Appendices

1. INFORMATION CONCERNING THE REPORTING PARTY AND PREPARATION OF NATIONAL REPORT

A. Reporting Party

Reporting Party	Poland
NATIONAL FOCAL POINT	
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SUBMISSION	
Signature of officer responsible for submitting national report	Janusz Zaleski, Undersecretary of State in the Ministry of the Environment
Submission date	31 March 2009

B. Process of preparation of national report

The Fourth National Report on Implementing the Convention on Biological Diversity was prepared in accordance with Article 28 of the Convention and Decision VIII/4 of the Conference of the Parties, on the basis of the guidelines provided by the first meeting of the Working Group on Review of Implementation.

The Report was prepared by the National Foundation for Environment Protection as ordered by the Ministry of Environment. An interdisciplinary taskforce consisting of experts from various institutions and disciplines was established for the purpose. The sources of information used were official documents (legal acts, strategies), compilations, overview and discussion materials, databases as well as individual specialists from various units sharing their knowledge and thoughts.

Prior to submission of the Report to the Secretariat of the Convention, a broad consultation process was carried out with the stakeholders. Most of the comments made, were taken into account and appropriate amendments and additions to the document were made.

The Fourth National Report on Implementation the Convention on Biological Diversity was prepared by the Editorial Team consisting of: Wojciech Nowicki, Andrzej Weigle, Katarzyna Kaim, Alicja Kiczyńska, Witold Lenart, Elżbieta Martyniuk, Jan Musiał, Wiesław Podyma, Jerzy Solon, Rajmund Wiśniewski.

In the process of drafting report, information and documents by Roman Andrzejewski, Elżbieta Chudzicka, Wiesław Fałtynowicz, Krzysztof Kafel, Witold Lenart, Wojciech Mróz, Elżbieta Martyniuk, Dorota Nowosielska, Joanna Perzanowska, Wiesław Podyma, Ewa Skibińska, Jerzy Solon, Hanna Werblan-Jakubiec, Krzysztof Walczak were used, as well as information contained within compilations, reports, statements and documents issued by government, research and public institutions.

C. Information sources used in the preparation of the report

Legislation:

- Act Amending the Act on Nature Conservation and some other Acts (2008);
- Act on Collective Water Supply and Collective Discharge of Wastewater (2001);
- Act on Forest Propagating Material (2001);
- Act on Genetically Modified Organisms (2001);
- Act on Inland Fisheries (1985);
- Act on Monument Protection and Conservation (2003);
- Act on Nature Conservation (2004);

- Act on Organisation of Breeding Domestic Animals (2007);
- Act on Preventing and Redress Environmental Damages (2007);
- Act on Protection of Farmland and Forestland (1995);
- Act on Sea Fishery (2004);
- Act on Seed Production (2003);
- Act on Sharing Information on the Environment and its Protection, Involvement of Society in Nature Conservation and on Environmental Impact Assessments (2008);
- Act on Spatial Planning and Development (2003);
- Act on the Chief Environmental Protection Inspectorate (1991);
- Forests Act (1991);
- Environment Protection Law (2004);
- Geological and Mining Law (1994);
- Water Law (2001);
- Regulation of the Minister of Agriculture and Rural Development on Fishing and Propagating, Rearing and Harvesting other Aquatic Organisms (2001);
- Regulation of the Minister of Environment on Kinds, Types and Subtypes of Nature Reserves (2005);
- Regulation of the Minister of Environment on the List of Game Species and Hunting Seasons (2001);
- Regulation of the Minister of Environment on the Protected Wild Animals Species (2004);
- Regulation of the Minister of Environment on the Protected Wild Fungi Species (2004);
- Regulation of the Minister of Environment on the Protected Wild Plant Species (2004).

Plans, strategies, programmes:

- Assumptions of the Polish Energy Policy until 2010 and 2020;
- Capercaillie Reintroduction Programme;
- Code of Good Agricultural Practice;
- Coherent Structural Policy for Rural Areas and Agriculture Development;
- Directions of Tourism Development till 2015;
- Fisheries Development Strategy 2000-2006;

- Fisheries Development Strategy 2007-2013;
- Forest Gene Preservation Programme;
- Framework of the Sustainable Development of Polish Fisheries Sector;
- II National Environmental Policy (2001);
- National Cohesion Strategy 2007-2013;
- National Development Plan 2004-2006;
- National Development Strategy 2007-2015;
- National Environmental Policy (1991);
- National Environmental Policy for 2003-2006 including Perspectives for 2007-2010;
- National Environmental Policy for 2009-2012 including Perspectives till Year 2016 (project);
- National Forest Policy;
- National Forest Resources Protection Policy;
- National Programme for Environmental Education;
- National Programme for Municipal Wastewater Treatment;
- National Programme for the Augmentation of Forest Cover;
- National Reform Programme 2005-2008;
- National Strategic Plan for Development of Rural Areas;
- National Strategic Reference Framework for years 2007-2013;
- National Strategy for Conservation and Sustainable Use of Biological Diversity and Action Plan (2003);
- National Strategy for Conservation and Sustainable Use of Biological Diversity and Action Plan (2007);
- National Strategy for Environmental Education – through Education to Sustainable Development;
- National Strategy for Protection of Wetlands;
- National Strategy for Water Management 2030;
- Operational Programme 'Development of Eastern Poland';
- Operational Programme 'Human Capital';
- Operational Programme 'Infrastructure and Environment';

- Operational Programme 'Innovative Economy';
- Operational Programme 'Sustainable Development of the Fisheries Sector and Coastal Fishing Areas 2007-2013';
- Operational Programme 'Technical Assistance';
- Poland 2025 – Long-Term Strategy for Sustainable Development;
- Polish Climate Policy – Strategy for Emissions of Greenhouse Gases until 2020;
- Polish Policy of Sustainable Forest Management;
- Principles of Scientific, Technical and Innovation Policy of the State by the Year 2020;
- Programme for Beskids;
- Programme for Restitution of Fir in Western Sudeten Mountains;
- Programme for the Oder – 2016;
- Programme of Coastal Protection;
- Programme of Restoration and Protection of Natural Fish Resources in the Pucka Bay;
- Programme of Restoring of Grey Seals and Porpoises in South Baltic Sea;
- Protection Programmes for Livestock Genetic Resources;
- Puck and Gdansk Bay Waters Protection Programme;
- Rural and Agriculture Development Strategy for 2007-2013;
- Rural Development Plan 2004-2006;
- Rural Development Programme 2007-2013;
- Sectoral Operational Program (SOP): 'Restructuring and Modernisation of the Food Sector and Rural Development';
- State Policy Provisions for Rationalization of Energy Consumption in the Municipal Sector;
- Strategy for Chemical Industry until 2010;
- Strategy for Development of Renewable Energy;
- Strategy for Tourism Development for 2001-2006;
- Strategy for Tourism Development for 2007-2013;
- Strategy of Coastal Protection;
- Strategy of Multifunctional Development of Rural Areas;
- Strategy of Social and Economic Activation of the Mountain and Mountainous Areas;

- Strategy of the National Fund for Environmental Protection and Water Management (2008);
- The Vistula River 2020 Programme;
- Water Management Strategy;
- Yew Restitution Programme;

Databases:

- Alien species in Poland;
- Atlas Flory Polski ATPOL dla roślin naczyniowych [ATPOL Atlas of Polish Flora for vascular plants];
- Centralna Baza Danych Geologicznych PIG (CBDG/PIG) [Central Geological Database];
- Centralny Rejestr Form Ochrony Przyrody [Central Register of Environment Protection Modes];
- INFOOS - Baza danych o ocenach oddziaływania na środowisko [Database on environmental impact assessment];
- Katalog Fauny Polski [Polish Fauna Catalogue];
- Krajowy Rejestr Leśnego Materiału Podstawowego [National Register of Forest Base Material];
- System Informacyjny Gospodarowania Wodami (SIGW) [Water Management Information System];
- System Informacji Przestrzennej o Mokradłach Polski [Spatial Information System on the Marshes of Poland];
- System wymiany informacji o różnorodności biologicznej w Polsce [Clearing House Mechanism in Poland];
- Krajowa baza danych o zasobach genetycznych zwierząt – element bazy Europejskiej EFABIS i światowej DAD-IS [National database of animal genetic resources – part of the European EFABIS database and the worldwide DAD-IS database].

Publications:

- Andrzejewski R. (red.), Weigle A. (red) 2003. Różnorodność biologiczna Polski, Narodowa Fundacja Ochrony Środowiska, ss. 284;
- FAO, 2007: The State of the World's Animal Genetic Resources for Food and Agriculture, edited by Barbara Rischowsky and Dafydd Pilling, FAO, Rome;

- Głowaciński 2002, Czerwona Lista Zwierząt Ginących i Zagrożonych w Polsce. Instytut Ochrony Przyrody PAN. Kraków;
- GUS, 2008. Użytkowanie gruntów, powierzchnia zasiewów i pogłowie zwierząt gospodarskich w 2008 r.;
- Herbich J. (red.) 2004. Poradniki ochrony siedlisk i gatunków Natura 2000 – podręcznik metodyczny. Ministerstwo Środowiska, Warszawa. T. 1-5.;
- Kaźmierczakowa R., Zarzycki K. et all, 2001. Polska czerwona księga roślin. Paprotniki i rośliny kwiatowe. Instytut Botaniki im. W. Szafera PAN., Instytut Ochrony Przyrody PAN. Kraków;
- Kostrzewska H., Krupiński J., Martyniuk E., 2008: Światowy Plan Działań na rzecz Zasobów Genetycznych Zwierząt - nowe perspektywy ochrony bioróżnorodności zwierząt gospodarskich. Wiadomości Zootechniczne R XLVI, Numer 1 Zeszyt specjalny, XI-XV;
- Matuszkiewicz J.M. 2001. Zespoły leśne Polski. - Wyd. Nauk. PWN, Warszawa, ss. 358;
- Matuszkiewicz J.M. 2001. Zróżnicowanie zasięgów geograficznych zespołów leśnych Polski;
- Matuszkiewicz J.M., Łonkiewicz B, Kliczkowska A., Hildebrand R., 2001.m ikroregionalizacja przyrodniczo-leśna Polski na podstawach geobotanicznych. – Prace Geogr. 178: 215 – 229;
- Matuszkiewicz W. 1999. Szata roślinna. W: Starkel L. (red.) Geografia Polski. Środowisko Przyrodnicze. Ss.: 427-475. Wydawnictwo Naukowe PWN, Warszawa;
- Matuszkiewicz W. 2001. Przewodnik do oznaczania zbiorowisk roślinnych Polski. Wydawnictwo Naukowe PWN, Warszawa;
- Mirek, Z., Piękoś-Mirkowa, H., Zając, A, Zając, M. et al., 2002, Flowering plants and pteridophytes of Poland. A checklist. Krytyczna lista roślin kwiatowych i paprotników Polski. IB PAN. Kraków;
- Polska Federacja Hodowców Bydła i Producentów Mleka, 2008: Ocena i hodowla bydła mlecznego, dane za rok 2007, Warszawa, 2008;
- Polski Związek Hodowców i Producentów Bydła Mięsnego , 2008: Ocena wartości użytkowej bydła ras mięsnych. Wyniki za rok 2007, Warszawa 2008;
- Polski Związek Hodowców i Producentów Trzody Chlewnej, POLSUS, 2008: Wyniki oceny trzody chlewnej w 2007 roku, Warszawa, 2008;
- Polski Związek Owczarski, 2008: Hodowla owiec i kóz w Polsce w 2007 roku. Warszawa, 2008;
- Roo-Zielińska E., Solon J. (red.) Między geografią i biologią - badania nad przemianami środowiska przyrodniczego. - Prace Geogr. 179, s: 263-295;

- Wawrzoniak J., Małachowska J. (red.) 2004. Stan uszkodzenia lasów w Polsce w 2003 roku na podstawie badań monitoringowych, Inspekcja Ochrony Środowiska, Biblioteka Monitoringu Środowiska, Warszawa;
- Wiadomości Zootechniczne, 2008: FAO International Technical Conference on Animal Genetic Resources for Food and Agriculture. Rok XLVI, Numer 1(256) zeszyt specjalny, Instytut Zootechniki_PIB, Kraków;
- Zając, A., Zając, M. (Eds.), 2001, Atlas rozmieszczenia roślin naczyniowych w Polsce. Distribution Atlas of Vascular Plants in Poland. Nakładem Pracowni Chorologii Komputerowej Instytutu Botaniki Uniwersytetu Jagiellońskiego, Kraków - Edited by Laboratory of Computer Chorology, Institute of Botany, Jagiellonian University, Kraków;
- Zarzycki K. Mirek Z. 2006. Red list of plants and fungi in Poland. Czerwona lista roślin i grzybów Polski, Kraków, IB im. W. Szafera PAN. ISBN 83-89648-38-5.

2. PROGRESS TOWARDS TARGETS OF THE GLOBAL STRATEGY FOR PLANT CONSERVATION

Target 1. A widely accessible working list of known plant species, as a step towards a complete world flora

Between 1919 and 1980 multiple volumes of „*Flora Polsk*i" were published. In each volume, systematic, ecological and geographical variance of each systematic plant group was discussed in detail, including very precise keys to identify each taxon. 1985-1992 saw the publication of a multi-volume global compilation entitled „*Flora Polska - rośliny naczyniowe*", which offered a slightly shorter synthesis of the taxonomy and the intra- and inter-species relationships between all vascular plant species in the country. This was followed by another compilation aiming to systematise the knowledge of the country's flora: *Mirek, Z., Piękoś-Mirkowa, H., Zając, A, Zając, M. et al., 2002, Flowering plants and pteridophytes of Poland. A checklist. Krytyczna lista roślin kwiatowych i paprotników Polski. IB PAN. Kraków.* The publication contains a list of vascular plant species of Poland that is as complete as possible. The alphabetic taxon index contains about 6 000 Latin names and over 4 000 Polish names for all (about 2 750) vascular plant species found in our country. Aside from the currently used Latin and Polish names, the most important synonyms in both languages are also included. The index includes all plants found in Poland, native taxa as well as well-established *anthropophytes*. It also includes an almost complete list of alien species temporary occurring - *ephemerophytes* and a few hundred species of ornamental and economically useful plants (trees, shrubs, undershrubs and ground perennials) which may potentially grow wild and become permanently established.

It can be currently assumed that the list of wild plant species in Poland is reasonably complete, including their position in the taxonomy. This does not mean that the work on Poland's taxonomy is complete. It is continuing in at least three directions: (a) adapting the taxonomy of Polish flora to any changes in the taxonomy of European flora, (b) continuing development of taxonomy inside taxa, in particular small species (e.g. belonging to the *Taraxacum, Hieracium, Rubus genera*), (c) registration of newly arriving alien species, especially those likely to become established.

Target 2. A preliminary assessment of the conservation status of all known plant species, at national, regional and international levels

Assessments of the conservation status of plant species (especially with regard to species ecology, habitat preferences and the dynamics of geographical range size) have been carried out since the work on Polish flora began. This knowledge was gradually verified and improved on. The information was synthesised in multiple publications, of which the most important is: *Kaźmierczakowa R., Zarzycki K. et all, 2001. Polska czerwona ksiega roślin. Paprotniki i rośliny kwiatowe. IB im. W. Szafera PAN., Instytut Ochrony Przyrody PAN. Kraków; Zarzycki K. Mirek Z. 2006. Red list of plants and fungi in Poland. Czerwona lista roślin i grzybów Polski, Kraków, IB im. W. Szafera PAN. ISBN 83-89648-38-5.*

In June 2007, in accordance with the requirements of Article 17 paragraph 1 of Council Directive 92/43/EWG of 21 May 1992 concerning the conservation of natural habitats of wild fauna and flora (the Habitats Directive), Poland submitted to the European Commission a report on the assessment of the conservation status of habitat types listed in annex I and animal and plant species listed in annex II, which covered the period between Poland accession to the EU and the end of 2006. The English version of the report is available at http://biodiversity.eionet.europa.eu/article17. The report, which presents the available knowledge on the conservation status of those species, their current locations and the location trends, deals with only a small group of plant species (the so-called „Natura 2000 species"), but the species concerned are very important in the context of the entire Polish and European flora.

„*Polska czerwona księga roślin*" [Red Book of Polish Plants] is a selection of plant taxa (mostly at the level of species) which are endangered or extinct in Poland. It includes *polystichum* species and seed plants present within the current borders of Poland in the 19th and 20th centuries. Its following editions have encompassed an increasing list of species, bringing its contents closer to „*Czerwona lista roślin i grzybów Polski*" [Red List of Polish Plants and Fungi], which is a full register of endangered species including a classification according to the level of risk.

The first book edition of „*Polska czerwona księga roślin*" appeared in 1993. The publication contained descriptions of 206 taxa, 34 of them extinct. The second edition was published in 2001 and comprised 296 taxa. This constitutes 58% of the endangered species in our flora (according to „*Czerwona lista*") and 15% of Poland's vascular plant species.

The classification of categories of risk is analogous to the categories adopted by the International Union for Conservation of Nature (IUCN) in 1994 (it does not take into account the changes to the criteria and classification introduced by the IUCN in 2001, which makes it more difficult to compare the real risk status of some systematic groups).

The first compilation which may be considered a red list of plants was Jasiewicz's work (*Jasiewicz A. 1981. Wykaz gatunków rzadkich i zagrożonych flory polskiej. Fragm. Flor.et Geobot., 27,3: 401-414*). Botanists from all major flora research centres in the country assisted in its development. The list comprised 457 species. Four categories were used to designate the level of risk: Ex – species extinct in Poland (8 species), V – species endangered in Poland (18 species), R – species rare in Poland (412 species), RL – species common in the mountains, rare in the lowlands (19 species). A large majority of the species were classified as rare, which means an insufficient knowledge of their locations and population levels rather than a lower level of risk. The list became a starting point for further research on the risk of vascular flora of Poland. The research resulted in the publication in 1986 of the List of extinct and endangered vascular plants in Poland (*Zarzycki K., Wojewoda W. [red.] 1986. Lista roślin wymierających i zagrożonych w Polsce. PWN, Warszawa*). It contained 339 species of vascular plants, classified into 4 categories: Ex - extinct (31 species), E – dying out (32 species), V - vulnerable (90 species), R - rare (130 species), I – undefined risk level (56 species). The 1992 edition (*Zarzycki K., Szeląg Z. 1992. Czerwona lista roślin naczyniowych zagrożonych w Polsce. s.: 87-98. W: Zarzycki K., Wojewoda W., Hainrich Z. 1992. Lista roślin zagrożonych w Polsce. Instytut Botaniki PAN, Kraków*) comprises 418 species, or about 19% of Poland's flora. The number of taxa considered extinct and most endangered increased (extinct or probably

extinct – 40 species, dying out – 54, in danger of extinction – 142), while the number of taxa of undefined risk level decreased (36 species). These changes were primarily due to the larger amount of data gathered about the species, which made possible a more precise assessment of their risk status. In the 2006 the following categories of risk were introduced: Ex – extinct and lost – species which no more exist in Poland at previously known stands and no new stands have been found; EW – extinct and lost – species which are extinct at natural stands but are being cultivated or exist at replacement stands; E – dying out – critically endangered – species in high danger of extinction, whose survival is unlikely in the continued presence of existing danger factors. The last group comprises species designated CR – critically endangered; |E| - dying out – critically endangered – species at high risk of extinction at isolated stands outside of their main locations; V – vulnerable – at risk of extinction – if the risk factors do not disappear, these species will be shortly moved to the dying out category; |V| - vulnerable - species at high risk of extinction at isolated stands outside of their main locations; R - rare (potentially endangered) – existing in small areas and existing highly dispersed. In this group are low risk species designated LR; I – undefined risk level – species about which there is no certain sources of information which would make it possible to classify them, but the information available indicates that they are endangered, dying out or extinct. The complete list contains 3123 taxa, of which 506 are vascular plant species. Below are quoted the numbers of species in each group of organisms (apart from mosses):

- Vascular plants: Ex – 44, EW – 3, E – 144, V – 183, R – 107, |E| - 25. In total - 506 species, constituting 21% of native Polish flora.
- *Marchantiophyta* and *Anthoceros*: Ex – 2, E – 21, V – 16, R – 38, I – 15. In total - 92 species, constituting 38.7 % of native Polish flora.
- Fungi (*macromycetes*): Ex - 53, E - 425, V - 175, R - 270, I - 40. In total - 963 species.
- Algae: 594 species. The list is tentative and provisional, it is largely incomplete.
- Lichens: 886 taxa. Their classification was based on different risk criteria.
- Slime molds: 82 species. The list is based on a small amount of data.

An important supplement to the above lists is the cartographic publication: *Zając, A., Zając, M. (Eds.), 2001, Atlas rozmieszczenia roślin naczyniowych w Polsce. Distribution Atlas of Vascular Plants in Poland. Nakładem Pracowni Chorologii Komputerowej Instytutu Botaniki Uniwersytetu Jagiellońskiego, Kraków - Edited by Laboratory of Computer Chorology, Institute of Botany, Jagiellonian University, Kraków.* It contains a presentation of species distribution in 10x10km squares for the entire territory of Poland with a commentary. Unfortunately, although the data contained in the Atlas provide a general idea of the richness of flora, the details only have a historical significance – with some very few exceptions, it is not a depiction of the current distribution of vascular plant species.

Supplementing the country-wide publications are numerous „regional red books and red lists", which provide an assessment of the conservation and protection status of flora in certain parts of the country (administrative, geographical or geometrical). However, there has not been a comprehensive analysis of regional publications – the results of such an analysis could change the

current views on the nationwide risk status of each species in a significant way. Information on the levels of dissemination, dynamic tendencies and the risk levels of individual species can also be found in keys for species designation, regional monographs on flora and – from a practical point of view – in management plans for national parks, landscape parks and other protected areas.

Lists of protected species, which are regularly updated and expanded through regulations on plant protection, serve as a practical indicator of plant conservation status.

It can be currently assumed that much is known on the conservation and protection status of all known plant species, although we know more about certain regions of the country than about others.

Target 3. Development of models with protocols for plant conservation and sustainable use, based on research and practical experience

To date, there has been no formal work carried out on the national level with regard to the development of models and protocols for plant conservation and sustainable use of particular species.

There are long-standing procedures regarding the possibility of gathering partially protected medicinal plant species from wild stands. These procedures are described in regulations on plant species protection. They regulate the means of obtaining a gathering permit, gathering zones and limits on the number of plant specimens gathered. However, these procedures are not based on population research and are rather 'intuitive' in nature.

It is only lately, in the scope of the *Transition Facility 2004 „Opracowanie planów renaturalizacji siedlisk przyrodniczych i siedlisk gatunków na obszarach Natura 2000 oraz planów zarządzania dla wybranych gatunków objętych Dyrektywą Ptasią i Dyrektywą Siedliskową"* project, that national protection plans have been drawn up for five species protected by national and international law (these are not 'sustainable use' species): cutleaf anemone (*Pulsatilla patens*), lady's slipper orchid (*Cypripedium calceolus*), lilyleaf ladybell (*Adenophora lilifolia*), saw-wort (*Serratula lycopifolia*) and ladder spleenwort (*Asplenium adulterinum*).

For some species, guidelines and standard procedures (including protocols regarding e.g. rules of species state monitoring and activity reporting) of varying quality are included in local-level documents, such as nature protection programmes for forest inspectorates and management plans for nature reserves, national parks and landscape parks.

General guidelines regarding protection of particular species are widely known and published. They are based on documented research.

Target 4. At least 10 per cent of each of the world's ecological regions is effectively conserved

Taking into consideration only the area of national parks, landscape parks and the Natura 2000 sites, it is to be recognized that Poland realizes that goal effectively. The protected areas in respective ecoregions are the following: (a) in the Central European mixed forests ecoregion –

18% of the area, (b) in the Baltic mixed forests ecoregion – 21% of the area, (c) in the Carpathian montane forests ecoregion – 35% of the area, (d) in the Western European broadleaf forests ecoregion – 25% of the area. Nevertheless, there is a problem with the efficiency of conservation assessment, as systematic and comprehensive analyses are lacking, particularly in the context of conservation goals' hierarchies, which in many cases are antagonistic in their mutual relations.

Target 5. Protection of 50 per cent of the most important areas for plant biological diversity assured

The most important areas in terms of biological diversity are distinguished as Important Plant Areas (IPA). This is a network of areas of a particular importance to preserve all Europe's flora and phytocoenoses groups. That network reflects and at the same time protects the most important elements of plant cover identity of the respective regions. An Important Plant Area is designated on the basis of three criteria. Criterion A: the presence of species of plants and fungi threatened on the European scale, with a particular consideration for endemic and rare relict species. Criterion B: the presence of a biotope representative and particularly rich in characteristic, endemic or rare species. Criterion C: the presence of biotopes particularly valuable botanically and threatened on the European scale.

At present, the IPA network in Poland comprises 116 Important Plant Areas, including all the 23 national parks, 57 landscape parks, over 30 nature reserves and protected landscape areas. According to the situation in 2006, as much as 53% of IPA are simultaneously covered by the NATURA 2000 network. According to the situation at the beginning of 2009 it can be approximately assumed, that over 95% of IPAs area, taking into account new proposals of IPAs and of objects from the so-called "Shadow List" verified in 2008, is assigned to protected areas (without taking into consideration protected landscape areas) or to areas designated to be protected under the NATURA 2000 network. The national coordinator for the Important Plant Areas is Professor Zbigniew Mirek, D.Sc. and the National Coordination Center is located in the W. Szafer Institute of Botany, Lubicz Str 46, 31-512 Kraków.

Target 6. At least 30 per cent of production lands managed consistent with the conservation of plant biodiversity

In Poland, there is no special programme concerned with including production lands into managing consistent with the plant biodiversity protection requirements. Nevertheless actions bringing about such an effect are included in numerous programmes and actions concerned with a sustainable development. A particular attention has to be given to actions taken within the framework of agro-environment schemes being elements of the *Rural Development Programme* for the years 2007-2013. Among nine so-called agro- environment packets seven of them are directly or indirectly concerned with the biological diversity protection of plants and of their habitats. Namely:

Packet 1. Sustainable agriculture

Packet 2. Ecological agriculture

Packet 3. Extensive permanent grassland

Packet 4. Protection of endangered bird species and habitats outside the Natura 2000

Packet 5. Protection of endangered bird species and habitats within the Natura 2000

Packet 8. Protection of soil and water

Packet 9. Buffer zones.

On the whole, over 60 thousand farms take part in the above-mentioned agro-environment schemes and the area they are embracing exceeds 4% of the cultivated land.

Independently from the above, it has to be emphasized that a large part of farms runs extensive farming, which is not contradictory to the requirements of plant biodiversity protection, although from the formal point of view they do not take part in these programmes. It concerns mainly about one half of farms (for the most part relatively small ones), in which production for own purposes is dominating. Taking into consideration differences in the mean size of farms it can be approximately assumed that at least 25% of the agricultural production area are used according to the requirements of plant biodiversity protection.

Target 7. 60 per cent of the world's threatened species conserved *in situ*

According to the Regulation of the Minister of Environment of July 9th, 2004 on the Protected Wild Plant Species, roughly 300 species of vascular plants and of *pteridophytes* are covered with a strict protection, of which about 100 needs an active protection. Taking into consideration that the list of threatened species (according to the study of 2006) counts about 500 species and covers almost all protected species, it can be assumed that nearly 60% of threatened species are protected.

Moreover, a part of threatened species (approximately a supplementary 10% - but these are rough data) occurs in national and landscape parks, where – at least formally – they are covered by the "area" protection.

Target 8. 60 per cent of threatened plant species is accessible in *ex situ* collections, preferably in the country of origin, and 10 per cent of them are included in recovery and restoration programmes

The aim of flora *ex situ* conservation is development of collections of live plants or of their seeds, collected from various populations of rare or threatened species, subspecies and varieties, serving their maintenance and possible reintroduction into the original environments or to replacement environments.

Conservation *ex situ* is performed in Poland by botanical gardens and on a smaller scale by medicinal plant gardens. There are 11 botanical gardens in Poland. Recently, a first landscape botanical park has been established – an arboretum (located in a non-urbanized site), which offers a suitably large area and natural habitat conditions for many species. Collections of trees, bushes and low shrubs are accumulated in arboreta. These institutions have a similar function to

botanical gardens, with a special emphasis on research studies, first of all from the fields of systematics, acclimatization of alien species with the aim of their practical use in forestry and in selections for planting in respective regions of the country. In Poland there are 17 arboreta. Medicinal plant gardens are mainly subordinated to medical universities, and special emphasis is pointed upon research studies connected with the production of new drugs. There are 7 such institutions in Poland.

Botanical gardens and arboreta are participating in biodiversity conservation by:

- development and maintenance a collection of plants directly imported from their natural sites or reproduced from seeds procured in the nature;
- reproducing plants in a garden and preparation of the material to its possible reintroduction or to move its population into replacement sites;
- picking seeds in natural sites to offer them to an exchange (Index Seminum);
- operating gene stock banks.

Saving from a total extinction the *Cochlearia polonica* is a proof of the important role of the above-mentioned institutions in biodiversity conservation. The population of *Marsylea quadrifolia* has survived only thanks to its conservation *ex situ* in botanical gardens, when its natural site in our country ceased to exist. Research is being done over the species *Hacquetia epipactis* with the use of *ex situ* cultivation of young seedlings. Obtaining that species by sowing from seeds originated from only two specimens preserved in natural environment enabled to reintroduce it into a natural forest site near the village Rozumice (district Głubczyce). Wrocław University is running (under the guidance of Ryszard Kamiński) a successful experiment concerning the cultivation *ex situ* of *Aldrovanda vesiculosa* in the botanical garden and its restitution in many water reservoirs in replacement sites. Also cultivation of *Saxifraga hirculus*, is run *ex situ*. It is a very rare species, but fortunately it has very durable populations in natural sites.

The comparison of accessible lists of protected species, bred in botanical gardens, shows that over 200 taxa legally protected and other numerous taxa endangered by extinction are represented in collections of gardens and of arboreta and that they have a documented origin from natural sites. It can approximately be assumed, that it corresponds to over 40% of Poland threatened species.

At present, the situation in *ex situ* protection is good and target 8 is implemented, although not completely, because actions concerned with the conservation *ex situ* of wild plant species in botanical gardens are not fully integrated within the framework of a comprehensive working plan. There is also lack of a unified system of their financing. Individual institutions developed creating their own collections and accumulated their own data on threatened, rare and critically endangered species, but their research studies were most frequently limited to only one chosen region.

Target 9. 70 per cent of the genetic diversity of crops and of other major socio-economically valuable plant species conserved, and associated indigenous and local knowledge maintained

The aim of conservation of genetic diversity of crops consists in retaining a full variability of all species cultivated in farm conditions and in retaining wild relatives of crops in their natural habitats. That kind of conservation anticipates not only to retain the given form in the place of that origin, in which it gained its specific characteristics, but also takes into consideration the continuation of traditional mode of cultivation and of selection, which leaded to its creation.

Poland is a signatory of the International Treaty for the Conservation of Plant Genetic Resources and a number of international obligations and agreements results directly from the Treaty. At present legal regulations concerning directly the conservation of crop plant genetic resources are not in force. The Act on Seed Production is nevertheless being amended and it will implement regulations, the purpose of which is enabling of trade of agricultural plant varieties, important to maintain the biological diversity.

Since 2007 a special Packet 6: "*Maintaining Threatened Plant Genetic Resources in Agriculture*" exists within the framework of agro-environment schemes. In 2008 42 motions were submitted concerning the cultivation of local varieties and of forgotten species on the area of 583 ha and also 839 orchards adjacent to the house of a total area of 293 ha were submitted to protection.

A lot of projects concerning the conservation of crop plant genetic resources *in situ* are run by some non-governmental organisations, including the Naturalist Club and the Public Ecological Institute. Projects were initiated by boards of landscape parks (of Lodz province, of Brodnica town , of Barycza valley) or by the Wigierski National Park.

A particularly interesting project has been initiated on the territory of the Nadwiślańskie Landscape Parks Complex, where old orchards and roadside plantings of fruit-trees from before the I world war and from the interwar period are growing. Under that project it was begun to establish an orchard of old varieties of apple trees run by traditional methods and it is planned to supplement the roadside planting by varieties existing in that region. Also the Research Institute for Vegetable Crops is collaborating with chosen farmers on storing old varieties of vegetables in farms.

National collections of crop plants are obligated to secure first of all genetic resources originated from Poland (wild species, ecotypes, local varieties and country's cultivable forms, registered varieties and varieties deleted from the register as well as valuable genetic materials produced in research institutions). In Poland 73 thousand of plant genotypes of an useful character are covered by different forms of conservation, over 65 thousand of them are seed samples deposited in long-term storage rooms in the National Center for Plant Genetic Resources IHAR. Several thousand objects are stored in vegetative form (fruit trees, bushes, hop, potatoes, garlic, asparagus etc). The major part of the stored genotype forms are domestic and foreign varieties and cultivation lines. The remaining materials are stored in research and working collections of institutes and cultivation stations as well as in didactic university collections.

The botanical garden of the Polish Academy of Sciences runs conservation of old varieties *ex situ*. A collection of over 2000 objects of genus rye (*Secale ssp*) was accumulated. At the same time

evaluation of collections in field conditions is running. A second direction of research consists in accumulating and assessing genetic resources of the genus *Malus*. The plant material of the apple tree was collected on the basis of gathering scions from old trees from various regions of Poland and from natural habitats. Varieties which were cultivated before 1930 are gathered and also those which are at present not in the natural selection. Up to now over 200 varieties were gathered. Also other species *Malus*, as e. g. *Malus sieversii*, characterized by the existence of many forms, are parts of that collection as well.

Poland is not a country rich in wild species being the ancestors of crop plants having a great economic importance. Exclusively Polish varieties of fodder grass and of *perennial papilionaceous* family plants were grown from wildly growing ecotypes. The ancestors of contemporary crop plants are mainly species from the genus *Prunus* (cherry, plum trees) as well as *Lactuca serriola* – the ancestor of the lettuce. Many important medicinal species appear commonly in natural sites, e.g. *Achillea millefolium* or *Iris sibirica*. There are many species which constitute a potential source of biodiversity for the agriculture, but are not used. It concerns forage crops of species *Alopecurus, Bromus*, *Medicago,* and *Trifolium*. There is also a group of wild species exists, that could be used as ornamental plants, e.g. *Scilla bifolia*, *Azalea pontica* or *Dendranthema Zawadskii.*

The Kostrzyca Forest Gene Bank (LBG) in Kostrzyca has a particular position in the strategy of conservation of forest genetic diversity *ex situ*.. In LBG genotypes are stored in the form of tissue cultures and of generative organs of disappearing and endangered populations of tree and bush species, principally from the region of disaster forest withering in the Sudety Mountains as well as genotypes of the oldest (over 200 – 250 years, depending on species) trees in Poland. Endangered plants of the forest undergrowth are also stored in the Bank. An arboretum and a container nursery producing saplings of local origin tree species stored in the gene bank are also running within the framework of LBG. These saplings serve to restore species extinct at the period of the ecological disaster in the Sudety mountains. That institution is also the coordinator of the *Programme of conservation and of restitution of common yew in Poland.*

Archives of clones of forest trees located in the Syców forest inspectorate (for south-western Poland) and in the Łomża inspectorate (for north-eastern Poland) play an important place in the conservation of forest biodiversity. Genotypes of valuable forest trees and of monumental trees are stored there. A similar role is played by forest arboreta in Wirty (Kaliska forest distrrict) in Glinna (Gryfino), in Kudypy and in Syców forest districts.

Due to the necessity of development of optimal conditions for the conservation of genetic diversity of crop plants, a draft suitable strategy has been prepared. It includes inter alia the following issues:

- to review the existing state of knowledge and on that basis to prepare lists of particularly valuable species of crop plants and of accompanying them weed species endangered with extinction, that require protection *in situ;*
- to carry out, under the leadership of an interdisciplinary group of specialists, with the participation of local communities and social organisations, a detailed inventory or an

identification of species and varieties of agricultural plants, vegetables, fruit-growing, ornamental and herbal plants grown in the region;

- to assign regions which should be excluded from an intensive agricultural production for benefits for agrocoenoses of crop plants in farms (creation of heritage production parks);
- to develop programmes of conservation of endangered crop species. These programmes are to specify which methods of conservation should be used for the given variety, which minimal population number should be hold *in situ* and whether it is necessary to store the genetic material in *ex situ* banks;
- to develop a programme of preserving *in situ* wild species of plants related to crop plants;
- to create legal and financing mechanisms ensuring the retention of traditional practices of local communities on the cultivation of land in certain rural areas, on protected areas and outside these areas.

Unfortunately , there is lack of detailed data to determine – even in an approximate way - the degree of implementation of the assumed target.

Target 10. Management plans are in place for at least 100 major alien species that threaten plants, plant communities and associated habitats and ecosystems

On national level adequate plans do not exist. There is a national database on the occurrence and nuisance of alien species and it is supplemented on a regular basis. Local initiatives are nevertheless taken up, *inter alia*, in national parks, to remove the most troublesome species and to contorl their entry, covering inter alia guidelines concerning the ornamental plant breeding in the vicinity of protected areas.

Target 11. No species of wild flora endangered by international trade

The principles of protection of populations of wild species of plants endangered by extinction through control and limitation of their international trade are normalized on a global level by regulations of the Washington Convention and on the national level by the Act on Nature Conservation of April 16th, 2004. The effectiveness of undertaking preventive actions in that field depends to a large extent on an effective involvement in it not only of the environment protection services but also of such institutions as inter alia the police and customs services.

In Poland there is established the Working Group for CITES, in which take part representatives of the Ministry of Environment, the State Council for Nature Conservation, the Ministry of Finance, the Customs, the Police, the Veterinary Inspectorate, non-governmental organisations as well as representatives of zoological gardens and the Prosecution Office. There is in the Polish Police Headquarters a group for crimes against environment, including crimes against endangered flora and fauna species, which are under the Washington Convention regulations. That group coordinates and monitors actions of local police units inspecting the domestic market, *inter alia* inspecting shops as well as selling CITES species specimens by internet.

Annual reports issued by the Ministry of Environment and by the Polish Police Headquarters show that both licit and illegal export from Poland of protected and threatened plants (or of their parts) has a quite marginal, unimportant character.

Target 12. 30 per cent of plant-based products derived from sources that are sustainably managed

Regarding vegetal products coming from cultivation, there do not exist any reliable data enabling to determine, what share of production is obtained from sources managed in a sustainable manner. That share can nevertheless be recognized as a significant one, as agriculture in Poland has on a prevailing scale an extensive character.

Wood produced and brought to the market by the State Forests can be counted as other products of vegetal origin. The State Forests the National Forest Holding (PGL-LP), is running the forest economy in accordance with the Forest Act, according to the principles of common protection of forests and the durability of their maintenance, continuity and sustainable use of all forest functions and enlarging forest resources. The *Good Forest Management Certificate* was awarded to most forests under PGL-LP management by the organisation Societé Générale de Surveillance and by Nepcon. One can therefore claim that nearly 100% of wood is obtained from sources managed in a sustainable manner.

Target 13. The decline of plant resources and associated indigenous and local knowledge innovations and practices, that support sustainable livelihoods, local food security and health care, halted

This target is implemented through the before-mentioned activities and legal solutions concerning wildly growing and cultivated species. Legal species protection and area protection realized in national and landscape parks, nature reserves and Natura 2000 sites are the basic types of actions. Agro-environment schemes related to the agricultural production play also a vital role. Information and educational activities run within the framework of school programmes and by many non-governmental organisations constitute also an important element.

Target 14. The importance of plant diversity and the need for its conservation incorporated into communication, education and public awareness programmes

Curricula, approved by the Minister of National Education, are the principal instrument of impact on teaching scope in primary and in secondary schools. In the minimum curriculum it is obligatory to conduct many themes concerned with the biological diversity, including inter alia: the necessity of conservation of species diversity and matter circulation, the decrease of species diversity of natural and anthropogenic ecosystems, the global importance of local balance disturbance, kinds of variability and its causes, protected areas and other related themes. In secondary schools as one of teaching goals there is to show the usefulness of knowledge on

biodiversity in science and in everyday life. In teaching contents there are also themes on the role of various plant and animal groups in ecosystems.

High schools have a large autonomy in establishing plans and programmes for students. Plant biological diversity issues and the necessity of its conservation are included into many courses and specializations in various departments of various types of universities. The broadest range of issues is included in such courses of studies as: agriculture, forestry, fishery, horticulture (in agricultural academies), biology, geography, environment conservation (in universities). It is also important to include these issues into curricula in pedagogical courses of various type of academies.

A constant raising of qualifications of services responsible for that sphere is very important towards the efficiency of actions taken on the protection and sustainable use of the biological diversity. Annually post-graduate studies are organized for civil servants, State Forests engineering staff, regional self-government staff.

Educational activities of the State Forests, run on the basis of *Directions of development of forest education in State Forests* and in *Guidelines for development of public forest education in forest inspectorates* and directed to all social groups, have a considerable importance for education towards informing the community of the significance of the biological diversity. A specific feature of public forest education is a very big emphasis on running it directly in the field, i.e. on educational paths, in forest education rooms, shelters and stations and in other forest sites. Such a form of education, giving an unique possibility of "touching" the nature and to be to some degree inside the biological diversity and becoming its element, is extremely suggestively operating on audience, writing down in their memory for a long time the abundance and the weight of biodiversity.

Non-governmental organisations play an important role in increasing the ecological awareness of the community. Annually in Poland over 2000 events, conferences, workshops and trainings dedicated to nature and environment conservation are organized. It is difficult however to evaluate, which number of them actually is concerned with the plant diversity conservation.

Target 15. The number of trained people working with appropriate facilities in plant conservation increased, according to national needs, to achieve the targets of this Strategy

The number of trained people is increasing according to the increase of needs. It applies to experts with a higher education, but also to persons trained on a basic level. Every year over 2000 persons are taking part in post-graduate studies and in supplementary courses organized by universities, the Polish Academy of Sciences and by the Ministry of Environment.

Target 16. Networks for plant conservation activities established or strengthened at national, regional and international levels

For many years Poland has been actively participated in international enterprises on nature conservation. During the last 20 years the majority of conventions and international agreements concerning that issue were ratified or signed by Poland.

The governmental authority responsible for the implementation of obligations resulting from accepted convention is the Ministry of Environment, in collaboration with other resorts.

Poland also actively participates in works of various international bodies, including specialized agencies of the UN system (UNEP, UNDP, FAO) and the Council of Europe forum as well as within the framework of *Paneuropean biological and landscape diversity strategy*. In recent years a significant animation of bilateral cooperation has also occurred, in particular with neighbour countries. Agreements with 21 European states and with the United States of North America were signed. There are also intense contacts with international non-governmental organisations, e. g. with the International Union for Conservation of Nature (IUCN) and with the World Fund for Conservation of Nature (WWF).

3. PROGRESS TOWARDS TARGETS OF THE PROGRAMME OF WORK ON PROTECTED AREAS

Goal	Actions
1.1 To establish and strengthen national and regional systems of protected areas, integrated into a global network as a contribution to globally agreed goals	A significant progress has been made in order to achieve the targeted network of protected areas. According to the Act on Nature Conservation passed by the Parliament on April 16th, 2004 the following forms of nature conservation are distinguished in Poland: national parks, nature reserves, landscape parks, protected landscape areas, Natura 2000 sites, documentation sites, ecological sites, nature /landscape complexes. The network of these areas is constantly broaden thanks to the identification and the designation by various forms of protection, other valuable natural areas. It finds its reflection in statistics of recent years: • National parks: 22 (2000); 23 (2007) • Landscape parks 120 (2000); 120 (2007) • Nature reserves: 1307 (2000); 1423 (2007) • Protected landscape areas: 407 (2000); 412 (2007) • Natural Monuments: 33 094 (2000); 35074 (2007) • Documentation sites: 103 (2000); 153 (2007) • Ecological sites: 6 113 (2000); 6686 (2007) • Nature/Landscape complexes: 170 (2000); 207 (2007) The most valuable areas from the European point of view are protected in a comprehensive way within the framework of the Natura 2000 network. They include at present 141 special birds protection areas, covering 15,97% of the country surface as well as 364 special areas of habitat conservation, covering 8,37% of Poland. In comparison with the data of 2004 – 72 special birds protection areas, covering 7,8% of the country and 184 special areas of habitat conservation, covering in total 3,7% of the country, the number of sites and the area of the Natura 2000 network has significantly increased. As not all protected habitats and species are yet represented sufficiently in the Natura 2000 network, works on its development will be continued. Protected areas cover at present in total 32,3% of the country territory. It has nevertheless to be emphasized, that this list is not closed and that works are still continued on covering by protection new areas, although a significant increase in their number is not to be expected as, *inter alia*, it is hard to find social acceptance for that kind of actions. There are plans to designate, among others, three new national parks: the Jurajski, the Turnicki and the Mazurian as well as to increase the area of the Bialowieski National Park. Apart from protection forms resulting from

	the Act on Nature Conservation some areas have also obtained a protection status within the framework of international conventions and programmes. It concerns biosphere reserves (9 on the Poland territory) and the Ramsar Convention on Wetlands areas (13).
1.2 To integrate protected areas into broader networks of land- and seascapes and sectors so as to maintain their ecological structure and function	In the field of preparing substantive principles of delimitation and tracing ecological corridors a progress has been obtained, nevertheless legal regulations for their legislation and implementation are lacking. Works on the concept of ecological corridors have taken place in Poland for many years (e. g. the Ekonet network project). In 2006 the Mammal Research Institute of the Polish Academy of Sciences in Białowieża had prepared, under a contract with the Minister of Environment, the *Project of Ecological Corridors Connecting the European Network of Natura 2000 Sites*. Although no concepts existing up to now have obtained a legal status, some parts are implemented, both through writing them down in the *National Strategy of Protection and Sustainable Use of Biological Diversity* as well as, in a more special way, in strategies of development of provinces and in planning documents of communes.
1.3. To establish and strengthen regional networks, transboundary protected areas (TBPAs) and collaboration between neighbouring protected areas across national boundaries	A gradual progress is taking place in enlarging the substantive and organisational scope of international cooperation on frontier protected areas. The basis of cooperation aimed at transboundary protected areas conservation consists in mutual activities taken up by institutions managing these areas from both sides of the border. In this context it is extremely important to emphasize initiatives taken up *inter alia* by the Polish UNESCO-MAB Committee within the framework of the international programme "The Man and the Biosphere" in biosphere reserves: Polish–Byelorussian - The Białowieża Primeval Forest, Polish–Slovak–Ukrainian – the Eastern Carpathians, Polish-Slovak – the Tatras, Polish-Czech – the Karkonosze mountains and Polish-Ukrainian-Byelorussian – the Western Polesie. For transboundary international protected areas mechanisms have been established allowing the cooperation of boards and advisory bodies operating in these objects. Cooperation between transboundary national parks can also be given as model examples of international collaboration. Apart from direct collaboration on regional level a number of initiatives are also taken up on national level. The Ministry of Environment is collaborating with all neighbours within the framework of Intergovernmental Commissions of Transboundary Collaboration. The Vysehrad Group of Environment Protection is working very actively - the ministers of environment of Poland, the Czech Republic, Slovakia and Hungary are meeting since 1999 on a regular basis once/twice a year. The Polish – German collaboration is characterized by a specific development of consulting bodies, its important elements are the activities of: the Polish–German Council for Environment Protection, the Polish–German Neighbour Commission for Environment, the Polish-German Working Group for Natural Protection as well as the Programming Council for the International Park of the Lower Odra Valley.
1.4 To substantially improve site-based	Progress has been obtained in ensuring legal and organisational conditions improving the management of protected areas.

protected area planning and management	According to the Act on Nature Conservation of April 16th, 2004 as well as to the appropriate regulation of the Minister of Environment of May 12th, 2005 detailed management plans are to be prepared for national parks, landscape parks and natural reserves. Development of up such a document is connected, among others, with the carrying out of a detailed inventory of natural resources and with defining threats for the protected area resources. On the basis of such an information and of the assumed protection goals, detailed recommendations are formulated concerning the implementation of protection activities in a 20- years perspective. Requirements formulated in such a manner enable the management bodies to carry out an effective and well thought-out policy of actions directed towards the protection and restoring resources of the relevant area. The superiority of management plans over all other planning documents is extremely important. A significant group of national and landscape parks and of natural reserves has up to now no approved management plans yet. Furthermore there appear also difficulties with their effective implementation. In order to ensure among others appropriate means and levels of protected areas management, the Parliament adopted on October 3th, 2008 a broad amendment to the Act on Nature Conservation and to some other acts. It enabled a full implementation of the European Union regulations into the Polish legislation, improved also the management of the Natura 2000 sites and ensured a suitable supervision by the authority that decides on limitation of using environment resources. As a result of adopted modifications and supplements, the amended act enabled the nature conservation services (mainly by enlarging the regulations on negotiation of agreements) to influence the decisions on the development of spatial plans, including forest management plans, which can have a negative impact on the nature conservation of protected areas. As concerns the Natura 2000 sites, the way of control and management of areas has been particularized, the scope of monitoring of nature elements has been enlarged, the conditions of establishing natural compensations were provided in details, new protection instruments, the so-called "plans of protection tasks" were introduced for the Natura 2000 sites, the mode of designation or deletion of the Natura 2000 sites as well as modifications of their boundaries were particularized, a category of "areas having an interest for the Community" has been introduced into the classification of the Natura 2000 sites. Moreover the obligation of carrying out public consultations with stakeholders in the course of works of development plans of protection tasks and management plans became enlarged.
1.5 To prevent and mitigate the negative impacts of key threats to protected areas	A significant progress has been obtained in enhancing the role of environmental impact assessments of planned economic undertakings on environment, as important instrument limiting the negative pressure on protected areas. The new Act of October 3th, 2008 on Sharing Information on the Environment and its Protection, Involvement of Society in Nature Conservation and on Environmental Impact Assessments contains improved regulations in this matter. According to its content all impacts on valuable natural areas have to be presented in strategic impact assessments on environment and in environmental impact

	assessments concerning individual undertakings. A specific group of regulations is concerned with undertakings, which could have a negative impact on the Natura 2000 sites. In such a case the environmental impact assessment obligatorily has to contain the description of anticipated actions, the purpose of which is to prevent, limit or compensate negative impacts on environment, in particular on goals and on the object of protection of the Natura 2000 sites as well as on its integrity.
2.1 To promote equity and benefit-sharing	Due to the compulsory Polish legal system structure as well as to regulations concerning protected areas, an effective protection of natural values and the possibility of obtaining social benefits coming from their operation has been ensured. Possibilities of carrying out various kinds of activities in protected areas depend on the kind of protection which is affected to the relevant area. So, if the status of a national park or reserve has been given to a site, it eliminates to a large extent the possibility of carrying out economic activities. At the same time favourable conditions arise to the development of eco-tourism, ecological education and other forms of activity conform with the rules of a sustainable development and promote the conservation of natural values of that territory. In the case of Natura 2000 sites the economic activity becomes limited according to the criterion of its negative impact on the habitats and species, to the protection of which that area was created. The necessity of stopping the relevant kind of activity is compensated for off-budget stakeholders within the framework of agro-environment schemes, implemented in accordance with the *Rural Development Programme for years 2007 – 2013*. Under these agro-environment schemes farmers have the possibility for obtaining extra charges to the activity they are carrying out, if they declare voluntarily to introduce in their farm standards defined in the *Rural Development Programmes*, the purpose of which is to limit negative impacts of agriculture on the nature of protected areas. Thanks to the agro-environment schemes, the status of natural values of protected areas and their vicinity constantly improves, and so the farmers' level of ecological awareness also grows. The area protection form as a landscape park also introduces limitations in the economic activity which has an impact on the condition of environment. Nevertheless losses resulting from these limitations are to a considerable extent compensated by the growth of attractiveness of the site for developing tourism, organic farming and ecological education. There is also allowed to run some form of economic activity which is not troublesome for the environment.
2.2 To enhance and secure involvement of indigenous and local communities and relevant stakeholders	An important progress has been noted in ensuring a broad access and public participation in decision-making procedures concerning inter alia protected areas. The act of October 3th, 2008 on Sharing Information on the Environment and its Protection, Involvement of Society in Nature Conservation and on Environmental Impact Assessments has to be acknowledged as the basic document, the aim of which is to ensure and to intensify public participation in the implementation of pro-environmental activities. The act controls the way and the extent of making information on environment publicly available, as well as provides detailed rules of public participation in diverse procedures on environment and nature protection,

	including those on protected areas. As concerns management plans, the development of each of them needs to carry out adequate agreements and consultations, so that members of local communities can have an impact on modelling these documents. The body that develops the certain document is obligated to make the information about the intend management plan publicly known.
3.1 To provide a policy, enabling institutional and socio –economic environment for protected areas	A significant progress has been attained in development and adoption national documents defining directions of actions as well as necessary tasks to be executed to enhance the system of protected areas. Problems of area protection were formulated in detail in the national strategies for the conservation and sustainable use of biological diversity. The first document of that type was adopted by the Council of Ministers on February 25th, 2003. The new version of that strategy, updated and adapted to new political, economic and social conditions, was adopted by the Council of Ministers on October 26th, 2007. It points out eight equivalent strategic goals, the most important of which for the area protection are: to identify and to monitor the state of biological diversity and existing and potential threats, to maintain and/or to enrich existing elements of biological diversity and to restore lost elements, as well as to improve mechanisms and instruments on the conservation and sustainable use of biological diversity. The first of above mentioned goals assumes in particular supplementing and disseminating knowledge on the location and resources of the biological diversity components and their threats. This knowledge is necessary to carry out an effective management of nature valuable areas. The greatest importance for protected areas has, within the framework of the second strategic goal, expanding and enhancing the national system of protected areas, including the implementation of the European Ecologic Network Natura 2000 as well as restoration and maintaining ecologic corridors (forest, river and other), which assure the exchange of genes between local populations. An improvement of legal, institutional and financial conditions of protected areas is also assumed by improving the law, especially from the point of view of its conformity with the European Union law. Third strategic goal from the above mentioned, concerns an institutional enhancement of the nature conservation system management as well as ensuring an appropriate level of financing of nature protection tasks. The *Strategy of protection of wetlands areas,* developed and adopted in 2006, is the second important document, in which references are given to issues on protected areas.
3.2 To build capacity for the planning, establishment and management of protected areas	No satisfactory progress has been attained in ensuring optimal financial and human resources, which enable a substantial growth of effective management of protected areas. It is expected to obtain a progress in this scope as a result of the adoption by the Parliament of the act of October 3rd, 2008 on Sharing Information on the Environment and its Protection, Involvement of Society in Nature Conservation and on Environmental Impact Assessments, which introduced new solutions on the organisation of environment protection authorities. The basic modification

	consists in establishment of specialized environment protection services, which constitute a division of the governmental administration on its central and regional levels. At the head of these services (General Direction for Environment Protection) is the General Director for Environment Protection, who is the central authority of governmental administration, subordinated to the Minister of Environment. On regional level (regional directions for environment protection - it includes the province area) there are regional directors for environment protection, who are authorities of government administration subordinated directly to the General Direction. According to the provisions of the act, tasks of the General Director for Environment Protection with reference to protected areas consist of: gathering of data and making information on Natura 2000 network and other protected areas as well as on environmental impact assessments and also executing tasks in connection with the Natura 2000 network, which are mentioned in the Act on Nature Conservation. The tasks of the General Director for Environment Protection, as the central governmental authority competent in matters related to environmental impact assessments and protection of the Natura 2000 network, include the collaboration with the Chief Conservation of Nature, and the State Council for Nature Conservation, but also with authorities of local governments and ecologic organisations in matters related to environmental impact assessments and nature protection. This act defined also the territorial extent of local competence of regional directors for environment protection (as an area of a province) and marked out their terms of reference. According to this act, the tasks of regional directors for environment protection in relation to protected areas include also the designation and deletion of some forms of nature conservation, the protection and the management of the Natura 2000 sites and other nature valuable areas, recognized as forms of nature protection according to principles and within the scope defined in the Act on Nature Conservation, as well as in decision making process on the basis of that act.
3.3 To develop, apply and transfer appropriate technologies for protected areas	In recent years in protected areas, in which development of economic activity is permitted, actions promoting technologies with a low inconvenience for the natural environment were intensified. In agriculture a substantial increase of interest for technologies enabling the production of healthy food is visible. Implemented legal regulations on organic farming and development of a broad access to the necessary knowledge, which can be obtained in numerous agricultural consultancy centres, are favourable to that way. In forestry ecological technologies of silviculture, prepared and tested successively in different research centres, including the Forest Research Institute, on protected areas are used to a more and more large extent. In fisheries ecological technologies of fishing, limiting their negative effects on water ecosystems are acquiring likewise an increasing importance. Owing to limitations concerning locations of undertakings influencing substantially the environment in protected areas, the implementation of investments is possible under the condition of using environment-friendly technologies. A content-related

	support in this field is given, among others, by: • Technological parks – in 2005 there was in Poland 23 such parks; environment technologies constitute the object of activity of a part of them, • Centres of Excellence - over 150 units, of which about 25 work on environment technologies, • Advanced Technologies Centres (CZT) – over one half of them work on environment technologies, • Research Networks, as for instance ENVITECH-net – Scientific Thematic Network of Environment Technologies and AIRCLIM-NET Scientific Thematic Network of Air Pollution/Climate Changes, • Technological Platforms - there are 22 platforms in Poland of that type, 9 of them work on environment technologies. It concerns in particular Polish Technological Platforms (PPT): the PPT of Environment Protection and the PPT of the Forest – Wood Sector.
3.4 To ensure financial sustainability of protected areas as well as of national and regional systems of protected areas	No satisfactory progress has been obtained in ensuring financial needs on the effective management of protected areas. The relatively small means assigned from the state budget are complemented by off-budget resources of ecological funds. Some of the most important of them are: <u>The National Fund for Environmental Protection and Water Management</u> In the years 1989 – 2007 over 1000 contracts were signed within the framework of the domain "nature and landscape protection" for an amount of over 257 million PLN. From that funds there were financed, among others, natural science museums in national parks, development of management plans of protected areas, reintroductions of certain species, research programmes related to protected areas, etc. <u>The EcoFund Foundation</u> One of priority sectors subsidized by the EcoFund is the protection of biological diversity. The Fund expended in the years 1992 – 2007 in total 250 million PLN for projects of that kind, and it represented 15% of the totally expended sum, of which in 2004 – 15,5 million PLN for the implementation of 95 projects, in 2005 – 13 million PLN (89 projects), while in 2006 – 14 million PLN (88 projects). The subsidy concerned among others the development of management plans for the Natura 2000 sites and the reintroduction of certain species. In 2008 EcoFund closed the admission of applications for grants. Resources received within the framework of various European Union programmes represent a substantial financial support. Some of the most important are: <u>The Financial Instrument LIFE+.</u> In September 2008 the National Fund for Environmental Protection and Water

	Management was appointed the National Institution Implementing the Financial Instrument LIFE+ in Poland. The LIFE+ programme is the only one financial instrument of the European Union concentrating solely on co-financing projects in the field of environment protection. For the period 2007 – 2010 the European Commission intend to allocate in Poland the amount of 41 million euro. Operation Programme The Infrastructure and Environment. The procedure of granting financial support within the framework of the V priority axis of the Operation Programme Infrastructure and Environment has been activated successively since 2007 to implement projects and programmes from the field of nature conservation and ecological education. During the period 2007 – 2013 105 million euro is planned to be allocated to the realization of tasks from this field, of which 89 million euro will come from the European Union funds. In 2008 recruitment of applications was pursued among others for subsidies in the following categories: *in-situ* protection of species and habitats, increase of passable conditions of ecological corridors, development of national programmes of protection of certain species or natural habitats. The Norwegian Financial Mechanism and the Mechanism of the Financial European Economic Area (EOG - EEA). The allocation to Poland by Norway, Island and Liechtenstein for projects to be realized during the period 2004 – 2009 amounted in total to 533,51 million euro. It was the Ministry of Regional Development, who was acting as the institution managing and coordinating activities related to operations of that funds. From among six priority areas included in the allocation of financial support two were directly connected with environment protection, i. e.: • environment protection, including human environment, among others through the reduction of pollutions and by promoting renewable energy sources; • promoting the sustainable development through a better use and management of resources . The Swiss-Polish Cooperation Programme In the first half of 2006 an agreement was signed between the European Union and Switzerland about the participation of that country in the financial support of the EU new member states. The principal goal of this support is to eliminate economic and social gaps between the old and new members of the Community. As a target within the framework of the Swiss-Polish Cooperation Programme about 419 million CHF will be allocated in Poland. A part of that amount will be designated to subsidize projects from the field of environment protection, of which 10 million CHF has been allocated to the biological diversity and the protection of ecosystems as well as to the support of transboundary environment initiatives.
3.5 To strengthen communication, education and public awareness.	Progress has been obtained in increasing public knowledge and ecological awareness, although the progress is too slow. Thanks to the possessed resources the most diverse educational activities are executed in national parks. They have a highly qualified staff, prepared to organize

	and tutor in classes in the field of ecological education, which finds its reflection in the large scope of organized events and meetings. They have a scientific character – conferences and scientific symposia, but also a popular science one, as e. g. educational actions directed mainly to teenagers. The basis for organizing activities of that kind frequently concerns museums or nature expositions existing in all national parks. Apart from organizing meetings, exposition competitions, editing publications, also tutoring classes within the framework of the so-called "green schools" are supported, for the needs of which didactic paths traced out in the park premises are often used In recent years also more and more natural reserves are equipped in an infrastructure enabling to acquaint the visitors with the natural values of the relevant object. Most frequently these are information boards, posters, places to carry out tutoring in the field, educational paths, etc.
4.1 To develop and adopt minimum standards and best practices for national and regional protected areas systems.	Progress has been obtained in ensuring standards of protected area management. A particular role in this process is played by The Minister's of Environment Regulation of May 12th, 2005 on development of draft management plans for a national park, a nature reserve and a landscape park and, as regards the Natura 2000 sites, the Minister's of Environment regulation of March 30th, 2005 on the mode and the scope of development of a draft management plans for the Natura 2000 sites. The superior goal of management plans is defining the strategy of protection of given area, thus the principles of protection policy, promotion of nature, landscape and cultural values as well as shaping functional environment elements in sustainable economy conditions. Development of the strategies and providing with details of area protection is included into action plans, concentrating on the following issues: • adapting individual means of protection to conditions coming from activities of nature units and providing detailed protection recommendations for the period of validity of the management plan, • indicating needs of protection and enriching the biological diversity of the area, including protection and restitution of special care species, • defining the principles of economic use of the protected area, • defining the principles of developing a spatial order on the protected area, • defining the principles of coexistence of natural, cultural and landscape resources, • indicating the principles of touristic access to the area and ecological education provided on the basis of nature values and the base of protected area, • defining organisational conditions of area managing, • development of principles of current recording of modifications occurring in the environment (monitoring),

	• indicating needs in the field of complementary knowledge about the nature environment of the area, • defining the principles of current evaluation of the implementation of a management plan, mainly through testing and monitoring the efficiency of protection activities. One of new requirements on management plans is the introduction of the GIS data standard in nature conservation, which obliges the contractor to build a GIS database in conformity with the defined requirements. An impact on maintaining high standards of protected areas management have also organisational modifications of running nature conservation services, executed by the amended act of October 3th, 2008 on nature conservation, the purpose of which is, among others, to improve the management of Natura 2000 sites and to assess an adequate control by the organ taking decisions concerning the limitation to the use of environment resources. As a result of introduced modifications and supplements, the amended act has enabled the nature conservation services to exert influence on decisions contained in planning studies, including forest management plans, which can have an adverse impact on nature conservation of protected areas. A distinct group of documents aiming at ensuring the area protection on a high substantive level, consists of various kinds of guides and handbooks, prepared and issued among others under a contract with the Ministry of Environment. The examples include Poradnik ochrony siedlisk i gatunków Natura 2000 – podręcznik metodyczny Ministerstwa Środowiska (Guide on protection of habitats and species of Natura 2000 – the systematic manual of the Ministry of Environment), Poradnik - System ocen oddziaływania na środowisko w granicach obszarów Europejskiej Sieci Ekologicznej Natura 2000 w wybranych krajach UE oraz w Polsce (Guide – System of environmental impact assessments within the European Ecological Network Natura 2000 in chosen countries of EU and in Poland) and other publication. Similar publications are also prepared by non-governmental organisations such as e. g. Klub Przyrodników - Poradnik Lokalnej Ochrony Przyrody (Naturalist Club – Handbook of local nature conservation, Poradnik Ochrony Mokradeł (Handbook of Wetlands Protection), Natura 2000-Niezbędnik urzędnika (Natura 2000 – clerk's notebook), Natura 2000-Niezbędnik leśnika (Natura 2000 – forester's notebook); Polskie Towarzystwo Ochrony Przyrody Salamandra: Ostoje przyrody o znaczeniu europejskim w Wielkopolsce (Polish Association of Nature Conservation Salamandra: Nature sites of European importance in the Wielkopolska Province).
4.2 To evaluate and improve the effectiveness of protected areas management 4.3 To assess and monitor protected area status and trends	The principles of control, monitoring and assessment of efficiency of protected areas management come from the specificity of their formal status. The inspection of the efficiency of national parks operations is supervised by the Ministry of Environment. Parks are accounted for the realization of annual protection actions. All other management activities are also assessed. An important role in that process falls to the Bureau of Inspection and Internal Audit in the Ministry of Environment, making performing every year an inspection in 5 – 6 chosen parks. The outcomes of inspection are prepared in the form of conclusions

	guided to increase the efficiency of activities of the relevant park and are submitted to the Minister of Environment. The efficiency of individual landscape parks operations is supervised, in accordance with their territorial affiliation, by province governors, who assesses the undertaken actions on the basis of yearly reports sent to them and on the basis of internal inspections carried out. An important drawback of the nature conservation system is the lack of a coherent monitoring of nature protection, referring to the situation of species and habitats on respective protected areas.
4.4 To ensure that scientific knowledge contributes to the establishment and effectiveness of protected areas and protected area systems.	A crucial problem of larger and faster progress of involving the scientific community into nature research in protected areas lies in the insufficient financing of nature conservation. Making use of the scientific potential in the research in protected areas as well as in managing them has in Poland a long tradition. Practically all nature documentations which constitute the content-related basis for designation respective protected areas have a scientific character. Analyses, on the basis of which provisions of management plans are formulated, also have a scientific character. High quality specialists with great scientific achievements and a great professional experience are engaged in these above-mentioned studies. Independently of the above-mentioned facts, protected areas play the role of important research testing grounds for a few dozen scientific institutions, in spite of serious financial difficulties, in the development of nature research. Their works are an important factor of supporting an efficient protected areas management. A specific form of using for that purposes the intellectual achievements of the natural science is the participation of recognized authorities in advisory councils of national and landscape parks. The results of this research and inventory are in particular broadly used in designation and management of the Natura 2000 sites. The ecological funds, including the National and Provincial Funds for Environmental Protection and of Water Management play an important role in supporting research and development studies on nature conservation. These financial means are, in spite of their significant participation, insufficient in relation to the needs and without the increase of expenditures taking full advantage of the existing scientific potential is not possible.