

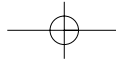
Strategija ohranjanja biotske raznoverstnosti v Sloveniji



Biodiversity Conservation Strategy of Slovenia



REPUBLIKA SLOVENIJA
MINISTRSTVO ZA OKOLJE IN PROSTOR
Ministry of the Environment and Spatial Planning



The Biodiversity Conservation Strategy of Slovenia was adopted by the Government of the Republic of Slovenia on 20. December 2001. It is based on technical contributions by the staff of the Ministry of the Environment and Spatial Planning and external experts. Until 2001, the work was coordinated by Stane Peterlin and later on by Andrej Bibič. The financial support to the project was provided by the Global Environmental Facility.

Branka Hlad and Fedor Černe, Ph.D., made an important contribution to the concept of the Strategy. The experts who worked on individual chapters of the Strategy are as follows:

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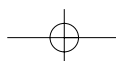
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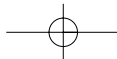
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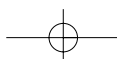


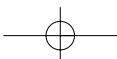
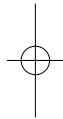
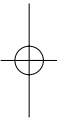
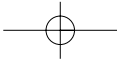
"Naša dežela je zaradi svoje izjemne naravne raznolikosti in naravnih vrednot nedvomno pravi biser Evrope in ena najiminitnejših dežel sveta, kar je že v bližnji prihodnosti lahko ena naših najmočnejših deviz."

(Narcis MRŠIČ: BIOTSKA RAZNOVRSTNOST V SLOVENIJI - Slovenija, " vroča točka" Evrope)

"Owing to its exceptional natural diversity and natural values, Slovenia is no doubt a true jewel of Europe and one of the most remarkable countries in the world, which may already in the very near future become one of it's most valuable resources."

(Narcis MRŠIČ: BIOTIC DIVERSITY IN SLOVENIA - Slovenia-the "hot spot" of Europe)





Predgovor

Slovenija ima v primerjavi z državami srednje Evrope večje število območij z ohranjeno biotsko raznovrstnostjo. To prinaša tudi odgovornost za njihovo ohranjanje, še posebej v obdobju, ko je upadanje biotske raznovrstnosti v Evropi že zaskrbljujoče. Državni zbor Republike Slovenije je ratificiral Konvencijo o biološki raznovrstnosti in nato sprejel Nacionalni program varstva okolja, ki postavlja ohranjanje biotske raznovrstnosti kot enega od štirih prednostnih ciljev.

Strategija ohranjanja biotske raznovrstnosti, ki jo je konec leta 2001 sprejela Vlada RS, s svojimi usmeritvami in cilji prispeva k usklajenemu doseganju treh glavnih ciljev Konvencije o biološki raznovrstnosti:

- ohranjanju biotske raznovrstnosti,
- trajnostni rabi njenih sestavin,
- pošten in pravični delitvi koristi genskih virov.

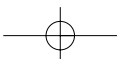
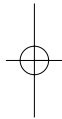
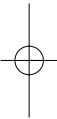
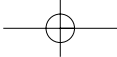
Strategija postavlja desetletne usmeritve za dejavnosti, ki pomembno vplivajo na trajnostno rabo sestavin biotske raznovrstnosti in trajnostni razvoj. Z njo dopolnjujemo druge državne strategije, predvsem Strategijo gospodarskega razvoja Slovenije in Nacionalni program varstva okolja. Vključevanje drugih resorjev v skrb za trajnostni razvoj postaja s sprejetjem te strategije še konkretnjše, njeno izvajanje pa bo prispevalo k še tesnejšemu povezovanju ključnih resorjev pri izvajanju ukrepov za ohranjanje raznovrstnosti.

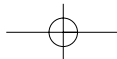
Medresorsko sodelovanje je bilo pomembno tako pri pripravi te strategije, kot tudi pri pregledu stanja biotske raznovrstnosti in krajinske pestrosti v Sloveniji - dokumentu, ki je predstavljal temelj strategiji. Skrb za ohranjanje biotske raznovrstnosti ima mednarodne razsežnosti, zato strategija upošteva tudi ocene stanja in vzrokov za upadanje biotske raznovrstnosti v Evropi ter strategije biotske raznovrstnosti držav Evropske unije in Hrvaške.

Slovenska strategija poudarja ohranjanje ekosistemov skozi ohranjanje ugodnega stanja pripadajočih združb rastlinskih in živalskih vrst (habitatnih tipov), predvsem najbolj ogroženih tipov – obalnih, morskih in celinskih voda, barij in močvirij, suhih in vlažnih travnišč, podzemeljskih habitatnih tipov, in zaradi velikosti populacij evropsko ogroženih vrst zelo pomembnih – gozdov.

Vključevanje Slovenije v Evropsko unijo tudi na področju ohranjanja biotske raznovrstnosti prinaša nove izzive. Evropska komisija je preteklo leto sprejela akcijske načrte za ohranjanje naravnih virov, kmetijstvo, ribištvo, razvoj in ekonomsko sodelovanje. Ti dokumenti so dobro vodilo tudi za pripravo in izvajanje slovenskega medresorskega akcijskega načrta, ki bo pomembna naloga v letu 2002.

Mag. Janez Kopač
Minister za okolje in prostor





Foreword

In comparison with other central European countries, Slovenia has more areas that have preserved their biodiversity. This brings with a responsibility to conserve such areas, especially at a time when the reduction of biodiversity in Europe is a cause of serious concern. Following the ratification of the Convention on Biological Diversity, the National Assembly of the Republic of Slovenia adopted the National Environmental Action Programme, which featured the conservation of biodiversity as one of its four priorities.

At the end of 2001 the Slovenian government adopted the Strategy for the Conservation of Biodiversity including objectives and directions which will help us attain in a co-ordinated manner the following three main objectives of the Convention on Biological Diversity:

- conservation of biological diversity;
- sustainable use of its components;
- fair and equitable sharing of the benefits arising from the utilisation of genetic resources.

The strategy defines ten-year objectives for activities with a significant impact on the sustainable use of the components of biological diversity and sustainable development. It complements other national strategies, primarily the Strategy for the Economic Development of Slovenia and the National Environmental Action Programme. The participation of other ministries in sustainable development has taken on more concrete forms on the basis of this strategy. Its implementation will contribute to closer co-operation between the key ministries in the implementation of measures for the conservation of biological diversity.

Inter-ministerial co-operation played an important role in the preparation of the present strategy and the Review of the Status of Biological and Landscape Diversity in Slovenia - a document that served as a basis for this strategy. Concern for the conservation of biodiversity has an international dimension, so the strategy reflects assessments of conservation status and the causes of the reduction of biodiversity in Europe as well as biodiversity strategies adopted by the European Union member states and Croatia.

The Slovenian strategy stresses the conservation of ecosystems by maintaining a favourable conservation status of plant and animal associations (habitat types), especially the most endangered types: coastal, marine and inland waters, bogs, mires and fens, wet and dry grasslands, subterranean habitat types, and forests which are of great importance given the population sizes of species of European conservation concern.

Slovenia's integration into the European Union brings new challenges in the conservation of biodiversity along with it. Last year the European Commission adopted action plans for the preservation of natural resources, for agriculture, fisheries, development and economic co-operation. These documents will guide the preparation and implementation of the Slovenian inter-ministerial action plan, which will be an important task for 2002.

Janez Kopač, M. Sc.
Minister of the Environment and Spatial Planning

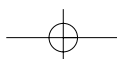


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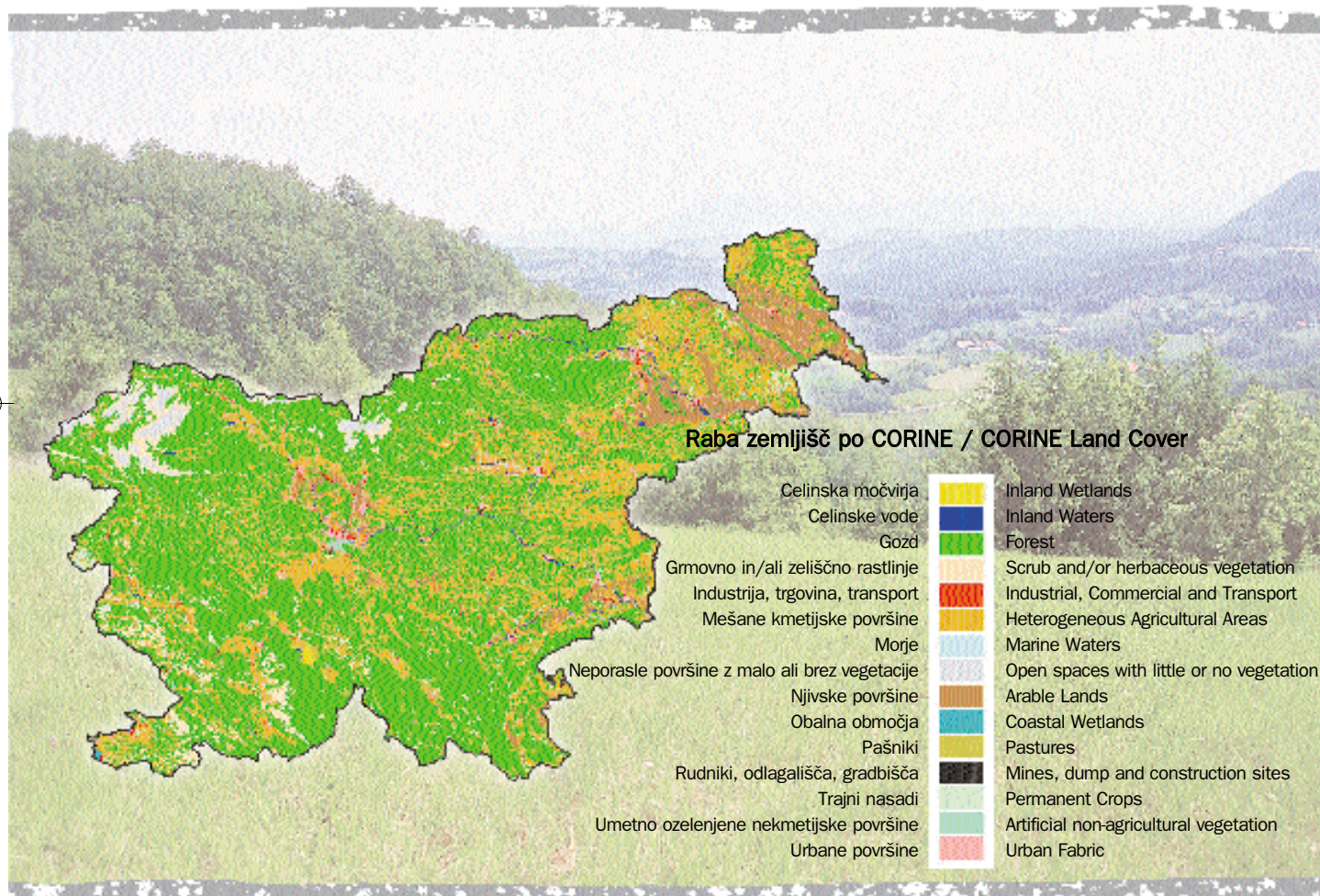
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UVOD



INTRODUCTION

1.1 Ohranjanje biotske raznovrstnosti - izziv za prihodnost

Življenje na Zemlji se je razvilo pred približno 3,5 milijardami let. Tekom evolucije so se razvile vrste in ekosistemi do stanja in pestrosti, ki jo poznamo danes in katere sestavni del je človek. Biotska raznovrstnost (uporabljajo se tudi sinonimi biološka raznovrstnost, biotska pestrost in biodiverziteteta) je kakovost velikega pomena za potek evolucije in vzdrževanje sistemov, ki ohranjajo življenje v biosferi in nadaljnji razvoj človeštva. Za človeka pa je pomembna tudi njena gospodarska, družbena in okoljska vrednost. Vsaka teh vrednosti se pomembno zrcali v interesu po zdravju v povezavi z okoljem (Vis medicatrix naturae – Zdravilna moč narave). Za posameznika je to ena od največjih vrednot in njegovih osebnih virov, na družbeni ravni pa je zdravje dobrina, ki omogoča uspešen družbeni razvoj in gospodarski napredek. Zdravje je kot zmožnost razvijanja človeških potencialov eden od ključnih virov in ciljev razvoja.

Konvencija o biološki raznovrstnosti (*Konvencija v nadaljevanju*) definira biološko raznovrstnost kot variabilnost med živimi organizmi, vključno s kopenskimi, morskimi in drugimi vodnimi ekosistemi in ekološkimi kompleksi, katerih del so.

Sestavine biotske raznovrstnosti so tudi vir dobrin, ki omogočajo zadovoljevanje prehrabnih, zdravstvenih in drugih potreb naraščajočega svetovnega prebivalstva (poglavje 1.2). Posebej za reševanje revščine in lakote v svetu poudarja Organizacija Združenih narodov za kmetijstvo in prehrano (FAO) ohranjanje biotske raznovrstnosti. Njeno ohranjanje in trajnostna uporaba njenih sestavin pa pomenita hkrati izboljševanje zdravja ljudi in dvig kakovost življenja in zato služita povečevanju blaginje sedanjih in prihodnjih rodov.

V evlucijsko zelo kratkem času je človek močno vplival na biotske razmere našega planeta in povzročil občutne motnje. Vanje je posegel s številnimi dejavnostmi, s katerimi zadovoljuje vedno večje potrebe rastočega prebivalstva in novimi navadami in vzorci vedenja ljudi (npr. povečevanje do okolja neprijaznega porabniškega vedenja, širjenje oblik preživljanja prostega časa, povečevanje mobilnosti). Zaradi nekaterih dejavnosti se biotska raznovrstnost občutno zmanjšuje (poglavje 1.3). S tem človek degradira tudi okolje za svoje in še posebno za življenje prihodnjih generacij. Časa za ukrepanje ni veliko, zato je treba preprečevati in odstranjevati vzroke zmanjševanja biotske raznovrstnosti prav pri izvoru.

Temeljni koncept ohranjanja biotske raznovrstnosti sestavljajo *Konvencija* in zakonodaja Evropske skupnosti. Ta koncept, ki se izraža že v slovenski zakonodaji, izpostavlja ohranitev ekosistemov in naravnih habitatnih tipov *in-situ* ter vzdrževanje in krepitev populacij, ki so sposobne nadaljevati vrste v svojem naravnem okolju (poglavje 2). Za dopolnjevanje ohranjanja *in-situ* je smiselno tudi

1.1 Conservation of biodiversity - a challenge for the future

Life on Earth began approximately 3,5 billion years ago. During the evolution, species and ecosystems developed to the stage known today. Human race constitutes its integral part. Biodiversity (biological diversity, biotic diversity are synonyms) is an essential component in the process of evolution, the maintenance of life-conserving systems in biosphere, and for the further development of human kind.

Biodiversity is extremely important for human race with regard to its economic, social and environmental value. The relevance of these values is reflected in the interest of man for health, in relation to the environment (Vis medicatrix naturae – The Healing Power of Nature). Health is one of the major values and personal sources for an individual and, at the social level, it is an asset which facilitates successful social development and economic progress. As a capacity for the development of human potential, health is one of its key sources and objectives.

Convention on Biological Diversity (hereinafter referred to as the *Convention*) defines biological diversity 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.

Biodiversity components are a source of assets that allow the ever-increasing world population to satisfy its need for food, health and other goods (Chapter 1.2). To solve the issues of poverty and hunger in the world, the Food and Agriculture Organisation of the United Nations (FAO) emphasises the importance of biodiversity conservation. Moreover, the conservation of biodiversity and the sustainable use of its components lead to the improved human health and quality of life and serve to augment the wealth of the present and future generations.

Man markedly affected biodiversity conditions on the planet and caused considerable disturbances in very short time, speaking in terms of evolution. Biodiversity components are influenced by numerous activities that fulfil the needs of the world population. The newly-developed habits and behavioural patterns (for example, environmentally unfriendly consumer behaviour, outdoor recreation activities, increased mobility) affect biodiversity. Some of the activities significantly diminish biodiversity (Chapter 1.3) and degrade the environment of the present and future generations. Not much time is left for action. The causes of significant reduction of biodiversity have to be prevented and eliminated at source.

The *Convention* and EU legislation constitute the basic concept of biodiversity conservation. This concept, adopted by the Slovene legislation, focuses on the *in-situ*

conservation of ecosystems and natural habitat types and the maintenance and strengthening of populations capable of reproduction in their natural environment (Chapter 2). With a view to supplementing the *in-situ* conservation, it is reasonable to enforce the *ex-situ* conservation of biodiversity components in their areas of origin. The sustainable use of biodiversity components plays a decisive role in the fulfilment of the basic needs of the world population, such as its need for food and health. In Europe, the densely populated and economically developed continent, the *in-situ* conservation is generally ensured through sustainable use and, exceptionally, through the natural development of areas. Such policy is only possible if the *in-situ* conservation and sustainable use become inseparable parts of the development of economic and social activities that affect biodiversity (for example, transport) and exploit its components (for example, agriculture) (Chapter 3). The existing measures focused on the mitigation of the loss of biodiversity are not sufficient to put a stop to current trends. A step in the right direction would be the inclusion, when possible and appropriate, of the conservation of biodiversity and sustainable use of its components into the relevant sectoral and inter-sectoral plans, programmes and policies.

The permanent abatement of adverse impacts on biodiversity, nature and the environment can be achieved if all the segments of society express a willingness to change the current system of values and their life-style. The objective may be reached if all three branches of power (in addition to the executive branch, mentioned in the previous paragraph, the legislative and judiciary branch) give a clear message in relation to biodiversity conservation and if the active participation of the public, in particular of the groups active in the non-profit and revenue-generating sector, is ensured. A key to success is the raising of awareness of the public and the susceptibility of people to change social habits.

The main challenge faced by the present Strategy is to achieve a harmonised conservation of biodiversity and the sustainable use of its components in all segments of the society, while taking into account the fundamental concept of biodiversity conservation. The objectives of the Strategy for the next 10 years will be met through the adoption and implementation of the action plan and the sectoral and regional development policies and plans that lead to the gradual changes in social habits. The current values of biodiversity and the resulting prosperity can thus be preserved for the present and future generations.

1.2 Value of biodiversity

In reality society attributes market value only to a few of biodiversity values (according to the *Convention* these are ecological, genetic, social, economic, scientific, educational, cultural, recreational and aesthetic values). However, their actual market value is high and diverse and can be expressed as:

Direct use value

The value of biodiversity components, for example wood, caught fish and other animals, fruit, picked mushrooms,

ohranjanje *ex-situ* sestavin biotske raznovrstnosti, predvsem v državah izvora sestavin. Trajnostna raba sestavin biotske raznovrstnosti pa je odločilnega pomena tudi za zadovoljevanje prehrambenih, zdravstvenih in drugih potreb naraščajočega svetovnega prebivalstva. V Evropi, gosto poseljeni in gospodarsko zelo razviti celini, se ohranjanje *in-situ* praviloma zagotavlja s trajnostno rabo, le redko s prepuščanjem območij naravnemu razvoju. To pa je mogoče le, če postaneta ohranjanje *in-situ* in trajnostna raba neločljivi del razvoja gospodarskih in družbenih dejavnosti, ki vplivajo na biotsko raznovrstnost (npr. promet) oziroma ki trajnostno izkoriščajo njene sestavine, npr. kmetijstvo (poglavje 3). Obstoječi ukrepi za zmanjšanje izgube biotske raznovrstnosti še niso zadostni za ustavitev današnjih trendov. Korak k temu je, da te dejavnosti povezujejo in vključujejo, kjer je mogoče in primerno, ohranjanje in trajnostno rabo sestavin biotske raznovrstnosti v ustreznih sektorskih in medsektorskih načrtih, programih in politikah.

Trajnejše zmanjšanje negativnih vplivov na biotsko raznovrstnost in naravo oziroma okolje v širšem pomenu pa lahko prinese le pripravljenost vseh segmentov družbe, da spremenijo sedanji sistem vrednot in svoj življenjski slog. To je možno doseči le z dajanjem jasnih sporočil vseh treh najvišjih ravni oblasti (poleg v prejšnjem odstavku omenjene izvršne še z zakonodajno in sodno) in zagotavljanjem aktivnega sodelovanja vse družbe, zlasti organiziranih skupin, ki delujejo v profitnem in neprofitnem sektorju. Ozaveščanje in dojemljivost ljudi za spreminjanje družbenih navad pa sta ključ do uspeha.

Glavni izziv te strategije je, ob upoštevanju temeljnega koncepta ohranjanja biotske raznovrstnosti, doseči premik v usklajeno ohranjanje biotske raznovrstnosti in trajnostno rabo njenih sestavin v vseh bistvenih segmentih družbe. Cilje strategije, postavljene za obdobje desetih let, bomo dosegli s sprejetjem in izvajanjem akcijskega načrta, sektorskih in regionalnih razvojnih politik in načrtov. To vodi tudi v postopno spreminjanje družbenih navad. Tako bo mogoče ohraniti današnje vrednote biotske raznovrstnosti in blaginjo, ki iz njih izhaja, sedanjim in prihodnjim generacijam.

1.2 Vrednost biotske raznovrstnosti

Le nekaterim od vrednosti biotske raznovrstnosti (npr. glede na delitev, ki jo vpeljuje *Konvencija* - ekološke, genske, družbene, gospodarske, znanstvene, izobraževalne, kulturne, rekreacijske in estetske vrednosti) družba dejansko pripisuje tržno vrednost. Ta je velika in raznolika, mogoče pa jo je izraziti kot:

Neposredno uporabno vrednost

To je npr. vrednost sestavin biotske raznovrstnosti, denimo lesa, ulovljenih rib in drugih živali, plodov rastlin, nabranih gob, zdravilnih rastlin in njihovih sestavin. Posebno neposredno uporabno vrednost predstavljajo kmetijske rastline in pasme domačih živali, ki so prilago-

jene specifičnim, pogosto zelo ekstremnim, pogojem okolja. V to kategorijo vrednosti lahko štejemo tudi v zadnjem času vse številnejša odkritja novih biogenih snovi (npr. prehranskih proizvodov, funkcionalne hrane, zdravil, industrijskega materiala itd.) in mehanizmov delovanja (npr. gibanje robotov, aerodinamičnih lastnosti itd.), ki dobijo s prenosom v tehnologijo neposredno uporabno vrednost. Ohranjeno biotsko raznovrstnost neposredno trži turizem, saj je sodobna usmeritev v "zeleni" ali alternativni turizem. Ta pa je odvisen od ohranjenosti biotske raznovrstnosti oziroma narave.

Posredno (ekološko) uporabno vrednost

Ekosistemi zagotavljajo ekološke procese, ki so tudi osnovna podpora delovanju človeške družbe in gospodarstva. To so npr. kroženje hranil in kisika, zaščita tal pred spiranjem in erozijo, blaženje podnebnih sprememb - ponor CO₂, čistilna funkcija voda, življenjski prostor za živali in rastline. Sistemi z večjo biotsko raznovrstnostjo bolje prenesajo nenadne spremembe v okolju in ohranjajo ugodno stanje ekosistemov. Pravočasno upoštevanje vidika ohranjanja biotske raznovrstnosti v okviru celovitega družbeno-gospodarskega pristopa zmanjšuje porabo sredstev za sanacijo nezaželenih posledic in s tem tudi javno porabo sredstev. Iz držav Evropske unije so znani predvsem primeri prihrankov zaradi zmanjševanja intenzivnosti kmetijstva in učinkovite rabe energije.

Estetsko, kulturno in intrinzično vrednost

Velik vpliv na človekovo doživetje okolice imajo naravne značilnosti - živali, rastline in naravna območja, čustveno pa se odzivamo na značilne estetske lastnosti. Posameznikovo doživetje narave je močno odvisno od asociacij, ki jih podajajo umetniki. Slednji pogosto najdejo navdih in motiv v naravi. Tudi številni kulturni običaji izvirajo iz naravnih pojavov. Za vedno številnejši del ljubiteljev narave je pomembno zavedanje, da še vedno so območja z ohranjeno naravo in visoko biotsko raznovrstnostjo, ki imajo estetsko, kulturno ali intrinzično vrednost kot zapuščina prihodnjim rodovom. Ta skupina ljudi prispeva k ohranjanju takih območij z materialnimi sredstvi in prostovoljnimi delom.

herbs and their parts. The direct use value includes, in particular, agricultural plants and breeds of domestic animals adapted to the specific, often extreme, local environmental conditions. Numerous newly discovered biogenic substances (of foodstuffs, functional food, medicines, industrial material, etc.) and operation mechanisms (moving of robots, aerodynamic properties) which gain direct use value when used in technology can be included in this category of values. The tourist sector directly markets conserved biodiversity since the eco/sustainable tourism is highly popular. Still, such tourism is determined by the level of the conservation of biodiversity and nature.



Na območjih z ohranjeno biotsko raznovrstnostjo trži njeno neposredno uporabno vrednost turizem, ki mora za dolgoročno ohranjanje te vrednosti zagotavljati ohranjenost teh območij.

In areas with conserved biodiversity its direct use value is marketed by tourism which must ensure the preservation of the value in order to guarantee the long-term conservation of these areas.

Indirect (ecological) use value

Ecosystems provide ecological processes which are the foundations for the functioning of human society and economy. In these processes the following are included: the cycle of nutrients and oxygen, the protection of soil against leaching and erosion, the mitigation of climate change - CO₂ sink, the purification function of waters, the habitats for plants and animals. Systems with rich biodiversity easily mitigate the sudden changes in the environment and maintain ecosystems at a favourable status. If biodiversity conservation aspects are duly taken into account within the framework of the integral social and economic approach, the funds for the rehabilitation of

undesired consequences and thus public spending, are reduced. In the EU member states savings arise from the reduction of the intensity of agricultural production and efficient energy use.

Aesthetic, cultural and intrinsic value

Natural features - animals, plants and natural areas - influence man's perception of the surrounding space but, emotionally, man responds to specific aesthetic characteristics. An individual perception of nature is to a large extent defined by the associations offered by artists who often find inspiration and motif in nature. Moreover, many cultural customs arise from natural phenomena. It is important for numerous nature lovers to know that there are still areas of conserved nature and rich biodiversity with the aesthetic, cultural and intrinsic value as a heritage for future generations. These people contribute to the conservation of such areas by material means and volunteer work.

1.3 The status of biodiversity and trends

The data and discoveries allow modern science to explain the existing status of matters with increasing reliability, to foresee the developments in nature and society and to effectively direct the necessary measures. However, despite all the measures and development, biodiversity is still diminishing. If measures are not implemented, the status does not improve. At the time of the adoption of the *Convention* it was established by the signatories that "where there is a threat of significant reduction or loss of biological diversity, lack of full scientific certainty should not be used as a reason for postponing measures to avoid or minimise such a threat". The doubts about the reliability of data should therefore be considered from this point of view.

The status of biological and landscape diversity in Slovenia, including the reference sources and the summaries of the world and European trends and the Slovene legislation, is thoroughly assessed and presented in the publication of the Environmental Agency of the Republic of Slovenia (the Review of the Status of Biological and Landscape Diversity in Slovenia). Only a general summary is provided here.

Število ogroženih vrst v zadnjih desetletjih zaskrbljujoče raste.

The increased number of endangered species in the last decades is a cause for concern.



It is estimated in the UNEP's Global Biodiversity Assessment, that on a global level biodiversity is decreasing at a faster rate now than at any other time in the history of Earth. Among the most affected areas are tropical forests and isolated island ecosystems. The FAO reports that one third of all domestic animal breeds faces extinction.

The situation in Europe is a cause for concern due to the impact of human activities lasting for centuries. The scale of the impact increased dramatically in the 19th century. The Assessment by the UNEP confirms that in some European countries up to 24 % of species of certain groups such as butterflies, birds and mammals are now nationally extinct. The European Environmental Agency

1.3 Stanje biotske raznovrstnosti in trendi

Sodobna znanost in stroka vsak dan prihajata do novih podatkov in odkritij, s katerimi lahko vedno bolj zanesljivo razlagata obstoječe stanje, predvidevata dogajanje v naravi in družbi in še bolj učinkovito usmerjata ukrepe. Kljub temu se biotska raznovrstnost zmanjšuje, kajti dokler se ukrepi ne izvajajo, se stanje praviloma ne popravlja. S sprejetjem *Konvencije* so podpisnice ugotovile, da »tam, kjer grozi občutno zmanjšanje ali izguba biotske raznovrstnosti, pomanjkanje popolne znanstvene zanesljivosti ne sme biti razlog za odlaganje ukrepov, s katerimi se je možno izogniti tej grožnji ali jo celo zmanjšati«. Zato je dvome o zanesljivosti podatkov treba gledati tudi v tej luči.

Pregled stanja biotske raznovrstnosti in krajinske pestrosti v Sloveniji z referenčnimi viri, ki navaja tudi povzetke svetovnih in evropskih trendov in slovensko zakonodajo, je izčrpno podan v pravkar izdani istoimenski publikaciji Agencije RS za okolje, zato so tukaj navedeni le splošni povzetki.

Ocena globalne biotske raznovrstnosti in njenih trendov, ki so jo izdelali v okviru Programa za okolje Združenih narodov (UNEP), kaže na veliko višjo stopnjo njenega zmanjševanja kot kdaj prej v zgodovini Zemlje. Najbolj kritično so prizadeti tropski gozdovi in izolirani otoški ekosistemi. FAO pa poroča, da se tretjina pasem domačih živali sooča z izumrtjem.

Stanje biotske raznovrstnosti v Evropi prav tako zbujajo skrb, saj človek nanjo nenehno vpliva že stoletja. Ta vpliv se je dramatično povečal v 19. stoletju. Omenjena ocena UNEP-a potrjuje, da je v nekaterih evropskih državah pri skupinah, kot so metulji, ptice in sesalci, izumrlo ali izginilo do 24 % vrst. Evropska okoljska agencija (EEA) v svojih poročilih navaja, da so vzroki za zmanjševanje biotske raznovrstnosti v mnogih evropskih regijah pred-

vsem intenzivne, deloma industrijske oblike kmetijske in gozdarske rabe prostora, visoka stopnja fragmentacije ostankov naravnih habitatov kot posledice infrastrukture, urbanizacija, množični turizem ter onesnaženost vode in zraka. Pri sedanjih trendih gospodarske rasti se bo izguba biotske raznovrstnosti v Evropi bržkone nadaljevala.

Pregled stanja biotske raznovrstnosti in krajinske pestrosti v Sloveniji potrjuje podobne trende, čeprav so manj izraziti kakor v razvitih srednjeevropskih državah. Ogroženih je na primer 10 % vseh praprotnic in semenk ter 56 % vretenčarjev (sesalci, ptiči, plazilci, dvoživke, ribe), najbolj ogroženi habitatni tipi pa so podzemski, obalni in morski, stoječe in tekoče vode, suha in vlažna travnišča. Med domorodnimi pasmami domačih živali je v kategoriji ogroženih populacij v Sloveniji najmanj devet pasem. Slovenija ima v primerjavi z državami Evropske unije še več območij z ohranjenimi habitatnimi tipi, ki nastanejo kot posledica ekstenzivne kmetijske in gozdarske rabe.

1.4 Pravni okvir in programski akti ohranjanja biotske raznovrstnosti

1.4.1 Konvencije – pravni in programski okvir

Konvencija o biološki raznovrstnosti postavlja pravni in programski okvir za učinkovito ukrepanje za ohranjanje biotske raznovrstnosti, o čemer govorijo naslednja poglavja te strategije. Z ratifikacijo skozi sprejetje *Zakona o ratifikaciji Konvencije o biološki raznovrstnosti*¹ so določila *Konvencije* postala tudi pravno zavezujoč okvir, s katerim se je Slovenija zavezala k izpolnjevanju ciljev na način predviden v *Konvenciji*.



Slovenska zakonodaja na mnogih področjih že ustrezno ureja ohranjanje biotske raznovrstnosti in trajnostno rabo in razvoj (na sliki slovenski parlament).

The conservation of biodiversity, and sustainable use and development, are in many fields adequately regulated by Slovene legislation (here, Slovenian parliament).

(EEA) states in its reports that the decline of Europe's biodiversity in many regions derives mainly from highly intensive, partially industrial forms of agricultural and silvicultural land use, from an increased fragmentation of remaining natural habitats by infrastructure and urbanisation and the exposure to mass tourism as well as pollution of water and air. Given the current trends in economic activities, the rate of loss of biodiversity in Europe is likely to continue.

In the Review of the Status of Biological and Landscape Diversity in Slovenia similar trends were confirmed, even though they are not as evident as in the Central European countries. Approximately 10 % of ferns and higher plants and 56 % of vertebrates (mammals, birds, reptiles, amphibians, fish) are endangered. The most threatened habitat types are subterranean habitats, coastal and marine habitats, standing and running waters, and dry and humid grasslands. In Slovenia at least nine breeds of indigenous domestic animals have been given the status of endangered population. In comparison to the EU countries, there are more areas of conserved habitat types based on low intensity agriculture and forestry in Slovenia.

1.4 Legal framework and programme documents on the conservation of biodiversity

1.4.1 Conventions - legal and programme framework

The *Convention on Biological Diversity* provides the legal and programme framework for the efficient action in the field of biodiversity conservation. With the ratification and adoption of the *Act ratifying the Convention on Biological Diversity*¹, the provisions of the *Convention* became a legally binding instrument obliging Slovenia to fulfil the objectives in a manner provided for in the *Convention*.

The *Convention on Biological Diversity* includes several subjects which are discussed in detail by other conventions - the *World Heritage Convention* (ratified in 1992), the *Ramsar Convention* (notified in 1992), the *Barcelona Convention* (notified in 1992), the *Alpine Convention* (ratified in 1995), the *Bonn Convention* (ratified in 1998), the *Bern Convention* (ratified in 1999) and the *Washington Convention* (ratified in 1999). The implementation of the UN conventions has lately been oriented towards the aggregation and coordination of activities, in particular at the national level.

¹ Ur.l. RS, št. 30/96

¹ Ur.l. RS (Official Journal of the Republic of Slovenia), 30/96

The *Convention on Biological Diversity* stipulates that its parties have to adopt a strategy for the conservation of biodiversity as a programme document that lays the foundations for the implementation of the measures provided for in the *Convention*. The *National Environmental Action Plan*², drawn up pursuant to Articles 47 and 48 of the *Environmental Protection Act*³, lays down that the Ministry for the Environment and Spatial Planning has to draw up a national biodiversity conservation strategy (Chapter 6.1.3.1). Pursuant to Article 21 of the *Government of the Republic of Slovenia Act*⁴ the Government is the body responsible for the adoption of such strategy.

1.4.2 **Obligations and programme documents within the framework of the approximation of laws to the Acquis**

Upon the adoption of the 5th Environmental Action Programme "Towards Sustainability", the EU member states came to an agreement to adopt a strategy on biodiversity. The strategy must be viewed in the context of the obligations to integrate environmental concerns into other sectoral policies, in accordance with article 130R (2) of the Amsterdam Treaty which establishes that "environmental protection requirements must be integrated into the definition and implementation of Community policies and activities, in particular with a view to promoting sustainable development". The Community Biodiversity Strategy as a programme document was adopted by the European Parliament in 1998. It provides guidelines for achieving compliance in the fulfilment of objectives and international obligations arising from the conventions signed by the European Union. The current EU legislation and policies are considered in the Community Strategy and Slovenia is obliged by the Association Agreement to implement them. The main documents are the integral common policies - *Agenda 2000*, sectoral policies - *Common Agricultural Policy*, *Common Fisheries Policy* and *Rural Development Policy* and the EU policy concerning the protection of nature, the environment and genetic resources determined in particular by the *Directive on the conservation of wild birds*, *Directive on the conservation of natural habitats and of wild fauna and flora*, *Directive establishing a framework for Community action in the field of water policy*, *Council Regulation on the conservation, the characterisation, the collection and the utilisation of genetic resources in agriculture* and various *Biodiversity conservation action plans focused on the conservation of natural resources, agriculture, fisheries and on economic and development cooperation*. In practice, the link between these documents and environmental concerns and the conservation of biodiversity is established by the possibility to draw funds from the EU financial mechanisms.

Konvencija o biološki raznovrstnosti obsega tudi vsebine, ki jih podrobneje obravnavajo druge konvencije - *Konvencija o varovanju svetovne dediščine* (ratificirana l. 1992), *Ramsarska* (notificirana l. 1992), *Barcelonska* (notificirana l. 1992), *Alpska* (ratificirana l. 1995), *Bonska* (ratificirana l. 1998), *Bernska* (ratificirana l. 1999) in *Washingtonska konvencija* (ratificirana l. 1999). Izvajanje konvencij, katerih skrbnik so Združeni narodi, je v zadnjem času usmerjeno v združevanje in koordinacijo dejavnosti. To prizadevanje naj bi potekalo predvsem na državni ravni.

Konvencija o biološki raznovrstnosti nalaga državam podpisnicam tudi sprejetje strategije ohranjanja biotske raznovrstnosti kot programskega dokumenta, ki naj zagotovi temelje za izvajanje ukrepov, določenih s *Konvencijo*. *Nacionalni program varstva okolja*², pripravljen na podlagi 47. in 48. člena *Zakona o varstvu okolja*³, nalaga Ministrstvu za okolje in prostor pripravo državne strategije za biotsko raznovrstnost (poglavje 6.1.3.1). Na podlagi 21. člena *Zakona o Vladi Republike Slovenije*⁴ pa Vlada sprejema Strategijo ohranjanja biotske raznovrstnosti.

1.4.2 **Obveznosti in programski akti v okviru prilagajanja evropskemu pravnemu redu**

Članice Evropske unije so se ob sprejetju *Petega okoljskega akcijskega programa "Towards Sustainability"* dogovorile med drugim o sprejetju strategije o biotski raznovrstnosti. Vsebine strategije morajo biti razumljene tudi v povezavi z dolžnostjo vključevati okoljske vidike v druge sektorske politike skladno s členom 130R (2) Amsterdamske pogodbe. Ta določa, da "morajo biti zahteve varstva okolja integrirane v opredelitev in izvajanje politik in dejavnosti Evropske unije, zlasti s poudarkom na promociji trajnostnega razvoja". *Strategijo Evropske unije o biotski raznovrstnosti* je parlament Evropske unije kot programski akt sprejel leta 1998 in določa smernice za zagotavljanje skladnosti pri doseganju ciljev in izpolnjevanju mednarodnih zahtev, ki izhajajo iz konvencij, katerih podpisnica je Evropska unija. Upošteva tudi obvezno zakonodajo in politike Evropske unije, ki se jih je Slovenija obvezala izpolnjevati s pridružitvenim sporazumom. To so predvsem celovite skupne politike kakor *Agenda 2000*, sektorske politike kakor *Skupna kmetijska politika*, *Skupna ribiška politika* in *Politika razvoja podeželja* ter politika Evropske unije na področju varstva narave, okolja in genskih virov, kakor jo določajo zlasti *Direktiva o ohranjanju prostoživečih vrst ptic*, *Direktiva o ohranjanju prostoživeče flore, favne in habitatov*, *Direktiva o skupni politiki do voda*, *Uredba sveta o ohranjanju, zbiranju in uporabi genskih virov v kmetijstvu ter Akcijski načrti biotske raznovrstnosti za ohranjanje naravnih virov, kmetijstvo, ribištvo in ekonomsko in razvojno sodelovanje*. Povezanost z okoljskimi zahtevami in ohranjanjem biotske raznovrstnosti se izraža v praksi pri možnostih črpanja sredstev iz finančnih mehanizmov Evropske unije.

2 Ur.l. RS, št. 83/99

3 Ur.l. RS, št. 32/93, 44/95, 1/99, 9/99

4 Ur.l. RS, št. 71/93, 23/96, 47/97, 23/99 and 119/00

2 Ur.l. RS, št. 83/99

3 Ur.l. RS, št. 32/93, 44/95, 1/99, 9/99

4 Ur.l. RS, št. 71/93, 23/96, 47/97, 23/99 in 119/00

1.4.3 Pravni predpisi in programi

Obravnavanje ohranjanja biotske raznovrstnosti

To področje je v Sloveniji zadovoljivo urejeno na ravni zakonskih aktov, obravnavajo pa ga predvsem *Zakon o ohranjanju narave*⁵, *Zakon o varstvu okolja* in *Zakon o zaščiti živali*⁶. Na ravni podzakonskih aktov velja za ohranjanje biotske raznovrstnosti nekaj ključnih uredb in odlokov (npr. *Uredba o zavarovanju ogroženih živalskih vrst*⁷, *Odlok o zavarovanju redkih ali ogroženih rastlinskih vrst*⁸, *Uredba o varstvu samoniklih gliv*⁹), na podlagi že sprejetih zakonov pa je treba sprejeti še nekaj podzakonskih aktov.

Področje podpor ohranjanja biotske raznovrstnosti v kmetijstvu ureja *Zakon o kmetijstvu*¹⁰.

Konvencija izpostavlja izjemen pomen ohranjanja *in-situ* biotske raznovrstnosti, k čemur pomembno prispeva ustrezno upravljanje zavarovanih območij visokega naravovarstvenega pomena. Predpisi, s katerimi se ustanavljajo zavarovana območja in se zanje določa upravljalca, imajo tako veliko vlogo pri ohranjanju raznovrstnosti. Na državni ravni so to zlasti *Zakon o Triglavskem narodnem parku*¹¹, *Zakon o Spominskem parku Trebče*¹² (pozneje z ZON preimenovanim v Kozjanski park), *Zakon o Regijskem parku Škocjanske jame*¹³, *Zakon o Naravnem rezervatu Škocjanski zatok*¹⁴ in *Uredba o Krajinskem parku Sečoveljske soline*¹⁵, na občinski pa npr. *Odlok o razglasitvi Zelencev za naravni rezervat*¹⁶.

Obravnavanje dejavnosti, ki izkoriščajo sestavine biotske raznovrstnosti

Formalnopravna ureditev trajnostne rabe sestavin biotske raznovrstnosti je na tistih področjih, ki so že urejena z novimi zakoni, to so zlasti gozdovi in delno kmetijstvo, načelno ustrezna. Na področju gospodarjenja z vodami, lovstva in ribištva, kjer je nova zakonodaja v pripravi, je treba vanjo vnesti trajnostno rabo sestavin biotske raznovrstnosti v skladu s predpisi o ohranjanju narave in mednarodnimi obveznostmi.

V usmeritvah in programskih dokumentih trajnostno rabo postavljajo *Nacionalni program varstva okolja*, *Strategija gospodarskega razvoja RS*, *Program razvoja gozdov v Sloveniji* in *Strategija razvoja kmetijstva*. Slednji razume varstvo biotske raznovrstnosti *in-situ* in trajnostno rabo njenih sestavin tudi v skladu z definicijami *Konvencije*. Programski dokumenta s področja kmetijstva (*Načrt razvoja podeželja 2000-2006* in *Slovenski kmetijsko-okoljski program 2001-2006*) načelno spodbujata kmetijsko prakso za ohranjanje biotske raznovrstnosti in finančno podporo trajnostni kmetijski rabi naravnih virov za ohranjanje kulturne krajine in biotske raznovrstnosti. V izvedbenem delu pa te spodbude še niso uravnotežene z načeli. Priprava programskih dokumentov lovstva in ribištva je v začetni fazi.

5 Ur. l. RS, št. 56/99, 31/00
6 Ur. l. RS, št. 98/99
7 Ur. l. SRS, št. 57/93, 61/93 in 69/00
8 Ur. l. SRS, št. 15/76 in 56/99
9 Ur. l. RS, št. 57/98
10 Ur. l. RS, št. 54/00
11 Ur. l. SRS, št. 17/81 in 42/86
12 Ur. l. SRS, št. 1/81 in 42/86
13 Ur. l. RS, št. 57/96
14 Ur. l. RS, št. 20/98
15 Ur. l. RS, št. 29/01
16 Ur. l. SRS, št. 27/1987

1.4.3 Legal acts and programmes

Addressing of biodiversity conservation

In Slovenia, the field of biodiversity conservation is rather well regulated by statutory acts, in particular the *Nature Conservation Act*⁵, the *Environmental Protection Act* and the *Animal Protection Act*⁶. The key executive acts concerning biodiversity conservation are the *Decree on the protection of endangered animal species*⁷, the *Ordinance on the protection of rare or endangered plant species*⁸ and the *Decree on the protection of wild fungi*⁹. Several more executive acts will have to be adopted pursuant to the already enforced laws.

The financial support for the conservation of agricultural biodiversity is regulated by the *Agriculture Act*¹⁰.

The *Convention* emphasises the outstanding importance of the *in-situ* conservation of biodiversity guaranteed by the adequate management of protected areas of high nature protection importance. The regulations concerning the establishment of protected areas and the designation of their management authorities therefore play a significant role in the conservation of biodiversity. Such national regulations are the *Triglav National Park Act*¹¹, the *Trebče Memorial Park Act*¹² (renamed by the Nature Conservation Act into Kozjansko Park), the *Škocjanske jame Regional Park Act*¹³, the *Škocjanski zatok Nature Reserve Act*¹⁴ and the *Decree on Sečoveljske soline Landscape Park*¹⁵. At the municipal level, the *Ordinance on the designation of Zelenci Nature Reserve*¹⁶ was adopted.

Addressing of the activities which use biodiversity components

In principle, the legal regulation of the sustainable use of biodiversity components is adequate in the fields where new acts have been adopted, that is in forestry and, in part, agriculture. In the field of water management, hunting and fisheries, the provisions concerning the sustainable use of biodiversity components have to be integrated into the legislation in accordance with the nature conservation regulations and international obligations.

The principles of sustainable use are covered by the following programme documents and guidelines: the *National Environmental Action Programme*, the *Strategy for the Economic Development of Slovenia*, the *Programme for the development of forests in Slovenia* and the *Development Strategy of Slovene Agriculture*. In the latter, the *in-situ* conservation of biodiversity and the sustainable use of its components are considered in accordance with the *Convention* definitions. The programme documents in the field of agriculture (the *Rural development plan 2000-2006* and the *Agri-environmental programme of Slovenia 2001-2006*) promote the agricultural practice

5 Ur. l. RS, št. 56/99, 31/00
6 Ur. l. RS, št. 98/99
7 Ur. l. SRS, št. 57/93, 61/93 and 69/00
8 Ur. l. SRS, št. 57/93, 61/93 and 69/00
9 Ur. l. SRS, št. 15/76 and 56/99
10 Ur. l. RS, št. 57/98
11 Ur. l. RS, št. 54/00
12 Ur. l. SRS, št. 17/81 and 42/86
13 Ur. l. SRS, št. 1/81 and 42/86
14 Ur. l. RS, št. 57/96
15 Ur. l. RS, št. 20/98
16 Ur. l. RS, št. 29/01

focused on biodiversity conservation and offer financial support for the sustainable agricultural use of natural resources, all with a view to conserve the cultural landscape and biodiversity. However, the discrepancies between the principles and actual situation in the provision of such support can not be ignored. In the field of hunting and fisheries the programme documents are only just being drawn up.

Addressing of the activities which have a significant impact on biodiversity

The *Spatial Planning Act*¹⁷ is of large importance for the conservation of biodiversity since space must be utilised in such a way that biodiversity is conserved. Fundamentally, the legislation in this field is adequate. However, new regulations on spatial planning must comply with the regulations on nature conservation and the international obligations.

The conflict between the conservation of biodiversity and the development of specific activities is often clearly evident from the spatial planning procedures and the procedures concerning the activities affecting space. Strategic decisions direct and motivate the development of activities but the regard for biodiversity conservation requirements is only a mechanism which merely mitigates the development trends, not influences them. It is of key importance that the principles of sustainable development and biodiversity conservation are integrated into the development strategies of specific activities. The *Resolution on the Strategy for energy use and supply* and the *Resolution on strategic goals for the development of tourism in the Republic of Slovenia* take into account the principles of sustainable development but they do not express their position towards the biodiversity conserving development. The *Strategy of Economic Development of Slovenia* lays the foundations for the programme directions in the field of transport but the actual integration of the *Strategy* into the national railway and road programme is not sufficient.

Addressing of the access to and distribution of benefits arising from the use of genetic resources and technology transfer

In Slovenia, the exploitation and transfer of technologies is rather satisfactorily regulated by the *Industrial Property Act*¹⁸.

1.5 Basic biodiversity conservation concept

At the global level the grounds for the biodiversity conservation concept were set by the *Convention*. At the European level they are supplemented by the EU legislation. The national legislation and the strategic and development programmes regulate the conservation of biodiversity in certain fields. The relations between the legislation and programmes on one hand and the objectives and directions on the other are hereby presented.

¹⁷ Ur.l. SRS, 27/87
¹⁸ Ur.l. SRS, 18/84, 15/89, RS 71/93

Obnavljanje dejavnosti, ki bistveno vplivajo na biotsko raznovrstnost

Velik pomen za ohranjanje biotske raznovrstnosti ima *Zakon o urejanju prostora*¹⁷ - prostor je namreč treba rabiti tako, da se ohranja biotska raznovrstnost. Zakonodaja, ki ureja to področje, je načeloma ustrezna, novi predpisi o urejanju prostora pa morajo biti usklajeni s predpisi o ohranjanju narave in mednarodnimi obveznostmi.

V postopkih urejanja prostora in poseganja vanj pa se pogosto najbolj jasno izraža konfliktnost med ohranjanjem biotske raznovrstnosti in razvojem nekaterih dejavnosti. Gonilo in usmerjevalec razvoja dejavnosti so strateške odločitve, upoštevanje zahtev, ki ohranjajo biotsko raznovrstnost, pa le mehanizem, ki ne more več vplivati na trende razvoja, lahko jih le blaži. Zato je ključnega pomena, da se v strategije razvoja dejavnosti vgradijo načela trajnostnega razvoja in ohranjanja biotske raznovrstnosti. Načela trajnostnega razvoja upoštevata *Resolucija o strategiji rabe in oskrbe Slovenije z energijo* in *Resolucija o strateških ciljih na področju razvoja turizma v Republiki Sloveniji*, ne opredeljujeta pa se do razvoja, ki ohranja biotsko raznovrstnost. Izhodišča za krovno prometno programsko usmeritev obstajajo v *Strategiji gospodarskega razvoja RS*, vendar je njena integracija v nacionalni železniški in avtocestni program pomanjkljiva.

Obnavljanje dostopa in delitve koristi od uporabe genskih virov ter prenosa tehnologij

Področje, ki ureja izkoriščanje in prenos tehnologij, je v Sloveniji zadovoljivo urejeno v *Zakonu o industrijski lastnini*¹⁸.

1.5 Temeljni koncept ohranjanja biotske raznovrstnosti

Konvencija na svetovni ravni postavlja veliko izhodišč, na evropski ravni pa jih dopolnjuje še zakonodaja Evropske skupnosti. Ti tvorijo globalni oziroma evropski koncept ohranjanja biotske raznovrstnosti. Državna zakonodaja ter strateški in razvojni programi urejajo ohranjanje biotske raznovrstnosti na nekaterih področjih. Odnos med to zakonodajo in programi ter cilji in usmeritvami strategije je razložen v nadaljevanju.

1.5.1 Cilji konvencije

Konvencija je bila sprejeta za doseganje treh temeljnih ciljev:

- ohranjanje biotske raznovrstnosti,
- trajnostna raba njenih sestavin,
- poštena in pravična delitev koristi genskih virov skupaj z ustreznim dostopom do njih in s primernim prenosom ustreznih tehnologij.

¹⁷ Ur.l. SRS, št. 18/84, 15/89, RS 71/93
¹⁸ Ur.l. RS, št. 13/92, 27/93, 34/97, 75/97

Ohranjanje biotske raznovrstnosti *in-situ* v slovenskih razmerah le v manjšem obsegu poteka s prepuščanjem naravnemu razvoju kot npr. v gozdnem rezervatu Pečka, v večjem pa s trajnostnimi oblikami rabe zemljišč kot npr. z ekstenzivnim kmetovanjem v Kozjanskem parku.



In Slovenia, the *in-situ* conservation of biodiversity, performed by leaving an area to natural processes, is restricted to small areas, e.g. the Forest Reserve Pečka; biodiversity is *in-situ* mainly conserved through sustainable land use, e.g. low intensity farming in the Park Kozjansko.



1.5.2 *Ohranjanje biotske raznovrstnosti*

Biotska raznovrstnost je raznolikost med živimi organizmi, vključno s kopenskimi, morskimi in drugimi vodnimi ekosistemi in ekološkimi kompleksi, katerih del so. Zmanjševanje svetovne biotske raznovrstnosti pomeni pospešeno izumiranje določenih viabilnih in za evolucijo sposobnih populacij ali vrst. S spremljanjem stanja v naravi je bilo ugotovljeno, da je določen del biotske raznovrstnosti bolj ogrožen od drugega. V okviru ohranjanja biotske raznovrstnosti so torej takšne populacije in vrste deležne svetovne pozornosti. Navedene so v rdečem seznamu svetovno ogroženih vrst, ki ga vodi IUCN. Države oziroma skupnosti držav (npr. Evropska unija) so odgovorne za ohranjanje biotske raznovrstnosti na svojem ozemlju in za trajnostno rabo svojih bioloških virov. Zato morajo usmeriti pozornost na te populacije in vrste na svojem ozemlju, pa tudi na populacije in vrste, ki so ogrožene na ravni celine oziroma države in prispevajo k viabilnosti regionalne populacije. Ker je osnovna zahteva po varstvu ekosistemov in naravnih habitatov *in-situ*, mora država skrbeti za ohranjanje ekosistemov oziroma habitatov takšnih vrst. Določeni ekosistemi oziroma habitatov potrebujejo večjo pozornost kakor drugi. Evropska unija je tukaj po znanju in pristopih pred svetovnim povprečjem *Konvencije* in v dveh direktivah že določa takšne vrste in habitatne tipe.

1.5.1 *Convention objectives*

The three basic objectives of the *Convention* are:

- the conservation of biological diversity,
- the sustainable use of its components,
- the fair and equitable sharing of the benefits arising out of the utilisation of genetic resources, including by appropriate access to genetic resources and by appropriate transfer of relevant technologies.

1.5.2 *Biodiversity conservation*

Biodiversity means the variability among living organisms from all sources, including terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are part. The loss of global biodiversity is indicated by the advanced dying out of specific viable populations or species capable of evolution. It has been established by the monitoring of their status in nature that specific species and populations are more threatened than others. In view of biodiversity conservation such populations and species cause world-wide concern. In the IUCN Red List they are identified as globally threatened species. Individual states and communities of states (for example, the European Community) are responsible for the conservation of biodiversity in their territory and for the sustainable use of their biological resources. Their attention should be devoted to popula-

tions and species found in their own territory, and to those which are threatened at the continental or state level and contribute to the viability of the regional population. Since the *in-situ* conservation of ecosystems and natural habitats is the basic requirement, a state should provide for the conservation of ecosystems and habitats of such species. However, certain ecosystems and habitats should be given more attention than others. With regard to the necessary knowledge and approaches, the European Union is a step ahead of the average *Convention* party. It has already adopted two directives identifying such species and habitat types.

One of the already enforced *in-situ* conservation measures is the establishment of protected areas and areas where special biodiversity conservation measures are foreseen. If appropriate, the parties to the *Convention* draw up guidelines for the selection, establishment and management of protected areas and areas where special biodiversity conservation measures are to be adopted. The EU member states have reached an agreement on the establishment of such protected areas in regions where habitats of endemic and endangered species of Community interest still exist. In such areas (NATURA 2000) the sustainable use of biodiversity components and the development of regions where habitats and populations of endemic and endangered species are conserved must be ensured. In these areas the economic and development incentives are provided for activities which comply with their conservation objectives.

Habitats, habitat types and their authentic biodiversity are conserved in two ways: by leaving an area to the natural processes (natural succession of communities) and by managing the area in a manner that conserves rich biodiversity. Except for biomes in the sub-Arctic area and high mountains, no habitat types in Europe are conserved through natural succession. The main reasons are the relatively dense population and the fact that most of the European territory is occupied by various human activities. The maintenance of habitat types through sustainable land use is the primary conservation method.

In Slovenia, the relevant legislation has been adopted but the implementation part remains to be set up. The implementation objectives, which will contribute to the conservation of biodiversity, are described in Chapter 2.

1.5.3 Sustainable use

As a result of thousands of years of land cultivation, the share of wilderness or entirely natural areas in Europe is rather small in comparison to other parts of the world. Here, the habitat types that are important for biodiversity conservation are part of the cultural landscape. Land use in these areas is essential for the conservation of typical plant and animal communities (characteristic biodiversity). However, such biodiversity conserving land use and the exploitation of water resources have to take into account that natural resources, either abiotic (e.g. water) or biotic (meaning biodiversity components) form a habitat for plant and animal species. In the *Convention*, sustainable use means "the use of components of biological diversity in a way and at a rate that does not lead to the long-term decline of biological diversity, thereby main-

Uveljavljen ukrep za ohranjanje biotske raznovrstnosti *in-situ* je ustanavljanje zavarovanih območij oziroma območij s posebnimi ukrepi za njeno ohranjanje. Podpisnice *Konvencije* pripravijo, kjer je treba, smernice za izbor, ustanovitev in upravljanje zavarovanih območij oziroma območij, kjer je treba sprejeti posebne ukrepe za ohranitev biotske raznovrstnosti. Evropska unija se je sporazumela o njihovem ustanavljanju tam, kjer so še evropsko pomembni habitatni z endemičnimi in ogroženimi vrstami. Na takšnih območjih (NATURA 2000) je treba zagotavljati trajnostno rabo sestavin biotske raznovrstnosti in razvoj prostora, ki ohranja habitate in populacije teh endemičnih in ogroženih vrst. Deležna pa so tudi večjih ekonomskih in razvojnih spodbud za dejavnosti, ki so v skladu s cilji njihovega ohranjanja.

Habitati, habitatni tipi in njihova avtentična biotska raznovrstnost se ohranjajo s prepuščanjem območij naravnemu razvoju (naravni sukcesiji združb) ali s poseganjem na območja z rabo, ki vzdržuje visoko biotsko raznovrstnost. Ohranjanje različnih habitatnih tipov s prepuščanjem naravni sukcesiji na primerno velikih območjih se v Evropi ne izvaja, razen v subarktičnem in visokogorskem biomu. Glavni razlog je razmeroma gosta poseljenost in človekova raba večine evropskega ozemlja. Zato je bolj uveljavljeno vzdrževanje habitatnih tipov s trajnostno rabo zemljišč.

Slovenska zakonodaja že ureja to področje, izvedbeno stran pa je treba vzpostaviti v celoti. Izvedbeni cilji, ki prispevajo k temu delu ohranjanja biotske raznovrstnosti, so opisani v poglavju 2.

1.5.3 Trajnostna raba

Zaradi večstoletnega kultiviranja zemljišč je prvotnih oziroma povsem naravnih območij v Evropi manj kakor v večini drugih delov sveta. Habitatni tipi, pomembni za ohranjanje biotske raznovrstnosti, so tudi del določene kulturne krajine. Na njih je raba zemljišč nujna za ohranjanje značilnih rastlinskih in živalskih združb (značilne biotske raznovrstnosti). Raba zemljišč in vodnih virov, ki naj ohranja biotsko raznovrstnost, pa mora upoštevati, da so naravni viri, tako abiotski (npr. voda) kot biotski (= sestavine biotske raznovrstnosti), tudi življenjski prostor živalskih in rastlinskih vrst. Trajnostna raba je zato v okviru *Konvencije* definirana kot »raba sestavin biotske raznovrstnosti le na način in v količini, ki dolgoročno ne povzroča zmanjševanja biotske raznovrstnosti, tako da ostaja ohranjena njena zmožnost za zadovoljevanje potreb in pričakovanj sedanjih in prihodnjih generacij«. Svetovna komisija za okolje in razvoj definira trajnostni razvoj kot »zadovoljevanje potreb sedanjih generacij, ne da bi bile s tem ogrožene možnosti prihodnjih generacij za zadovoljevanje njihovih«. Tak razvoj mora priznavati tudi biotsko raznovrstnost kot kvaliteto, kot zbirko sestavin, ki je danes ne uporabljamo v celoti, potrebovale pa jo bodo prihodnje generacije. Za dosego takšnega razvoja je treba zahteve po ohranjanju življenjskega prostora sestavin biotske raznovrstnosti upoštevati pri izrabi prostora in abiotskih naravnih virov. Slovenija se je za trajnostni razvoj nedavno opredelila v *Strategiji gospodarskega razvoja RS*.

Gospodarske in nekatere družbene dejavnosti z izkoriščanjem naravnih virov (npr. sestavin biotske raznovrstnosti, vode, zemljišč, mineralnih surovin) ali s poseganjem v prostor bistveno vplivajo na biotsko raznovrstnost. Zato morajo povezovati in vključevati, kjer je mogoče in ustrezno, ohranjanje in trajnostno rabo sestavin biotske raznovrstnosti v ustrezne sektorske in med-sektorske načrte, programe in politike, s čimer bosta zagotovljena ohranjanje ter trajnostna raba sestavin biotske raznovrstnosti. *Strategija Evropske unije o biotski raznovrstnosti* natančneje določa ukrepe, ki so potrebni za zagotavljanje trajnostne rabe naravnih virov.

Slovenska zakonodaja to področje pravnosistemsko že ureja. Na posameznih področjih je treba trajnostno rabo sestavin biotske raznovrstnosti tudi pravno še urediti. Obvezno pravno programsko izhodišče za vključevanje ukrepov ohranjanja biotske raznovrstnosti na druga področja je že dano, v usmeritvah ga natančneje dopolnjujeta še *Nacionalni program varstva okolja* in *Strategija gospodarskega razvoja RS*. Sektorske razvojne politike pa morajo ohranjanje biotske raznovrstnosti in trajnostno rabo njenih sestavin postopoma vključiti v celoti. Izvedbeni cilji trajnostne rabe in razvoja, ki prispevajo k ohranjanju biotske raznovrstnosti, so opisani v poglavju 3.

1.5.4 Podporne dejavnosti ohranjanju biotske raznovrstnosti in trajnostni rabi

Te dejavnosti pomembno prispevajo k bolj ciljnemu in učinkovitemu ohranjanju *in-situ* in trajnostni rabi, s čimer je možno tudi bolj učinkovito odpravljati največje grožnje zmanjševanju biotske raznovrstnosti. V nadaljevanju so izpostavljene tiste dejavnosti, ki jih zaradi njihovega pomena pri ohranjanju biotske raznovrstnosti izpostavlja *Konvencija* ali *Strategija Evropske unije o biotski raznovrstnosti*.

Monitoring

Za učinkovito ohranjanje biotske raznovrstnosti *in-situ* in za ustrezno trajnostno rabo je potrebno ugotavljanje sprememb v stanju biotske raznovrstnosti. Spremljati in nadzirati je treba njene sestavne dele, s posebno pozornostjo do tistih, ki zahtevajo nujne ohranitvene ukrepe, ter tistih, ki ponujajo največje možnosti za trajnostno rabo. Treba je opredeljevati procese in kategorije dejavnosti, ki imajo ali bi lahko imele pomembne škodljive učinke na ohranjanje in trajnostno rabo biotske raznovrstnosti, ter spremljati in nadzirati posledice teh procesov in dejavnosti. V okviru monitoringa je treba sistematsko zbirati ustrezne podatke, jih ohranjati in vzdrževati.

Slovenska zakonodaja to področje že ureja, izvedbeni cilji monitoringa so opisani v poglavju 4.

Raziskovanje

Politika trajnostnega razvoja je lahko uspešnejša kadar obstajajo ustrezne znanstvene podlage in strokovne rešitve. Zato je treba okrepiti raziskovanje, ki prispeva k identifikaciji biotske raznovrstnosti in učinkovitemu ukrepanju pri njenem ohranjanju. Za družbeni razvoj je pomembno raziskovanje konceptov in načinov trajnostne rabe sestavin biotske raznovrstnosti.

taining its potential to meet the needs and aspirations of present and future generations." The World Commission on Environment and Development defines sustainable development as "development that meets the needs of the present without compromising the ability of future generations to meet their own needs." Such development must acknowledge that biodiversity is a collection of components which are currently not used in entirety but will be needed by future generations. In order to achieve such development the conservation of the habitats of biodiversity components has to be considered when space and abiotic natural resources are exploited. With the adoption of the *Strategy of Economic Development Slovenia* has taken over the concept of sustainable development.

Economic and other human activities affect biodiversity by the exploitation of natural resources (for example, biodiversity components, water, land, mineral raw materials) or by affecting the physical space. These activities must integrate, as far as possible and as appropriate, the conservation and sustainable use of biological diversity into the relevant sectoral or cross-sectoral plans, programmes and policies and thus ensure the conservation and sustainable use of biodiversity components. The Community Biodiversity Strategy lays down in detail the measures needed to guarantee the sustainable use of natural resources.

In Slovenia, the legislation concerning sustainable development has been adopted to a great extent but in certain fields the sustainable use of biodiversity components still needs to be regulated. The mandatory legal grounds for the integration of biodiversity conservation measures into other fields have been established and further supplemented by the directions of the *National Environmental Action Programme* and the *Strategy for the economic development of Slovenia*. However, biodiversity conservation and sustainable use of its components still need to be fully integrated into the sectoral development policies. The implementation objectives concerning sustainable use and development, which will contribute to the conservation of biodiversity, are described in Chapter 3.

1.5.4 Activities supporting biodiversity conservation and sustainable use

These activities significantly contribute to the target-oriented and efficient *in-situ* conservation and sustainable use and thus support efficient removal of the most serious threats to biodiversity. Listed below are the activities emphasised by the *Convention* and the *Community Biodiversity Strategy* as activities important for biodiversity conservation.

Monitoring

In order to implement efficiently the *in-situ* conservation of biodiversity and to use its components in a sustainable manner it is necessary to identify the changes in the status of biodiversity. Biodiversity components have to be monitored with particular attention devoted to those that require urgent conservation measures and those which offer the greatest potential for sustainable use. It is of utmost importance that the processes and categories of

activities that have, or might have, significant adverse effects on the conservation and sustainable use of biodiversity are determined, and the consequences of these processes and activities monitored. Within the framework of the monitoring procedure, the relevant data have to be systematically collected, kept and maintained.

In Slovenia, the relevant legislation has been adopted. The implementation objectives concerning monitoring are described in Chapter 4.

Research

The relevant scientific expertise and technical solutions improve the efficiency of the sustainable development policy. The research contributing to the identification of biodiversity and to the efficient conservation measures needs to be built up. The research of the concepts and methods of sustainable use of biodiversity components is important in the view of social development.

Education and communication

The threat to biodiversity arises from the relation of man to nature and the existing behavioural patterns in society. Biodiversity can only be conserved if the entire society is aware of the reasons and consequences of the threat it poses to nature and if social habits and behavioural patterns change. This is only possible if people are motivated by appropriate mechanisms, limitations and incentives, and if the public is informed and educated. In order to fulfil these tasks all three branches of power should adopt appropriate measures.

Biodiversity conservation measures

Each Contracting Party adopts, as far as possible and as appropriate, the economically and socially sound measures that act as incentives for the conservation and sustainable use of biodiversity components. Such measures concern the legislation, economic development and spatial planning. The EU has already incorporated the legislative and economic incentive mechanisms into specific sectoral policies. Various forms of financial support are available to the interested parties, such as LIFE funds intended for the conservation of NATURA 2000 sites, the agri-environmental support to appropriate land use in areas of high biodiversity and the support to suitable regional development. Specific restrictions are necessary to ensure efficient biodiversity conservation. The EU legislation restricts certain activities with a view to conserve the most endangered components of biodiversity.

In Slovenia, the relevant legislation is adequate in specific fields. The implementation objectives concerning the introduction of mechanisms for the promotion of biodiversity conservation and the coordination of conservation and (un)sustainable use interests are described in Chapters 3 and 4.

Izobraževanje in komuniciranje

Ogroženost biotske raznovrstnosti izhaja iz človekovega odnosa do narave ter obstoječih vedenjskih vzorcev v družbi. Biotsko raznovrstnost je možno ohranjati le, če se celotna družba zaveda vzrokov in posledic njenega ogrožanja in spremeni del svojih navad in vedenjskih vzorcev. To pa bo možno ob motivaciji z ustreznimi mehanizmi, z omejitvami in spodbudami ter primerno informiranostjo, ozaveščenostjo in izobraževanjem, za kar morajo poskrbeti vsi trije segmenti oblasti.

Mehanizmi ukrepanja za ohranjanje biotske raznovrstnosti

Vsaka pogodbenica, če je to možno in ustrezno, sprejme ustrezne gospodarske in družbeno sprejemljive ukrepe, ki spodbujajo ohranjanje in trajnostno rabo sestavin biotske raznovrstnosti. Takšni ukrepi so zakonodajni, ekonomski in prostorsko-načrtovalski. Evropska unija je spodbujevalne zakonodajne in ekonomske mehanizme že vgradila v nekatere sektorske politike. Zainteresiranim so tako na razpolago podpore LIFE za ohranjanje območij NATURA 2000, kmetijsko-okoljske podpore za ustrezno rabo zemljišč z visoko biotsko raznovrstnostjo in podpore za ustrezen regionalni razvoj. Za večjo učinkovitost pri ohranjanju biotske raznovrstnosti so nujni tudi omejevalni mehanizmi. Zakonodaja Evropske unije omejuje dejavnosti predvsem s ciljem ohranjati najbolj ogrožene sestavine biotske raznovrstnosti.

Slovenska zakonodaja to ustrezno ureja na nekaterih področjih. Izvedbeni cilji za uvajanje mehanizmov spodbujanja ohranjanja biotske raznovrstnosti in usklajevanja interesov ohranjanja in (ne)trajnostne rabe so opisani v poglavjih 3 in 4.

1.6 Izhodišča in načela priprave strategije ohranjanja biotske raznovrstnosti

Vodilo pri pripravi slovenske strategije so bili dokumenti *Konvencije* (sama določila *Konvencije*, odločitve konferenc pogodbenic, priporočila strokovnih organov *Konvencije*), upoštevani so bili tudi ukrepi, ki jih nalaga zakonodaja Evropske skupnosti. Že iz ciljev *Konvencije* izhajajo specifični cilji in ukrepi, ki stremijo k vzpostavitvi ugodnega stanja najbolj ogroženih in za rabo najbolj pomembnih sestavin biotske raznovrstnosti v državi, kakor tudi k ustavljanju nezaželenih trendov njenega zmanjševanja.

Oblikovanje strateških ciljev in usmeritev temelji na:

- pregledu stanja biotske raznovrstnosti in krajinske pestrosti v Sloveniji,
- oceni stanja in vzrokov za zmanjševanje biotske raznovrstnosti v Evropi, s poudarkom na sosednjih državah in državah Evropske unije,
- obstoječih pravnih podlagah in mehanizmih,
- upoštevanju načel ukrepanja in delitev odgovornosti,
- znanih pristopih ohranjanja biotske raznovrstnosti, ki

1.6 Grounds and principles for the drawing up of the Biodiversity Conservation Strategy

The basis for the drawing up of the Slovene Strategy were the *Convention* documents (the provisions of the *Convention* itself, decisions adopted by the contracting parties, recommendations by the expert *Convention* bodies) and the measures imposed by the EU legislation. The objectives of the *Convention* lay down the specific objectives and measures oriented towards the establishment of a favourable status of most endangered and usable biodiversity components in the state and towards the elimination of undesired trends of biodiversity loss.

The strategic objectives and directions are formulated on the basis of:

- the review of the status of biological and landscape diversity in Slovenia,
- the assessment of the status and the causes for biodiversity loss in Europe, with emphasis on the neighbouring countries and the EU member states,
- the existing legislative instruments and mechanisms,



- the consideration of the principles of action and responsibility sharing,
- the established biodiversity conservation approaches employed by the neighbouring countries.
- The "Review of the Status of Biological and Landscape Diversity in Slovenia", where specific sectoral issues are discussed, was drawn up by the Environmental Agency of Slovenia in cooperation with the representatives of the relevant sectors and ministries, national research institutions, NGO representatives and numerous experts.

1.6.1 *The principles of action and responsibility sharing*

When the following principles are accepted by all the sectors and activities that use or affect natural resources, the conservation of biodiversity and sustainable use of its components can be achieved. Some of them are incorporated into the existing sectoral policies - the *Environmental Protection Act* and the *Nature Protection Act*. They are also indirectly or directly stressed in the *Strategy for the economic development of Slovenia*. The Biodiversity Conservation Strategy summarises the principles which are to be followed in the development of sectoral policies.

- **Principle of careful decision making:** to take decisions on the basis of the best available information; to adopt the economically and socially adequate measures which function as incentives for the conservation of biodiversity.
- **Principle of avoidance¹⁹:** to draw up strategic environmental impact assessments that are mandatory for projects which are likely to have a significant negative impact on biodiversity.
- **Precautionary principle:** to take action to avoid the potential adverse impacts of activities on biodiversity even when a causal link between activities and their impact has not been established; through the application of the scientific and technological advances such measures substantially reduce the risk to people, nature and the environment; the principle is best followed by integral strategies which at the initial stage prevent environmental burdens and burdens to biodiversity.
- **Principle of translocation and wise land use²⁰:** to translocate activities which are particularly damaging to biodiversity and can not be avoided, to areas where they will cause less environmental damage; when the effects of the exploitation of natural assets (the impact on the habitats of species and populations) are considered to be equal, the least disturbing manner of and conditions for an activity affecting nature must be selected; in case of an alternative technical possibility such activity must be selected which does not degrade nature.

jih ubirajo sosednje države.

- Pripravo publikacije Pregled stanja biotske raznovrstnosti in krajinske pestrosti v Sloveniji, ki vključuje opredeljevanje sektorskih problematik, je vodila Agencija RS za okolje, sodelovali pa so predstavniki ključnih sektorjev oziroma ministrstev, različne nacionalne raziskovalne institucije, predstavniki nevladnih organizacij in številni strokovnjaki.

1.6.1 *Načela ukrepanja in delitev odgovornosti*

Doseganje ohranjanja in trajnostne rabe sestavin biotske raznovrstnosti je uspešnejše ob upoštevanju spodaj navedenih načel v vseh dejavnostih, ki izkoriščajo naravne vire ali nanje vplivajo. Nekatera načela so v Sloveniji že vgrajena v področno zakonodajo - *Zakon o varstvu okolja* in *Zakon o ohranjanju narave*, posredno ali neposredno jih izpostavlja tudi *Strategija gospodarskega razvoja RS*. Strategija ohranjanja biotske raznovrstnosti jih povzema celovito, z namenom, da jim sledijo pri svojem razvoju tudi sektorske politike:

- **Načelo previdnega sprejemanja odločitev:** odločati se je treba na podlagi najboljših razpoložljivih informacij ter sprejeti gospodarsko in družbeno ustrezne ukrepe, ki delujejo kot spodbude za ohranjanje biotske raznovrstnosti.
- **Načelo izogibanja¹⁹:** za projekte, ki bodo imeli verjetno večji negativni vpliv na biotsko raznovrstnost, je obvezna izdelava strateške presoje vplivov na okolje.
- **Načelo previdnosti:** ne sme se odložiti ukrepanja, s katerim se je možno izogniti potencialno negativnim vplivom dejavnosti na biotsko raznovrstnost, tudi če vzročna zveza med temi dejavnostmi in njihovim vplivom še ni bila v celoti ugotovljena. To pomembno prispeva k zmanjšanju tveganja za človeštvo, naravo in okolje z uporabo znanstvenih in tehnoloških prednosti. Temu načelu najbolj sledijo celovite strategije, ki preprečujejo okoljske obremenitve oziroma obremenitve biotske raznovrstnosti od vsega začetka.
- **Načelo premestitve in smotrne rabe prostora²⁰:** dejavnosti, ki so še posebno škodljive za biotsko raznovrstnost in se jim ni mogoče izogniti, bi morali premestiti na območja, kjer bodo povzročale manj škode. Ob približno enakih učinkih izkoriščanja naravnih dobrin (ki pomeni poseganje v življenjski prostor vrst in populacij) je treba izbirati najmanjše možno poseganje v naravo in se, če so na voljo alternativne tehnične možnosti, odločiti za izvedbo posega, ki ne okrne narave.
- **Načelo ekološke kompenzacije²¹:** če se škodljivim vplivom fizikalno-kemijskih sprememb na območjih z visoko stopnjo biotske raznovrstnosti ni mogoče izogniti, je treba spet vzpostaviti ravnotežje s kompenzacijskimi varstvenimi ukrepi.
- **Načelo ekološke celovitosti²²:** zagotoviti je treba delovanje ekoloških procesov, od katerih je odvisno preživetje vrst in ohranitev habitatov.
- **Načelo ponovne vzpostavitve in obnove²³:** izgubljene sestavine biotske raznovrstnosti bi morali spet vzpostaviti in/ali obnoviti, sem spadajo ukrepi za obnovo habitatov in ponovno naselitev ogroženih vrst.

¹⁹ Ur.l. RS, 13/92, 27/93, 34/97 and 75/97
²⁰ *Environmental Protection Act, Articles 51, 54 and 55.*

¹⁹ ZVO, členi 51, 54 in 55
²⁰ ZVO, člen 53/2 in ZON člena 5 in 15
²¹ ZON, člen 52
²² ZON, člena 32 in 33
²³ ZON, členi 15, 16, 17 in 52

- **Načelo najboljše razpoložljive tehnologije in okolju najustreznejšega ravnanja²⁴:** dostop do tehnologije in njeno širjenje sta ključna elementa ohranjanja; kjer je mogoče, je treba tudi drugim omogočiti uporabo tehnologij, ki so uporabne pri ohranjanju biotske raznovrstnosti in trajnostni rabi njenih sestavin.
- **Načelo »onesnaževalec plača«²⁵:** stroške ukrepov za preprečevanje, nadzorovanje in zmanjševanje škode, povzročene biotski raznovrstnosti, mora poravnati tisti, ki je odgovoren za nastalo škodo. Za to načelo je osrednjega pomena celostno obravnavanje stroškov, ki izhaja iz ekoloških učinkov proizvodnje, potrošnje in distribucije. Sestavni del načela je tudi dodelitev stroškov onesnaževalcu, in te stroške je treba upoštevati pri merjenju ekonomske učinkovitosti. Intenzivnost rabe narave in okolja se mora naraščajoče izražati v stroških in posledično v cenah. Le tako bodo gospodarske družbe in gospodinjstva/širša javnost prejeli pravilne, tj. trajnostnost spodbujajoče cenovne signale na katerih bodo temeljile njihove odločitve.
- **Načelo udeležbe javnosti in javne dostopnosti informacij²⁶:** podporo javnosti pri uvajanju ukrepov v zvezi z biotsko raznovrstnostjo je treba doseči z vključevanjem javnosti, interesnih skupin in lastnikov zemljišč, znanstvene skupnosti ter drugih posameznikov in skupin državljanov.
- **Načelo preprečevanja²⁷:** preprečevanje škode je cenejše kakor njeno saniranje.
- **Načelo sodelovanja²⁸:** načelo, ki omogoča skupno reševanje problematike in najučinkovitejše iskanje ustreznih rešitev, s tem pa prinaša velike prihranke tudi v okviru porabe javnih sredstev, saj že vsebuje načelo preprečevanja. Temelji na najširši možni udeležbi vseh zainteresiranih, tj. javnosti, industrije in družbenih skupin pri zastavljanju ciljev in izvajanju ukrepov, ki sledijo politiki trajnostnega razvoja.

- **Principle of ecological compensation²¹:** to avoid the harmful effects of the physical and chemical changes in the areas of rich biodiversity by the introduction of compensatory protection measures for the restoration of a natural balance.
- **Principle of ecological integrity²²:** to guarantee the functioning of ecological processes vital for the survival of species and conservation of habitats.
- **Principle of re-establishment and restoration²³:** to re-establish and/or restore the lost biodiversity components; the introduction of measures for the restoration of habitats and re-population of endangered species.
- **Principle of Best Available Techniques and Best Environmental Practice²⁴:** to provide access to technology and its expansion as the key conservation elements; when possible, other users must have access to technologies which can be used in the conservation of biodiversity and sustainable use of its components.
- **Polluter-pays principle²⁵:** to oblige the person responsible for the damage to cover the costs of measures for the prevention, control and reduction of damage on biodiversity; the essential element of the principle is that the costs arising from environmental impacts of production, consumption and distribution are considered integrally and are allocated to the polluter; the costs must be taken into account in measuring the economic efficiency; the intensity of the exploitation of nature and environment should be reflected in higher costs, and subsequently, prices; the companies and households/the public will thus realise the connection between sustainable use of natural resources and their price and will base their consumer decisions on this information.
- **Principle of public participation and access to information²⁶:** to attain public support to the introduction of biodiversity conservation measures through the participation of citizens, interest groups, land-owners, scientific community and other individuals and groups.
- **Principle of prevention²⁷:** to prevent damage is more cost-effective than to restore it.
- **Principle of cooperation²⁸:** to cooperate to facilitate the common problem-solving and efficient finding of solutions; since it integrates the principle of prevention, the savings in public expenditure are significant; the principle is based on the participation of all interested parties, the public, industry and social groups, in the setting up of the objectives and implementing the measures concerning sustainable development.

24 ZVO, člen 8
25 ZVO, člen 10
26 ZVO, člena 14 in 73
27 ZVO, člen 8
28 ZVO, člen 7

21 Environmental Protection Act, Article 53(2) and Nature Conservation Act, Articles 5 and 15.
22 Nature Conservation Act, Article 52.
23 Nature Conservation Act, Articles 32 and 33.
24 Nature Conservation Act, Articles 15, 16, 17 and 52.
25 Environmental Protection Act, Article 8.
26 Environmental Protection Act, Article 10.
27 Environmental Protection Act, Articles 14 and 73.
28 Environmental Protection Act, Article 8.

2

USMERITVE OHRANJANJA BIOTSKE RAZNOVRSTNOSTI



BIODIVERSITY CONSERVATION DIRECTIONS

Koncept biotske raznovrstnosti obravnava vse obstoječe variacije živega sveta, to je število, pestrost in variabilnost organizmov in zvez, ki jih tvorijo z združevanjem. Običajno je ta pestrost razumljena na treh biotskih ravneh – genski, vrstni in ekosistemski. Temeljna je zahteva po ohranitvi te biotske raznovrstnosti z ohranitvi-jo ekosistemov in naravnih habitatov *in-situ* ter vzdrževanjem in krepitevijo populacij, ki so sposobne nadaljevati razvoj vrst v svojem naravnem okolju. Ohranitev ekosistemov se izvaja zlasti skozi sonaravno ali trajnostno gospodarjenje, ki vključuje ohranjanje ugodnega stanja habitatnih tipov, habitatov vrst, vrst in populacij ter genske pestrosti. Odločitev pogodbenic št. V/6 (glej poglavje Dodatek) podrobneje razlaga in promovira ekosistemski pristop pri ohranjanju biotske raznovrstnosti. Ohranjanje *in-situ* je v nadaljevanju razdeljeno na tri ravni, ekosistemsko, vrstno in gensko. V Evropi zaradi večtisočletnega kultiviranja zemljišč pomembno prispeva k ohranjanju biotske raznovrstnosti tudi ohranjanje krajinske pestrosti. Za vrste in populacije, ki so tako prizadete, da je njihovo preživetje v naravi regionalno ali globalno vprašljivo, in za kultivirane sorte in pasme, pa je smiselno tudi varovanje *ex-situ*.

Pojem živalske in rastlinske vrste se uporablja, kakor je določeno v *Zakonu o ohranjanju narave*, s čimer se cepljivke, glive in lišaji obravnavajo kot rastlinska vrsta.

2.1 Ohranjanje ekosistemov

Med velikimi naravnimi ekosistemi, ki v Evropi bistveno prispevajo k ohranjanju biotske raznovrstnosti in so zaradi človekovega delovanja najbolj ogroženi, so predvsem celinske vode, morski, obalni, traviščni in gozdni ekosistemi. K ohranjanju ekosistemov prispeva ohranjanje ugodnega stanja pripadajočih habitatnih tipov. V Sloveniji je treba za ohranjanje visoke biotske raznovrstnosti poleg habitatnim tipom, ki se pojavljajo v prej naštetih ekosistemi, posvetiti posebno pozornost še podzemeljskim habitatnim tipom. V strategiji je uporabljena klasifikacija habitatnih tipov PHYSIS, ki jo kot osnovo za določanje

The concept of biodiversity deals with all existing variations of the living world, the number, diversity and variability of all organisms and the relations created by their uniting. Generally, the diversity covers three biotic levels – the genetic, species and ecosystem level. The fundamental requirement is to conserve biodiversity through the *in-situ* conservation of ecosystems and natural habitats, and the maintenance and strengthening of populations which are capable of further development in their natural environment. Ecosystems are conserved through sustainable management which incorporates the maintenance of habitat types, species' habitats, species and populations, and genetic diversity at a favourable status. Decision V/6 of the Parties to the *Convention* (see Appendix) describes in detail the ecosystem approach in the conservation of biodiversity and promotes its enforcement. The *in-situ* conservation is further divided into the ecosystem, species and genetic level. Due to the thousands of years of land cultivation in Europe, the conservation of landscape diversity significantly contributes to the conservation of biodiversity. The *ex-situ* conservation must be taken into account in relation to the species and populations which are threatened to the extent when their survival in nature is uncertain at the local and global level, and to the cultivated varieties and breeds.

The term plant and animal species is used as referred to in the *Nature Conservation Act*. Cyanobacteria, fungi and lichens are considered plant species.

2.1 Conservation of ecosystems

Of the large natural ecosystems in Europe that substantially contribute to the conservation of biodiversity and are threatened by human activities, the following should be emphasised: inland waters, marine and coastal ecosystems, grasslands and forests. The maintenance of habitat types at a favourable status contributes to the conservation of the relevant ecosystems. In order to conserve rich biodiversity in Slovenia, subterranean habitat types must be added to the list of types which are part of the

Za nemoteno delovanje ekosistema je pomemben neoviran in stalen pretok energije med trofičnimi nivoji, neovirana in stalna produkcija in razgradnja biomase. V tleh (na sliki levo je profil gozdnih tal) to omogočajo povezave gliv z viri hranil, višjimi rastlinami, drugimi vrstami glivami in bakterijami (na slikah desno).

An ecosystem functions well if the energy flux between trophic levels is continuous and the production and decomposition of biomass is undisturbed. In soil (left picture: forest soil profile), the functioning of an ecosystem is guaranteed when the contacts between fungi and nutrients, higher plants, other fungi and bacteria are established (pictures on the right).



above-mentioned ecosystems. The PHYSIS classification of habitat types was used in the Strategy. It is applied by the European Union as a basis for the determination of habitat types. The decisions adopted by the Parties to the *Convention* introduce the term wetlands which is, however, defined differently than habitat types. Generally speaking, in Slovenia a wetland is an area of any coastal habitat type and habitat types of inland waters, bogs, fens and marshes, humid and wet grasslands, riverine and marsh forests and scrub, and specific subterranean habitat types.

A considerable reduction in and loss of specific habitat types (extensive meadows, meadow orchards, wetlands), an increased fragmentation of landscape, hindrances to dynamic processes in ecosystems, loss of landscape structures, increased nuisances in distant natural areas (high mountains, rock walls, headwaters), all these lead to the extensive loss of specialised and endemic species and to the "erosion" of species diversity in Slovenia. The conservation of ecosystems and the appurtenant diversity of habitat types is therefore of key importance for the conservation of species' diversity. In view of the *Ramsar Convention*, wetlands are one of the more emphasised ecosystems. They are conserved through the implementation of the nature protection directions focused on the above-mentioned habitat types (Chapter 2) and activities that contribute to their maintenance at a favourable status (Chapter 3).

In view of the efficient conservation of ecosystems, it is important to promote the establishment of a network of protected areas, taking into account the network of protected areas of the European Union - NATURA 2000. However, the established system of protected areas is not sufficiently efficient and adequate to guarantee the conservation of populations of numerous wild species and their habitats. It is therefore necessary for the *in-situ* conservation that a state ensures the conservation and sustainable use of biodiversity components outside protected areas.

Numerous global processes, in particular climate change and the depletion of the ozone layer, seriously affect the status of biodiversity. Climate change influences certain sensitive ecosystems. The functioning of ecosystems may alter, following the enhanced climate changes and that should be taken into account in the conservation and sustainable use of biodiversity components. In addition, the depletion of the ozone layer is likely to have an adverse impact on local biodiversity.

OBJECTIVE

- To conserve ecosystems through the maintenance of habitat types at a favourable status.

DIRECTIONS

- To protect areas vital for the maintenance of habitat types at a favourable status.
- To establish a network of protected areas, while taking into account the NATURA 2000 network, and to provide mechanisms for the conservation and sustainable use, including financial mechanisms.
- To establish and efficiently manage the ecological network to improve the status of endangered and key

habitatnih tipov uporablja tudi Evropska unija. Odločitve pogodbenic *Konvencije* uvajajo tudi pojem mokrišča, ki pa je opredeljen na drugačni podlagi kakor habitatni tipi. Okvirno je v slovenskih razmerah mokrišče območje, kjer se pojavlja kateri koli od obalnih habitatnih tipov, habitatnih tipov celinskih voda, barij in močvirij, mokrotnih in vlažnih travišč, obrečnih in močvirnih gozdov in grmišč ter nekateri od podzemeljskih habitatnih tipov.

Občutno zmanjševanje in izguba določenih habitatnih tipov (npr. ekstenzivni travniki, travniški sadovnjaki, mokrišča), vse večja fragmentacija krajine, zaviranje dinamičnih procesov v ekosistemi, izginjanje struktur v krajini, povečevanje motečih dejavnikov v odročnih naravnih predelih (visokogorje, skalne stene, povirja potokov in rek) vodi k vse obsežnejšemu izginjanju specializiranih in endemičnih vrst in s tem k »eroziji« slovenske vrstne raznovrstnosti. Ohranjanje ekosistemov in pripadajoče pestrosti habitatnih tipov je zato ključno tudi za ohranjanje vrstne pestrosti. Zaradi navezave na *Ramsarsko konvencijo o mokriščih* so eden izmed poudarjenih ekosistemov mokrišča. Ohranjajo se z izvajanjem naravovarstvenih usmeritev, ki se nanašajo na zgoraj omenjene habitatne tipe (poglavje 2) in dejavnosti, ki prispevajo k ohranjanju njihovega ugodnega stanja (poglavje 3).

Za učinkovitejše ohranjanje ekosistemov je pomembno okrepiti podporo ustanavljanju mreže zavarovanih območij ob upoštevanju sistema zavarovanih območij Evropske unije - mreže NATURA 2000. Za ohranjanje populacij številnih prostoživečih vrst in njihovih življenjskih prostorov pa vzpostavitev sistema zavarovanih območij še ni dovolj učinkovita in ustrezna. Zato je za ohranjanje *in-situ* nujno, da država poskrbi za ohranjanje in trajnostno rabo sestavin biotske raznovrstnosti tudi zunaj zavarovanih območij.

Številni globalni procesi imajo resne posledice za stanje biotske raznovrstnosti, zlasti podnebne spremembe in tanjšanje ozonskega plašča. Podnebne spremembe vplivajo na nekatere občutljive ekosisteme. Kot posledica stopnjevanja podnebnih sprememb v delovanju ekosistemov lahko nastanejo spremembe, kar je treba upoštevati pri ohranjanju in trajnostni rabi sestavin biotske raznovrstnosti. Tanjšanje ozonske plasti pa utegne posredno vplivati na lokalno biotsko raznovrstnost.

CILJ

- Ohranitev ekosistemov skozi ohranjanje ugodnega stanja habitatnih tipov.

USMERITVE

- Zavarovanje in varovanje območij, ključnih za ohranjanje ugodnega stanja habitatnih tipov.
- Vzpostavitev mreže zavarovanih območij ob upoštevanju omrežja NATURA 2000 in zagotavljanje ustreznih mehanizmov za ohranjanje in trajnostno rabo, vključno s finančnimi mehanizmi.
- Vzpostavitev in učinkovito upravljanje ekološkega omrežja z namenom izboljšati stanje ogroženih oziroma ključnih vrst in njihovih habitatov ter ekosistemov.
- Podpreti in promovirati ohranjanje značilnih struktur in funkcij ogroženih ekosistemov.
- Zvišati družbeno in ekonomsko uporabnost mehanizmov za ohranjanje biotske raznovrstnosti ter odpravljati

podpore, ki spodbujajo zmanjševanje biotske raznovrstnosti in netrajnostno rabo njenih sestavin.

- Vzpostavitev ustrezne koordinacije med različnimi pobudami za ustavljanje podnebnih sprememb in tanjšanja ozonske plasti za doseganje njihove sinergije v skladu z Okvirno konvencijo ZN o spremembah podnebja.
- Združevanje aktivnosti in pobud drugih mednarodnih dogovorov s področja varstva okolja in ohranjanja narave ter vsebin *Konvencije* z namenom doseči, da bodo čim bolj učinkoviti.

2.1.1 Obalni in morski habitatni tipi

Slaba petina slovenske morske obale je ohranila bolj ali manj naravno podobo. Območja z obalnimi in morskimi habitatnimi tipi, kjer so ti še biotsko izjemno raznovrstni ali dobro ohranjeni in dajejo habitat ogroženim rastlinskimi ali živalskimi vrstam, bistveno prispevajo k visoki biotski raznovrstnosti v Sloveniji. Takšna območja edina zagotavljajo življenjski prostor številnim značilnim morskim in obmorskim organizmom.

Podobno kot v vsem Sredozemlju so tudi pri nas poglobljeni pritiski na tovrstne habitatne tipe urbanizacija, industrializacija, povečevanje prometa in turizma in s tem povezano onesnaževanje. To so glavni vzroki za njihovo ogroženost, delujejo pa predvsem v zaledju. Biotsko raznovrstnost v obalnih in morskih habitatnih tipih neposredno ogrožajo urbanizacija ožjega obalnega pasu in nekatere druge dejavnosti na obali in v morju ter s tem povezano onesnaževanje, ter naseljevanje in širjenje tujerodnih vrst.

V Sloveniji je večina območij s pomembnimi obalnimi in morskimi habitatnimi tipi zavarovana, zelo važno pa je tudi njihovo ustrezno upravljanje. Omenjena zavarovana območja so majhna, zato je za dolgoročno ohranitev teh habitatnih tipov pomembno ustrezno prilagajanje dejavnosti na njihovih vplivnih območjih.

CILJI

- Na Obali in v zaledju zmanjšanje industrijskega, kmetijskega in komunalnega onesnaževanja voda in morja na raven, ki ne ogroža biotsko izjemno raznovrstnih ali dobro ohranjenih habitatnih tipov ter habitatov ogroženih ali endemičnih rastlinskih ali živalskih vrst.
- Vrnitev v ugodno stanje degradiranih habitatnih tipov, kjer je to izvedljivo.
- Preprečitev vnosa tujerodnih vrst v naravno okolje in širjenja že vnesenih tujerodnih vrst na ekološko pomembna območja.

USMERITVE

- Dosledno upoštevanje in izvajanje varstvenih režimov zavarovanih območij in izkoriščanje razvojnih možnosti, ki jih ta ponujajo pri razvoju Obale.
- Prednostno izvajanje sprejetih programov obnove degradiranih habitatnih tipov.
- Načrtovanje in izvajanje posegov in dejavnosti na zavarovanih območjih in v njihovem vplivnem območju morata zagotavljati ohranjanje ugodnega stanja habitatnih tipov, z naravno zgradbo in strukturo morskega dna, obale in rečnih ustij vred.

2.1.2 Celinske vode, barja in močvirja

Le nekaj odstotkov površine Slovenije so območja z

species and their habitats and ecosystems.

- To encourage and promote the conservation of characteristic structures and functions of the threatened ecosystems.
- To improve the social and economic serviceability of biodiversity conservation mechanisms and to withdraw support to activities which diminish biodiversity and promote unsustainable use of its components.
- To establish appropriate coordination between various incentives to stop climate change and the depletion of the ozone layer in order to achieve synergy effects of these incentives in the framework of the UN Framework Convention on Climate Change.
- To coordinate the activities and incentives of various international environmental protection and nature conservation agreements and the subject matter of the Convention in order to achieve their maximum efficiency.

2.1.1 Coastal and marine habitats

Only one fifth of the Slovene sea coast has maintained its natural appearance. The areas of coastal and marine habitat types fundamentally contribute to Slovenia's rich biodiversity, in particular when they are well conserved and provide habitats for endangered plant or animal species. Often they are the only habitats of numerous characteristic marine and coastal organisms.

With regard to the main sources of impacts on such habitat types, the situation in Slovenia is quite similar to that in other Mediterranean countries. Urbanisation, industrialisation, increased transport and the related pollution are the main threat to the coastal and marine habitats. They are concentrated in particular in the hinterland of the Slovene coast. Biodiversity is directly threatened by the urbanisation of the narrow coastal zone, by activities carried out on the shore and in the sea, and by the resulting pollution and the introduction and expansion of non-indigenous species.

In Slovenia, most of the areas of important coastal and marine habitat types have been protected but the appropriate management of these areas must not be neglected. These protected areas are rather small and in order to guarantee the long-term conservation of their habitat types it is necessary to adjust the activities carried out in their zones of influence.

OBJECTIVES

- To reduce, on the Coast and in its hinterland, the industrial, agricultural and urban pollution of streams and sea to the level that does not threaten the exceptionally diverse, with regard to biotic characteristics, and well preserved habitat types and the habitats of endangered or endemic plant and animals species.
- To restore at a favourable status the degraded habitat types, where possible.
- To prevent the introduction of non-indigenous species into the natural environment and the spreading of the introduced non-indigenous species to the ecologically important areas.

DIRECTIONS

- To consistently implement and enforce the protection regimes in protected areas and to exploit the possibilities of development on the Coast.
- To give priority to the implementation of the adopted

V Sloveniji je večina območij s pomembnimi obalnimi in morskimi habitatnimi tipi zavarovanih (na sliki Naravni rezervat Strunjan).

In Slovenia, most areas of coastal and marine habitat types of conservation concern have been protected (here, the Nature Reserve Strunjan).



programmes for the restoration of degraded habitat types.

- To ensure the maintenance of habitat types at a favourable status, including the natural texture and structure of the sea bottom, shore and river mouths, by planning and carrying out suitable activities in protected areas and their zones of influence.

2.1.2 *Inland waters, bogs and fens, and marshes*

Only a small share of Slovenia's territory is taken up by the conserved habitat types of inland waters, bogs and fens, and marshes. However, they are extremely rich in species and thus significantly contribute to the overall biodiversity in Slovenia.

They are extremely sensitive due to their limited size. Their low social value is the main reason for their substantial and continuous degradation. Consequently, they are among the most threatened habitat types. Inappropriate management of waters and organisms living in and near water contributes considerably to the endangerment of species.

The quality and quantity of water (in particular in view of the pollution of water with pesticides and fertilisers) are the fundamental parameters essential for the functioning of all ecosystems and the conservation of the threatened habitat types. The competition and conflict between the nature conservation sector and other economic sectors over this limited natural resource has provoked the need for the drawing up of a strategic water policy focused on the conservation and sustainable use of biodiversity components. Such policy was established by the EU within the framework of its common water policy (Directive establishing a framework for Community action in the field of water policy).

OBJECTIVES

- To conserve the existing ecologically important wetlands and their habitat types at a favourable status and to restore the ecological characteristics of the degraded inland waters, bogs and fens, and marshes, where feasible.
- To consider waters as a system where subterranean and surface waters and their habitat types form an integral whole.

ohranjenimi habitatnimi tipi, ki spadajo med celinske vode, barja in močvirja. Ti so med vrstno najbogatejšimi in tako znatno prispevajo k višji biotski raznovrstnosti.

Že zaradi razmeroma majhne površine so zelo ranljivi, zaradi nizke družbene vrednosti pa močno podvrženi degradaciji in posledično med najbolj ogroženimi. Neustrezno upravljanje voda in posledično v njej in ob njej živečih organizmov je bistveno prispevalo k veliki ogroženosti vrst.

Količina in kakovost vode (zlasti v povezavi z onesnaževanjem s pesticidi in gnojili) sta bistvena parametra za delovanje vseh ekosistemov in s tem za ohranjanje ogroženih habitatnih tipov. Konkurenčne in z ohranjanjem potencialno konfliktno zahteve različnih sektorjev po tem omejenem naravnem viru ustvarjajo nujnost strateške politike do voda s ciljem ohranjanja in trajnostne rabe sestavin biotske raznovrstnosti, ki jo je Evropska unija postavila s skupno politiko do voda (ti. Direktiva o skupni politiki do voda).

CILJI

- Ohranitev obstoječih ekološko pomembnih mokrišč in ugodnega stanja habitatnih tipov na njih ter obnova ekološkega značaja degradiranih celinskih voda, barj in močvirij, kjer je to izvedljivo.
- Celovita obravnava voda kot sistema, v katerem podzemne in površinske vode ter pripadajoči habitatni tipi sestavljajo enovito celoto.
- Doseči raven stanja voda, ki ne ogroža biotsko izjemno raznovrstnih ali dobro ohranjenih habitatnih tipov ter habitatov ogroženih ali endemičnih rastlinskih ali živalskih vrst, predvsem z zmanjšanjem industrijskega, kmetijskega in komunalnega onesnaževanja voda.
- Preprečitev vnosa tujerodnih vrst v celinske vode in širjenja že vnesenih tujerodnih vrst na ekološko pomembna območja.
- Spodbuditev rabe zemljišč na obrežju in v aluvialnem pasu rek za ohranjanje habitatnih tipov, ki vzdržujejo vodni ciklus in so pomembni za ohranjanje biotske raznovrstnosti, ter zmanjšanje in preprečevanje škodljivega delovanja voda.
- Prilagajanje rabe prostora naravnim zakonitostim voda ter njeno usmerjanje zunaj območij z intenzivnimi hidrodinamičnimi procesi in zunaj območij, ki so strateško pomembni vodni viri.

USMERITEV

- Učinkovito izvajanje skupne politike Evropske unije do voda kot orodja za ohranjanje in trajnostno rabo svetovnih biotske raznovrstnosti. To zahteva analizo količin in kakovosti vode za zadovoljevanje potreb po njej na vsakem povodju, med katerimi je treba upoštevati potrebe po vodi za ohranjanje biotske raznovrstnosti, za pitno vodo in drugo rabo (npr. namakalno, energetsko, industrijsko).

2.1.3 Habitatni tipi v kmetijski krajini

Ekstenzivni načini rabe zemljišč, ki vzdržujejo kmetijsko krajino, pomagajo ohranjati tudi habitatne tipe, ki bistveno prispevajo k ohranjanju biotske raznovrstnosti. Ti tipi so predvsem vlažna in suha travnišča na revnih tleh (habitatni tipi po palearktični klasifikaciji: naravna suha travnišča in sekundarna suha travnišča, mokrotna ali vlažna antropogena travnišča in visoko steblikovje), travniški sadovnjaki in omejk, drevoredi, podeželski mozaik.

Obseg nekaterih habitatnih tipov v kmetijski krajini se je precej zmanjšal zaradi prehoda na intenzivni način pridelave hrane in zaradi opuščanja sonaravnih oblik kmetovanja. Tako so redke in ogrožene postale številne vrste, vezane pretežno na te habitate. Iz krajine so izginile tudi številne drobne strukture (npr. omejk, drevoredi, suhozidi), ki so pomembne za preživetje ogroženih vrst.

V primerjavi z državami Evropske unije ima Slovenija še več območij z ohranjenimi habitatnimi tipi v kmetijski krajini. To prednost bomo ohranili z ustreznimi ukrepi razvoja kmetijstva.

CILJA

- Ohranitev sedanjega obsega vlažnih in suhih travnišč ter travniških sadovnjakov prednostno na območjih ogroženih ali endemičnih živalskih ali rastlinskih vrst.
- Ohranitev sedanje dolžine omejkov oziroma njeno povečanje, prednostno na ekološko pomembnih območjih.

USMERITVE,

- ki pomembno prispevajo k tema ciljem, so opisane v poglavju Kmetijstvo.

2.1.4 Gozdni habitatni tipi

V primerjavi z večino evropskih držav imamo v Sloveniji sorazmerno dobro ohranjene gozdove, ki pokrivajo 56 % ozemlja. Pestra rastišča in podnebne razmere omogočajo veliko pestrost gozdnih združb (habitatnih tipov). K ohran-

- To attain such water quality standards that the exceptionally diverse, with regard to biotic characteristics, and well preserved habitat types and habitats of endangered and endemic plant or animal species are not threatened, in particular by reducing the industrial, agricultural and urban pollution of water.
- To prevent the introduction of non-indigenous species into the inland waters and the spreading of the already introduced non-indigenous species to the ecologically important areas.
- To encourage the land use on river banks and in alluvial area in order to conserve habitat types which maintain the water cycle, and are important for the conservation of biodiversity and the reduction and prevention of damage caused by waters.
- To adjust land use to the natural water regimes and to concentrate activities outside areas of intensive hydrodynamic processes and areas of strategically important water resources.

DIRECTION

- To implement the EU common water policy which is an instrument of conservation and sustainable use of biodiversity components; the quality and quantity of water needed in every water basin, including the need for water to conserve biodiversity, the need for drinking water, and water used in other sectors (irrigation, energy, industry) must be analysed for this purpose.

2.1.3 Habitat types of agricultural land

The extensive farming, which maintains agricultural landscape, helps conserve habitat types that contribute to the conservation of biodiversity. These habitats are mostly dry and humid grasslands on poor soil (habitat types

according to the paleartic classification: natural dry grasslands and secondary dry grasslands, wet and humid anthropogenic grasslands and tall herbs), meadow orchards and hedges, trees along roads, rural mosaic.

As a result of transfer to intensive food production and abandonment of sustainable agricultural practices, the size of specific habitat types in the agricultural landscape reduced. Many species living in these habitats became rare and endangered. Small landscape structures (hedges, tree-lined roads, rock fences), important for the survival of endangered species, have disappeared.

In comparison to the EU member states Slovenia has large areas of conserved habitat types in agricultural landscape. The advantage can only be preserved by the implementation of appropriate measures for the development of agriculture.



Ohranitev ekološko pomembnih mokrišč (na sliki Cerkniško jezero) in ugodnega stanja pripadajočih rastlinskih in živalskih združb (habitatnih tipov) na njih pomembno prispeva k ohranitvi biotske raznovrstnosti.

The conservation of ecologically important wetlands (here, Cerkniško jezero) and the maintenance of the relevant plant and animal communities (habitat types) at a favourable status significantly contribute to the conservation of biodiversity.

Kmetijska krajina na Ljubljanskem barju z ohranjenimi habitatnimi tipi, ki so življenjski prostor številnim ogroženim vrstam.

The conserved habitat types of the agricultural landscape in Ljubljansko barje are habitats of numerous endangered species.



OBJECTIVES

- To conserve the surface area of wet and dry grasslands and meadow orchards, in particular in areas of endangered or endemic plant or animal species.
- To conserve, and even increase, the current length of hedges, in particular in ecologically important areas.

DIRECTIONS

- which significantly contribute to the achievement of these two objectives are discussed in the Chapter on agriculture.

janju visoke biotske raznovrstnosti v Sloveniji prispevajo predvsem velike sklenjene površine gozdov v različnih sukcesijskih stadijih z visokim deležem odmrle lesne mase in otoki gozdov v kmetijski in predmestni krajini (zlasti dinarski jelovo-bukovi gozdovi, nižinski jelševi gaji in poplavni dobovi gozdovi, redke gozdne združbe drugih svežih in povirnih leg, drugi redki ekosistemi, habitati in biotopi / ekocelice v gozdu, gozdovi na zgornji gozdni meji, (pra)gozdni rezervati, naravni in stari polnaravni gozdni tipi, gozdni genski rezervati in avtohtone prove-

nience). V takih gozdovih so se pogosto obdržali redki habitatni tipi in vrste organizmov, ki jih je treba posebej varovati.

2.1.4 *Forest habitat types*

In comparison to most European countries the forests in Slovenia are rather well conserved. They cover approximately 56 % of the territory. Diverse sites and climate conditions determine the high diversity of forest communities (habitat types). In Slovenia the conservation of rich biodiversity primarily derives from large complexes of forests in various stages of succession with a large share of decaying wood mass, and of "forest islands" in the agricultural and suburban landscape (Dinaric fir-beech forests; lowland alder groves; flooded common-oak forests; rare forest communities of headwaters and other rare ecosystems; habitats and biotopes/eco-cells in forests; forests at upper forest line; reserves of primeval forests; natural and old, semi-anthropogenic forest types; forest gene reserves and autochthonous provenances). In such forests rare habitats and organisms are often conserved and they need to be protected carefully.



Obsežni strnjeni gozdovi v JV Sloveniji pomembno prispevajo k ohranjanju biotske raznovrstnosti v evropskem merilu.

Large forest areas in SE Slovenia essentially contribute to the conservation of biodiversity at the European level.

Institucionalno in normativno je skrb za gozdove dobra, to se kaže v ohranjenosti in pestrosti naših gozdov. Slovenija z velikim deležem gozdov nosi zaradi ogroženosti gozdnih ekosistemov v svetovnem in evropskem merilu tudi veliko odgovornost za ohranjanje njihove biotske raznovrstnosti. Z usmeritvami razvoja gozdarstva pa je treba zagotoviti, da se bo tako stanje tudi ohranilo.

CILJ

- Ohranitev ugodnega stanja gozdnih habitatnih tipov in povečevanje območij v takšnem stanju.

USMERITVE,

- ki pomembno prispevajo k temu cilju, so opisane v poglavju Gozdarstvo.

2.1.5 Podzemeljski habitatni tipi

Zanje je v Sloveniji značilna visoka stopnja endemizma živalskih vrst in razmeroma dobra ohranjenost - pripada joča vodna in kopenska podzemeljska favna sta med najbogatejšimi na svetu. Slovenski podzemeljski svet ima tudi izjemno znanstveno in kulturno-zgodovinsko vrednost.

Gre za okolja z veliko ekološko občutljivostjo, na stanje biotske raznovrstnosti v njih pa neposredno vpliva pretirana ali neprimerna uporaba jam. Ta povzroča uničevanje življenjskega prostora živali z onesnaževanjem z odlaganjem odpadkov v vhodne dele jam, v njihovi notranjosti pa s teptanjem, onesnaževanjem s karbidnim apnom, baterijami in nerazgradljivimi odpadki, motenjem kolonij netopirjev, lovom in nabiranjem nevretenčarjev, osvetljevanjem turističnih jam. Raba kraškega površja odločilno vpliva na stanje biotske raznovrstnosti v jamah prek stanja in dinamike površinskih voda, ki se stekajo v podzemlje. Raznovrstnostjo ogroža onesnaževanje teh voda, hidrotehničnih posegi, ki bistveno spreminjajo odtočni režim, ter občasne nesreče kot posledica posamičnih izlivov strupenih snovi nad kraškim podzemljem ali nad ležišči intersticijske vode.

CILJ

- Ohranitev ugodnega stanja podzemeljskih habitatnih tipov na ekološko pomembnih območjih in ugodnega varstvenega statusa celotne podzemeljske favne.

USMERITEV

- Dovoljevati rabo jam le za oblike turizma in rekreacije, ki ustrezno upoštevajo veliko občutljivost teh habitatov in ne uničujejo življenjskega prostora živali.

OBJECTIVE

- To maintain forest habitat types at a favourable status and to increase the share of areas with such a status.

DIRECTIONS

- which significantly contribute to the achievement of this objective are discussed in the Chapter on forestry.

2.1.5 Subterranean habitat types

Subterranean habitat types are characterised by a high level of endemism of animal species and a good conservation status - the aquatic and terrestrial subterranean fauna is among the richest in the world. The Slovene underground is extremely valuable from the scientific, cultural and historic point of view.

Subterranean habitats are ecologically highly sensitive environments. The status of their biodiversity is directly affected by the excessive or inappropriate use of caves. The habitats of animals is destroyed and affected by pollution caused by the disposal of waste at the entrances to caves; soil compaction; pollution by waste carbide lime, batteries and indecomposable substances; disturbances to bat colonies; hunting and collection of invertebrates; and lighting systems in tourist caves. Land use categories in karst areas affect the status of biodiversity in caves via surface waters that run into the underground.

Slovenski podzemeljski habitatni tipi izstopajo po velikem številu endemičnih živalskih vrst (na sliki jamski paščipalec *Neobysium spelaeum*).

In Slovenia subterranean habitat types are characterised by a high number of endemic animal species (here a cavernicolous pseudoscorpion *Neobysium spelaeum*).



2.2 Ohranjanje krajinske pestrosti

V Evropi zaradi večstisočletnega kultiviranja zemljišč prevladuje krajina, ki zaradi regionalno različnih krajinskih

Biodiversity is threatened by the pollution of waters, hydro technical activities that significantly change the runoff regime, and the occasional accidental spillages of toxic substances at the karst surface or above the layers of interstitial water.

The conservation of biodiversity in subterranean habitat types is incorporated into the objectives of the chapters on inland waters, bogs and fens, and marshes, and water

management. However, another specific objective is relevant for the karst area.

OBJECTIVE

- To maintain the subterranean habitat types in the ecologically important areas, and the entire subterranean fauna, at a favourable conservation status.

DIRECTION

- To permit the use of caves only for such tourist and recreational activities which take into account the sensitivity of these habitats and do not destroy the habitats of animals.

2.2 Conservation of landscape diversity

Due to thousands of years of land cultivation in Europe, the locally diverse landscape types prevail which considerably contribute to the rich biodiversity. Landscape types, whose constituent parts are small structures (streams and other water bodies, individual trees and tree groups, hedges, rock fences, tree-lined roads), the low intensity agricultural land (meadows and pastures which are not fertilised), the mosaics of fields covered by various agricultural plants, and the sustainably managed forest, are particularly important for the conservation of biodiversity.

The simplification of landscape patterns caused by the loss of natural structures and cultural elements in landscape results in the diminished landscape and biological diversity and leads to the loss of the identity of a specific landscape type. In Slovenia, landscape is characterised by agriculture and forestry. The intensification of agricultural production ruins the traditional landscape patterns. In certain regions the abandonment of farming causes the overgrowing of arable land causing the loss of specific habitat types in the landscape.

Landscape patterns are conserved by human activities, e.g. activities focused on the conservation and maintenance of important or characteristic landscape qualities which conserve the typical landscape and biological diversity of the area. The protection and conservation of landscape types, important for biodiversity conservation, is closely linked to the traditional and low intensity land use categories of the past era which reflected the economic and social conditions of the period. Nowadays, it can only be preserved at a limited scale in protected areas or areas of exceptional landscapes. In order to conserve other landscape types it is important that such activities are planned which do not reduce the diversity of landscape and its valuable natural and cultural features. It is important to appropriately maintain landscape patterns and coordinate the changes arising from the social, economic and environmental processes.

OBJECTIVES

- To conserve the traditional low intensity and sustainable land use forms that maintain the high level of biodiversity, and the diversity and cultural identity of land-

tipov pomembno prispeva k visoki biotski raznovrstnosti. Za njeno ohranjanje so posebno pomembni tipi krajine, katerih sestavni deli so drobne strukture v njej (vodotoki in drugi vodni pojavi, posamezno dreve ali skupine dreves, žive meje, suhozidi, drevoredi), ekstenzivne kmetijske površine (npr. malo gnojene ali negnojene travniki in pašniki), mozaični preplet njiv z različnimi kulturami in trajnostno gospodarjen gozd.

Poenostavljanje krajine zaradi izginjanja naravnih struktur in kulturnih elementov v krajini zmanjšuje tako krajinsko pestrost kakor biotsko raznovrstnost ter vodi v izginjanje identitete določenega tipa krajine. Pretežni del slovenske krajine je v kmetijski in gozdarski rabi. Na zemljiščih v kmetijski rabi poteka poenostavljanje krajine zaradi intenzifikacije. V nekaterih delih Slovenije se zaradi opuščanja kmetijstva zaraščajo kmetijske površine, s čimer izginjajo tudi določeni habitatni tipi v krajini.

Krajino ohranjajo človekove aktivnosti, to pomeni izvajanje aktivnosti za ohranjanje in vzdrževanje pomembnih ali značilnih lastnosti krajine, ki ohranjajo za določen tip krajine značilno krajinsko in biotsko raznovrstnost. Varstvo oziroma ohranjanje biotsko najbolj pomembnih tipov krajine je povezano s tradicionalnim in ekstenzivnim načinom rabe prostora v preteklosti, ki je bil odvisen od ekonomskih in socialnih razmer v preteklosti, in je zato izvedljivo le na manjših površinah v okviru zavarovanih območij oziroma na območjih izjemnih krajin. Za ohranjanje ostale krajine pa je važno takšno načrtovanje dejavnosti, ki ne zmanjšuje



Grbinasti travniki (na sliki v Triglavskem narodnem parku) so oblika izjemne krajine, nastale zaradi delovanja ledenikov.

Bumpy meadows (here in the Triglav National Park) are an example of an outstanding landscape, formed by glaciers.

pestrosti krajine ter naravnih in kulturnih vrednot v njej. Pomembno je njeno ustrezno vzdrževanje ter usmerjanje in usklajevanje sprememb, ki jih prinašajo družbeni, gospodarski in okoljski procesi.

CILJA

- Ohranitev tradicionalne ekstenzivne in trajnostne rabe prostora, ki ohranja visoko biotsko raznovrstnost, krajinsko pestrost in kulturno identiteto krajine, v delih zavarovanih območij in na območjih izjemnih krajin.
- Ohranitev obstoječe krajinske pestrosti ter naravnih in kulturnih vrednot v njej.

USMERITVE

- V delih zavarovanih območij in na območjih izjemnih krajin usmerjanje razvoja, razvoj trajnostnih modelov rabe prostora, spodbujanje domače obrti, usmerjanje turistov za zmanjševanje neželenih obremenitev okolja in zviševanje lokalnih prihodkov.
- Zmanjševanje škodljivih učinkov prostorskih posegov na krajino ter njene naravne in kulturne vrednote s prostorskim načrtovanjem in nadzorom nad nezaželenimi oblikami razvoja.
- Podpiranje tradicionalne rabe prostora, kjer je možno, zlasti pa v povezavi s kmetijsko-okoljskimi programi.

2.3 Ohranjanje vrst

Med poglavitnimi vzroki ogrožanja biotske raznovrstnosti so intenzifikacija kmetijske pridelave, širjenja urbanih središč, industrije in transportne mreže, povečevanje onesnaževanja, povečevanje rabe zemljišč in naravnih virov za potrebe turizma. Podatki iz rdečih seznamov kažejo na ogroženost 10 % domorodnih vrst višjih rastlin, 36 % listnatih mahov, 12 % lišajev, 13 % metuljev, 62 % domorodnih sladkovodnih in 7 % morskih vrst rib, 100 % dvoživk, 88 % plazilcev, 52 % ptic in 55 % sesalcev. Večinoma so to specializirane in/ali endemične vrste. K njihovu vse obsežnejšemu izginjanju vodi predvsem izguba njihovih življenjskih prostorov (habitato). Biotska raznovrstnost domorodnih pasem domačih živali pa je ogrožena zaradi nadomeščanja z intenzivnejšimi tujerodnimi pasmami, ki omogočajo večjo prirejo in s tem gospodarnejšo pridelavo na kmetijah.

Preprečevanje neposrednega uničevanja živali in rastlin zmanjšuje ogroženost vrst, ki imajo v Sloveniji majhne in izolirane populacije (na sliki gorski apolon *Parnassius apollo*, priljubljena vrsta zbiralcev metuljev).

The prevention of direct destruction of animal and plants species with small and isolated populations remaining in Slovenia eliminates a threat to these species (here, apollo *Parnassius apollo*, favoured by butterfly collectors).



scapes in protected areas and areas of exceptional landscapes.

- To conserve the existing landscape diversity and its valuable natural and cultural features.

DIRECTIONS

- To draw up directions for the development of sustainable land use models, the promotion of hand craft, the construction of tourist trails to avoid undesired burdening of the environment and to increase the income of the local population.
- To reduce the harmful impacts of activities on the landscape and its valuable natural and cultural features through spatial planning and control over the unsuitable development.
- To promote the traditional land use forms, if possible, in particular in relation to agri-environmental programmes.

2.3 Conservation of species

The main threat to biodiversity is the intensification of agricultural production; the growth of urbanised areas, industry and transport network; the increased pollution; and the land use and natural resources for tourist purposes. The data in red lists show that 10 % of indigenous higher plants, 36 % of leafy mosses, 12 % of lichens, 13 % of butterflies and moths, 62 % of indigenous freshwater and 7 % of marine fish species, 100 % of amphibians, 88 % of reptiles and 55 % of mammals are endangered. These species are, in most cases, specialised and/or endemic. One of the main reasons for their diminishing is the loss of their habitats. The threat to biodiversity of indigenous breeds of domestic animals is posed in particular by the substitution of these breeds with more productive non-indigenous species which facilitate the cost-effective farm production.

In order to stop the "erosion" of species' diversity it is of key importance that ecosystems and the diversity of their habitat types are conserved (see chapter on the Conservation of ecosystems). Some species are threat-

ened by the loss of habitats and others by other direct causes of endangerment. In this case, additional measures are necessary for the conservation of these species.

OBJECTIVE

- To maintain all indigenous animal and plant species at a favourable status.

DIRECTIONS

- To prepare and implement action programmes for improving the status of the most endangered species.
- To mitigate the pressure on endangered species (in particular pressure caused by recreational activities and the exploitation of species) in critical periods (nesting, spawning, wintering) to the level which allows the maintenance of populations.
- To conserve structures in habitats which are necessary for the conservation of endangered species' populations.
- To conserve and, where appropriate, establish ecological links which facilitate gene exchange among populations.
- To coordinate the in-situ and ex-situ measures for the conservation of endangered species, in particular the breeding of species for reintroduction into the wild and the establishment of suitable conditions for their reproduction in nature.
- To prevent the introduction of non-indigenous species into the natural environment.

2.4 Conservation of genetic diversity

Genetic diversity is a fundamental feature of living organisms. It allows them to adapt to the changeable living conditions and it guarantees the survival of organisms in the ever-changing environment and the constant adaptation of organisms through generations. Large effective populations ensure the high genetic diversity of a species. It is therefore of utmost importance to conserve such populations.

Genes of the wild and domesticated species carry information for useful organic substances, such as medicines and technical material. Genetic diversity is a prerequisite for the conservation of agricultural plant varieties and domestic animal breeds. Genetic reserves (for example, the minimum number of animals and animal semen doses) are essential for the conservation of breeds and varieties.

Genetic depletion of species threatens their existence. It derives from the diminishing and isolation of a specific population due to the reduction, fragmentation and isolation of habitats. Many wild plant and animal species are limited to the fragmented, unconnected and genetically isolated populations. That is reflected in the genetic drift that increases with the reduced size and advanced level of isolation of a population. The *in-situ* protection of genetic resources and the conservation of adequate sizes of effective populations is therefore the main biodiversity conservation objective while the *ex-situ* protection meas-

ures by the loss of habitats and others by other direct causes of endangerment. In this case, additional measures are necessary for the conservation of these species.

Za ustavitev »erozije« vrstne pestrosti je ključno ohranjanje ekosistemov in njihove pestrosti habitatnih tipov (glej poglavje Ohranjanje ekosistemov). Nekatere vrste so ogrožene zaradi izgube habitatov in tudi zaradi neposrednih načinov ogrožanja. Za ohranjanje populacij teh vrst so potrebni dodatni ukrepi.

CILJ

- Ohranitev ugodnega stanja vseh domorodnih živalskih in rastlinskih vrst.

USMERITVE

- Priprava in izvajanje akcijskih programov za izboljšanje stanja najbolj ogroženih vrst.
- Zmanjšati pritiske na ogrožene vrste (predvsem zaradi povečane rekreacije in izkoriščanja vrst) v kritičnih obdobjih (gnezdenje, drstenje, prezimovanje) na raven, ki omogoča vzdrževanje populacij.
- V habitatih ohraniti strukture, potrebne za ohranjanje populacij ogroženih vrst.
- Ohraniti in po potrebi vzpostavljati ekološke povezave, ki omogočajo gensko izmenjavo med populacijami.
- Za ohranjanje ogroženih vrst koordinirati *in-situ* in *ex-situ* ukrepe, zlasti vzgajanje vrst za vračanje v naravo z vzpostavljanjem primernih razmer za njihovo razmnoževanje v naravi.
- Preprečevati vnos tujerodnih vrst v naravno okolje.

2.4 Ohranjanje genske pestrosti

Genska pestrost je pri vseh živih bitjih temelj za prilagajanje spremenljivim življenjskim razmeram. Omogoča jim preživetje v spreminjajočem se okolju in s tem nenehno prilagajanje vrst nanj skozi generacije. K visoki genski pestrosti v okviru vrste prispevajo velike učinkovite populacije, zato je pomembno njihovo ohranjanje.

Geni prostoživečih in udomačenih vrst nosijo zapise za uporabne organske snovi, kakor so zdravila in tehnični material. Genska pestrost je obenem temelj za ohranjanje sort kmetijskih rastlin in pasem oziroma linij domačih živali. Za njihovo ohranjanje so pomembne t.i. genske rezerve (npr. minimalno število živali in doz živalskega semena).

Gensko siromašenje vrst ogroža njihov obstoj in je posledica zmanjševanja in izolacije posameznih populacij zaradi zmanjševanja, drobljenja in izolacije habitatov. Mnoge prostoživeče rastlinske in živalske vrste so danes omejene na razdrobljene, nepovezane populacije, ki so med seboj gensko izolirane. To se izraža v genskem driftu, ki je tem večji, čim manjše in čim bolj izolirane so populacije. Varovanje genskih virov *in-situ* in ohranjanje ustreznih velikosti učinkovitih populacij je zato glavni cilj ohranjanja biotske raznovrstnosti, medtem ko je varovanje *ex-situ*, kakor so botanični in živalski vrtovi, arboretu- mi in genske banke, nujen dodaten ukrep pri redkih in ogroženih vrstah in tam, kjer varovanje *in-situ* ni več možno.

Ohranjanje genske pestrosti je treba obravnavati kot

sestavni del in dopolnilo k varstvu vrst in ekosistemov. Sestavni del zato, ker z vzpostavitvijo ekoloških koridorjev lahko preprečimo izolacijo posameznih populacij in s tem siromašenje genske pestrosti, ki lahko vodi v izumiranje vrst; dopolnilo pa zato, ker lahko v določenih primerih procese, ki vodijo v zmanjševanje vrstne pestrosti, ugotovimo s spremljanjem genetske variabilnosti, še preden jih je možno zaznati s spremljanjem drugih značilnosti.

CILJA

- Preprečitev drobljenja populacij in povezovanje nekoč povezanih populacij za ohranjanje pretoka genov, pri naravno izoliranih populacijah pa zagotovitev njihovega ohranjanja *in-situ*, in kjer je potrebno povečevanje teh populacij.
- Zagotovitev *ex-situ* varstva za domorodno floro in favno, katere populacije so tako majhne, da samo *in-situ* varstvo ni dovolj uspešno.

USMERITVI

- Pri vnašanju tujerodnih vrst in genskem vmešavanju v naravo uvesti primerno varnostno zaščito, zlasti pri gospodarskih panogah, kjer se dejavnosti izvajajo v naravnem okolju, npr. kmetijstvo, farmacija, biotehnologija.
- Pravno urediti področja ohranjanja biotske raznovrstnosti *in-situ* in *ex-situ* in ravnanja z gensko spremenjenimi organizmi.

ures, such as botanical gardens, zoos, arboretums and gene banks, are a necessary additional measure taken to conserve rare and endangered species if the *in-situ* conservation is no longer possible.

The conservation of genetic diversity must be considered a constituent part of and supplement to the protection of species and ecosystems. A constituent part because the establishment of eco-corridors allows us to prevent the isolation of individual populations, and thus the depletion of genetic diversity which leads to the extinction of a species, and a supplement because in specific cases the processes which lead to the reduction of biodiversity can be recognised through the monitoring of genetic variability, even before they could be registered through the monitoring of other characteristics.

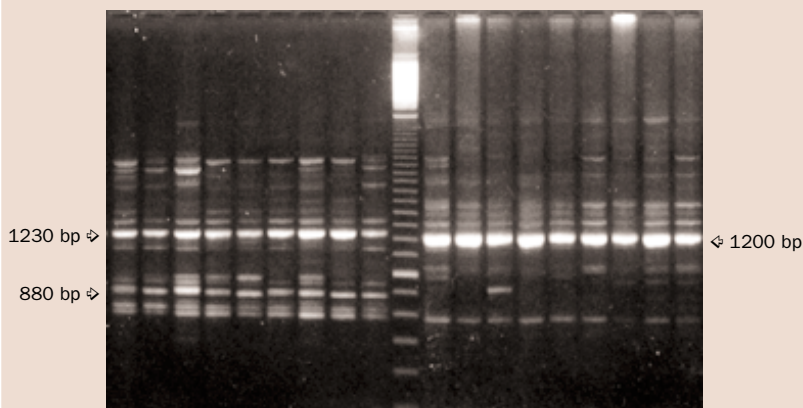
OBJECTIVES

- To prevent the fragmentation of populations and to promote the re-establishment of the once-existing connections between populations to conserve the gene flow; to ensure the *in-situ* conservation of naturally isolated populations and, where possible, increase the number of specimens in these populations.
- To guarantee the *ex-situ* protection of indigenous flora and fauna the populations of which are so small that the *in-situ* conservation does not suffice.

DIRECTIONS

- To initiate an appropriate protection mechanism with regard to the introduction on non-indigenous species and genetic manipulation, in particular in relation to economic sectors where activities are carried out in the natural environment, such as agriculture, pharmacy, biotechnology.
- To legally regulate the field of the *in-situ* and *ex-situ* biodiversity conservation and the management of genetically modified organisms.

Površinska pop. / terrestrial pop. Jamska pop. / subterranean pop.
Rakov škocjan M Planinska j. II Planinska j. I



Raziskave genske pestrosti pri enakonožnem raku vodnem osličku (*Asellus aquaticus*) iz porečja kraške Ljubljane kažejo na zelo velike genetske razlike med površinskimi in jamskimi populacijami, razlike pa so tudi med jamskimi populacijami. Na sliki je primerjava delčkov DNK (metoda RAPD) med jamskimi in površinskimi populacijami, označeni delčki so pomembno različni.

Vir: VEROVNIK, R. Genetska diferenciacija jamskih in površinskih populacij vodnega oslička *Asellus aquaticus* (Crustacea: Isopoda) v povodju kraške Ljubljane. Magistrska naloga, 1998.

The studies of genetic variability in isopod crustacean *Asellus aquaticus* from the river system of karst Ljubljana show significant genetic differences between the terrestrial and subterranean populations and also between the two subterranean populations. Here, the comparison of DNA fragments (RAPD method) between the terrestrial and subterranean populations. Marked are the significantly different DNA fragments.



2.5 Ex-situ conservation

Gene banks, breeding centres, botanical gardens and zoos play an important role in the conservation of biodiversity if their activities are included in the coordinated

Ohranitev genskih virov domorodnih vrst, ki se jih uporablja za proizvodnjo materiala in zdravil (na sliki semenska plantaža črne jelše *Alnus nigra*), pomaga izboljševati njihove uporabne vrednosti.

The conservation of genetic resources of indigenous species, used for the production of materials and medicines (here, the seed plantation of black alder *Alnus nigra*), helps improve the use value of these species.



reintroduction or integral nature protection schemes. With regard to the agricultural plants, including the forest genetic fond and domestic animals, it is extremely important that genetic erosion is avoided and the quality of breeds and varieties improved.

OBJECTIVES

- To conserve wild animals ex-situ when the in-situ conservation is not possible or is seriously threatened.
- To conserve indigenous domestic breeds and varieties for the production of food, materials and medicines, and to conserve the genetic resources of wild relatives of domesticated breeds and varieties.

DIRECTIONS

- To encourage zoos and botanical gardens, gene banks and collections to maintain species in order to reintroduce them into the wild when the action leads to a satisfactory in-situ conservation status of a species; to maintain animals according to the standards which guarantee viable specimens.
- To promote the breeding of indigenous varieties of agricultural plants and breeds of domestic animals.

2.5 Ohranjanje ex-situ

Genske banke, vzrejni centri, botanični in živalski vrtovi imajo lahko pomembno vlogo pri ohranjanju biotske raznovrstnosti, če je njihova dejavnost vključena v koor-

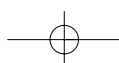
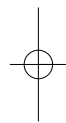
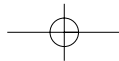
dinirane reintrodukcijske ali celovite naravovarstvene sheme. Za kmetijske rastline, z gozdnim genskim fondom vred, kot tudi domače pasme se je nujno izogniti genski eroziji in izboljšati kakovost sort in pasem.

CILJA

- Ohranitev *ex-situ* prostoživečih vrst, kadar za te ni možno zagotoviti ohranjanja *in-situ* oziroma kadar je njihovo ohranjanje *in-situ* resno ogroženo.
- Ohranitev domorodnih udomačenih pasem in sort za proizvodnjo hrane, materiala in zdravil ter genskih virov prostoživečih sorodnikov udomačenih sort in pasem.

USMERITVI

- Spodbujati živalske in botanične vrtove, genske banke in zbirke, da vzdržujejo vrste za vračanje v naravo, kadar to vodi k zadovoljivemu ohranitvenemu statusu vrste *in-situ*. Vzdrževanje živali naj poteka v okviru zadovoljivih standardov, ki zagotavljajo preživetja sposobne osebkke.
- Spodbujati gojenje domorodnih sort kmetijskih rastlin in rejo domorodnih pasem domačih živali.





PODPORNE DEJAVNOSTI OHRANJANJU BIOTSKE RAZNOVRSTNOSTI IN TRAJNOSTNI RABI



SECTORS INVOLVED IN THE SUSTAINABLE
USE OF BIODIVERSITY COMPONENTS
AND SUSTAINABLE DEVELOPMENT

Trajnostni razvoj omogoča zadovoljevanje potreb današnjih generacij, ne da bi omejeval možnosti prihodnjih pri zadovoljevanju njihovih potreb. Blaginja sedanjih generacij je sprejemljiva, če izhaja iz krepitve virov blaginje in izboljševanja razvojnih dejavnikov. Za zadovoljevanje potreb prihodnjih generacij bo treba zbirko sestavin biotske raznovrstnosti, ki jih danes še ne uporabljamo, širiti. Uporabljamo namreč vedno več zdravil, tehničnega materiala, rastlinskih sort in živalskih pasem, ki jih pridobimo iz sestavin biotske raznovrstnosti. Zato trajnostna raba posameznih sestavin biotske raznovrstnosti pomeni njihovo rabo na način in v količini, ki dolgoročno ne povzroča zmanjševanja celotne biotske raznovrstnosti. Rezultat trajnostnega razvoja je torej dolgoročno uravnoteženo izboljševanje vseh treh sestavin blaginje, gospodarske, socialne in okoljske, kar vključuje ohranjenost biotske raznovrstnosti.

Dejavnosti različno učinkujejo na ohranjanje biotske raznovrstnosti in trajnostno rabo njenih sestavin. Najbolj odločilen vpliv imajo kmetijstvo, gozdarstvo, lov, ribištvo, vodno gospodarstvo, energetika, industrija, promet, urbanizacija, turizem in rekreacija. Za učinkovito izvajanje strategije je nepogrešljivo sodelovanje znanosti, tehnologije, izobraževanja, strokovnega usposabljanja in financ.

3.1 Kmetijstvo

Načini rabe prostora poglavitno vplivajo na biotsko raznovrstnost. Določena raba v okviru iste dejavnosti lahko podpira ohranjanje in trajnostno rabo sestavin biotske raznovrstnosti ali pa povzroča resno grožnjo. Kmetijstvo generira oboje, tako koristi kot neugodne pritisk na biotsko raznovrstnost, odvisno od načina kmetovanja, obdobja paše in košnje ipd. Določeni habitatni tipi so zaradi naravnih danosti posebno občutljivi na vplive kmetijstva.

Vladno posredovanje s podpiranjem izbranih ukrepov močno vpliva na način kmetovanja. Podpore pogosto vodijo do pridelave ustreznih količin hrane in izvajanja novih kmetijskih praks, ki pa marsikdaj niso v skladu s trajnostno rabo sestavin biotske raznovrstnosti. Povečanje pridelave gre pogosto na račun degradacije naravnega kapitala (rodovitna zemlja, čista voda, naravni in polnaravni ekosistemi). Po drugi strani podpiranje sonaravne kmetijske prakse pogosto pomeni zagotavljanje in ohranjanje pomembnih habitatov.

Prebivalci območij, ki so odvisni od kmetijstva, bi morali biti zainteresirani, da raba kmetijskih zemljišč sledi trajnostni praksi. S tem lahko pomembno prispevajo k ohranjanju in trajnostni rabi sestavin biotske raznovrstnosti. Nekatere habitate je možno ohraniti le, če še naprej potekajo ustrezne kmetijske dejavnosti. Kjer je kmetijska raba ključni trajnostni element ekosistemov, lahko njeno opuščanje pelje v nepovratno degradacijo različnih habitatov. Čeprav je ozaveščenost med kmeti vse večja, pa praksa »zelenih tehnologij« ne more zaživeti do zelene stopnje, če kmetijska in okoljska politika ne dajeta kmetom komplementarnih usmeritev in ne delujeta skupno.

Sustainable development allows the present generations to satisfy their needs without limiting the possibilities of future generations to satisfy their needs. The prosperity of current generations is acceptable if it originates from the strengthening of the sources of prosperity and the improvement of development factors. In order to satisfy the needs of future generations it is necessary to expand the collection of biodiversity components that are currently not used. Nowadays, more and more medicines, technical material, plant varieties and animal breeds, obtained from biodiversity components, are used. It is considered that particular components of biodiversity are used sustainably when they are used in a manner and quantity which in a long-term do not reduce biodiversity. The result is a balanced, long-term improvement of all three prosperity components, the economic, social and environmental, including biodiversity.

Various activities have various impacts on the conservation of biodiversity and sustainable use of its components. Most decisive is the impact of agriculture, forestry, hunting, fisheries, water management, energy sector, industry, transport, urbanisation and tourism and recreation. Science, technology, education, expert training and finances have to go hand in hand to efficiently implement the Strategy.

3.1 Agriculture

Land use categories have a principal impact on biodiversity. A specific form of land use within the same activity can support the conservation and sustainable use of biodiversity components, or seriously threaten them. Agriculture is an activity that generates both, the benefits and adverse effects on biodiversity, depending on the farming practices and grazing and mowing periods, etc. Due to their natural features, particular habitat types are extremely sensitive to the impacts of agriculture.

Governmental interventions assist the selected measures and thus significantly affect the farming practices. They often lead to the sufficient food production and implementation of new agricultural practices. However, many times they are not in compliance with the sustainable use of biodiversity components. The production increases at the expense of the degradation of natural capital (fertile soil, clean water, natural and semi-natural ecosystems). On the other hand, the support to sustainable agricultural practices often leads to the maintenance and conservation of important habitats.

People, who live in areas where agriculture is the primary source of income, must be interested in sustainable land use practices. In this way they can contribute to the conservation and sustainable use of biodiversity components in the area. Certain habitats are conserved only if the traditional agricultural activities continue to be carried out. Where farming land is the key sustainable element of an ecosystem, its abandonment leads to the irreversible degradation of different habitats. Even though the awareness of farmers has improved, the practice of "green technologies" does not reach the wanted level if the agricultural and environmental policies do not offer farmers complementary directions, and if they do not act jointly.

Mozaični preplet travnikov, njiv, sadovnjakov in omejkov, življenjski prostor številnim ogroženim vrstam, vzdržujejo kmetje na nekaj območjih v Sloveniji (na sliki v Kozjanskem parku).

In certain areas of Slovenia the mosaic of meadows, fields, orchards and hedges, a habitat to many endangered species, is conserved by farmers (here, the Park Kozjansko).



Species' genetic resources are an irreplaceable source of materials used in agriculture, either for activities carried out by breeders or for economic activities, such as quantitative food production, production in changed environmental conditions and production in balanced ecosystems which allow such activities. One of the most important aspects of the agricultural policy is the protection of genetic resources, (potentially) used in agriculture, in the environment where they originate. When such protection of genetic resources is not possible, it is necessary to carry out the *ex-situ* protection measures which guarantee the conservation of genetic resources (for example, gene banks).

The objectives of the Slovene agricultural policy are the preservation of population density in the countryside and the enforcement of the principles of environmental protection and nature conservation. These objectives have to be met if agriculture is to play its economic, spatial, environmental and social role. In order to achieve this goal, the agricultural policy integrates the biodiversity conservation measures into the traditional, but modernised, environmental protection and nature conservation instruments and rules. These have to be further developed on the basis of the principles of sustainable development and use of biodiversity components, including genetic resources. The agricultural policy covers the measures for maintaining and even increasing the stock of domestic animals. These measures need to be enforced at a broader level.

The Slovene countryside is characterised by variable relief and micro-climatic diversity. Together with the economic and sociological aspects, these aggravating conditions determine the cultivation practices in these areas. Since 1990s, such areas are defined as "less-favoured areas" in terms of agricultural production. According to the special criteria they are divided into the mountainous, highland, karst areas and other areas. To guarantee the cultivation of land in these areas, the Ministry of Agriculture, Forestry and Food provides annual direct payments. Slovenia incorporated the programme on direct payments for these areas into its agricultural policy reform and in this way harmonised its legislation with that of the EU. The multipurposeness of agriculture is acknowledged through this support. At the same time the non-market allocation of funds encourages and ensures the conservation of biodiversity and the cultivation of land, the maintenance of population density and

Genski viri vrst so nenadomestljiv izvor materiala za kmetijsko rabo, bodisi za dejavnost žlahtniteljev, bodisi za gospodarsko dejavnost, kakor je količinska pridelava hrane, bodisi za pridelavo v spremenjenih okoljskih razmerah, in ne nazadnje tudi za pridelavo v tistih uravnoteženih ekosistemih, ki dopuščajo takšno dejavnost. Eden pomembnejših vidikov kmetijske politike je zaščita genskih virov, ki so uporabni ali potencialno uporabni v kmetijstvu, v okolju kjer so nastale. Za primere, ko takšna oblika varstva genskih virov ni možna, pa je treba izvajati takšne ukrepe varstva *ex-situ*, ki zagotavljajo ohranjanje teh genskih virov (npr. genske banke).

Slovenska kmetijska politika si je pri uresničevanju gospodarske, prostorske, ekološke in socialne vloge kmetijstva ter njegovega sonaravnega razvoja postavila za cilj tudi uresničevanje načel varstva okolja in ohranjanja narave ter poseljenosti podeželja. Za doseg omenjena politika vključuje ukrepe ohranjanja biotske raznovrstnosti v okviru klasičnih, vendar posodobljenih instrumentov ter pravil varovanja okolja in ohranjanja narave. Instrumenti in pravila se morajo razvijati naprej na podlagi načel trajnostnega razvoja in trajnostne rabe prvin biotske raznovrstnosti, z genskimi viri vred. Kmetijska politika zajema med drugim ukrepe za ohranjanje in povečevanje števila domorodnih domačih živali, potrebno pa je še bolj obsežno izvajanje.

Značilnosti slovenskega podeželja sta reliefna razgibanost in mikroklimatska pestrost. Skupaj z ekonomskimi in sociološkimi dejavniki pogojujeta oteženo obdelovanje na teh območjih. Od 1990 so takšna območja v Sloveniji opredeljena kot »območja z omejenimi možnostmi za kmetovanje« in določena po posebnih kriterijih v: gorsko-višinska, hribovska, kraška in druga območja. Za zagotavljanje obdelanosti le-teh pa Ministrstvo za kmetijstvo, gozdarstvo in prehrano zagotavlja tudi letna izravnalna plačila. Slovenija je program izravnalnih plačil za ta območja utemeljila v reformi kmetijske politike in se tako na tem področju uskladila s pravnim redom Evropske unije. Vsebinsko te podpore pomenijo priznanje večnamenskosti kmetijstva ter prehod na tržno nevezana plačila, ki vzpodbujajo tudi ohranjanje biotske raznovrstnosti, poleg tega pa še zagotavljanje primerne obdelanosti, ohranjanje poseljenosti, kulturne krajine in okolja.

Ohranjanje podeželja, njegove obdelanosti in posredno tudi poseljenosti pa so temeljni cilji slovenske in evropske kmetijske strukturne politike.

Vzdrževanje in uporaba domorodnih pasem domačih živali lahko ob ustreznem sistemu podpor prispeva k ohranjanju območij z omejenimi dejavniki pridelave v Sloveniji in tako preprečuje zaraščanje kmetijskih površin. Te podpore in kmetijsko okoljske podpore Evropska unija namenja tudi za rejo ogroženih lokalnih pasem domačih živali na območjih, od koder izvirajo. Reja teh pasem je del ukrepov ohranjanja okolja in narave.

V zadnjih letih je razvoj nove biotehnologije, zlasti na področju genskega inženiringa pripeljal do uporabe metod, ki omogočajo produkcijo gensko spremenjenih organizmov (GSO) z novimi, drugačnimi in/ali izboljšanimi lastnostmi. Ker GSO niso rezultat naravnega izbora, se porajajo pomisleki o njihovi uporabi in zaskrbljenost zaradi morebitnih škodljivih vplivov na ohranjanje biotske raznovrstnosti. Skrb je v manjši meri izražena za nenačrtovane vnose iz laboratorijev v naravo, v večji pa za primere sproščanja GSO v naravo za uporabne namene, še posebno kadar prihaja do interakcij GSO z drugimi organizmi in posledično za spremembe v strukturi in funkciji določenega ekosistema. Zato se z opredelitvijo biološkega tveganja na podlagi ocene vplivov GSO na naravo ter njihovih medsebojnih vplivov zagotavlja varstvo narave in zlasti ekosistemov pred možnimi škodljivimi vplivi GSO.

Zaradi interakcije trajnostnega kmetijstva in razvoja podeželja z ohranjanjem in trajnostno rabo sestavin biotske raznovrstnosti morata ohranjanje in trajnostna raba biotske raznovrstnosti upoštevati naslednje pristope:

Ohranjanje in trajnostna raba sestavin biotske raznovrstnosti v kulturni krajini

Kmetijstvo pomembno vpliva na stanje in delovanje habitatnih tipov v ekosistemih kulturne krajine (kmetijski ekosistemi). Posledice se kažejo tudi na okoliških ekosistemih, in če gre za vodne ekosisteme, še daleč nizvodno. V obeh primerih lahko kmetijstvo vpliva na ohranjanje in trajnostno rabo sestavin biotske raznovrstnosti pozitivno ali negativno.

Kmetijstvo je igralo in še vedno igra zelo veliko vlogo v ekosistemski pestrosti. Zato ohranjanje in trajnostna raba kmetijskih ekosistemov zahtevata vzdrževanje in nadaljnji razvoj kmetovanja. Ob upoštevanju pozitivne vloge ekstenzivnega kmetijstva na prostoživeče vrste je treba kmete podpreti pri vzpostavljanju in vzdrževanju ustreznih ustvarjenih habitatov. Zagotoviti je treba kar najbolj pozitivne vplive kmetijskih praks in proizvodnje na ohranjanje in trajnostno rabo sestavin biotske raznovrstnosti in na krajinsko pestrost - zlasti ohranjanje in vzdrževanje določene sonaravne oblike kmetijstva.

Negativne vplive kmetijskih dejavnosti na biotsko raznovrstnost in krajinsko pestrost je treba blažiti, zlasti določene načine rabe zemljišč in uporabe zaščitnih sredstev in gnojil, čezmerne obremenitve kmetijskih površin, onesnaževanja kot posledice intenzivne živinoreje,

the conservation of cultural landscape and the environment. The conservation of the countryside, its land cultivation and the maintenance of population density are the fundamental objectives of the Slovene and European agricultural structural policies.

The maintenance and use of indigenous breeds of domestic animals and the adequate system of financial support contribute to the conservation of areas where production conditions are limited and the afforestation of arable land is thus prevented. The European Union allocates funds and agri-environmental supports to the breeding of endangered local breeds of domestic animals in their centres of origin. The breeding of these animals is one of the nature conservation and environmental protection measures.

In the last few years the development of biotechnology, in particular in the field of genetic engineering, led to the application of methods which allow the production of genetically modified organisms (GMO) with new, different and/or improved properties. Since GMO do not derive from natural selection processes, the doubts about their use are raised and the concern is expressed about their possible adverse effects on the conservation of biodiversity. The accidental introduction of GMO into nature from laboratories is a cause for concern and their release for application purposes is highly questionable, in particular, since GMO interact with other organisms and, consequently, change the structure and function of a particular ecosystem. The identification of a biological hazard on the basis of the assessment of the impact of GMO on nature and their mutual impacts guarantees the protection of nature and ecosystems against the potential adverse effects of GMO.

Due to the interaction between sustainable agriculture and rural development, and the conservation and sustainable use of biodiversity components, the conservation and sustainable use of biodiversity have to take into account the following approaches:

Conservation and sustainable use of biodiversity components in cultural landscape

Agriculture significantly affects the status and functioning of habitat types in the ecosystems of cultural landscape (agricultural ecosystems). The consequences are also seen in the neighbouring ecosystems and, in the case of aquatic ecosystems, far downstream. In both cases agriculture affects the conservation and sustainable use of biodiversity components, either positively or negatively.

Agriculture has always played an important role in the diversity of ecosystems. The maintenance and further development of farming activities is a prerequisite for the conservation and sustainable use of agricultural ecosystems. Taking into account the positive impact of low intensity agriculture on wild species, farmers must be given support in the setting-up and maintenance of suitable "created" habitats. The positive effects of agricultural practices and production on the conservation and sustainable use of biodiversity components and landscape diversity have to be guaranteed. The specific sustainable farming methods in particular should be conserved and maintained.

The negative impacts of agricultural activities on biologi-

cal and landscape diversity should be mediated, especially the specific land cultivation methods; the application of plant health products and fertilisers; the excessive burdening of arable land; the pollution caused by intensive livestock breeding; the extensive monocultures; the destruction of wetlands and hedges; and the use of heavy machinery. Pesticides have direct negative impacts on the conservation of biodiversity in areas where they are introduced into the environment, as well as indirect impacts in other, non-agricultural ecosystems.

The agricultural action plan has to be based on the existing policies and policies included in the Agenda 2000. However, these policies have to be supplemented in such a way that they contribute to the conservation of biological and landscape diversity.

OBJECTIVE

- To enforce the ecological and social function of agriculture which contribute to the conservation of the countryside and rich biodiversity in these areas and is based on sustainable agricultural practices and sustainable development of these areas.

DIRECTIONS

- To meet the objectives concerning the conservation of biological and landscape diversity through the application of suitable agricultural policy instruments.
- To promote the target agri-environmental measures which emphasise the principles of the conservation of plant and animal species in agricultural activities and ensure sustainable agriculture; to regularly monitor the efficiency of these measures through specific biodiversity indicators.
- To allocate budgetary funds to the target agri-environmental measures instead of financially supporting the farming practices which reduce biodiversity.
- To enforce the recommendations concerning good agricultural practice in order to reduce the threat of pollution caused by chemical and mineral substances and other harmful effects on biological and landscape diversity.
- To raise the awareness of all farmers and turn the potential polluters into stewards of the environment and biological and landscape diversity; the emphasis is placed on the appropriate management of pesticides.
- To introduce and promote, through legislation, the labelling and marking of agricultural products grown in a manner, and in areas, significantly contributing to the conservation of biodiversity.
- To reduce emissions from point (livestock breeding farms) and diffuse (intensive cultivation) sources of pollution.
- To promote and ensure the viability of sustainable plant cultivation and animal breeding through the selection of varieties and breeds that are adapted to the natural conditions and conserve the ecosystems of endangered wild species; to support the breeding/cultivation of less productive indigenous plant species and breeds of domestic animals.
- To coordinate agricultural policy with the efforts for the conservation of endangered plant and animal species, in particular the policy on livestock breeding with the endeavours for the conservation of large carnivores.
- To promote and encourage the less intensive agricultural practices in areas of high nature protection value, especially in protected areas.
- To limit all the activities which are unfavourable for the conservation of biodiversity (agromeliorations, hydro meliorations, commassations) and do not contribute to the

monokultur večje razsežnosti, uničevanja mokrišč in živice ter uporabe težke mehanizacije. Denimo pesticidi imajo neposredne negativne učinke na ohranjanje biotske raznovrstnosti na območjih, kjer se jih vnaša v okolje, poleg tega pa tudi posredne na drugih območjih in v drugih, nekmetijskih ekosistemi.

V tem okviru mora akcijski načrt za kmetijstvo temeljiti na obstoječih politikah in tistih, začrtanih v Agendi 2000, in jih dopolniti tako, da bodo prispevale k ohranjanju biotske raznovrstnosti in krajinske pestrosti.

CILJ

- Uveljavitev ekološke in socialne funkcije kmetijstva, ki prispeva k ohranjanju podeželja, visoke biotske raznovrstnosti na teh območjih in temelji na sonaravnih oblikah kmetijstva ter trajnostnem razvoju teh območij.

USMERITVE

- Dosegati cilje ohranjanja biotske raznovrstnosti in krajinske pestrosti z ustreznimi instrumenti kmetijske politike.
- Spodbujanje ciljnih kmetijsko-okoljskih ukrepov, ki morajo bolj vključevati načela ohranjanja rastlinskih in živalskih vrst v kmetijske dejavnosti in zagotavljati sonaravno kmetijstvo, ter redno spremljanje njihove učinkovitosti s specifičnimi kazalci biotske raznovrstnosti.
- Povečanje ustreznega proračuna in virov za ciljne kmetijsko-okoljske ukrepe na račun sredstev za podporo oblikam kmetovanja, ki zmanjšujejo biotsko raznovrstnost.
- Uveljavljanje priporočil dobre kmetijske prakse z namenom zmanjševati tveganje onesnaževanja s kemičnimi in mineralnimi snovmi ter drugih škodljivih vplivov na biotsko raznovrstnost in krajinsko pestrost.
- Povečevanje ozaveščenosti vseh kmetovalcev, da iz potencialnih onesnaževalcev postanejo skrbniki okolja ter biotske raznovrstnosti in krajinske pestrosti, kar zajema tudi ustrezno ravnanje s pesticidi.
- Zakonsko uvajanje in promocija označb kmetijskih izdelkov, pridelanih na načine, ki pomembno prispevajo k ohranjanju biotske raznovrstnosti, ter zaščitnih znamk za kmetijske izdelke, pridelane na območjih, ki pomembno prispevajo k ohranjanju biotske raznovrstnosti.
- Zmanjševati emisije iz točkovnih (npr. živinorejskih farm) in razpršenih virov (intenzivno kmetijstvo).
- Promocija in zagotavljanje viabilnosti sonaravne vzgoje rastlin in reje živali z izbiro sort in pasem, ki so prilagojene naravnim danostim in s katerimi je mogoče ohranjati ekosisteme ogroženih prostoživečih vrst ter z zagotavljanjem podpore za rejo/vzgojo manj produktivnih domorodnih rastlinskih sort in pasem domačih živali.
- Uskladitev kmetijske politike s prizadevanjem za ohranitev ogroženih vrst rastlin in živali, še posebno živinorejske politike s prizadevanjem za ohranitev velikih zveri.
- Promocija in podpora manj intenzivnim oblikam kmetovanja v naravovarstveno visoko ovrednotenih območjih, zlasti zavarovanih.
- Omejevanje vseh neugodnih posegov za ohranjanje biotske raznovrstnosti (agro- in hidromelioracij, komasacij itd.), ki ne prispevajo k doseganju vseh ciljev kmetijske politike.

Ohranjanje in trajnostna raba genskih virov, vrst, sort, pasem in mikrobnih življenjskih oblik *in-situ* in *ex-situ* z aktualno ali potencialno vrednostjo kot kmetijskih pridelkov in uravnotežena delitev koristi, ki izhajajo iz

rabe genskih virov v kmetijstvu, zahteva širok spekter dejavnosti *in-situ* in *ex-situ*.

Varstvo lokalnih vrst in-situ, sort in pasem (semen-ski sestoji, genske banke kmetijskih rastlin in domačih živali, ohranjanje na zavarovanih območjih) zahteva ustrezen sistem ekonomskih in socialnih spodbud, povezanih z boljšo ozaveščenostjo uporabnikov in porabnikov, in normativno urejen sistem. Nekatere kmetijske dejavnosti pomagajo vzdrževati ogrožene rastlinske in živalske vrste, kar je družbeno pomembna storitev.

Genske banke (semenske banke, semenski nasadi in žive zbirke, poskusni nasadi, klonski vrtovi, žive živali, zamrznjeno seme, jajčeca in embriji, ohranjanje in-vitro) domorodnih sort rastlin in domorodnih pasem domačih živali, pomembnih za ohranjanje biotske raznovrstnosti, je treba povzdigniti na raven, ki bo zmogla zadovoljiti sedanje in prihodnje zahteve po prehranski varnosti. Slovenske domorodne pasme domačih živali je treba ohranjanje predvsem v njihovem avtohtonem okolju. Pregled zdajšnjega stanja v Sloveniji je naveden v Pregledu stanja biotske in krajinske raznovrstnosti.

CILJA

- Razširitev obsega sonaravne kmetijske prakse, ki temelji na domorodnih genskih virih rastlinskih sort in pasem domačih živali.
- Ohranjanje genskega potenciala domorodnih sort in pasem.

USMERITVE

- Karakterizacija (s taksonomsko identifikacijo vred), ovrednotenje in dokumentacija genskih virov rastlinskih sort in pasem živali. Ovrednotenje naj poleg bioloških značilnosti zajema tudi agronomске značilnosti kmetijskih rastlin in njihovih divjih sorodnikov ter fiziološko-prehranske značilnosti posameznih pasem živali.
- Učinkovito upravljanje inventarja in centralnega registra slovenskih genskih virov (*in-situ*, *ex-situ*).
- Priprava in izvajanje nacionalnega programa ohranjanja genskih virov in njihove trajnostne rabe v okviru ohranjanja biotske raznovrstnosti in potencialne rabe za prehranske in druge namene.
- Izdelava programov delovanja kmetijskih genskih bank, uporabnih za ohranjanje genskih virov *in-situ* in *ex-situ* za prehrano in kmetijstvo tako, da bodo dostopne tudi za rabo.
- Spodbujanje reje/vzgoje in kmetijske rabe gospodarsko učinkovitih domorodnih rastlinskih pasem in sort domačih živali.
- Spodbujanje razvoja blagovnih znamk kmetijskih izdelkov, ki izvirajo od domorodnih pasem domačih živali in rastlinskih sort, ter organiziranja prodaje teh proizvodov.
- Okrepitev sodelovanja in s tem pretoka informacij med znanostjo, stroko, pristojnimi ministrstvi, kmetovalci in porabniki.
- Z ustrezno zakonodajo vzpostaviti mehanizme nadzora nad uporabo in sproščanjem GSO v naravo ter njihovo uvajanje le postopno, ob upoštevanju načela previdnosti in načela »od primera do primera«.
- Zagotoviti preglednost postopkov izdaje soglasij oziroma dovoljenj za uporabo in sproščanje GSO z ustrezno institucionalno infrastrukturo na ravni države

fulfilment of the objectives of agricultural policy.

The in-situ and ex-situ conservation and sustainable use of genetic resources of species, varieties and microbes, (potentially) valuable as crops, and the balanced distribution of benefits arising from the use of genetic resources in agriculture require a wide spectre of *in-situ* and *ex-situ* activities.

In-situ protection of local species, varieties and breeds (seed stands, gene banks of agricultural plants and domestic animals, conservation in protected areas) requires an appropriate system of economic and social incentives, based on the raised awareness of users and consumers, and a system of norms; specific agricultural activities assist in the maintenance of endangered plant and animal species and that is a socially important service.

Gene banks (seed banks, seed stands and live collections, test stands, clone gardens, live animals, frozen semen, eggs and embryos, in-vitro conservation) of indigenous plant varieties and animal breeds, important for the conservation of biodiversity, must be further developed to meet the current and future food safety requirements. The Slovene indigenous breeds of domestic animals should be conserved in their autochthonous environment. The current status of these breeds is dealt with in the Review of the Status of Biological and Landscape Diversity.

OBJECTIVES

- To enforce sustainable agricultural practice based on indigenous genetic resources of plant varieties and breeds of domestic animals in the newly designated, expanded areas.
- To conserve the genetic potential of indigenous varieties and breeds.

DIRECTIONS

- To characterise (including the taxonomic identification), evaluate and document the genetic resources of plant varieties and animal breeds; beside biological properties, the evaluation should include the agronomic characterisation of agricultural plants and their wild relatives and the physiological and dietary characterisation of specific animal breeds.
- To effectively manage the inventory and central register of Slovene genetic resources (*in-situ*, *ex-situ*).
- To draw up and implement the national programme for the conservation and sustainable use of genetic resources within the framework of biodiversity conservation and their potential use for dietary and other purposes.
- To draw up programmes on the functioning of agricultural gene banks that are used for the in-situ conservation of genetic resources intended for dietary and agricultural purposes with the aim of actual utilisation of the products.
- To promote the breeding/cultivation and agricultural use of the economically efficient indigenous plant varieties and breeds of domestic animals.
- To promote the development of trade marks for agricultural products of indigenous breeds of domestic animals and plant varieties and to organise the market for these products.
- To strengthen the cooperation and flow of information between research sciences, technical sciences, responsi-

ble ministries, farmers and consumers.

- To establish, through legislation, the mechanisms of control over the use and release and gradual introduction of GMO in nature, taking into account the precautionary principle and the "from case to case" principle.
- To guarantee, with appropriate institutional infrastructure at the state level, the transparency of procedures for the granting of consents and permits for the use and release of GMO, and the technically qualified staff.
- To designate and conserve areas where GMO are not released into the environment.
- To strengthen international cooperation in the exchange of information and genetic material according to the principles of state competencies and its responsibility for the protection of natural genetic resources.

The **impact of the agricultural market policy** on agricultural production and land use indirectly affects the conservation of biological and landscape diversity. Direct financial support to producers within the framework of the promotion of sustainable development and biodiversity will have to become an even more important motivation factor. The changes in the global and regional patterns of agricultural production, emphasised by the changes in trade patterns, will require the replacement or abandonment of the current local production systems. They may lead to the intensification of production, all with a view to preserve the competitive position of producers and to supply new markets. Global processes of the liberalisation of the market induce the substantial alterations in the current systems of subventions and protection mechanisms.

Consumers dictate the forms of food production. The reliable and persuasive consumer information on food production methods (labels identifying production methods, designation of geographical origin and other characteristics of agricultural products) contributes to the conservation of biodiversity. It helps promote such land use forms which conserve agricultural ecosystems and maintain gene banks of varieties and breeds which prevent genetic erosion. It is necessary to establish and enforce legislation regulating consumer protection by the labelling of products according to the production methods, designation of geographical origin and provenance and the characteristics of an agricultural product.

OBJECTIVE

- To promote market-orientated agricultural policies and activities that take into account the requirements concerning the conservation and sustainable use of biodiversity components.

3.2 Forestry

Beside agriculture, forestry is the principal land use activity which affects biodiversity, not only because forests cover 56 % of the surface area but also because it is exceptionally important for the conservation of habitats, communities, species and their genetic diversity, and for sustainable use. The basic facts about the status of Slovene forests and their role in the conservation of biodiversity are covered by the 1996 *Programme for the development of forests in Slovenia*²⁹.

in strokovno usposobljenostjo kadrov.

- Razglasitev in ohranjanje območij, kjer se GSO ne sprošča v okolje.
- Okrepitev mednarodnega sodelovanja na področju izmenjave informacij in genskega materiala po načelu pristojnosti države in njene odgovornosti do zaščite naravnih genskih virov.

Vpliv politike trgovanja s kmetijskimi izdelki na kmetijsko proizvodnjo in rabo prostora je posredno pomemben za ohranjanje biotske in krajinske pestrosti. Neposredne investicije proizvajalcem v okviru promovanja trajnostnega razvoja in biotske raznovrstnosti bodo morale postati močnejša gonilna sila. Spremembe v globalnih in regionalnih vzorcih kmetijske proizvodnje, podprte s spremembami v vzorcih trgovanja, bodo verjetno zahtevale nadomestitev ali opustitev sedanjih lokalnih proizvodnih sistemov ali pa bodo vodile v intenziviranje zaradi ohranjanja konkurenčnosti oziroma oskrbovanja novih trgov. Globalni proces liberalizacije trga pelje v znatno spreminjanje obstoječih sistemov subvencij in zaščitnih mehanizmov.

Porabnik pomembno vpliva na oblike pridelave hrane. Njegovo verodostojno in prepričljivo obveščanje o načinu pridelave kupljene hrane (označbe načinov pridelave, znamke geografskega porekla in druge značilnosti kmetijskih proizvodov) lahko prispeva k ohranjanju biotske raznovrstnosti. V pomoč je pri kmetijski rabi zemljišč, ki prispeva k ohranjanju kmetijskih ekosistemov, in pri vzdrževanju genskih bank sort in pasem, ki prispevajo k preprečevanju genske erozije. Za to sta pomembni vzpostavitev in uveljavitev zakonodaje, ki ureja varstvo porabnika z označbami načinov pridelave, varstva geografskega porekla in opredelitve izvora in značilnosti kmetijskih proizvodov.

CILJ

- Promoviranje v trgovino usmerjene kmetijske politike in dejavnosti, ki upoštevajo zahteve ohranjanja in trajnostne rabe sestavin biotske raznovrstnosti.

3.2 Gozdarstvo

V Sloveniji je gozdarstvo poleg kmetijstva pglavitna oblika rabe prostora v smislu vpliva na biotsko raznovrstnost. Ne le zaradi obsežnosti ozemlja (56 %), ampak tudi zato, ker ima ključno vlogo pri ohranjanju naravnih habitatov, združb, vrst in njihove genske pestrosti, in trajnostni rabi. Bistvene ugotovitve o stanju slovenskih gozdov in pomenu za biotsko raznovrstnost navaja že leta 1996 sprejet *Program razvoja gozdov v Sloveniji*³⁰, zato so tukaj povzete, nekatere pa dopolnjene.

Gozdovi so za Slovenijo, ki nima veliko drugih naravnih virov, zelo pomembni tudi gospodarsko. Ohranjeni gozdovi omogočajo razvoj turizma in rekreacije, saj je privlačnost obsežnih območij ohranjenih gozdov ena naših najvažnejših primerjalnih prednosti pred drugimi srednjeevropskimi državami. V primerjavi z gozdovi

²⁹ Environmental Protection Act, Article 7.

³⁰ Ur. l. RS, št. 14/96

večine drugih evropskih državah so slovenski bolje ohranjeni in imajo pestrejšo naravno zgradbo, kar kažejo med drugim nadpovprečno močne populacije evropsko ogroženih vrst. Vzrok za nadpovprečno ohranjenost slovenskih gozdov je težka prehodnost kraškega in gorskega sveta, zaradi katere je človek v preteklosti nanj vplival manj usodno kot v lažje dostopnih gozdovih, in načrtno in skrbno gospodarjenje z gozdovi v preteklosti in danes. K temu pripomore tudi dobra institucionalna in normativna urejenost gozdarstva v Sloveniji.

Z gozdovi v Sloveniji gospodarimo sonaravno. Pomlajujemo jih naravno, vsi posegi v gozdove so malopovršinski in zmerni, kar odgovarja režimu, ki ga IUCN predpisuje za zavarovana območja VI. kategorije. Sonaravno gospodarjenje z gozdovi v Sloveniji organsko povezuje ohranjanje narave in gospodarsko dejavnost. Z njim se hkrati z izkoriščanjem gozdov ohranjajo in krepijo vse funkcije gozdov - ekološke, socialne in proizvodne. Krepitev ekoloških in socialnih funkcij gozdov praviloma skoraj v ničemer ne omejuje proizvodnje lesa, zahteva pa posebej poglobljeno, načrtno in dolgoročno gospodarjenje z gozdovi.

Zaradi zagotavljanja ekoloških in socialnih funkcij imajo tudi zasebni gozdovi javni pomen, zato država financira

In this chapter, the summary of the programme conclusions and some supplementary ideas are discussed.

Forests are of enormous economic importance for Slovenia since it does not possess many other natural resources. The conserved forests facilitate the development of tourism and outdoor activities, and the attractiveness of vast forest areas is one of the most important comparative advantages of Slovenia over other countries of the Central Europe. In comparison to other European countries, the forests in Slovenia are well conserved and their natural structure is far more diverse. They are inhabited by the above-average populations of species endangered at the European level. The reason for the high degree of conservation of Slovene forests lies in the prevailing karst and mountainous landscape that is not easily traversed. In the past, the impact of human activities in these areas was not as accentuated as in the more easily accessible forests. The other reason is the carefully planned and wise management of forests now and in the past. Moreover, the exemplary institutional and normative regulation of forestry in Slovenia significantly contributed to the conservation of forests.

In Slovenia forests are managed in a sustainable manner. They are naturally regenerated, all the activities affecting them are carried out over small areas and at a moderate scale. The management regime corresponds to the IUCN

Izven območij strnjanih gozdov so za ohranjanje biotske raznovrstnosti ključnega pomena manjši gozdovi, skupine drevev, posamezna drevesa, obvodno gozdno rastje, protivetrni pasovi in mejki.

Small woods, groups of trees, individual trees, riparian forest vegetation, wind shelter belts and hedges contribute to the conservation of biodiversity outside areas of large forests.



javno gozdarsko službo tudi v zasebnih gozdovih in lastnikom gozdov pokriva del stroškov gospodarjenja z gozdovi.

Program razvoja gozdov v Sloveniji določa tri temeljne cilje gospodarjenja z gozdovi, od katerih se dva neposredno nanašata na ohranjanje biotske raznovrstnosti v slovenskih gozdovih in krajinah. Strategija povzema te cilje.

Protected Area Category VI. Sustainable forest management is an instrument for establishing an organic link between nature conservation and economic activities. It allows the simultaneous exploitation of forests and the conservation and strengthening of all forest functions, the ecological, social and production function. The strengthening of the ecological and social functions of forest is generally not hindered by the production of wood, but the main condition is a sound, strategic and long-term forest management.

In order to ensure the ecological and social functions of forests, the state provides funds for a public forestry service in both, public and private forests. Part of the

costs of the forest management is thus covered by the state instead of the owners of forests.

The *Programme for the development of forests in Slovenia* sets three basic forest management objectives. Two of them directly target the conservation of biodiversity in Slovene forests and landscapes. They are included in the Strategy.

OBJECTIVES

- To conserve forests and develop them in a sustainable manner, all in view of the conservation of biodiversity and the ecological, social and production functions of forests.
- To conserve the natural environment and the ecological balance in a landscape.
- To conserve population density in and cultivation of a landscape and to improve the quality of life in the countryside.

DIRECTIONS

- To effectively enforce all the directions of the *Programme for the development of forests in Slovenia* which contribute to the conservation of biodiversity, in particular:
- To conserve and restore plant and animal diversity and to protect the rare or endangered forest species and ecosystems; to conserve and establish a suitable living environment for all indigenous species of wild animals.



Sustainable agricultural practice based on indigenous genetic resources of plant varieties and breeds of domestic animals supports conservation of agricultural diversity and diversity of wildlife.

- To bring the tree composition and structure, as much as possible, to the natural status and to carry out a gradual biological stabilisation (by the introduction of indigenous tree species) in the biologically and ecologically labile stands (for example, in fir prevailing stands).
- To regenerate forests naturally and over small areas; the regeneration by plantation is an exceptional measure taken when it is impossible to regenerate forests naturally; if forests are regenerated by plantation, it is vital that the propagating material is of a species suitable for the selected site and of suitable provenances.
- To designate the habitats of particular importance for animals and areas important for the conservation of biodiversity in a forest and landscape; to adapt the management to forests and the role they play in the environment.
- To guarantee the conservation and development of aquatic ecosystems in the forest environment.

CILJI

- Ohranitev in trajnostni razvoj gozdov v smislu njihove biološke pestrosti³¹ ter vseh ekoloških, socialnih in proizvodnih funkcij.
- Ohranitev naravnega okolja in ekološkega ravnotežja v krajini.
- Ohranitev poseljenosti in kultiviranosti krajine ter izboljševanje kakovosti življenja na podeželju.

USMERITVE

- Učinkovito izvajanje vseh usmeritev *Programa razvoja gozdov v Sloveniji*, ki prispevajo k ohranjanju biotske raznovrstnosti, zlasti:
- Ohranjanje in vzpostavljanje rastlinske in živalske pestrosti ter varovanje redkih ali ogroženih vrst in ekosistemov v gozdu, pa tudi ohranjanje in vzpostavljanje primernega življenjskega okolja za vse avtohtone vrste prostoživečih živali.
- Drevesno sestavo in zgradbo je treba še bolj približati naravni; v biološko in ekološko labilnih (npr. zasmrečenih) sestojih izvajati postopno biološko stabilizacijo (z vnašanjem naravnih drevesnih vrst).
- Gozdove je treba pomlajevati naravno in malopovršinsko, obnova s sajenjem pa je le izjemni ukrep v razmerah, ko gozda ni mogoče naravno obnoviti; pri obnavljanju sestojev s sajenjem je treba



Sonaravna kmetijska praksa, ki temelji na slovenskih genskih virih rastlinskih sort in pasem domačih živali (na sliki štajerska kokoš in kranjska čebela), pomaga ohranjati tako kmetijsko biotsko raznovrstnost, kot raznovrstnost prostoživečih vrst.

- uporabljati sadike rastišču primernih vrst in ustreznih provenienc.
- Določiti posebej vredne habitate za živali oziroma predele, ki so posebej pomembni za ohranitev biološke pestrosti v gozdu in krajini in prilagoditi gospodarjenje z gozdovi njihovi vlogi.
- Skrb za ohranitev in razvoj vodnih ekosistemov v gozdnem prostoru.
- Zagotovitev popolnega varstva gozdnih rezervatov (zakonska zaščita in po potrebi odkup).
- Zagotovitev popolnega varstva gozdov v območjih I. in II. varstvene kategorije po IUCN.
- Prepuščati ekološko zelo ranljive sestoje na ekstremnejših rastiščih naravnemu razvoju (razen nujnih sonaravnih sanacij).
- Izločitev manjših površin gozdov (ekocelic) in posameznega drevja z namenom ohranjanja in

³¹ sinonim za biotsko raznovrstnost

- povečevanja biotske pestrosti gozdnega prostora,
- Ohranitev, vzpostavitev in oblikovanje gozdnih robov ter skupin drevja, posameznih dreves, obvodnega gozdnega rastišča, protivetrnih pasov in omejitev zunaj gozda.
- Uporabljati izključno ekološko obzirne tehnologije pridelave (spravila) lesa ter graditi okolju čim bolj prilagojene in samo najnujnejše gozdne prometnice.
- Preprečiti take rabe gozdov, ki bi ogrozile trajnostni razvoj gozdov in njihovih funkcij.
- Pri prostorskem planiranju, načrtovanju posegov v prostor in razvoju dejavnosti na območjih, opredeljenih v gozdnogospodarskih načrtih, upoštevanje funkcij gozdov, zlasti ekoloških.
- V okviru slovenske gozdne genske banke vzpostavitev mreže gozdnih genskih rezervatov na osnovi strokovnih meril ter ustrezne karakterizacije in dokumentacije domorodnih populacij gozdnih genskih virov.

3.3 Lovstvo

Populacije divjadi in njihovo življenjsko okolje (habitat) sta neločljiva dela celote, zato mora biti tudi njihovo obravnavanje vselej celovito. Struktura habitatov divjadi je zelo odvisna od načina rabe gozdnih in kmetijskih zemljišč ter vzorcev poselitve, transportnih povezav, načina in obsega turizma in rekreacije. V Sloveniji jo zaznamuje velik delež strujenih gorskih gozdov in gozdov na visokem krasu, ki še daje primerne habitate populacijam v Evropi redkih vrst divjadi. K ohranitvi divjadi pa morajo prispevati vse dejavnosti, ki delujejo v prostoru in vplivajo nanj.

Neustrezno načrtovani in izvajani posegi v populacije (npr. odvzem najvitalnejšega dela populacije iz narave) nujno vodijo v njihovo gensko osiromašitev, spreminjanje spolne in starostne strukture ter povečane pritisk na habitate. Zato mora načrtovanje ukrepov temeljiti na sistematičnem spremljanju stanja oziroma trendov razvoja populacij divjadi, njihovih habitatov ter medsebojnih razmerij. Načrtovanje ukrepov mora predvideti tudi posredne učinke lova lovni vrst divjadi (npr. pri vrstno neselektivne oblike lova, vznemirjanje ogroženih vrst z lovom na določenih območjih) in jih preprečevati. Cilji lovskih organizacij sledijo zakonodaji in se distancirajo od teh oblik lova, ki jih zagovarjajo vedno bolj le posamezniki.

Usmerjanje gospodarjenja z divjadjo in njihovim življenjskim okoljem v Sloveniji je institucionalno in normativno dobro urejeno. Desetletne in letne lovskogojitvene načrte lovskogojitvenih območij izdeluje javna gozdarska služba, s čimer je zagotovljena celovitost usmerjanja z gozdnimi ekosistemi. Lovskogospodarske načrte za posamezna lovišča pa na njihovi podlagi izdelujejo lovske organizacije (lovske družine in gojitvena lovišča). Uresničevanje načrtov nadzoruje inšpekcija. Šibka plat celotnega sistema upravljanja s populacijami divjadi je nezadovoljivo uresničevanje načrtov.

Lovstvo uspešno sodeluje pri ohranjanju biotske raznovrstnosti predvsem z zavzemanjem za ohranjanje habitatov živalskih vrst, z zmanjševanjem števila lovni vrst, uvajanjem območij brez lova in krajšanjem obdobja

- To ensure the complete protection of forest reserves (legal protection and purchase, if necessary).
- To ensure the complete protection of forests in the IUCN Protected Area Categories I and II.
- To surrender the ecologically vulnerable stands, growing in extreme conditions, to the natural development (except for the urgent sustainable restoration measures).
- To designate small forest areas (eco-cells) and individual trees in order to conserve and increase biodiversity of forests.
- To conserve, establish and create forest edges and tree groups, individual trees, riparian forest vegetation, wind shelterbelts and tree boundaries outside forests.
- To apply the ecologically sound technologies in tree felling (skidding of wood) and to only build the absolutely necessary and environment-friendly forest roads.
- To prevent the exploitation of forests which would threaten their sustainable development and functions.
- To take into account forest functions, in particular ecological, in the planning and development of activities in areas defined in the forest management plans.
- To establish, within the framework of the Slovene forest gene bank, a network of forest gene reserves based on expert criteria and on appropriate characterisation of and documentation on indigenous populations of forest genetic resources.

3.3 Hunting

The populations of wild animals and their living environment (habitat) are constituent parts of an integral whole and must be dealt with in an integral manner. The categories of use of forests and agricultural land, the settlement patterns, the transport connections and the form and extent of tourism and outdoor activities to a large extent determine the structure of game habitats. In Slovenia these habitats are characterised by a large share of mountain forests and forests of the high karst regions which provide a suitable living environment for populations of game which is rare elsewhere in Europe. However, the conservation of game must be taken into account by all activities affecting the environment in the area.

The inadequately planned and implemented activities affecting populations (the taking of the most vital part of population from the wild) inevitably lead to the genetic depletion of a population, the alterations in its gender and age structure and the increased impacts on habitats. The planned measures must be founded on the systematic monitoring of the status of game populations and trends of their development, their habitats and mutual relations. The indirect effects of the hunting of game species (non-selective hunting with regard to the species, disturbing of endangered species by hunting in specific areas) have to be taken into account in the planning of measures or even prevented. The objectives of the hunting organisations are not in contradiction with the relevant legislation. Non-selective hunting is merely a preference of certain individuals.

In Slovenia, the directions on the management of game and its living environment is well regulated at the institutional and normative level. The ten-year and annual plans for game breeding and hunting in specific hunting

Z usmerjanjem razvoja populacij visoke divjadi (na sliki divje svinje *Sus scrofa*) je možno ohranjati ugodno stanje habitatnih tipov.

It is possible to maintain habitat types at a favourable status by the management of populations of large game species (here, wild boar *Sus scrofa*).



and breeding areas are drawn up by the public forestry services. In this way the integrity of forest ecosystems is guaranteed. The hunting management plans for specific hunting grounds are drawn up by the hunting organisations on the basis of the game breeding and management plans. The implementation of the plans is controlled by inspection bodies. Nevertheless, the weak link in the system of game population management is the insufficient enforcement of the plans.

Hunting organisations contribute to the conservation of biodiversity through the conservation of habitats of animal species, the reduction in the number of hunted species, the designation of non-hunting areas and the limitation of hunting periods for particular species. When such activities are carried out which interfere with the populations of animal species, the findings of ecology are taken into account and gradually enforced. Such approach successfully supports the conservation of biodiversity.

OBJECTIVE

- To maintain species and habitat types at a favourable status and, where necessary, improve their status by directing the development of game populations.

DIRECTIONS

- To address the issues of game and its living environment in an integral manner.
- To draw up game-breeding and hunting plans with regard to the status of game, its habitats, the load-bearing capacity of the environment and the ecological processes in ecosystems, in compliance with the sustainable use and development of forests.
- To incorporate the nature protection objectives into the game breeding and hunting plans and to guarantee their harmonisation with the directions for the conservation of endangered species and threatened habitat types.
- To promote the participation of public forestry services and hunting organisations in the spatial planning process and the implementation of activities in rural areas, in particular during the construction of infrastructure, in order to ensure the conservation of habitats of game and other wild animals.
- To draw up directions for all activities, in particular in

individualnega lova. Pri poseganju v populacije živalskih vrst se postopoma upoštevajo in uveljavljajo dognanja iz ekologije. Takšen pristop uspešno podpira ohranjanje biotske raznovrstnosti.

CILJ

- Ohranjanje ugodnega stanja vrst in habitatnih tipov, in kjer je to potrebno izboljševanje stanja, z usmerjanjem razvoja populacij divjadi.

USMERITVE

- Ohranitev celovitega obravnavanja divjadi in njenega življenjskega okolja.
- Pripravljanje lovsko-gojitvenih načrtov glede na stanje divjadi in njenih habitatov, glede na naravno nosilno kapaciteto okolja ter ob upoštevanju ekoloških procesov v ekosistemih in v skladu s trajnostno rabo in razvojem gozdov.
- Vključitev naravovarstvenih ciljev in lovsko-gojitvene načrte in zagotavljanje njihove usklajenosti s smernicami ohranjanja ogroženih vrst in habitatnih tipov.
- Aktivnejša vključitev javne gozdarske službe in lovskih organizacij v prostorsko načrtovanje in izvedbo posegov v neurbani prostor, še posebno ob gradnji infrastrukturnih objektov, za zagotavljanje ohranjanja habitatov divjadi in drugih prostoživečih živali.
- Aktivnejše usmerjanje vseh dejavnosti, še posebej na področju kmetijstva, gozdarstva in upravljanja z vodami, za zagotavljanje ohranjanja habitatov divjadi in drugih prostoživečih živali.
- Usmerjati opravljanje za divjad motečih aktivnosti v primerna letna obdobja.
- Izvajanje lovskogojitvenih ukrepov za ohranitev in izboljšanje habitatov divjadi in drugih prostoživečih vrst, pri tem pa postopno zmanjševanje intenzivnosti krmljenja divjadi.
- Postopno prenehanje doseljevanja vseh lovni vrst divjadi v naravo na ekološko pomembnih območjih in upoštevanje lokalnega genskega izvora pri doseljevanju divjadi na drugih območjih.
- Spodbujati zmanjševanje umetne reje lovni vrst ptic za športni lov.
- Zmanjševanje obor, postavljenih za namene lova.

Ukvarjanje s športnim ribolovom pomeni mnogim ljudem ohranjanje stika z naravo, vendar je v neustreznih oblikah vzrok ogroženosti številnih vrst.

Many people maintain their contact with nature through angling. However, its inappropriate forms constitute a threat to many species.



3.4 Ribištvo

V preteklosti so antropogeni vplivi na vodne sisteme (protipoplavni ukrepi, hidroelektrarne in jezovi, spuščanje odpadnih voda, namakanje in izsuševanje) pogosto močno negativno vplivali na vodne organizme, tudi ribe. Od 81 vrst domorodnih sladkovodnih rib in piškurjev jih je 64 % ogroženih, poleg tega je v slovenske vode naseljenih še 14 tujerodnih vrst rib. Od najmanj 110 vrst morskih rib stalnic jih je 7 % ogroženih. Komerzialno ribištvo za zadovoljevanje prehrambnih potreb je v Sloveniji prisotno v morskih vodah in v manjši meri v notranjosti države, prispevek komercialnega ribolova k slovenski ekonomiji je minimalen. Nekateri načini morskega ribolova zmanjšujejo biotsko raznovrstnost v slovenskem morju. Športni ribolov je ekonomsko mnogo pomembnejši in ima v nasprotju s komercialnim mnogo večji vpliv na biotsko raznovrstnost. Selektivno odstranjevanje vrst rib iz ekosistema in znotraj vrst najbolj vitalne osebe. Vlaganje rib in urejanje površin za športni ribolov močno vpliva na naravne populacije in na spreminjanje sestave ekosistemov. Premalo je promocije pomena in ohranjanja naravnega drstenja in izkoriščanja le naravnega prirastka rib. Posebno zaradi majhnega deleža vodnih površin v Sloveniji športni ribolov močno učinkuje na zmanjšanje biotske raznovrstnosti, skupaj s širjenjem tujerodnih vrst rib ogroža številne domorodne vrste rastlin in živali ter ruši naravno ravnotežje ekosistemov.

CILJA

- Vzpostavitev upravljanja sladkovodnih ribjih populacij na podlagi strokovno in pregledno določenih velikosti populacij rib, ob upoštevanju ekoloških procesov v vodnih ekosistemih, naravne nosilne kapacitete okolja in naravovarstvenih smernic, tako da se ohranjanja biotska raznovrstnost.
- Zagotovitev trajnostne rabe biotskih virov, ki so predmet morskega ribolova in nabiralništva morskih organizmov, in ohranjanje biotske raznovrstnosti v morskih in obalnih habitatnih tipih.

USMERITVE

- Pripravljanje ribiško-gojitvenih načrtov na podlagi upoštevanja številčnosti in vrstne sestave ribjih populacij v okviru mednarodno uveljavljenih metodologij.

the field of agriculture, forestry and water management, to conserve the habitats of game and other wild animals.

- To perform activities at a time of year when game is not overly disturbed.
- To implement the game breeding and hunting measures to conserve and improve the habitats of game and other wild animals, while gradually lessening the intensity of game feeding.
- To gradually cease the repopulation of hunted species in the ecologically important areas and to take into account the local gene origin in the repopulation of game in other areas.
- To reduce the breeding of hunted bird species for the purpose of sport hunting.
- To reduce the size of pens set up for hunting purposes.

3.4 Fisheries

In the past anthropogenic activities (anti-flood measures, hydro electric power plants and dams, the discharge of waste waters, irrigation and drainage) adversely affected water ecosystems and aquatic organisms, including fish. Of 81 species of indigenous freshwater fish and lampreys, 64 % are endangered. In addition, 14 non-indigenous fish species have been introduced into Slovene waters. In total 7 % of at least 110 non-migratory marine fish species are endangered. In Slovenia the industrial fishing for food is carried out at the sea and, to a lesser extent, in inland waters. However, the contribution of industrial fishing to the economy is minimum. Certain forms of marine fishing reduce biodiversity of the Slovene sea. Economically much more important is the recreational fishing. Contrary to the industrial fishing its impact on biodiversity is much more significant. It selectively removes fish species from an ecosystem and the most vital specimens within a specific species. The stocking of fish and the management of areas intended for recreational fishing affect natural populations and the structure of ecosystems changes. Natural spawning, and its conservation, and the exploitation of the natural fish stock are not promoted enough. Due to the rather limited share of water areas in Slovenia the recreational fishing and the introduction of non-indigenous fish species significantly reduce biodiversity, endanger numerous

indigenous plant and animal species and destroy the natural balance of ecosystems.

OBJECTIVES

- To manage freshwater fish populations; in order to conserve biodiversity the management plans must be founded on the technically well defined sizes of fish populations, while taking into account the ecological processes in water ecosystems, the natural load-bearing capacity of the environment and the nature protection guidelines.
- To ensure the sustainable use of biotic resources, subject to marine fishing and harvesting of marine organisms, and to conserve biodiversity in the marine and coastal habitat types.

DIRECTIONS

- To draw up fish-breeding plans on the basis of the abundance and species composition of fish populations within the framework of the internationally enforced methodologies.
- To implement and promote projects for the conservation of biodiversity by recreational fishing which does not threaten endangered species.
- To use in a sustainable manner species which are subject to marine fishing and harvesting of marine organisms while reducing the bycatch and the negative impacts of fishing on the benthic, pelagic and other communities of wild animals and plants.
- To gradually cease stocking all fish species into open waters in the ecologically important areas and to take into account the local gene origin in the stocking of indigenous fish species.
- To fish in such a way that the natural age structure of animal populations is not altered and to stop the fishing of indigenous species by electrifying devices.
- To physically enclose and separate the commercial fish farms from the natural watercourses in order to prevent the escaping of fish and the organic pollution.
- To promote the breeding of indigenous fish species in commercial fish farms.

3.5 Water management

Water management (the protection and management of waters, decision-making concerning their use) is of extreme importance for the conservation of biodiversity. In the past

- Izvajanje in promocija projektov ohranjanja biotske raznovrstnosti s športnim ribolovom, prijaznim do ogroženih vrst.
- Trajnostna raba vrst, ki so predmet morskega ribolova in nabiralništva morskih organizmov, ob hkratnem zmanjševanju stranskega ulova ter negativnih vplivov ribolova na bentoške, pelagične in druge skupnosti prostoživečih živali in rastlin.
- Postopno prenehanje vlaganja vseh vrst rib v odprte vode na ekološko pomembnih območjih in še večje upoštevanje lokalnega genskega izvora pri vlaganju domorodnih vrst rib.
- Izvajanje ribolova na način, ki ne spremeni naravne starostne strukture živalskih populacij, in prenehanje izlavljanja domorodnih vrst rib z elektrolovom.
- Primerno fizično zavarovanje komercialnih ribogojnic in ločitev od naravnih vodotokov, tudi za preprečevanje pobega rib in organskega onesnaževanja.
- V komercialnih ribogojnicah spodbujanje gojenja domorodnih vrst rib.

3.5 Upravljanje z vodami

Upravljanje z vodami (zajema njihovo varstvo, urejanje in odločanje o rabi) je zelo pomembno za ohranjanje biotske raznovrstnosti. Neprimerni načini urejanja voda v preteklosti so močno vplivali na zmanjševanje biotske raznovrstnosti vodnih in na vode vezanih habitatnih tipov. Največje zmanjševanje so povzročili posegi pri urejanju voda, ki so spremenili ali zaustavili rečno dinamiko, s čimer je izginilo mnogo obrežnih življenjskih prostorov ter nanje vezanih živalskih in rastlinskih vrst. Odvzemanje čezmernih količin vode in prod, predvsem v obdobjih in na območjih, ki so kritična za preživetje vrst, je dodatno prispevalo k zmanjševanju populacij ogroženih vrst.

Cilji upravljanja z vodami v Sloveniji so sedaj doseganje ugodnega stanja voda in drugih z njimi povezanih ekosistemov, zagotavljanje varstva pred škodljivim delovanjem voda, uravnavanje in ohranjanje vodnih količin ter spodbujanje trajnostne rabe voda ob upoštevanju dolgoročnega varstva razpoložljivih vodnih virov in njihove kakovosti. Doseganje teh ciljev je združljivo z ohranjanjem območij z visoko biotsko raznovrstnostjo, vendar pa je za ohranjanje

Ohranjanje biotske raznovrstnosti in zagotavljanje varstva pred škodljivim delovanjem voda je možno z reaktivacijo potencialnih in vzpostavitev novih retencijskih površin (na sliki logi ob Dravi).

The reactivation of potential retention areas and the establishment of new ones (here, the foot-flooded forest at the river Drava) facilitate the conservation of biodiversity and ensure protection against adverse impacts of water.



visoke raznovrstnosti na teh območjih praviloma treba storiti še nekaj več od nujno potrebnih ukrepov za doseganje ciljev upravljanja z vodami.

CILJA

- Urejanje in varovanje voda na način, ki ohranja biotsko raznovrstnost ter zagotovitev trajnostne rabe voda.
- Celovito upravljanje voda, ki upošteva njihovo dinamiko in naravne procese ter medsebojno povezanost in soodvisnost pripadajočih habitatnih tipov.

USMERITVE

- Vključevanje ciljev ohranjanja biotske raznovrstnosti v vse vidike upravljanja z vodami.
- Zagotavljanje do narave prijaznega urejanja vodotokov ob njihovem upoštevanju kot celovitih sistemov in na način, ki zagotavlja ohranjanje ali vzpostavitev naravne dinamike voda. S tem sta povezani ohranitev in vzpostavitev obrežnega pasu in poplavnega prostora, ki so življenjski prostor ali del življenjskega prostora rastlinskih in živalskih vrst, zlasti ogroženih.
- Ohranjanje oziroma kjer je mogoče, vnovično vzpostavljajte zvezne povezave voda za zagotavljanje vodnih selitvenih poti živali.
- Izvajanje posegov v času, ki se ne ujema z najbolj občutljivimi obdobji razmnoževanja živali in rastlin.
- Vzdrževanje voda in vodnogospodarske infrastrukture - vključno s čiščenjem naplavin in odstranjevanjem rastlinja - na način, ki ne zmanjšuje biotske raznovrstnosti.
- Odvzemanje voda v količinah in na način, ki ne zmanjšuje biotske raznovrstnosti.
- Zagotovitev ciljev upravljanja z vodami predvsem s reaktivacijo potencialnih in vzpostavitev novih retencijskih površin.
- Na ekološko pomembnih območjih zagotavljanje zadostnih količin oziroma pretoka vode za ohranjanje biotske raznovrstnosti, posebno v kritičnih obdobjih.
- Zagotavljanje poenotnega upravljanja z vodnogospodarskimi objekti.

3.6 Industrija in energetika

Strategija gospodarskega razvoja Slovenije temelji tudi na predpostavki, da se mora za večjo konkurenčnost zniževati okoljska intenzivnost gospodarske rasti in zviševati okoljska učinkovitost podjetij. Bistvo izboljševanja okoljske učinkovitosti slovenskih podjetij mora biti zniževanje okoljske intenzivnosti dosedanjega razvoja. Energetska intenzivnost je dvakrat višja od povprečne v Evropski uniji, delež izvoza, ki temelji na naravnih virih, je večji od tistega, ki bi si ga Slovenija lahko privoščila, saj nima pomembnejših zalog ekonomsko zanimivih mineralnih in energetskih surovin. Biotska raznovrstnost (vrste in genska informacija, ki jo nosijo) je neobnovljiv naravni vir, ki ga je treba ohranjati in trajnostno izkoriščati njegov potencial. Mnoge njene sestavine se namreč uporabljajo kot surovine v industriji. Uveljavljanje visokih in čistejših tehnologij dolgoročno pripomore k ohranjanju biotske raznovrstnosti.

Dejavnosti trajnostne rabe sestavin in trajnostnega razvoja
Sector involved in the sustainable use of biodiversity components and sustainable development

3

the unsuitable water management methods significantly affected the reduction of biodiversity in the aquatic and water-related habitats. The loss of biodiversity was mostly provoked by water management activities that altered the river dynamics and in some cases even stopped the flow, causing the loss of many riparian habitats and their plant and animal species. The abstraction of excessive amounts of water and gravel, in particular in areas and during periods vital for the survival of species, contributed to the reduction of populations of endangered species.

In Slovenia the objectives of water management are to attain the favourable status of waters and water-related ecosystems; to ensure protection against the adverse impacts of water; to regulate and conserve the available amounts of water; to promote the sustainable use of water, while taking into account the long-term protection of the available water resources and their quality. The fulfilment of these objectives is closely linked to the conservation of areas of high biodiversity but beside the indispensable water management measures, additional action will be needed for the conservation of such areas.

OBJECTIVES

- To manage and protect waters in a biodiversity-conserving manner and to ensure sustainable use.
- To manage waters in an integral manner taking into account the natural processes and the interconnectedness and mutual dependency of habitat types.

DIRECTIONS

- To integrate biodiversity conservation objectives into all aspects of water management.
- To ensure the nature-friendly management of watercourses as integral systems and to manage them in a way which guarantees the conservation or restoration of the natural dynamics of waters; to this end, the main tasks are the conservation and restoration of the embankment area and the flood zone functioning as a habitat, or part of it, of many plant and animal species, in particular endangered ones.
- To conserve and, where possible, restore the passages between particular water bodies in order to ensure migration routes for animals.
- To carry out activities at a time of year which does not coincide with the breeding periods of plants and animals.
- To manage waters and water infrastructure network, including the removal of deposits and vegetation, in a manner that does not reduce biodiversity.
- To remove gravel in the amount and manner that does not reduce biodiversity.
- To guarantee the fulfilment of water management objectives through the reactivation of potential retention zones and the creation of new ones.
- To guarantee, in ecologically important areas, sufficient amount of water and regular flow rate to conserve biodiversity, in particular in dry season.
- To ensure uniform management of water management facilities.

3.6 Industry and energy sector

The Strategy for the Economic Development of Slovenia is founded on the presumption that, in order to achieve

K ohranjanju biotske raznovrstnosti prispeva posredno, a zelo pomembno, uvajanje čistejših in energetske učinkovitejših industrijskih tehnologij, kot je npr. kotlovnica, ki pridobiva energijo iz industrijskih lesnih odpadkov.

The introduction of cleaner and energy-efficient industrial techniques, such as district heating plants firing industrial wood waste, indirectly, but significantly, contribute to the conservation of biodiversity.



the higher level of competitiveness, the environmental intensity of economic growth has to reduce and the environmental efficiency of companies has to grow. The basic prerequisite for the improved environmental efficiency of Slovene companies is the reduction of the environmental intensity of the current economic development. The energy intensity is twice the average of the EU, and the share of export based on natural resources is too large since Slovenia does not have important deposits of mineral and energy raw materials. Biodiversity (species and their genetic information) is a non-renewable natural resource that must be conserved, and its potential exploited in a sustainable manner, since many biodiversity components are used as raw materials in industry. In a long-term, the enforcement of high and clean technologies contributes to the conservation of biodiversity.

OBJECTIVES

- To ensure the competitive position of industry through sustainable development which conserves biodiversity.
- To guarantee a reliable and sufficient long-term energy supply which is environment-friendly and conserves biodiversity, and to encourage efficient energy use.

DIRECTIONS

- To use energy and use natural resources more efficiently and to take into account the energy intensity trends in energy supply.
- To reduce greenhouse gas emissions.
- To promote investments in clean industrial technologies and reduce the emissions of harmful substances.
- To promote industrial activities in areas where a suitable infrastructure is in place, where it is possible to prevent environmental catastrophes, and where biodiversity is not threatened.
- To avoid the construction of new energy supply facilities in the ecologically important areas or areas which are part of the ecological network.

3.7 Transport

In the last decade the road transport in Slovenia has rapidly increased. The growth can be ascribed to the increase in domestic transport as well as to transit arising from the geographical position of Slovenia and the latest political changes. The state itself must actively address

CILJA

- Zagotovitev konkurenčnosti industrije s trajnostnim razvojem, ki ohranja tudi biotsko raznovrstnost.
- Zagotovitev dolgoročno zanesljive in zadostne energetske oskrbe, ki je sprejemljiva za okolje in ohranja biotsko raznovrstnost, ter učinkovite rabe energije.

USMERITVE

- Učinkovitejša raba energije, izraba naravnih virov in upoštevanje trendov energetske intenzivnosti pri oskrbi z energijo.
- Zmanjševanje emisij toplogrednih plinov.
- Spodbujanje vlaganj v uvajanje čistih industrijskih tehnologij in zmanjševanje emisij škodljivih snovi.
- Širjenje industrijskih dejavnosti na območja, kjer je urejena ustrezna infrastruktura in zagotovljena možnost preprečevanja okoljskih katastrof, in kjer ni ogrožanja biotske raznovrstnosti.
- Izogibanje gradnji novih energetskih objektov na ekološko pomembnih območjih oziroma območjih, ki so del ekološkega omrežja.

3.7 Promet

Cestni promet v Sloveniji je v zadnjem desetletju skokovito naraščal. Povečal se je notranji promet, zaradi geografske lege Slovenije in političnih sprememb pa tudi tranzitni promet. Država mora sama aktivno odpravljati težave s transportom v okviru mednarodnega prizadevanja za načine prevoza, ki čim manj obremenjujejo okolje in naravo. Promet negativno vpliva na stanje biotske raznovrstnosti s fragmentacijo habitatov, zavzemanjem obsežnega prostora za prometno infrastrukturo, onesnaževanjem zraka, voda in tal ter povečanim hrupom.

Navkljub nekaterim ukrepom za izboljšanje stanja (uvajanje čistejših oblik transporta, razvoj konkurenčne železniške infrastrukture in razvoj kolesarskega omrežja) sta za to ključnega pomena prehod prebivalstva na okolju in naravi manj škodljive oblike prevoza ter zmanjševanje prometa.

Mobilnost ljudi zagotavljajo tudi okoljsko sprejemljivejše oblike prometa.

The environment friendly forms of transport ensure the mobility of people.



CILJ

- Zagotovitev mobilnosti ljudi in tovora, ki ohranja biotsko raznovrstnost.

USMERITVE

- Preusmerjanje prometa na okoljsko sprejemljivejše in ne dovolj izkoriščene zmogljivosti (npr. železniški promet).
- Obvladovanje onesnaženja zaradi prometa z izogibanjem nepotrebemu ali odvečnemu prometu ter vzpostavljanjem strukturnega razvoja v industriji in urbanizmu, ki bo transportno manj intenziven.
- Tehnična optimizacija vozil in goriv z namenom zmanjševati emisije in porabo energije, razvijati nove pogonske načine in povečati zbiranje in recikliranje odsluženih vozil.
- Vključevanje načel ohranjanja biotske raznovrstnosti v prometno politiko in razvoj infrastrukture, kar pomeni tudi izogibanje območjem visoke naravovarstvene vrednosti, kolikor je le mogoče.
- Preprečevanje ali omejevanje negativnih vplivov gradnje infrastrukture in infrastrukturnih dejavnosti na krajine in ekosisteme, ter boljše izkoriščanje obstoječe infrastrukture.
- Ustavljanje drobljenja ekosistemov zaradi gradnje novih infrastrukturnih objektov in zagotavljanje ustreznih prehodov za živalske vrste.

3.8 Turizem

Turizem je pomembna in razvijajoča se gospodarska panoga in pomemben vir prihodka za Slovenijo. Lahko bistveno prispeva k ohranjanju biotske raznovrstnosti, ker jo pomaga ekonomsko ovrednotiti kot dobrino, ki sicer nima tržne vrednosti.

Biotska raznovrstnost daje visok simbolni pomen in višjo ceno proizvodom, ki jih turizem trži (tudi kot izvozno blago) na domačih tleh z neposredno prodajo turistom iz tujine (npr. prenočišča, kakovostna domača prehrana, zunajpenzijska poraba). Za Slovenijo pomeni razvojno priložnost, ker ima še številne razmeroma dobro ohranjene ekosisteme in omogoča doživljanje rastlinskih in živalskih vrst. Slednje je pomembna prvina trženja pri turistični ponudbi podeželja, ki jo išče segment kupcev z visoko razvito zavestjo o pomenu zdravega okolja in nujnosti njegovega ohranjanja.

the issues of transport within the framework of international efforts for such modes of transport that do not excessively burden the environment and nature. The negative impacts of transport on the status of biodiversity are evident from the fragmentation of habitats, occupation of large areas by transport infrastructure, pollution of air, water and soil, and noise pollution.

Despite specific measures for the improvement of the status (the introduction of cleaner transport means, the development of railway infrastructure and a network of cycling trails), the situation is not likely to change unless people start using more environment-friendly transport means and unless the overall transport decreases.

OBJECTIVE

- To guarantee such mobility of people and cargo which conserves biodiversity.

DIRECTIONS

- To transfer transport to the more environmentally acceptable modes which have not been exploited enough (e.g. railway transport).
- To control pollution caused by transport by avoiding the unnecessary or redundant transport and by less transport-intensive development in the industrial and urban sector.
- To technically improve vehicles and fuels to reduce emissions and energy consumption; to develop new drive modes and promote the collection and recycling of used vehicles.
- To incorporate biodiversity conservation principles into the transport policy and the development of infrastructure, i.e. to avoid as much as possible the areas of high nature protection value.
- To prevent or limit the negative impacts of the construction of infrastructure and the relevant activities on landscape and ecosystems and to optimally use the existing infrastructure.
- To stop the fragmentation of ecosystems caused by the construction of new infrastructure facilities and to guarantee suitable passages for animals.

3.8 Tourism

Tourism is an important and developing economic sector which generates a considerable share of Slovenia's GDP.

Its contribution to the conservation of biodiversity is significant since it assists in the economic evaluation of biodiversity as an asset which, in view of other sectors, does not have a market value.

Biodiversity has a high symbolic value and is an element which raises the price of the marketed tourist products (including export goods) directly offered to foreign tourists in the state itself (tourist residences, high quality domestic food, extra spending). Slovenia has many well-conserved ecosystems and biodiversity is a feature that offers an opportunity for development since it allows tourists to enjoy the variety of plant and animal species. The latter is an important component in the tourist marketing of the countryside, particularly popular with tourists who are aware of the importance of the healthy environment and its conservation.

Such areas are relatively easily accessible. Unfortunately, the infrastructure does not permit adequate tourist management that would direct tourists to areas less vulnerable to environmental pressures (information centres, eco-museums, various trails) and ensure harmless visits of valuable natural features. As soon as such infrastructure is in place it starts to function as an instrument for raising the public awareness about the importance of biodiversity.

The inappropriate forms of tourism can contribute considerably to the depletion of biodiversity. The main problem is the intensity of the activity (mass tourism).

Tourism is an economic sector determined by the accessibility and availability of the healthy, natural environment. It must follow the principles of sustainable development. If these principles are not taken into account, the conservation of biodiversity is not guaranteed and the exploitation of non-renewable resources continues at an undiminished rate. The principles of tourist development must include the conservation of diversity, the characteristics and beauties of nature and landscape, and the development of suitable recreation areas in compliance with the nature protection principles.

Območja s temi danostmi so sorazmerno dostopna, pre-malo pa je razvita infrastruktura, ki bi obiskovalcem primerno ponudila naravne vrednote in jih hkrati usmerjala na dele območij, ki prenesejo večje turistične obremenitve (npr. informacijski centri, ekomuzeji, učne in doživljajske poti). S takšno infrastrukturno ureditvijo je možno tudi uspešno ozaveščati ljudi o pomenu biotske raznovrstnosti.

Neustrezne oblike turizma lahko bistveno pripomorejo k zmanjšanju biotske raznovrstnosti, praviloma so povezane s preveliko intenzivnostjo (ti. množični turizem).

Turizem je močno odvisen od zdravega, naravnega okolja, zato mora nujno slediti načelom trajnostnega razvoja. Brez tega ni mogoče zagotoviti ohranjanja biotske raznovrstnosti ali zmanjšati porabe neobnovljivih virov. Načela turističnega razvoja morajo vključevati ohranjanje pestrosti, značilnosti in lepote narave in krajine ter razvoj ustreznih rekreacijskih območij skladno z naravovarstvenimi načeli.

CILJ

- Oblikovanje bolj uravnotežene in trajnostno usmerjene turistične ponudbe z vpletanjem naravnih znamenitosti vanjo ter upoštevanjem potenciala vse države in ogroženosti posameznih znamenitosti.

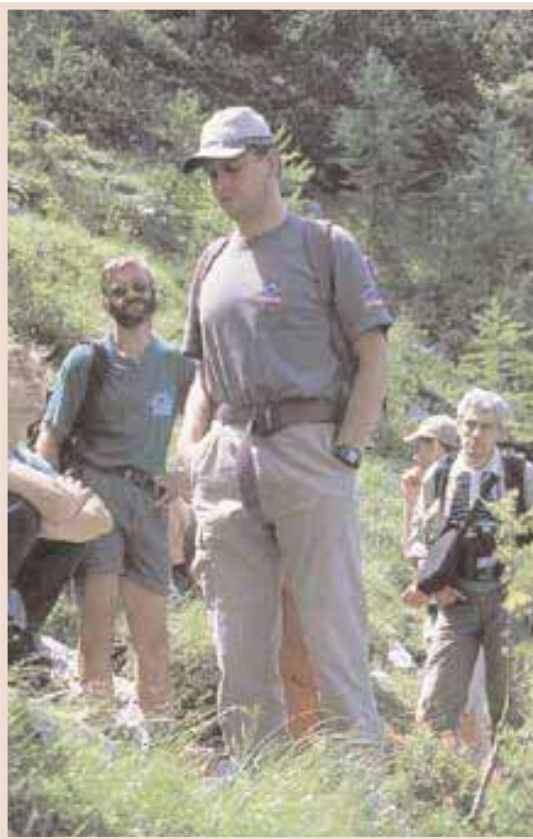
USMERITVE

- S ponujanjem vrednot biotske raznovrstnosti oblikovanje novih turističnih produktov in storitev, ki povečujejo prihodek in število delovnih mest v turizmu.
- Zmanjšati obremenitev okolja, ki jo lahko povzroča razvoj turizma, s spodbujanjem okoljsko sprejemljivih dejavnosti, primernih za lokalno (v geografskem pomenu) turistično gospodarstvo.
- Razvoj oziroma izgradnja zavarovanemu območju primerne turistične in rekreacijske infrastrukture, še posebno v in ob narodnih, regijskih in krajinskih parkih, z namenom usmerjati dostop javnosti do območij (tudi rekreacijskih) v zavarovanih območjih.
- Uvedba zoniranja v zavarovanih območjih za usmerjanje dostopa javnosti z določitvijo več kategorij območij: od predelov, kjer velja prepoved obiska, do predelov, kjer je zaželeno razvijati ustrezno turistično infrastrukturo.

Območja z ohranjeno biotsko raznovrstnostjo so pomemben del turistične ponudbe, zato jih ohranjamo tudi z ustreznim usmerjanjem obiskovalcev s pomočjo parkovne infrastrukture in nadzornikov (na slikah informacijski center Triglavskega narodnega parka v Trenti in nadzornik z oznakami pri vodstvu skupine obiskovalcev).

Areas with conserved biodiversity constitute an important part of tourist offer; their value can be conserved if appropriate visitor management is supported by park facilities and rangers (here, the Triglav National Park Information Centre in Trenta and a ranger wearing a badge, with a group of visitors).





- Spodbujanje do okolja prijazne in uravnotežene rasti turizma in do narave prijaznih oblik tovrstne gospodarske rabe prostora ob zmanjševanju pritiska na biotsko raznovrstnost.
- Prostorsko usmerjanje in časovno usklajevanje dejavnosti za preprečevanje motenja in uničevanja živali in rastlin.
- Ozaveščanje turističnih delavcev in turistov o pomenu biotske raznovrstnosti za kakovostno turistično ponudbo (npr. tekmovanja za naravovarstvene ali okoljevarstvene nagrade).

OBJECTIVE

- To formulate a balanced and sustainable tourist offer by incorporating into it the outstanding natural features and by taking into account the potential of the entire state and the endangerment of particular outstanding features.

DIRECTIONS

- To include biodiversity components in the tourist offer and thus develop new tourist products and services that increase the profit and create new jobs.
- To reduce the tourism induced burdening of the environment by promoting the environmentally acceptable activities suitable for the local (geographically speaking) tourist economy.
- To develop and construct tourist and recreational infrastructure suitable for a specific protected area, in particular in and near the national, regional and landscape parks, in order to direct the access of the public to the areas within the protected area.
- To introduce zoning in protected areas in order to direct the access of the public by classifying areas into several categories, from areas where access is prohibited to areas where the construction of tourist infrastructure is welcome.
- To promote the environment-friendly and balanced growth of tourism and other activities while simultaneously reduce the pressure on biodiversity.
- To coordinate the spatial distribution and the timing of activities in order to prevent the disturbing of animals and plants, and their destruction.
- To raise awareness of the employees of tourist facilities and tourists themselves about the importance of biodiversity for high quality tourist offer (competitions for nature protection or environmental protection awards).

4

PODPORNE DEJAVNOSTI OHRANJANJU BIOTSKE RAZNOVRSTNOSTI IN TRAJNOSTNI RABI



ACTIVITIES SUPPORTING BIODIVERSITY
CONSERVATION AND SUSTAINABLE USE

4.1 Mehanizmi ukrepanja za ohranjanje biotske raznovrstnosti

Država ima horizontalno (na vsem svojem območju) na voljo ekonomske, zakonodajne in prostorsko-načrtovalske mehanizme za ohranjanje biotske raznovrstnosti, ki so lahko omejevalni ali spodbujevalni. Najbolj učinkovita je kombinirana uporaba mehanizmov, ki omejujejo nezaželene oblike rabe prostora oziroma poseganja vanj v okviru neke dejavnosti, ter tistih, ki spodbujajo pozitivne oblike rabe oziroma poseganja v okviru iste dejavnosti. Ambicija ekonomske politike varstva okolja, vključno z ohranjanjem biotske raznovrstnosti je uskladitev javnofinančnih izdatkov oz. zmanjšanje teh izdatkov za netrajnostne programe ob sočasnem povečanju izdatkov za (nove) programe trajnostnega razvoja. Regionalno načrtovanje, usmerjanje in spodbujanje razvoja je v državah Evropske unije pristop, ki na večjem geografskem območju lahko poveže horizontalne ukrepe in jih prilagodi. Pri učinkoviti in pametni uporabi prej naštetih mehanizmov in posledično pri ohranjanju biotske raznovrstnosti ima pomembno vlogo zagotavljanje javnih služb. Tega lahko zagotavlja država neposredno z vodenjem javnih zavodov ali s prenašanjem upravljanja teh mehanizmov na zasebne ustanove preko koncesij (npr. za rabo naravnih vrednot, ki so v lasti lokalne skupnosti ali države ter za upravljanje parkov in zavarovanih območij).

4.1.1 Zakonodajni in ekonomski mehanizmi

V slovenski zakonodaji so številni ustrezni zakonodajni mehanizmi že vzpostavljeni, s podzakonskimi akti pa praviloma še ne dovolj natančno opredeljeni. Ti mehanizmi bolj učinkovito prispevajo k doseganju ciljev, če so podprti z ustreznimi ekonomskimi mehanizmi. Ekonomski mehanizmi, ki prispevajo k ohranjanju okolja in so navedeni v NPVO, lahko prispevajo tudi k ohranjanju biotske raznovrstnosti, če so pri njihovem uresničevanju upoštewane posebnosti ohranjanja biotske raznovrstnosti. Tuje izkušnje učijo, da so za njihovo dokončno postavitev in uveljavitev (tudi javno financiranje) pomembni dokončna vzpostavitev trga, določitev jasnih lastninskih razmerij, opredelitev naravovarstvenega interesa pri državni/občinski lastnini in opredelitev javnega naravovarstvenega interesa pri zasebni lastnini.

Najpomembnejši spodbudi za ohranjanje biotske raznovrstnosti sta javno financiranje in davčne olajšave za storitve, ki jo ohranjajo, še posebno, če se hkrati zmanjšujejo nasprotne pomoči, ki zmanjšujejo biotsko raznovrstnost. Oblikovanje takšnih ekonomskih mehanizmov mora zagotoviti prerazporeditev javnofinančnih izdatkov v skladu s predvsem prej navedenim ter uveljavitev tržnih mehanizmov trajnostno naravnega upravljanja z naravnimi dobrinami v parkih in zaščitanih območjih z uveljavitvijo koncesij za njihovo rabo (voda, gramoz, gozdovi).

4.1 Biodiversity conservation mechanisms

At the horizontal level (at its entire area) the state has at its disposal the economic, legislative and spatial planning mechanisms for the conservation of biodiversity. These mechanisms may be either restrictive or promoting. The most efficient is the combination that restricts the unfavourable forms of land use within the framework of an activity affecting the environment on one hand and promotes the favourable land use within the framework of the same activity on the other. The ambition of the economically oriented environmental protection policy, including the conservation of biodiversity, is to coordinate and reduce the general government expenditure intended for non-sustainable programmes while simultaneously increase the expenditure for (new) sustainable development programmes. In the EU member states the directing and promoting of regional development is an approach that creates a link between the horizontal measures and adjusts them to the conditions in a large, geographically defined area. The provision of adequate public services plays an important role in the efficient and sound application of the mentioned mechanisms and, consequently, in the conservation of biodiversity. Public services may be ensured through the state-run public institutes or through the transfer of management to private institutions via concessions (e.g. for the use of valuable natural features owned by local communities or the state and for the management of parks and protected areas).

4.1.1 Legislative and economic mechanisms

In Slovenia the relevant legislative mechanisms have already been established by the acts and laws but the regulatory framework has not been determined in detail. It should be taken into account that these mechanisms are effective if they are supplemented by the relevant economic mechanisms which contribute to the conservation of biodiversity. These mechanisms are included in the National Environmental Action Programme. If the specific requirements of biodiversity are taken into account, they can contribute to its conservation. According to the foreign experience, in order to set up and enforce the economic mechanisms (including public financing) it is necessary to establish market, introduce clear ownership relations and define the nature conservation interests with regard to the national/municipal property and private property.

The most important incentives for the conservation of biodiversity are public financing and tax reliefs for services that conserve biodiversity, in particular, if support to adverse incentives is lessened. Economic mechanisms must be formulated in such a way that the reallocation of general government expenditure is provided in compliance with the already mentioned principles, and that the market mechanisms concerning the sustainable management of natural resources in parks and protected areas are enforced via concessions for their use (water, gravel, forests).

OBJECTIVES

- To enforce biodiversity conservation measures provided for in the Nature Conservation Act.
- To enforce measures for the conservation of biodiversity and sustainable use of its components provided for in the National Environmental Action Plan.

4.1.2 Spatial planning

The purpose of spatial planning is to ensure a harmonised spatial development through the coordination of the economic, social and environmental protection aspects of development. Spatial planning is one of the mechanisms for ensuring sustainable development in space since it guarantees the conservation of nature, the protection of natural resources, cultural heritage and other high quality features of the natural and cultural environment, by the application of the spatial planning and urbanistic methods.

The decisions related to the matters concerning spatial planning are based on the analyses of and expert findings about the characteristics of space and the developmental possibilities of particular activities located within it. The developmental needs and protection requirements must be incorporated into spatial plans. The interests concerning the conservation of biodiversity are included in the spatial planning process in compliance with the legislation and at the same level as other sectors that represent public interests determined by legislative acts.

Procedures concerning the drawing up of the spatial planning documents and spatial realisation documents are an important instrument for the inclusion of biodiversity conservation in spatial planning since the acceptability of the planned activities is assessed according to the expected impacts on biodiversity. The provision of reliable data on the management, protection, measures and restrictions is a necessity if procedures are to be less expensive, more sensible and not so long-lasting.

Analyses of sectoral interests in space and the environmental vulnerability studies, which are incorporated into the legislative instruments concerning spatial planning, form the foundation for the coordination of developmental needs and protection requirements. In the analysis phase of the drawing up of spatial documents, the basic spatial planning objectives, the environmental vulnerability studies and the integrated environmental impact assessments take into account the biodiversity conservation issues. These documents lay the foundations for the selection of the form of an activity that conserves biodiversity, or whose impact is minimum.

OBJECTIVES

- To include the conservation of biodiversity in spatial documents and procedures for the drawing up of spatial planning and spatial realisation documents (vulnerability studies, environmental impact assessments and strategic environmental impact assessments), in particular in protected and internationally important areas.
- To guarantee the participation of the public in the procedures for the drawing up and adoption of spatial documents.

CILJA

- Uveljavitev ukrepov za ohranjanje biotske raznovrstnosti, ki jih predvideva Zakon o ohranjanju narave.
- Uveljavitev ukrepov za ohranjanje biotske raznovrstnosti in trajnostno rabo njenih sestavin, ki jih predvideva NPVO.

4.1.2 Urejanje prostora

Namen urejanja prostora je z usklajevanjem gospodarskih, družbenih in okoljevarstvenih vidikov razvoja omogočati skladen prostorski razvoj. To je eden od mehanizmov za zagotavljanje trajnostnega razvoja v prostoru, saj z metodo prostorskega in urbanističnega načrtovanja lahko zagotavlja ohranjanje narave, varovanje naravnih virov in kulturne dediščine ter drugih kakovosti naravnega in kulturnega okolja.

Odločitve o zadevah, povezanih z urejanjem prostora, temeljijo na analizah in strokovnih dognanjih o lastnostih prostora in na razvojnih možnostih posameznih dejavnosti v njem. Z načrtovanjem prostorskih ureditev se soočajo razvojne potrebe in varovalne zahteve. Interesi ohranjanja biotske raznovrstnosti vstopajo v proces prostorskega načrtovanja v skladu z zakonodajo, enakovredno s sektorji, ki zastopajo zakonsko opredeljene javne interese.

Postopki priprave prostorskih planskih in izvedbenih aktov so lahko pomemben instrument za vključevanje ohranjanja biotske raznovrstnosti, saj se med postopkom preverja sprejemljivost načrtovanih posegov glede na pričakovane vplive nanjo. Z zagotavljanjem korektnih podatkov v ureditvah, varovanju, ukrepih in omejitvah se lahko zagotovijo krajši, cenejši in smiselnejši postopki.

Podlaga za usklajevanje razvojnih potreb in varstvenih zahtev so analize sektorskih interesov v prostoru in študije ranljivosti prostora, ki so opredeljene v pravnih podlagah urejanja prostora. V analitični fazi priprave prostorskih aktov je skrb za ohranjanje biotske raznovrstnosti lahko zajeta s temeljnimi cilji urejanja prostora, s študijami ranljivosti in s celovitimi presojami vplivov na okolje. Ti dokumenti dajo podlago za izbiro najugodnejše različice za poseg, ki ohrani ali najmanj vpliva na biotsko raznovrstnost.

CILJA

- Ustrezna vključitev skrbi za ohranjanje biotske raznovrstnosti v prostorske akte in v postopke priprave prostorskih planskih in izvedbenih aktov (npr. študije ranljivosti, celovite presoje vplivov na okolje, še posebno na zavarovanih in mednarodno pomembnih območjih).
- Zagotovitev vključevanja javnosti v postopke priprave in sprejemanja prostorskih aktov.

USMERITVI

- Dodelava zakonskih podlag za zagotovitev kakovostne presoje vplivov, ki bo vključevala presojo izgube biotske raznovrstnosti in krajinske pestrosti.
- Izboljševanje vsebinske revizije prostorskih aktov.

4.1.3 Regionalni razvoj

Učinkovito načrtovanje in usmerjanje razvoja na večjem geografskem območju lahko precej olajša prizadevanje za

ohranjanje biotske raznovrstnosti in trajnostno rabo njenih sestavin. Na naravno najbolj ohranjenih območjih Slovenije se klasični razvojni programi srečujejo z omejitvami, ki jih postavljajo naravne danosti. Prav tu so večinoma tudi že ustanovljena ali načrtovana zavarovana območja (narodni, regijski in krajinski parki), ki so se marsikje v Evropi izkazala kot ustrezna oblika usmerjanja manj konvencionalnih načinov razvoja. Tudi za ohranjanje biotske raznovrstnosti je ključno uravnoteženje socialnih in ekonomskih zahtev regij z njihovimi naravnimi danostmi. Ker je za ta območja značilno zmanjševanje prebivalstva, je na njih vedno težje vzdrževati za biotsko raznovrstnost tako pomembno kulturno krajino. Z vstopanjem v Evropsko unijo bo na teh območjih tudi pri-

DIRECTIONS

- To amend the existing legislation in order to ensure high quality environmental impact assessments which will include the evaluation of the loss of biological and landscape diversity.
- To improve the revision procedures of the substantive elements of spatial documents.

4.1.3 *Regional development*

The efficient planning of development in a large geographic area can mitigate efforts for the conservation of biodiversity and the sustainable use of its components. In the environmentally most conserved areas of Slovenia the traditional development programmes are faced with

Ena od možnosti za usklajevanje različnih interesov z zahtevami ohranjanja biotske raznovrstnosti in trajnostnega razvoja je načrtovanje prostorskih ureditev.

The planned spatial management is one of the possibilities for coordination between different interests and biodiversity conservation and sustainable development requirements.



hodnost kmetijstva tesno povezana z ohranjanjem narave, saj naravne razmere večinoma ne omogočajo konkurenčne proizvodnje kmetijskih proizvodov za trg. Sektorsko neusklajeno spodbujanje nekaterih oblik gospodarskega razvoja (npr. agromelioracije, male hidroelektrarne, gradnja obsežnih turističnih zmogljivosti, neprimerna prometna infrastruktura) je v preteklosti ponekod ogrozilo ali zmanjšalo biotsko raznovrstnost, demografski upad pa s tem ni bil ustavljen.

Ena od razvojnih možnosti teh območij, ki lahko izboljša razmere za delo in življenje lokalnega prebivalstva, so parki. Ti so tudi center združevanja sredstev za vzpostavitev sistema podpor, ki omogoča normalno delo in življenje domačinov in upošteva ohranjanje biotske raznovrstnosti.

CILJA

- Postavitev regionalnega razvoja na načelih trajnostnega razvoja.
- Spodbuditev razvoja dejavnosti, ki izkoriščajo razvojne možnosti območij z ohranjeno biotsko raznovrstnostjo tako, da raznovrstnosti ne ogrožajo, in so umeščene v prostor tako, da jo hkrati ohranjajo.

USMERITVE

- Usposabljanje domačega prebivalstva za vodenje in izvajanje novih dejavnosti, ki jih omogoča in prinaša zavarovano območje, še posebej narodni, regijski ali krajinski park.

the restrictions imposed by natural conditions. It is here that protected areas have been established or planned (national, regional and landscape parks) which proved to be an appropriate form of the less conventional development in many parts of Europe. The balance of the social and economic requirements of regions characterised by their natural conditions is a key to the conservation of biodiversity. Since these areas are denoted by the decrease of population it is difficult to maintain the cultural landscape vital for biodiversity. With the accession of Slovenia to the EU the future of agriculture will be closely connected to the conservation of nature in these areas since the natural conditions do not allow the production of competitive market products. In the past the promotion of specific forms of development, uncoordinated at the sectoral level, (e.g. agromeliorations, small hydro electric power plants, construction of extensive tourist facilities, inappropriate road infrastructure), threatened and even diminished biodiversity but the decrease of population continued.

In these areas parks are one of the developmental possibilities for improving the working and living conditions of the population. They are centres of the accumulation of funds intended for the establishment of the system of financial supports which gives an opportunity to the local population for normal life and work and simultaneously takes into account the conservation of biodiversity.

OBJECTIVES

- To base the regional development programmes on the principles of sustainable development.
- To promote activities that exploit the developmental possibilities of areas with conserved biodiversity in such a way that biodiversity is not threatened and that the location of a particular activity conserves biodiversity.

DIRECTIONS

- To train the local population for the management and implementation of activities introduced by the establishment of a protected area, in particular the national, regional or landscape park.
- To strengthen the capacities of appropriate institutions which participate in the conservation of biodiversity and sustainable use of its components.
- To promote organic farming and encourage the marketing of organic products from parks.
- To implement the agri-environmental programmes which help conserve important habitats and ensure the profitability of low intensity farms.
- To facilitate the modernisation and restoration of farms which contribute to the sustainable management and reduce the burdening of the environment.
- To promote the economic diversification and development of additional activities on farms, based on conserved biodiversity.
- To promote the coordination of cultural programmes and the programmes concerning the conservation of biodiversity and protection of cultural heritage.
- To detect and prevent in due time the negative impacts of the development of road infrastructure in unpopulated areas.

4.2 Monitoring

The monitoring of changes in biodiversity is an essential component in the implementation of the *Convention*. Monitoring covers the status of biodiversity and the pres-



Dolgotrajnejše spremljanje velikosti oz. gostote populacij poteka na območju Slovenije za mnogo vrst ptic in lovno divjad.

In Slovenia the long-term monitoring of population size or density is carried out for numerous bird and game species.

- Okrepitev zmogljivosti ustreznih ustanov, ki sodelujejo pri ohranjanju biotske raznovrstnosti in trajnostni rabi njenih sestavin.
- Spodbujanje ekološkega kmetijstva in podpiranje trženja ekoloških proizvodov iz parkov.
- Izvajanje kmetijsko-okoljskih programov, ki pomagajo ohraniti pomembne habitate in omogočajo rentabilnost kmetij z ekstenzivno kmetijsko proizvodnjo.
- Podpiranje takšne modernizacije in obnove kmetijskih gospodarstev, ki prispeva k večji sonaravnosti in nižjemu obremenjevanju okolja.
- Spodbujanje ekonomske diverzifikacije in razvoja dopolnilnih dejavnosti na kmetijah, ki temelji na ohranjeni biotski raznovrstnosti.
- Spodbujanje povezovanja kulturnih programov s programi ohranjanja biotske raznovrstnosti in varstva kulturne dediščine.
- Pravočasno ugotavljanje in preprečevanje negativnih trendov, ki jih na doslej neposeljena območja prinaša razvoj prometne infrastrukture.

4.2 Monitoring

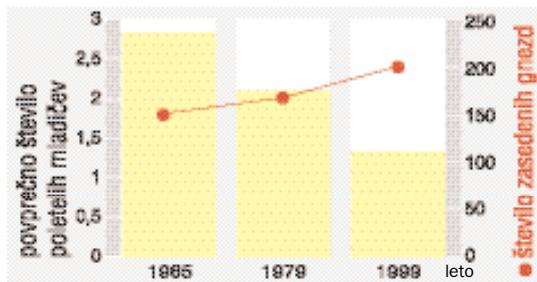
Monitoring sprememb biotske raznovrstnosti je nujna sestavina izvajanja *Konvencije*. Sestavljajo ga monitoring stanja biotske raznovrstnosti in monitoring pritiskov in odzivov na zmanjševanje biotske raznovrstnosti. Upošteevajoč kadrovske in finančne omejitve ter dejanske naravovarstvene potrebe, *Konvencija* spodbuja monitoring kazalcev stanja biotske raznovrstnosti, ki ga večina evropskih držav že izvaja. Navkljub obstoju določenih baz podatkov o stanju biotske raznovrstnosti v Sloveniji je bilo posvečene monitoringu kazalcev stanja biotske raznovrstnosti doslej posvečene izjemno malo pozornosti. Napredek v okviru izvajanja strategije in akcijskega načrta ter drugih ukrepov se spremlja in ocenjuje tudi po kazalcih stanja biotske raznovrstnosti, zato je z razvojem strategije nujno začeti izvajati ciljno zastavljeni monitoring. Z njim je treba zajeti ekosisteme in habitate tipe:

- z veliko pestrostjo, s številnimi endemičnimi ali ogroženimi vrstami,
- ki so nujni za preživetje selitvenih vrst,
- ki so družbenega, gospodarskega, kulturnega ali znanstvenega pomena,
- ki so reprezentativni, enkratni ali povezani s ključnimi evolucijskimi ali drugimi biološkimi procesi.

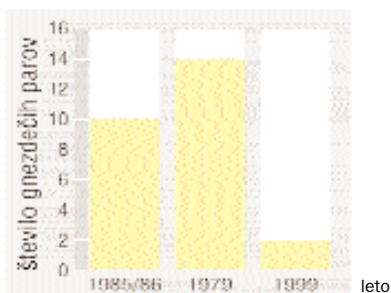
Za spremljanje pritiskov, ki vplivajo na biotsko raznovrstnost je treba opredeliti ustrezne kazalce. Njihov monitoring je bistven element te strategije, ker bo zagotovil potrebne informacije za presojo izvrševanja in vpliva ukrepov.

CILJI

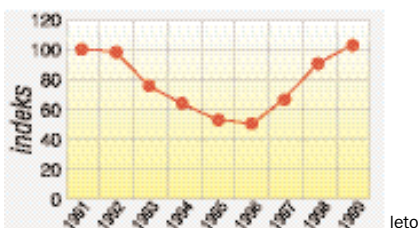
- Izpopolnitev seznama vrst in populacij v Sloveniji.
- Spremljanje stanja biotske raznovrstnosti na osnovi sklopa kazalcev.
- Spremljanje vplivov najpomembnejših pritiskov na biotsko raznovrstnost na podlagi sklopa kazalcev.
- Spremljanje odzivov na zmanjševanje pritiskov, tudi pripravljenost družbe za spreminjanje ustaljenih vedenjskih vzorcev.
- Zagotovitev dostopnosti interpretacij zbranih podatkov in po potrebi podatkov samih.



Velikost populacije in gnezditveni uspeh bele štoklje (*Ciconia ciconia*) v Sloveniji.
Population size and breeding success of white storks (*Ciconia ciconia*) in Slovenia.



Velikost slovenske gnezdeče populacije zlatovranke (*Coracias garrulus*).
Size of slovene breeding population of roller (*Coracias garrulus*).



Opazanja risa (*Lynx lynx*) v Gojitenih loviščih Jelen Snežnik in Medved Kočevje.
Records of lynx (*Lynx lynx*) in GL Jelen Snežnik and Medved Kočevje.

Viri:

- 1 ŠOŠTARIČ, M. Štoklje v slovenskem Podravju. Varstvo narave 1965, 4. JEŽ, M. Bela štoklja (*Ciconia ciconia* L.) v Sloveniji v letu 1979. Varstvo narave 1987, 13. DENAC, D. Gnezditvena biologija, fenologija in razširjenost bele štoklje (*Ciconia ciconia*) v Sloveniji. *Acrocephalus* 2001, 106-107. POLAK, S. (ur.), 2000: Mednarodno pomembna območja za ptice v Sloveniji; Important Bird Areas (IBA) in Slovenia. DOPPS, Monografija DOPPS Št. 1, Ljubljana.
- 2 BRAČKO, F. Naglo upadanje številčnosti zlatovranke *Coracias garrulus* v Sloveniji. *Acrocephalus* 1986, 30. GEISTER, I., 1995. Ornitološki atlas Slovenije. Tehniška založba Slovenije. Ljubljana. POLAK, S. (ur.), 2000: Mednarodno pomembna območja za ptice v Sloveniji; Important Bird Areas (IBA) in Slovenia. DOPPS, Monografija DOPPS Št. 1, Ljubljana.

3 graf prirejen po STANIŠA, C., KOREN, I., ADAMIČ, M. Situation and Distribution of the Lynx (*lynx lynx* L.) in Slovenia from 1995-1999 - *HYSTRIX - Italian Journal of Mammalogy*, 2001, Vol. 12 (2).

asures on and responses to the reduction of biodiversity. Taking into account the limitations concerning the available human resources and funds and the actual nature protection requirements, the *Convention* promotes the monitoring of indicators that show the status of biodiversity. Such monitoring is implemented in most European countries. Despite the existence of specific data-bases on the status of biodiversity in Slovenia, the monitoring of biodiversity status indicators has been neglected so far. The indicators of biodiversity status serve as a foundation for the monitoring and evaluation of the progress within the framework of the implementation of the Strategy, the action plan and other measures. It is essential that with the development of the Strategy, the target-oriented monitoring starts. The monitoring must be focused on ecosystems and habitat types:

- of high diversity, with numerous endemic or endangered species;
- vital for the survival of migratory species;
- socially, economically, culturally or scientifically important;
- representative, unique or linked to the key evolutionary or other biological processes.

In order to monitor the pressures that affect biodiversity, the relevant indicators must be determined. The monitoring of these indicators is a crucial element of the present Strategy. It will ensure the information needed to assess the enforcement of the measures and their impacts.

OBJECTIVES

- To update the list of species and populations found in Slovenia.
- To monitor the status of biodiversity on the basis of a set of indicators.
- To monitor the effects of the most important pressures on biodiversity on the basis of a set of indicators.
- To monitor the responses to the reduction of pressures, including the willingness of a society to change the established behavioural patterns.
- To ensure the access to the collected data and their interpretations.

DIRECTIONS

- To adopt legal provisions on the internationally comparable monitoring of biodiversity indicators at the ecosystem, spatial and genetic level.
- To establish and implement the national programme for the monitoring of biodiversity.
- To keep and coordinate central records on the surveying and monitoring of biodiversity.
- To transparently present methods used in determining the status of biodiversity and encourage responses to negative trends.
- To identify indicators used in assessing the impacts of activities on biodiversity components and in evaluating progress in the implementation of the Strategy.
- To monitor the indicators of activities that degrade habitats, are managed in an unsustainable manner and cause the emissions of pollutants and the release and spreading of non-indigenous species and genetically modified organisms in the environment.
- To monitor public opinion on the issues concerning biodiversity.
- To monitor the public opinion about the willingness to change the established behavioural patterns.

4.3 Research and technology development

Any sustainable development policy is much more successful if it is based on scientific findings which are timely taken into account in the adoption of the relevant decisions. In order to allow the economic and social development that conserves biodiversity, while simultaneously creating prosperity, it is necessary that knowledge is acquired and technologies created for the sustainable use of natural resources. Biodiversity components provide an unexploited potential for the research of materials, technologies and energy resources used by man. It is necessary to promote research focused on the identification of biodiversity components. The fight against the reduction of biodiversity is successful if measures for the conservation of biodiversity components are developed and applied, and if the undesired impacts on biodiversity are avoided. The efficiency of the research process and technological development is ensured through the application of the interdisciplinary approach and the inclusion of all research fields.

Applied technologies, such as biotechnology, offer numerous possibilities for the exploitation of biodiversity components. Consequently, the need has arisen for global cooperation in biotechnological research of natural genetic resources. However, the right to exploit these resources has to be taken into account. Biotechnology is becoming an important factor in the environmental, economic and social prosperity of a state.

OBJECTIVES

- To broaden the scope of research of threats to and pressures on biodiversity components and of their causes.
- To develop the tools and alternative instruments for all parties involved in the conservation of biodiversity and use of its components, including the research of clean and *ex-situ* conservation technologies.
- To broaden the scope of the basic research pro-

USMERITVE

- Sprejetje pravnih določil o mednarodno primerljivem monitoringu kazalcev biotske raznovrstnosti na ekosistemski, vrstni in genski ravni.
- Zastaviti in izvajati nacionalni program monitoringa biotske raznovrstnosti.
- Centralno koordinirati in voditi evidence o popisovanju (inventarizaciji) in monitoringu biotske raznovrstnosti.
- Pregledno podajati metode o ugotavljanju stanja biotske raznovrstnosti in spodbujati odzivanje na negativne trende.
- Opredelitev kazalcev za presojo vpliva posegov in dejavnosti na sestavine biotske raznovrstnosti ter za presojo napredka pri izvajanju strategije.
- Monitoring kazalcev za posege in dejavnosti, ki povzročajo degradacijo habitatov, netrajnostno ravnanje, emisije onesnaževal ter sproščanje ali širjenje tujerodnih vrst in gensko spremenjenih organizmov v okolje.
- Spremljanje javnega mnenja o problematiki biotske raznovrstnosti.
- Spremljanje javnega mnenja o pripravljenosti za spreminjanje ustaljenih vedenjskih vzorcev.

4.3 Raziskovanje in razvoj tehnologij

Politika trajnostnega razvoja je lahko uspešnejša ob primerni znanstveni podlagi, ki jo mora pravočasno upoštevati tudi pri sprejemanju odločitev. Vzpostavljane takšnega ekonomskega in družbenega razvoja, ki omogoča blaginjo ob ohranjanju biotske raznovrstnosti, zahteva razvijanje znanja in tehnologij za trajnostno rabo naravnih virov. Sestavine biotske raznovrstnosti dajejo tudi malo izkoriščen potencial za raziskovanje materiala, snovi, tehnologij in virov energije, ki jih lahko uporablja človek. Zato je nujno spodbujati raziskave za identifikacijo sestavin biotske raznovrstnosti. Zmanjševanju biotske raznovrstnosti uspešneje kljubujemo z razvijanjem in uporabo metod za ohranitev njenih ogroženih sestavin oziroma za izogibanje nezaželenim vplivom nanje. Raziskovanje in tehnološki razvoj sta učinkovitejša le z interdisciplinarnim pristopom in vključevanjem vseh

Z ustreznim znanjem in podatki uspešneje kljubujemo zmanjševanju biotske raznovrstnosti.

Adequate knowledge and relevant data are the principal factors in addressing the loss of biodiversity.



potrebnih raziskovalnih področij.

Uporabne tehnologije, kakor je nova biotehnologija, odpirajo številne možnosti izkoriščanja sestavin biotske raznovrstnosti in s tem potrebe po globalnem sodelovanju z zagotavljanjem učinkovite sodelave pri biotehnoških raziskavah naravnih genskih virov, ob upoštevanju pravic do njih. Tako postaja tudi biotehnologija pomemben dejavnik okoljske, gospodarske in družbene koristi države.

CILJI

- Širitev raziskav ogroženosti in relevantnih pritiskov na sestavine biotske raznovrstnosti ter njihovih vzrokov.
- Razvoj orodja in alternativ za partnerje pri ohranjanju biotske raznovrstnosti in rabi njenih sestavin, z raziskovanjem čistih tehnologij in varstvenih tehnologij *ex-situ* vred.
- Širitev ustreznih temeljnih raziskovalnih programov na področjih sistematike, evolucijske biologije, fiziologije, ekologije in genetike.
- Zagotovitev dostopnosti izsledkov raziskav in študij za odločanje.

USMERITVE

- Oblikovanje interdisciplinarnega nacionalnega programa raziskovanja biotske raznovrstnosti, ki določa prioritete, tudi na področju taksonomije, pri temeljnih in usmerjenih raziskavah in kategorizaciji projektov.
- Vzpostavitev nacionalne mreže centrov za raziskovanje biotske raznovrstnosti in njihovo vključevanje v evropske centre, za pospešitev bazičnega raziskovanja pomena in delovanja biotske raznovrstnosti na vseh ravneh.
- Podpiranje aplikativnih raziskav načinov ohranjanja biotske raznovrstnosti *in-situ*, ki vključujejo tudi načine ravnanja s habitatnimi tipi in upravljanje krajine.
- Podpiranje aplikativnih raziskav o trajnostni rabi sestavin biotske raznovrstnosti v kmetijstvu, gozdarstvu, lovstvu, ribištvu in biotehnologiji, ki vključujejo tudi načine ravnanja s habitatnimi tipi in upravljanje krajine.
- Promoviranje raziskovalnih dejavnosti, ki uporabljajo molekularne metode pri merjenju in odkrivanju biotske raznovrstnosti in uzakonjanje teh tehnologij.
- Izboljševanje sodelovanja različnih ministrstev oziroma drugih partnerjev pri ciljnih raziskovalnih programih.
- Krepitev deleža družboslovnih in ekonomskih raziskav za potrebe ohranjanja biotske raznovrstnosti ter deleža raziskav, ki opredeljujejo sektorske koristi od njenega ohranjanja.

Podpore dejavnosti ohranjanju biotske raznovrstnosti in trajni rabi
Activities supporting biodiversity conservation and sustainable use

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grammes in the field of systematics, evolution biology, physiology, ecology and genetics.

- To ensure the accessibility and availability of research and study findings in the decision-making process.

DIRECTIONS

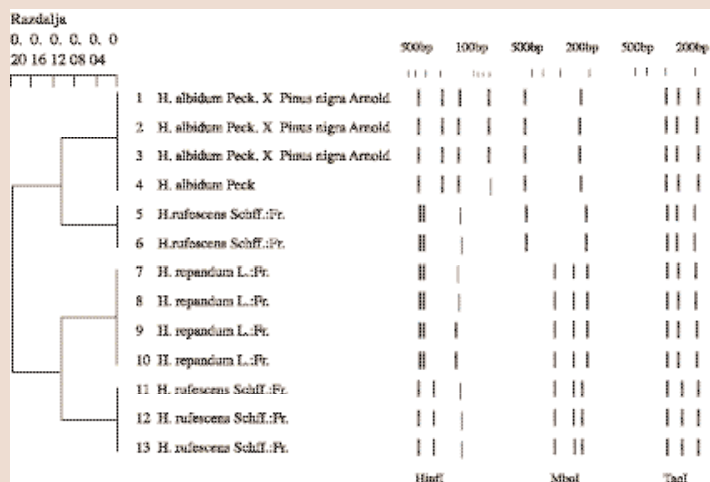
- To formulate an interdisciplinary national programme for the research of biodiversity that would lay down the priorities, including in the field of taxonomy, with regard to the basic and directed studies, and for the categorisation of projects.
- To establish the national network of biodiversity research centres and ensure their participation in the European network, with a view to encourage the basic research of the importance and functioning of biodiversity at all levels.
- To offer support to the applied research of the *in-situ* biodiversity conservation methods which include various forms of the management of habitat types and landscapes.
- To offer support to the applied research of the sustainable use of biodiversity components in agriculture, forestry, hunting, fisheries and biotechnology, including the research of various forms of the management of habitat types and landscapes.
- To promote research activities which apply molecular methods in the measuring and discovering of biodiversity components and to enact these technologies.
- To improve the cooperation of various ministries and other involved parties in the target research programmes.
- To increase the share of social science and economic studies focused on the conservation of biodiversity and the share of studies dealing with benefits derived from biodiversity conservation.



Dendrogram pestrosti treh vrst ježkov (gliv iz rodu *Hydnum*) in njihove ektomikorize pri črnem boru (*Pinus nigra*).
The dendrogramme of variability of three species of genus *Hydnum* and their ectomycorrhizae on austrian pine *Pinus nigra*.

Molekularno biološke raziskave prispevajo pomemben delež k poznavanju in razumevanju biotske raznovrstnosti. Dendrogram je narejen na osnovi primerjave vzorcev DNK, oddaljenost posameznih črtic od levega roba pomeni enak košček DNK in kaže na variabilnost znotraj vrste ali celo možnost delitve vrste rumeni ježek (*H. rufescens* L.Fr. – na sliki spodaj v mikorizi s smreko) na dve taksonomski enoti.

The molecular biology research methods significantly contribute to the understanding of biodiversity. The dendrogramme is prepared on the analysis of DNA samples in which the distances of individual lines from the left edge represent equal DNA fragments, shows the variability within the species or even a possibility of dividing *H. rufescens* L. Fr. species into two taxonomic units (picture below, in its ectomycorrhizae on spruce).



VIR: GREBENC, Tine, KRAIGHER, Hojka. Kartiranje tipov ektomikorize po anatomski metodi in s primerjavo s PCR-RFLP vzorci eksikatov gliv iz mikoteke GIS. *Hladnikia* (Ljublj.), 2001, 13, str. 64-68.

4.4 A right to apply knowledge

Fast development of the information and gene technologies in view of the use of natural resources and the related discoveries of the hereditary information of biological material affect the relationships between the natural genetic resources and the development of technologies, production and economic efficiency, with regard to the promotion of competition between various partners/stakeholders and states. The biotechnological

Velik delež svetovne kemijske, farmacevske in živilske proizvodnje uporablja sestavine biotske raznovrstnosti ali informacije iz njihovih genskih zapisov.

A large share of world production of chemicals, pharmaceuticals and food is based on the exploitation of biodiversity components or their genetic code information.



and genetic research is included in the directed and rationalised research and development processes in medicine, pharmacy, chemistry and other fields. The study of genes and biomolecules is focused on the identification of their information-carrying components and their transfer into the "in-vitro" systems. Consequently, large quantities of material are no longer needed. In Slovenia, there are no broad studies oriented towards the development of technologies from biodiversity components at the moment. The institutions and companies rarely obtain patents for their findings but it is possible that the policy will develop in the future.

More than 40 % of the world production of chemicals and pharmaceuticals is founded on the exploitation or identification of natural resources by gene technology. Its results form the basis for industrial production of the identical "synthetic" compounds and final products. The exploitation of genetic resources is extremely intensive, in particular in the developing countries. It is stipulated by national legislations that lay down the possibilities for access to the natural genetic resources, their exploitation, and the application of environment-friendly technologies.

The *Convention* and the Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS Agreement) stipulate the "rules of play" for all contracting parties. The issue is the primary right to compensation for exploitation of natural genetic resources. This right implies the right of the state of origin of a natural genetic resource to patent compensation. The transfer of technologies via patent protection undoubtedly promotes the marketing of bioscience and increases the impact and

4.4 Pravice do uporabe znanja

Nagel razvoj informacijske in genske tehnologije na področju uporabe naravnih virov in s tem povezano odkrivanje dednih informacij biološkega materiala spreminjata odnose na relaciji naravni genski viri-razvoj tehnologij-proizvodnja-ekonomska učinkovitost v smislu spodbujanja tekmovalnosti med različnimi partnerji in državami. Biotehnoško in gensko raziskovanje tako postaja sestavni del vse bolj usmerjenega in racionalnega

liziranega raziskovanja in razvoja v medicini, farmaciji, kemiji in na drugih področjih. Pospešeno proučevanje genov in biomolekul je torej usmerjeno k prepoznavanju njihovih informacijskih vsebin in njihovemu prenosu v »in-vitro« sisteme, kar po drugi strani zmanjšuje potrebo po vse večjih količinah razpoložljivega materiala. V Sloveniji trenutno ni obsežnih raziskav za razvijanje tehnologij iz sestavnih delov biotske raznovrstnosti, slovenske ustanove in podjetja prav tako redko patentirajo te izsledke, lahko pa se ta dejavnost razvije.

Več kot 40 % svetovne kemijske in farmacevske proizvodnje temelji na izkoriščanju ali prepoznavanju naravnih virov s pomočjo genske tehnologije; na podlagi teh rezultatov je zasnovana tudi industrijska proizvodnja identičnih »sintetičnih« spojin in končnih proizvodov. Izkoriščanje genskih virov v državah, zlasti tistih v razvoju, je intenzivno. Odvisno je od nacionalne zakonodaje in ta določa možnosti dostopa do naravnih genskih virov, njihovo izkoriščanje in uporabo okolju primernih tehnologij.

Konvencija in Mednarodni sporazum o trgovinskih vidikih pravic intelektualne lastnine zahtevata vzpostavitev pravil »igre« v državah pogodbenicah. Gre za primarno pravico do odškodnine v primeru izkoriščanja naravnih genskih virov. Ta med drugim zajema pravico države, iz katere naravni genski vir izhaja, do odškodnine iz patenta. Nedvomno pa se s prenosom tehnologij prek patentne zaščite pospešuje trženje bioznanosti in povečuje vpliv ter nadzor posameznikov, držav ali podjetij na izkoriščanje svetovnega potenciala naravnih genskih virov.

CILJ

- Omogočanje dostopa do genskih virov z okolju primerno uporabo tehnologij.

USMERITEV

- Uresničevanje mehanizmov pravične delitve dosežkov raziskovanja in razvoja, kakor tudi koristi od komercialne in druge rabe virov.

4.5 Izobraževanje in komuniciranje

Ogroženost biotske raznovrstnosti izhaja iz človekovega dojemanja narave in odnosa do nje ter obstoječih vedenjskih vzorcev. Ohranjanje biotske raznovrstnosti je možno le, če se ljudje zavedajo vzrokov njenega ogrožanja in spremenijo del svojih navad in vedenjskih vzorcev. Spremenili pa jih bodo le, če jih bodo k temu motivirali ustrezni mehanizmi z omejitvami in spodbudami in če bodo primerno informirani, ozaveščeni in izobraženi.

Za spreminjanje vzorcev vedenja morajo ljudje vedeti, kje in kaj morajo oziroma lahko počnejo drugače. Cilj ozaveščanja je, da naravovarstvena sporočila pridejo v zavest posameznika in da ravna v skladu z njimi. To je zahtevna naloga, saj ljudje sprejemajo predvsem ekonomske, zdravstvene in družbene koristi, ki jih imajo od spremenjenih vedenjskih vzorcev. Poleg tega živimo v informacijski družbi, v kateri smo vsak dan zasuti s kopico informacij in sporočil. Ozaveščanje različnih ciljnih skupin zahteva ustrezne komunikacijske metode, tehnike in sredstva. Ozaveščenost pa je lažje doseči, če tudi formalno izobraževanje zagotavlja ustrezno znanje, razumevanje in povezovanje naravovarstvenih problemov ter ga omogoča uporabiti za njihovo odpravljanje. Izobraževanje je ključnega pomena za doseganje in promocijo trajnostnega razvoja ter krepitev človeških virov na tem področju. Temeljne dejavnosti za učinkovitejšo uresničevanje ciljev trajnostnega razvoja so ozaveščanje širše javnosti, formalno izobraževanje in usposabljanje skupin, ki nenehno aktivno sodelujejo v procesu ohranjanja in rabe biotske raznovrstnosti.

Za odgovorno ravnanje z biotsko raznovrstnostjo in okoljem je bistveno izobraževanje in usposabljanje.

Education and training are essential for the responsible management of biodiversity and the environment.



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control of individuals, states or companies over the exploitation of the available natural genetic resources in the world.

OBJECTIVE

- To facilitate the access to genetic resources by the application of environment-friendly technologies.

DIRECTION

- To enforce mechanisms that ensure the just distribution of the achievements of research and development and the benefits of the commercial and other use of resources.

4.5 Education and communication

The threat to biodiversity arises from the man's comprehension of nature and his relation to it, and from the existing behavioural patterns. Biodiversity can only be conserved if the public becomes aware of the reasons for its endangerment and if it changes habits and behavioural patterns. However, people will only change their attitudes if they are motivated by appropriate restrictive mechanisms and incentives, and if they are well-informed, aware and educated.

In order to change their behavioural patterns people must know what to do differently, and where to do it. The basic objective is to launch the nature protection slogans in such a way that the public becomes aware of the problems and consequently acts in accordance with the message. That is a demanding task since people usually consider only the economic, health and social benefits of the changed behavioural patterns. Moreover, we live in an information society and every day we are burdened with new information and messages. In order to raise awareness of various target groups it is necessary to apply the appropriate communication methods, techniques and means. It is easier to achieve a high level of awareness if the formal education process provides people with the appropriate knowledge about and understanding of nature protection issues, with a view to eliminate the environmental problems. The education process plays a key role in the promotion and achievement of sustainable development and in the capacity building of human resources in this field. The basic activities for the

effective enforcement of sustainable development objectives are the raising of awareness of the general public and the formal education and training of groups actively participating in the processes concerning the conservation and use of biodiversity.

4.5.1 *Raising of public awareness and communicating with the public*

Public awareness constitutes a basis for a gradual change in people's habits towards the conservation of biodiversity at the working place, at home, in the local community and during free time activities. The awareness-raising campaigns are therefore one of the notable instruments for achieving the *Convention* objectives. In many fields the public is organised in interest groups (societies and associations) that are important awareness-raising mechanisms. In Slovenia the communication with and between the interest groups is not as well developed as in the EU member states. The communication fields that have to be further developed within the framework of awareness raising process are the intersectoral communication and the communication with local communities, organised interest groups, public media and general public.

OBJECTIVE

- To increase the number of environmentally aware interest groups which understand the importance of biodiversity and are familiar with the activities that conserve, or potentially threaten, biodiversity.

DIRECTIONS

- To enforce the state policy in the field of raising of environmental awareness and promoting education about all aspects of biodiversity.
- To develop programmes for informing, educating and raising the awareness of the public about the conservation and sustainable use of biodiversity and to coordinate the mentioned activities.
- To set up an appropriate system for informing and supporting the participation of individuals in biodiversity conservation activities and for encouraging the wise and sound use of natural resources.
- To incorporate purposeful communication in the activities involved in the conservation of biodiversity and sustainable use of its components; consequently, the intersectoral communication and the communication with the local populations should improve.
- To organise campaigns and other awareness-raising activities within all sectors concerned with biodiversity.
- To train the staff involved in the implementation of the biodiversity conservation strategy at the local, national or international level.
- To reward the economic and social actors for achievements in the field of biodiversity conservation.

4.5.2 *Education and training*

The general, professional, and technical education and training in the field of biodiversity are focused on the education and training of individuals for the sound management of nature and the environment. They are instruments for better understanding of the functioning of nature and the impacts on nature caused by consumer behaviour patterns and social trends. Through the education and training an individual learns how to act to contribute to the conservation and sustainable use of biodiversity.

In order to implement the Biodiversity Conservation Strategy, all actors involved in the activities concerning or

4.5.1 *Ozaveščanje in komuniciranje z javnostmi*

Ozaveščena javnost je bistvena za postopno spreminjanje navad v smeri ohranjanja biotske raznovrstnosti na delovnem mestu, doma, v lokalni skupnosti in pri prostoračnih dejavnostih. Zato so kampanje in druge dejavnosti ozaveščanja javnosti eden od pomembnih instrumentov za doseg ciljev *Konvencije*. Javnost je na mnogih področjih organizirana v interesne skupine (društva in zveze), ki imajo ključno vlogo pri ozaveščanju. Komuniciranje z in med interesnimi skupinami v Sloveniji ni razvito do stopnje, ki jo pozna Evropska unija. Glavne skupine komunikacijskih področij, ki jih je treba v okviru ozaveščanja javnosti bolj razvijati so medresorsko komuniciranje, komuniciranje z lokalnimi skupnostmi, organiziranimi interesnimi skupinami, javnimi občili in širšo javnostjo.

CILJ

- Povečevanje števila ozaveščenih zainteresiranih skupin ljudi, ki se zavedajo pomena biotske raznovrstnosti in poznajo aktivnosti, s katerimi jo pomagajo ohranjati ali jo lahko ogrožajo.

USMERITVE

- Uveljavljanje aktivne politike države na področju ozaveščanja in izobraževanja o vseh vidikih biotske raznovrstnosti.
- Razvoj programov informiranja javnosti, izobraževanja in ozaveščanja o ohranjanju in trajnostni rabi biotske raznovrstnosti ter ustrezna koordinacija omenjenih dejavnosti.
- Vzpostavitev ustreznega sistema informiranja in podpiranje aktivne udeležbe posameznikov pri ohranjanju biotske raznovrstnosti ter modri in razumni rabi naravnih virov.
- Vgrajevanje načrtnega komuniciranja v vse dejavnosti, ki so ključne za ohranjanje biotske raznovrstnosti in trajnostno rabo njenih sestavin. To mora voditi tudi k boljši medsektorski komunikaciji in komuniciranju z lokalnim prebivalstvom.
- Vodenje kampanj in drugih dejavnosti ozaveščanja v okviru vseh vsebinskih sklopov biotske raznovrstnosti.
- Usposabljanje kadrovskega potenciala, ki so ali bodo vključeni v izvajanje strategije biotske raznovrstnosti na lokalni, državni in mednarodni ravni.
- Nagrajevanje gospodarskih in družbenih akterjev za dosežke na področju ohranjanja biotske raznovrstnosti.

4.5.2 *Izobraževanje in usposabljanje*

Vzgoja in izobraževanje na področju biotske raznovrstnosti v splošnem, poklicnem in strokovnem izobraževanju sta namenjena pridobivanju znanja in vzgoji oziroma došolanju posameznikov za odgovorno ravnanje z naravo in okoljem. Sta instrumenta za boljše razumevanje delovanja narave in posledic vzorcev lastnega potrošniškega vedenja in družbenih trendov nanjo. Hkrati posreduje informacije o tem, kako lahko vsak človek s svojimi dejanji prispeva k ohranjanju in trajnostni rabi biotske raznovrstnosti.

Izvajanje strategije ohranjanja biotske raznovrstnosti zahteva specifično-strokovno znanje vseh akterjev, ki kakor koli posegajo v biotsko raznovrstnost ali vplivajo nanjo. Potrebno strokovno znanje je na razpolago le, če so vse-

bine ohranjanja biotske raznovrstnosti oziroma trajnostne rabe njenih sestavin vključene v sheme usposabljanja strokovnjakov. Najnovejši izsledki stroke se lahko uveljavijo v praksi, če se lahko strokovnjaki redno seznanjajo z znanstvenim, tehničnim in tehnološkim napredkom ter upoštevajo rezultate v programih dela svojih organizacij.

CILJA

- Zagotovitev specifičnega strokovnega znanja za ohranjanje biotske raznovrstnosti med akterji, ki kakor koli poklicno posegajo v biotsko raznovrstnost ali vplivajo nanjo.
- Zagotovitev zadovoljive stopnje splošne izobrazbe o okolju, biologiji in biotski raznovrstnosti na vseh stopnjah izobraževanja.

USMERITVE

- V vseh šolah izboljšanje obstoječe kakovosti in obsega naravoslovja, ki prispeva k razumevanju delovanja biotske raznovrstnosti, še posebno biologije.
- Opredelitev minimalne skupne vsebine učnih načrtov in vključevanje vsebin varstva narave oziroma biotske raznovrstnosti v učne načrte na vseh ravneh formalnega izobraževanja.
- Spremljanje izvajanja okoljskega oziroma naravovarstvenega izobraževanja in vrednotenje njegovih učinkov.
- Usmerjanje dodiplomskih in podiplomskih študijskih vsebin v teme *Konvencije*.
- Priprava in podpiranje programov interdisciplinarnega usposabljanja in specializacije naravovarstvenega kadra, zlasti za projektno vodenje, upravljalške naloge in komuniciranje z zadevnimi javnostmi in drugimi ciljnimi skupinami.
- Priprava in podpiranje programov interdisciplinarnega usposabljanja posredovalcev naravovarstvenega znanja, zlasti učiteljev, kmetijskih svetovalcev, nevladnih organizacij, javne vodnogospodarske in gozdarske službe, turističnih delavcev za izobraževanje in ozaveščanje zainteresiranih skupin (npr. lastnikov in upravljalcev).
- Promocija nenehnega izobraževanja odraslih o okoljskih oziroma naravovarstvenih zadevah.
- Vzpostavitev in promocija razvoja raziskovalnih in interdisciplinarnih izobraževalnih centrov za okoljsko izobraževanje.
- Podpora različnim oblikam sodelovanja z in med podjetji ter nevladnimi organizacijami pri ozaveščanju, izobraževanju, usposabljanju in drugih oblikah komuniciranja.

4.6 Izmenjava informacij in sodelovanje

4.6.1 Posredovalnica informacij

Posredovalnica informacij (Clearing House Mechanism – CHM) je informacijski in komunikacijski sistem, ki omogoča dostop in izmenjavo informacij o biotski raznovrstnosti, podpira in pospešuje znanstveno in tehnično sodelovanje z aktivnim pridobivanjem novih informacij ter razvija medmrežne povezave na mednarodni in državni ravni.

Zbira in posreduje vse informacije, ki so vezane na posamezne člene *Konvencije* in sledijo njenim ciljem. Okvir

affecting biodiversity must be well educated and trained in specific scientific or technical fields. The necessary technical knowledge is available only if the issues concerning biodiversity conservation and sustainable use of its components are incorporated in the expert education and training schemes. The latest findings in a specific field can be applied in practice if experts are regularly informed about the scientific, technical and technological progress, and if the research results are taken into account in the work programmes of their companies or organisations.

OBJECTIVES

- To guarantee specific technical knowledge, needed for the conservation of biodiversity, of all actors who professionally interfere with or affect biodiversity.
- To guarantee a satisfactory level of general education on the environment, biology and biodiversity at all stages of the education process.

DIRECTIONS

- To improve the current level of quality and extent of nature science programmes which contribute to the understanding of the functioning of biodiversity, in particular of biology programmes, in all schools.
- To define the minimum range of common curriculum themes and to integrate into them the nature protection or biodiversity issues at all levels of the formal education process.
- To monitor the implementation of the environmental and nature protection education programmes and to evaluate their effects.
- To include the *Convention* issues in the graduate and post-graduate theses.
- To draw up programmes for the interdisciplinary training and specialisation of the nature protection staff in project management, management tasks and communication with the general public and other target groups.
- To draw up programmes for interdisciplinary training of disseminators of nature protection knowledge, in particular teachers, agricultural advisers, non-governmental organisations, public water management and forestry services and employees of tourist companies and organisations, to educate the interested groups (e.g. owners and managers) and raise their awareness.
- To promote the continuous adult education in nature conservation and environmental protection.
- To establish and promote the development of the research and interdisciplinary environmental education centres.
- To support cooperation with and between companies and non-governmental organisations in awareness-raising, education, training and other forms of communication.

4.6 Information exchange and cooperation

4.6.1 Clearing House Mechanism

The Clearing House Mechanism - CHM is an information and communication system for the access to and exchange of information on biodiversity; it supports and promotes the scientific and technical cooperation through the active gathering of information, and develops internet links at the international and national level.

All the information concerning the particular articles of the *Convention*, and its objectives, are gathered and provided within this mechanism. The framework of the CHM is rather wide and includes such fields as the *in-situ* and *ex-situ* protection; systematics; access to genetic resources; intellectual property and transfer of technology; biological safety; traditional and domestic knowledge; sharing of benefits; incentive mechanisms; and institutional framework.

OBJECTIVE

- To promote decision-making based on the available information, the comparing of information and knowledge, and the upgrading and integration of knowledge; to prevent the unnecessary duplication of work.

DIRECTIONS

- To promote the participation of all sectors, governmental, non-governmental, expert and scientific organisations, individuals, local communities, public media and other CHM users as information suppliers or users.
- To establish control over legislation, strategic documents, projects, data bases and mechanisms concerning biodiversity.
- To coordinate data bases with information on biodiversity.
- To set priorities concerning the research and education in the field of biodiversity on the basis of the available and requested information.
- To link knowledge with information and to ensure data needed for inquiries related to the enforcement of the *Convention* at the national and international level.
- To guarantee the informing of the public and its participation in the decision-making procedures concerning the environmental impact assessments by establishing the internationally comparable and publicly accessible information system.
- To establish a clearing-house mechanism to implement the Protocol on Biosafety pursuant to the mandatory provisions of the *Convention*.

4.6.2 *International cooperation*

International cooperation is of key importance for the implementation of the Slovene policy on the conservation of biodiversity and sustainable use of its components and for the exchange of experience and cooperation at the bilateral and multilateral level. The cooperation involves in particular:

- cooperation with the *Convention* Secretariat and other expert and political bodies,
- cooperation with contracting parties of the *Convention* at the inter-state, European and global level.

The Clearing House Mechanism plays an important role in such cooperation.

The formulation of common positions at the national level by the Biodiversity Working Group (see Chapter 5) is a prerequisite for successful international cooperation. The implementation of the *Convention* at the national and international level must be closely linked to the implementation of other conventions in the field of biodiversity (Washington Convention, Ramsar Convention, Bonn Convention, Bern Convention, Barcelona Convention, Danube Convention, World Heritage Convention, UN Framework Convention on Climate Change).

At the international level, the main issue is the cooperation with the *Convention* bodies (*Convention* Secretariat,

posredovalnice je za zdaj zelo širok in zajema področja, kakor so varstvo *in-situ* in *ex-situ*, sistematika, dostop do genskih virov, intelektualna lastnina in prenos tehnologije, biološka varnost, tradicionalno in domače znanje, delitev koristi, spodbujevalni mehanizmi in institucionalna vzpostavitev.

CILJ

- Omogočitev podpore odločanju na podlagi dostopnih informacij, primerjave med informacijami in znanjem ter nadgradnjo in integracijo le-tega, kakor tudi preprečitev podvajanja dela.

USMERITVE

- Sodelovanje vseh sektorjev, vladnih, nevladnih, strokovnih in znanstvenih organizacij, posameznikov, lokalnih skupnosti, javnih občil in drugih uporabnikov CHM kot ponudnikov ali uporabnikov informacij.
- Vzpostavitev pregleda nad zakonodajo, strateškimi dokumenti, projekti, bazami podatkov in mehanizmi, ki segajo na področje biotske raznovrstnosti.
- Uskladitev podatkovnih baz, ki pokrivajo biotsko raznovrstnost.
- Določanje prioritet pri raziskovanju, izobraževanju in šolanju na področju biotske raznovrstnosti poteka na podlagi ponudb in povpraševanja po tipih informacij.
- Povezovati znanje in informacije ter zagotavljati informacije za poizvedbe, povezane z uresničevanjem *Konvencije*, tako na nacionalni kot mednarodni ravni.
- Zagotovitev obveščanja javnosti in njeno vključevanje v postopke odločanja pri presoji tveganja za naravo z vzpostavitev mednarodno primerljivega in javnosti dostopnega informacijskega sistema.
- Vzpostaviti posredovalnico informacij za potrebe izvajanja Protokola o biološki varnosti na podlagi obveznih določil *Konvencije*.

4.6.2 *Mednarodno sodelovanje*

Mednarodno sodelovanje je ključnega pomena pri izvajanju politike ohranjanja biotske raznovrstnosti in trajnostne rabe njenih sestavin v Sloveniji ter pri izmenjavi izkušenj in sodelovanju na bilateralni ali multilateralni ravni. Sodelovanje se razvija predvsem na dveh ravneh:

- s Sekretariatom *Konvencije* in njenimi preostalimi strokovnimi in političnimi telesi,
- z državami pogodbenicami *Konvencije* na meddržavni, evropski in svetovni ravni.

Pomembno vlogo pri tem ima posredovalnica informacij (CHM).

Za uspešno mednarodno sodelovanje je ključnega pomena oblikovanje skupnih izhodišč na nacionalni ravni, ki jih pripravlja Delovna skupina za biotsko raznovrstnost (glej naslednje poglavje). Izvajanje *Konvencije* na nacionalni in mednarodni ravni se mora povezovati z izvajanjem preostalih konvencij, vezanih na biotsko raznovrstnost (Washingtonska, Ramsarska, Bonska, Bernska, Barcelonska, Donavska konvencija, Konvencija o ohranjanju svetovne dediščine, Okvirna konvencija ZN o spremembi podnebja).

Na mednarodni ravni gre predvsem za sodelovanje organi *Konvencije* (Sekretariat *Konvencije*, Pomožno telo za znanstveno, tehnično in tehnološko svetovanje, Konferenca pogodbenic in Medvladni odbor za Kartagenski protokol) kot tudi z Organizacijo Združenih narodov za kmetijstvo in

Mednarodna izmenjava izkušenj in prenos dobre prakse lahko pomembno izboljšata učinkovitost ohranjanja biotske raznovrstnosti.

The international exchange of experience and the transfer of good practice can significantly improve the efficiency of biodiversity conservation.



prehrano. Prispevki k mednarodnemu sodelovanju so tudi imenovanje slovenskih strokovnjakov na Mednarodni seznam ekspertov za posamezna področja, sodelovanje na delavnicah in pri delu ad hoc strokovnih skupin, ki jih sprejme Konferenca pogodbenic ter udeležba na regijskih pripravljanih sestankih.

Sekretariat *Konvencije* in Sekretariati Ramsarske, Bonske, Barcelonske, Washingtonske konvencije, Konvencije o ohranjanju svetovne dediščine in Okvirne konvencije ZN o spremembi podnebja so podpisali memorandum o sodelovanju. To poteka tako med sekretariati kakor med pogodbenicami konvencij, in sicer kot priprava skupnih programov, sodelovanje pri skupnih projektih in usklajevanje poročanj za posamezno konvencijo.

V okviru približevanja Evropski uniji je ključno sodelovanje z njenimi ustanovami in drugimi državami pri vseevropskih pobudah (npr. Panevropska strategija) ter z mednarodnimi strokovnimi organizacijami in fundacijami, kakor so Planta Europa, BirdLife International, Wetlands International, IUCN, World Conservation and Monitoring Centre, EUROPARC, European Association for Animal Production, EUFORGEN (Evropski program varovanja gozdnih genskih virov), ECCF (Evropski svet za ohranjanje gliv) in Global Environment Facility.

CILJ

- Krepitev mednarodnega sodelovanja in izboljševanje njegovih rezultatov na posameznih ravneh in med njimi.

USMERITVE

- Krepitev sodelovanja z mednarodnimi institucijami in pri posameznih projektih z izmenjavo izkušenj in dobre prakse.
- Posredovanje in predstavitev dobrih primerov ohranjanja biotske raznovrstnosti in rabe njenih sestavin mednarodni javnosti.
- Razvijati prednostna področja mednarodnega sodelovanja (teme *Konvencije*): gozdni ekosistemi, celinske vode in mokrišča, invazivne tujerodne vrste, turizem, gensko spremenjeni organizmi.

Subsidiary Body on Scientific, Technical and Technological Advice, Conference of the Parties and Intergovernmental Committee for the Cartagena Protocol) and the Food and Agriculture Organisation of the United Nations. The international cooperation includes the appointment of Slovene experts to the International list of experts for particular fields, the participation at workshops and in ad-hoc expert groups organised by the Conference of the Parties, and the participation at the regional preparatory meetings.

The Secretariat of the *Convention* and the Secretariats of the Ramsar, Bonn, Barcelona and Washington Convention, the World Heritage Convention and the UN Framework Convention on Climate Change have signed the Memorandum of Cooperation. The Secretariats and the contracting parties cooperate in the drawing up of joint programmes, participate in joint projects, and coordinate the reporting for a particular convention.

Within the framework of Slovenia's accession to the EU, the cooperation with its institutions and other states, in view of pan-European initiatives (e.g. the Pan-European strategy), and international expert organisations and foundations, such as Planta Europa, BirdLife International, Wetlands International, IUCN, World Conservation and Monitoring Centre, EUROPARC, European Association for Animal Production, EUFORGEN (European Forest Genetic Resources Programme), ECCF (European Council for Conservation of Fungi) and Global Environment Facility, is extremely important.

OBJECTIVE

- To strengthen international cooperation and improve results at particular levels and between them.

DIRECTIONS

- To strengthen cooperation with international institutions and projects by exchanging information and good practice.
- To present the successful examples of biodiversity conservation and sustainable use of its components to the international public.
- To develop priority fields of international cooperation (the *Convention* Thematic Areas): forest ecosystems, inland waters and wetlands, invasive alien species, tourism, genetically modified organisms.

5

IZVEDBENA STRUKTURA ZA DOSEGANJE CILJEV STRATEGIJE



IMPLEMENTATION FRAMEWORK FOR THE ACHIEVEMENT OF THE STRATEGY OBJECTIVES

5.1 Predpogoji

Cilji strategije so zastavljeni ob določenih predpogojih in mogoče jih bo doseči učinkovito, če bodo izpolnjeni. To so:

- vlada na različnih ravneh zagotavlja vzajemnost, partnerstvo in soudeležbo pri ohranjanju biotske raznovrstnosti,
- pripravljenost vseh zadevnih javnosti in sektorjev, da cilje strategije biotske raznovrstnosti vključujejo v svoje strategije, programe, projekte,
- sodelovanje vseh poglobitvenih udeležencev vladnih sektorjev, lokalnih skupnosti, nevladnih organizacij, lastnikov zemljišč in najširše javnost pri vključevanju ciljev strategije in izvajanju usmeritev ohranjanja biotske raznovrstnosti, ki pri doseganju ciljev sledijo enakim strateškim načelom in s tem zagotavljajo vzajemno pomoč,
- državne službe v veliki meri izkoristijo obstoječe pravne, finančne in druge družbeno-gospodarske mehanizme na mednarodni, nacionalni, regionalnih in lokalnih ravneh za doseganje ciljev strategije v okviru svojih dejavnosti,
- pripravljenost odgovornih za izvajanje zakonodaje in sprejemanje ustreznih podzakonskih aktov,
- ustrezno spremljanje in nadzor nad izvajanjem zakonodaje,
- pravočasno izvajanje predpisov s področja ohranjanja narave in poseganja v prostor, tudi delov, povezanih z izpolnjevanjem zahtev Direktiv Evropske unije o ohranitvi prostoživečih ptic ter ohranitvi naravnih habitatov in prostoživeče flore in favne,
- pravočasno izvajanje predpisov s področja ravnanja z GSO,
- ustrezno spremljanje in nadzor nad izvajanjem strategije.

Zavedati pa se je treba, da sestavine biotske raznovrstnosti ne poznajo regionalnih in državnih meja in so zato populacije vrst odvisne tudi od razmer v drugih državah. Raven ohranjanja biotske raznovrstnosti v drugih državah bo zato vplivala tudi na stanje biotske raznovrstnosti v Sloveniji.

5.2 Sprejetje akcijskega načrta

Izvajanje *Konvencije* je večstopenjski proces. Analiza oziroma poročilo o uresničevanju določil *Konvencije* kaže sedanje stanje biotske raznovrstnosti in nakazuje poglobitve pomanjkljivosti pri njenem ohranjanju ter trajnostni rabi njenih sestavin. S sprejetjem te strategije se začne odpravljanje poglobitvenih pomanjkljivosti in določi splošna politična usmeritev. Sledi priprava akcijskega načrta po sektorjih, ki mora biti sprejet najpozneje leto dni po sprejetju strategije. Ključni proces za doseganje ciljev *Konvencije* pa je izvajanje akcijskih načrtov in drugih ukrepov v strateškem okviru, ki je podan za poglobitve sektorske razvojne politike.

5.1 Preconditions

In order to effectively achieve the objectives of the Strategy, specific preconditions have to be met. These preconditions are:

- the reciprocity, partnership and co-participation in the conservation of biodiversity, ensured by the Government;
- the willingness of the public and each sector to integrate the objectives of the Biodiversity Conservation Strategy into their own strategies, programmes and projects;
- the participation of the representatives of all major governmental sectors, local communities, non-governmental organisations, land owners and the general public in the formulation of the Strategy objectives and the implementation of biodiversity conservation directions which follow the same strategic principles and thus guarantee mutual assistance;
- the utilisation of the available legal, financial, social and economic mechanisms by state institutions at the international, national, regional and local level aimed at achieving the strategy objectives within the framework of their activities;
- the willingness of the responsible bodies to implement the legislation and adopt the relevant executive acts;
- the monitoring and control of the implementation of the legislation;
- the punctual implementation of the regulations on nature conservation and the activities affecting the environment, including the requirements of the EU directives on wild birds and on the conservation of natural habitats and of wild fauna and flora;
- the punctual implementation of the regulations on GMO;
- the monitoring and control of the implementation of the Strategy.

However, it should be taken into account that biodiversity components cross regional and national borders and that populations of species thus also depend on the conditions in the neighbouring countries. The degree of conservation of biodiversity in these countries hence inevitably affects the status of biodiversity in Slovenia.

5.2 Adoption of the action plan

The implementation of the *Convention* is a multistage process. The analysis of and report on the enforcement of the provisions of the *Convention* reflect the current status of biodiversity and indicate the main deficiencies concerning biodiversity conservation and the sustainable use of its components. With the adoption of this Strategy the basic deficiencies are eliminated and a general policy framework is established. The following stage dictates the drawing-up of the action plan by sectors. The plan has to be adopted in one year after the adoption of the Strategy. The main condition for the achievement of the *Convention* objectives is the implementation of the action plans and other measures within the strategic framework established for the principal sectoral development policies.

Action plans and other measures must be founded on the existing, successfully implemented measures and mechanisms and on the principles of good practice. Sectoral development policies should be upgraded with measures which are efficient in the elimination of the main problems of biodiversity depletion. The action plan must therefore be based on the participation of all principal actors in every field and the implementers of sectoral policies. The latter must be prepared to accept their share of obligations and tasks in the conservation of biodiversity. The core element of the plan is the responsibility to adapt all activities to the natural capacity of the environment and to enforce the sustainable development. The tasks of sectors are:

- to define the practical biodiversity conservation measures
- to draw up sectoral plans for the implementation of these measures
- to cooperate with nature protection experts and encourage the participation of economic sectors in such activities
- to upgrade the scientific and expert findings and improve the human resource capability through appropriate training, education and information within the framework of the economic and study activities.

The role/task of the nature protection sector is to monitor the status and pressures and to analyse, set priorities and objectives, inform, promote and offer advice and expert assistance. In cooperation with other sectors, it carries out joint projects concerning good practice of the conservation of biodiversity and sustainable use of its components and suggests the relevant general measures and directions. The continuous dialogue between the nature protection sector and other sectors must be guaranteed and the division of responsibilities must be clear in order to carry out the imposed tasks.

The Ministry of the Environment and Spatial Planning as well as the Ministry for Agriculture, Forestry and Food, the Ministry of the Economy, the Ministry of Education, Science and Sport, the Ministry of the Interior, the Ministry of Labour, Family and Social Affairs, the Ministry of Finance, the Ministry of Health and the Ministry of Culture must actively participate in the implementation of the Strategy.

5.3 Monitoring of the efficiency of the action

The implementation and enforcement of the Strategy objectives must be monitored and evaluated and, if necessary, supplemented and improved, therefore the objectives must be measurable. The action plan lays down the deadlines for the achievement of the results and the spatial distribution of the relevant activities. It should be taken into account that biodiversity is a dynamic system which changes in time and space. It is significantly affected by human activities and the objectives must be set in the framework of the land use categories in the past and now. It is quite demanding to formulate such objectives that would produce measurable results, in particular in view of defining the status of biodiversity. The main reason is the insufficient knowledge, especially in the field of taxonomy and ecology.

In order to measure the objectives, the reports on the status and the information on trends of the relevant indicators must be made available (see Chapter 4.2). However, while

Akcijski načrt in drugi ukrepi za doseg ciljev morajo graditi na že obstoječih uspešnih ukrepih in mehanizmih oziroma primerih dobre prakse. Sektorske razvojne politike je treba nadgraditi z ukrepi, ki bodo uspešnejše odpravljali glavne probleme zmanjševanja biotske raznovrstnosti. Akcijski načrt mora zato na vsakem vsebinskem področju temeljiti na vključevanju glavnih akterjev in izvajalcev sektorske politike, slednji pa morajo biti pripravljeni prevzeti svoj del odgovornosti in nalog za ohranjanje biotske raznovrstnosti. Jedro je odgovornost prilagajanja vseh dejavnosti naravnim zmogljivostim okolja in uresničevanju trajnostnega razvoja. Vloga/naloga sektorjev pa je:

- opredeliti konkretne ukrepe za ohranjanje biotske raznovrstnosti,
- pripraviti sektorske načrte za izvajanje teh ukrepov,
- sodelovati z naravovarstveno stroko in aktivno vključevati gospodarske panoge v tovrstno delo,
- nadgraditi spoznanja strokovnih ali znanstvenih izsledkov in povečevati kadrovske zmogljivosti z ustreznim usposabljanjem in izobraževanjem ter informiranjem v okviru gospodarskih dejavnosti in študijskih smeri.

Vloga/naloga naravovarstvenega sektorja je spremljanje stanja in pritiskov, analiziranje, določanje prioritet in ciljev, informiranje, spodbujanje, promoviranje, svetovanje in strokovna pomoč. V sodelovanju z drugimi sektorji izvaja skupne projekte zgledne prakse ohranjanja biotske raznovrstnosti in trajnostne rabe njenih sestavin in predlaga splošne ukrepe in usmeritve. Za to nalogo je pomembno zagotoviti stalni dialog med naravovarstvenim in drugimi sektorji ter opredeliti skupne cilje in jasno delitev odgovornosti.

Pri izvajanju strategije morajo poleg Ministrstva za okolje in prostor aktivno sodelovati zlasti Ministrstvo za kmetijstvo, gozdarstvo in prehrano, Ministrstvo za gospodarstvo, Ministrstvo za promet, Ministrstvo za šolstvo, znanost in šport, Ministrstvo za notranje zadeve, Ministrstvo za delo, družino in socialne zadeve, Ministrstvo za finance, Ministrstvo za zdravje in Ministrstvo za kulturo.

5.3 Spremljanje uspešnosti doseganja ciljev

Doseganje ciljev in izvajanje usmeritev strategije je treba spremljati in vrednotiti ter jih po potrebi dopolnjevati in izboljševati. Zato morajo biti merljivi, v akcijskem načrtu pa doseganje rezultatov tudi časovno in prostorsko opredeljeno. Pri njihovem oblikovanju pa je treba upoštevati, da biotska raznovrstnost označuje dinamičen sistem, ki se spreminja v času in prostoru. Nanj močno vpliva človek s svojimi dejavnostmi, zato je cilje treba postaviti v okvir rabe prostora v preteklosti in sedanjosti. Oblikovanje ciljev z merljivimi rezultati, posebno tistih, ki opredeljujejo kakovost stanja biotske raznovrstnosti, je pogosto oteženo zaradi pomanjkanja znanja, zlasti taksonomskega in ekološkega.



Za merjenje ciljev morajo biti na razpolago poročila o stanju in trendih primernih kazalcev (glej tudi poglavje 4.2). Medtem, ko te razvijamo, pa je možno uporabiti nekatere že obstoječe kazalce za spremljanje napredka.

Doseganje ciljev spremlja in vrednoti Delovna skupina za biotsko raznovrstnost, ki deluje v okviru slovenskega Sveta za trajnostni razvoj. Slednji jo potrdi na predlog, ki ga Vlada posreduje v treh mesecih po sprejetju strategije. Delovna skupina spremlja izvajanje ciljev strategije ter Svetu za trajnostni razvoj in Vladi redno poroča in predlaga popravke in dopolnitve. Sestavljajo jo predstavniki ključnih vladnih sektorjev, združenj lokalnih skupnosti, vplivnih nevladnih organizacij in znanstvenih ustanov.

Naloga Delovne skupine je tudi vključevanje ohranjanja in trajnostne rabe sestavin biotske raznovrstnosti v ustrezne sektorske ali medsektorske načrte. Pri tem sodelujejo organi v sestavi ministrstev, zaradi koordinacijske vloge mora biti oblikovana večja strokovna delovna skupina v okviru ARSO. Sem sodi tudi izboljšanje organizacije ohranjanja biotske raznovrstnosti, medinstitucionalnega in medsektorskega sodelovanja, preglednosti in dostopnosti podatkovnih baz in informacijskih sistemov.

5.4 Poročanje o izvajanju strategije

Medvladni forum za predstavitev dosežkov strategije in akcijskega načrta na mednarodni ravni so srečanja držav pogodbenic in konference evropskih ministrov za okolje.

Države podpisnice so dolžne poročati o izvajanju *Konvencije* Konferenci pogodbenic praviloma vsaka 4 leta na podlagi standardiziranega formata. Na temelju sklepov pogodbenic Slovenija izdeluje tudi tematska poročila o izvajanju *Konvencije* na področju izbranih ciljev (npr. v letih 2000-01 o tujerodnih vrstah, gozdnih ekosistemih in deljenju koristi). Pripravljajo se na podlagi poročil Delovne skupine za biotsko raznovrstnost.

new indicators are being developed, the existing ones should be used to monitor the progress.

The Biodiversity Working Group of the Council for Sustainable Development monitors to what degree the objectives have been achieved. This working group is approved by the Council on the proposal submitted by the Government in three months after the adoption of the Strategy. It monitors the implementation of the Strategy objectives and reports to the Council for Sustainable Development and the Government. It also proposes amendments to the Strategy. The members of the Biodiversity Working Group are the representatives of the key governmental sectors, local communities' associations, influential non-governmental organisations and scientific institutions.

The principle task of the Working group is to incorporate the conservation and sustainable use of biodiversity components into the relevant sectoral and intersectoral plans. The bodies of various ministries participate in the implementation of its tasks but in order to coordinate the process, a special technical working group within the Environmental Agency has to be established. Moreover, the organisation of the biodiversity conservation, the interinstitutional and intersectoral cooperation and the transparency and accessibility of data bases and information systems have to improve.

5.4 Reporting on the implementation of the Strategy

The meetings of contracting parties and the conferences of the European environmental ministers are the intergovernmental forum for the presentation of the achievements of the Strategy and action plan at the international level.

The contracting parties are obliged to report on the implementation of the *Convention* to the Conference of the Parties every four years on the basis of a standardised format. Following the decisions of the contracting parties, Slovenia draws up theme reports on the implementation of the *Convention* with regard to the selected objectives (e.g. in 2000-01 on alien species, forest ecosystems and the sharing of benefits). These reports are drawn up on the basis of the reports issued by the Biodiversity Working Group.



APPENDIX

DODATEK

6.1 Slovarček izrazov in kratic

Biodiverzitet (glej *Biotska raznovrstnost*)

Biotska pestrost (glej *Biotska raznovrstnost*)

Biotska raznovrstnost (definicija iz Zakona o ohranjanju narave) je raznovrstnost živih organizmov, ki vključuje raznovrstnost znotraj vrst in med različnimi vrstami, gensko raznovrstnost ter raznovrstnost ekosistemov. Izraz "*biotska raznovrstnost*" izhaja iz angleškega izraza "*biodiversity*" in je preveden na več načinov, zato se v slovenščini uporabljajo tudi izrazi »*biodiverzitet*« in »*biotska pestrost*«.

Biološka raznovrstnost - izraz izhaja iz angleškega izraza »*biological diversity*«, ki ga je leta 1992 definirala Konvencija. Pozneje se je v angleščini kot primernejši uveljavil izraz »*biodiversity*«. Glej tudi *Biotska raznovrstnost*.

Domorodna (avtohtona) živalska ali rastlinska vrsta je tista, ki je v določenem ekosistemu naravno prisotna; od vrst, ki so bile iztrebljene, se za domorodne štejejo tiste, za katere v ekosistemu še obstajajo približno enaki biotopski in biotski dejavniki, kot so bili pred iztrebitvijo.

Efektivna populacija je tisti del populacije, ki se uspešno razmnožuje. Njena velikost se izraža kot razmerje med efektivno in celotno populaciji.

Ekološko pomembno območje je območje habitatnega tipa, dela habitatnega tipa ali večje ekosistemske enote, ki pomembno prispeva k ohranjanju biotske raznovrstnosti. To so:

- območja habitatnih tipov, ki so biotsko izjemno raznovrstni ali dobro ohranjeni, kjer so habitat ogroženih ali endemičnih rastlinskih ali živalskih vrst in habitatov vrst, ki so mednarodno pomembni po merilih ratificiranih mednarodnih pogodb ali ki drugače prispevajo k ohranjanju biotske raznovrstnosti,
- območja habitatnega tipa ali večje ekosistemske enote, ki pomembno prispevajo k ohranjanju naravnega ravnovesja s tem, da so glede na druga ekološko pomembna območja uravnoteženo biogeografsko razporejena in sestavljajo ekološko omrežje,
- habitat mednarodno varovanih vrst,
- selitvene poti živali in
- območja, ki bistveno prispevajo h genski povezanosti populacij rastlinskih ali živalskih vrst.

Ekosistem pomeni dinamičen kompleks rastlinskih in živalskih združb ter združb mikroorganizmov in njihovega neživega okolja, ki so povezani v funkcionalno celoto.

Endemit, endemična vrsta je rastlinska ali živalska vrsta, ki živi samo na določenem geografskem območju, praviloma manjšem (npr. Cerkniško jezero, Notranjska, Alpe).

GSO – gensko spremenjeni organizmi.

6.1 Glossary of terms and abbreviations

Biodiversity (see *Biotic diversity*)

Biotic diversity (the Nature Conservation Act definition) is the variability among living organisms, including the diversity within and between species, genetic diversity and diversity of ecosystems.

Biological diversity - the term was defined by the *Convention* in 1992. Later on, the term "*biodiversity*" was accepted world wide. (See also *Biotic diversity*)

Conference of the Parties is the highest body of the *Convention* where the authorised representatives of the parties adopt decisions concerning the implementation of the *Convention* and its amendments, and discuss other important issues related to it. The decisions adopted at the *Conference of the Parties* are obligatory for all parties if the reservations can not be made.

Convention - in *italic* it refers to the *Convention on Biological Diversity*.

Decision of the Parties see *Conference of the Parties*

Effective population is the population that breeds successfully. Its size is determined by the ratio between the effective population and total population.

Ecologically important area is an area of a habitat type, its part or large ecosystem unit that significantly contributes to conservation of biodiversity. Such areas are:

- areas of habitat types which are, with regard to their biotic characteristics, exceptionally diverse or well preserved; where there are habitats of endangered or endemic plant or animal species; and habitats which are internationally important according to the criteria of the ratified international treaties; or habitats which in any other way contribute to the conservation of biodiversity;
- areas of a habitat type or a large ecosystem unit which significantly contribute to the maintenance of natural balance; their biogeographical distribution is regular in comparison to other ecologically important areas and they compose an ecological network;
- habitats of internationally protected species;
- animal migration routes; and
- areas which significantly contribute to the genetic flow between the populations of plant or animal species.

Ecosystem is a dynamic complex of plant, animal and micro-organism communities and the relevant non-living environment, which interact as a functional unit.

Endemic, endemic species is a plant or animal species that inhabits a specific geographical area, usually a small one (for example, Cerkniško jezero, Notranjska region, the Alps).

Ex-situ conservation is the conservation of populations and species outside their natural living environment, in botanical gardens, zoos, and aquariums.

GMO - Genetically Modified Organisms.

Habitat is an area where a species lives and which is characterised by specific living and non-living factors or a geographically defined area where the specimen or population of a species live.

Habitat type is a spatially explicit ecosystem unit distinguished by biotope or biotic characteristics. Up to 6 levels (subtypes) of habitat types can be defined according to the PHYSIS classification. As a rule, they describe a characteristic species' community or the status of abiotic factors.

Habitat type is at a favourable status when its natural range and areas it covers within that range are general and stable; when the structure of a habitat type and the natural processes or proper use guarantee its self-preservation capacity; when the processes which might deteriorate the structure and function of a habitat type and thus threaten its self-preservation capacity in a foreseeable future are not known; when a favourable status of characteristic habitat types is guaranteed.

Indigenous (autochthonous) animal or plant species is a species which naturally occurs in a certain ecosystem; of the exterminated species those shall be considered indigenous for which approximately the same biotope and biotic conditions still exist in the ecosystem as prior to the extermination.

IUCN (The World Conservation Union) is an international nature protection organisation; it was established in 1948 as the *Union for Protection of Nature* (IUPN). In 1956 it was renamed into the *International Union for Conservation of Nature and Natural Resources* and since the 18th Session of the General Assembly in Perth (1990) the shorter name, *The World Conservation Union*, is used. The abbreviation IUCN (UICN in French) has not changed.

In-situ conservation is the conservation of populations and species in their living environment.

NATURA 2000 - a network of protected areas of the European Union pursuant to the directives on the conservation of wild birds and on the conservation of natural habitats and of wild fauna and flora.

Notification is a notice on the adoption of a convention communicated by the state to the Depositary of the Convention.

NEAP - National Environmental Action Programme

Non-indigenous (allochthonous) species is a species which has been introduced in a certain area (for example, continent, state, island) by man (not naturally) and has not been present in biocenosis of a certain ecosystem prior to the introduction; of the exterminated species those

Habitat (življenjski prostor) je s specifičnimi neživimi in živimi dejavniki opredeljen prostor vrste oziroma geografsko opredeljen prostor osebkov ali populacije vrste.

Habitatni tip je biotopsko ali biotsko značilna in prostorsko zaključena enota ekosistema. Po klasifikaciji PHYSIS delimo habitatne tipe na do šest ravni (podtipov). Praviloma so opis značilne združbe vrst ali stanja abiot-skih dejavnikov.

IUCN (Svetovna zveza za ohranitev narave) je mednarodna naravovarstvena organizacija, ustanovljena leta 1948 pod imenom *International Union for Protection of Nature* (IUPN). Leta 1956 se je preimenovala v *International Union for Conservation of Nature and Natural Resources*, od zasedanja Generalne skupščine leta 1990 v Perthu (Avstralija) pa se vedno bolj uveljavlja krajši opisni naslov *The World Conservation Union*. Kratica IUCN (oziroma UICN na francoskem govornem območju) se s tem ne spreminja.

Konferenca pogodbenic je najvišji organ konvencije, v katerem pooblaščen predstavniki pogodbenic sprejemajo odločitve glede izvajanja konvencije, spremembe ali dopolnitve konvencije ter druge pomembnejše zadeve v zvezi s konvencijo. Odločitev sprejeta na konferenci pogodbenic je za državo pogodbenico obvezujoča, če pridržki niso dopustni.

Konvencija – v *ležeči pisavi* je mišljena Konvencija o biološki raznovrstnosti.

Mokrišče je v splošnem v slovenskih razmerah območje, kjer se pojavlja kateri koli od naslednjih habitatnih tipov po klasifikaciji PHYSIS: obalni habitatni tipi, celinske vode, barja in močvirja, mokrotna in vlažna travišča, obrečni in močvirni gozdovi in grmišča; ter nekateri podzemski habitatni tipi.

NATURA 2000 - sistem zavarovanih območij Evropske unije na podlagi Direktiv o ohranitvi prostoživečih ptic ter ohranitvi naravnih habitatov in prostoživeče flore in favne.

Notifikacija je obvestilo o sprejetju konvencije, ki ga država običajno pošlje njenemu depozitarju.

NPVO – Nacionalni program varstva okolja.

Odločitev pogodbenic glej *Konferenca pogodbenic*.

Ohranjanje ex-situ je ohranjanje populacij in vrst izven njihovega naravnega življenjskega okolja, v botaničnih in zooloških vrtovih oziroma akvarijih.

Ohranjanje in-situ je ohranjanje populacij in vrst v njihovem življenjskem okolju.

Ratifikacija je način sprejetja konvencije v notranjo zakonodajo države.

Tujerodna (alohtona) vrsta je tista, ki se na neko območje (npr. kontinent, država, otok) ne naseli po naravni poti (praviloma jo vnese človek) in v biocenozi določenega

ekosistema pred naselitvijo ni bila prisotna; od vrst, ki so bile iztrebljene, se za tujerodne štejejo tiste, za katere v ekosistemu ne obstajajo več približno enaki biotopski in biotski dejavniki, kot so bili pred iztrebitvijo.

Ugodno stanje habitatnega tipa nastopa, če je naravna razširjenost habitatnega tipa in območij, ki jih posamezen habitatni tip znotraj te razširjenosti pokriva, splošna in stabilna, če struktura habitatnega tipa in naravni procesi ali ustrezna raba zagotavljajo samoohranitveno sposobnost, če v predvidljivi prihodnosti niso znani procesi, ki bi lahko poslabšali strukturo in funkcijo habitatnega tipa in s tem ogrozili njegovo samoohranitveno sposobnost, ali če je zagotovljeno ugodno stanje značilnih vrst habitatnega tipa.

Ugodno stanje vrste nastopa, če sta razširjenost vrste in številčnost populacij v okviru naravnih nihanj in ne kaže dolgoročnega trenda zmanjševanja in so habitatni populacij vrste dovolj veliki, da zagotavljajo dolgoročno ohranitev populacij.

Vrsta je skupina naravnih populacij, ki se med seboj dejansko ali potencialno razmnožujejo, ki pa so reproduktivno izolirane od drugih takšnih skupin.

Zavarovano območje pomeni geografsko določeno območje, ki je namenjeno ali urejeno in upravljano za doseganje posebnih ohranitvenih namenov.

shall be considered non-indigenous for which approximately the same biotope and biotic conditions no longer exist in the ecosystem as prior to the extermination.

Protected area is a geographically defined area intended for achieving special conservation measures and managed accordingly.

Ratification is the manner of accepting a convention in the internal legislation of a state.

Species is at a favourable status if its distribution and abundance are consistent with the natural fluctuations and do not show a long-term reduction trend and if the habitats of its populations are sufficiently large to maintain the populations on a long-term basis.

Species is a group of, actually or potentially, interbreeding individuals, not normally able to interbreed with other such groups.

Wetland is the area (in Slovenia, in general conditions) where any of the following habitat types, classified according to the PHYSIS, occurs: coastal habitat types; inland waters; bogs and fens, and marshes; wet and humid grasslands; riparian and marsh forests and scrub; specific subterranean habitat types.