



# BIODIVERSITY AND COMPANIES

## - EUROPEAN OVERVIEW -

Marina Pereira Silva ([msilva@ciimar.up.pt](mailto:msilva@ciimar.up.pt))

Isabel Sousa Pinto ([ispinto@ciimar.org](mailto:ispinto@ciimar.org))

CIMAR - Centre of Marine & Environmental Research  
University of Porto, Portugal

Rua dos Bragas, 289 | 4050-123 Porto | Portugal  
Tel (+351) 22 340 18 00 | Fax (+351) 22 339 06 08 | Web: [www.cimar.org](http://www.cimar.org)



**November 2008**

## TABLE OF CONTENTS

EXECUTIVE SUMMARY .....	3
1 - NATIONAL REGULATIONS CONCERNING IMPACT ON BIODIVERSITY AND THEIR IMPLEMENTATION.....	5
1.1 - Biodiversity Impact Assessments.....	5
1.2 - Mitigation / Compensation for Biodiversity Impact.....	5
1.3 - Implementation / Enforcement.....	6
1.4 - Impact Evaluations and/or Compensations / Mitigations Management (Mitigation Banking) .....	6
2 - BIODIVERSITY AND COMPANIES .....	8
2.1 - Initiatives on Business & Biodiversity .....	8
2.2 - Measures Taken by Companies (Private or Public) Concerning Conservation of Biodiversity .....	10
2.2.1 - Accounting of their Impacts on Biodiversity .....	10
2.2.2 - Main Measures Taken to Minimize their Impacts.....	10
2.2.3 - Contribution to Conservation of Biodiversity .....	11
2.3 - Biodiversity Research Supported by Private Companies .....	11
2.3.1 - Existing or Past Research Activities for Conservation in General .....	12
2.3.2 - Existing or Past Research Activities Focused on the Impacts of the Companies Activities and Mitigation or Restoration .....	12
3.1 - State of the Art of Ecological Engineering Applied to Industrial Impact Assessment and Restoration / Mitigation.....	16
3.2 - Examples .....	17
REFERENCES .....	20
LINKS.....	20
ANNEX A .....	22
ANNEX B.....	23
ANNEX C.....	26
ANNEX D .....	30
ANNEX E.....	32
ANNEX F .....	34

## EXECUTIVE SUMMARY

This report is an overview on Biodiversity and Companies that was based on the National Reviews on this topic received from various BIOSTRAT partners, as a contribution to the preparation for the French EPBRS (European Platform for Biodiversity Research Strategy) Meeting held in Paris between 17<sup>th</sup> and 21<sup>st</sup> of November 2008.

BIOSTRAT partners were invited to address a number of questions regarding different aspects of the relationship between Biodiversity and Companies in their country (Annex A). The questionnaire was divided into 3 parts:

- National regulations concerning:
  - Biodiversity impact assessments
  - Mitigation / compensation for biodiversity impact
  - Implementation / Enforcement
  - Impact evaluations and/or compensations-mitigations management (mitigation banking)
- Measures taken by companies (private and public) concerning:
  - National B&B initiatives
  - Biodiversity conservation
  - Biodiversity research activities
- Ecological Engineering

Seventeen contributions were received by the 17<sup>th</sup> of November 2008 from the following countries: Belgium, Cyprus, Czech Republic, Finland, Germany, Hungary, Ireland, Italy, Lithuania, Norway, Portugal, Russia, Slovakia, Spain, The Netherlands, UK and Ukraine and were used in this overview.

Although the structure of the reviews varied from country to country, most of them addressed in some way all the aspects requested but with different degree of detail. Different methods were used to review the different topics but most were based on literature reviews, internet information and questionnaires to the relevant entities and persons in each countries.

Some misunderstandings is apparent in the replies, namely regarding the topics related with the measures taken by companies in order to mitigate or compensate the impacts on biodiversity. In some reviews only measures taken by companies are considered and in others, measures taken by governmental entities are listed; So in some reviews concrete measures (actions and projects in the field) are listed and in others governmental measures as legislations and regulations are considered. Nevertheless it was possible to summarise the information on some aspects regarding the integration of biodiversity into companies management, as well as list some examples found around Europe.

All the countries who provided a review have a legal framework regarding impact assessment and mitigation / restoration of the impacts on biodiversity; in almost all countries companies are aware of their impact on biodiversity although, in some cases there is a lack of measures to mitigate or compensate their effects; regarding ecological engineering we found that it is a new field of work in most of the countries specially for industrial impact restoration / mitigation or compensation.

The full reviews sent by the partners can be found in the website of BIOSTRAT:

<http://www.biostrat.org/>

From France we received the guide «Intégrer la Biodiversité dans les Stratégies des Entreprises - Le Bilan Biodiversité des Organisations» (Houdet, 2008). The guide is the result of the working group “how to include biodiversity into strategies of companies” created in February 2006 by the French Institute of Biodiversity (IFB), Orée association and Veolia Environment. Companies, both large groups and SMEs, scientists and associations met quarterly to discuss and to find the tools to increase the integration of biodiversity in the economic activities.

The working group established a “interdependence indicator between company and biodiversity” in order to have a multicriteria analysis of the companies. From the results presented in the guide we can obtain information about the contribution of French companies to biodiversity conservation (Annex F).

One of the outcomes of the background discussion for the High Level Conference on Business and Biodiversity held in Lisbon, during 12-13 November 2007, highlights that biodiversity can be addressed by a company at four different levels (<http://countdown2010.net/business>):

1. **Compliance**, when a business focuses its efforts to comply with local and national legislation;
2. **Philanthropy**, when a business responds to the challenges to biodiversity by making donations to external conservation organizations;
3. **Management**, when corporate strategies, policies and operational responses are developed, based on biodiversity assessments to reduce, control and mitigate impacts;
4. **Value Creation**, when a company fully integrates biodiversity into its business model and develops new business opportunities linked to biodiversity conservation.

Analysing the reviews we can conclude that:

- In almost all the countries surveyed, many companies are aware of their impact on biodiversity
  - Survey choice of companies may have been responsible but there is already considerable awareness
- In most cases companies still focus on compliance with legislation (level 1)
  - Incentive still needed to move most companies to integrate biodiversity concerns
- Many cases identified of philanthropy and corporate strategies to reduce, control and mitigate impacts on biodiversity (voluntary base) (level 2 and 3)
- Not able to identify clear examples of companies that fully integrate biodiversity into its business model and develops new business opportunities linked to biodiversity conservation (level 4)
  - This should've been targeted from the start
- Ecological Engineering - term used for many different approaches – is usually connected with restoration measures and presents many differences between countries.

## 1 - NATIONAL REGULATIONS CONCERNING IMPACT ON BIODIVERSITY AND THEIR IMPLEMENTATION

Results from the reviews are listed in Annex B.

### 1.1 - Biodiversity Impact Assessments

Impact evaluation of the economical and industrial activities on biodiversity takes place, mainly, during the process of Environmental Impact Assessment (EIA) or Strategic Environmental Assessment (SEA) in all the cases received, except for Russian Federation, where normally the evaluation is made after an environmental incident. Regarding The Netherlands, regulations exist for almost all major infrastructural works but not for agriculture.

EU member States have made adaptation when they transform the EIA Directive into national law. Some are more restrictive regarding the threshold level for several activities than others, and some include more industries to the list of activities that are subject to EIA.

*“SEA legislation is a good vehicle for ensuring biodiversity protection”* (European Environmental Bureau, 2005) because the EU SEA Directive (2001/42/EC) explicitly states that biodiversity must be taken into consideration during the SEA process.

For actions or projects developed in protected areas there are national legislation (Finland, Spain and UK) and EU legislation referring to Natura 2000 network (Cyprus, Czech Republic, Germany, Hungary, Portugal and Spain) that is in force and the promoters are obliged to assess the environmental impact of their projects. In other cases the impact assessment is done in the framework of environmental licensing or/and emission of environmental licenses / authorizations / permissions (Belgium and Cyprus).

*Some research topics were suggested regarding this topic:*

Germany NR: Accompanying interdisciplinary research is necessary of political and society tools for implementation of biodiversity regulations, especially the different targets of the Convention on Biological Diversity (CBD) and Agenda 21 (e.g. Spillmann, 2007). Further research is also required to develop practical indicators related to the different values of biodiversity and a condensed amount of evaluation criteria.

Portuguese NR: Assess the integration of biodiversity related issues into the legislation and/or process of EIA and SEA, according with Decision VI/7 of the CBD COP 6 (2002).

### 1.2 - Mitigation / Compensation for Biodiversity Impact

Mitigation / compensation measures are part of the EIA or SEA process when the EIA/SEA authorities consider that the project or plan concerned has negative effects on the environment.

Projects, actions, plans or programs can only be approved if the owners present mitigation / compensation measures that are approved by the administration of impact assessment.

Also, compensation measures are defined in the cases of violation of environmental laws, lack of compliance with the licenses or authorizations or in case of environmental damages (namely pollution). All countries have a legislative framework for these questions, either criminal or administrative or more recently, environmental liability legislation with the transposition into national laws of the European Directive on Environmental Liability with Regard to the Prevention and Remedying of Environmental Damage.

In Ukraine, in case of mitigation of damages companies may face two choices: to pay a fine or to restore.

Research priority:

Germany NR: Research on integrating tools of biodiversity values into the different land use processes (agriculture, forestry, fishing, urban and rural development, transport, industry, etc.), for instance, is urgent, for implementing the German National Biodiversity Strategy (BMU, 2007), instead of focusing on ineffective impact assessments and compensation measures.

### 1.3 - Implementation / Enforcement

The environmental regulations referring to the environmental impact assessment and consequent application of mitigation / compensation measures are implemented by: promoter / owner of the projects, licensing and impact assessment authorities and other actors related to the process.

Enforcement of mitigation / compensation measures is responsibility of a number of actors. In all countries considered in this study, it involves the Ministries of Environment and local or regional environmental departments in conjunction with others governmental departments with responsibility: municipality's services, parks and natural reserves services, police force and civil society.

The processes of environmental assessment are open to public participation, in some countries more effectively than in others. So civil society has the possibility to interfere in the process presenting proposals and accompanying the implementation of the mitigation / compensation measures.

Research priority:

Germany NR: Further research is required on implementation barriers and public participation (e.g. Beirat für Naturschutz and Landschaftspflege, 1997 and Heiland, 2005), as well as, basic and applied research on biodiversity evaluation and monitoring.

### 1.4 - Impact Evaluations and/or Compensations / Mitigations Management (Mitigation Banking)

Answers to the question “Does it exist any agency, public or private, to manage impact evaluations and/or compensations-mitigations (such as mitigation banking...)?” show some confusion regarding the meaning of the concept “mitigation banking” from many of the partners (e.g. from Cyprus, Czech Republic, Finland, Germany, Ireland, Italy, Lithuania, Norway, Portugal, Russia and Spain).

In most of the cases partners said that management of the environmental assessment and/or compensation / mitigation measures is made by the environmental authorities responsible for the assessment process and by the government licensing authority or competent for the authorisation of the project.

Italy answered “no” to the question and Finland said that “*markets for biodiversity are poorly developed and there exist no mitigation banking functions*”. In Norway “*there is no formal mechanism to assess compensation / mitigation measures, except for the individual EIAs conducted under the planning law*”.

On the other hand Germany referred that “*in order to turn the impact mitigation principle more flexible banking institutions are emerging: “Flächenpools” (provision of areas that can be used for compensation measures later) and “Ökokonten” (accounts where compensation measures are already provided)*”.

In Spain legislation “*also promotes the sustainable use of the natural heritage and biodiversity and regulates the access to the genetic resources of wild plants and animals and the share of benefits coming from their use, and creates the National Fund for Natural Heritage and Biodiversity that act as a co-financing instrument aiming to assure the territorial cohesion and the achievement of the environmental laws*”.

Portugal has the “Fund for Nature Conservation and Biodiversity“ to implement compensation / mitigation and restoration measures and to implement nature conservation and biodiversity projects.

Another example is given by Lithuania, where “Šiaulių bankas“ “*is one of the leaders in crediting environmental projects, was the first bank to sign an agreement with the Lithuanian Environmental Investment Fund (LEIF) and the Investment Guarantee Fund and its representative participates in the Supervisory Board of the fund. The fund finances private and public sector implementing water management, hazardous waste management, waste recycling, renewable energy and energy efficiency projects on easier terms (via subsidies and soft loans)*”.

Some research topics were suggested regarding this topic:

Germany NR: Research is needed on establishing effective public and private structures to control the implementation of the impact mitigation principle and related regulations, including comparative analysis of similar institutional structures in other European and non-European countries.

Portugal NR: Research is needed in order to assess the implementation of the new regime for nature conservation and biodiversity. Mainly in what concerns the possibility that conservation could be done through private companies financing support to the administration. This can take the responsibilities of the companies to contribute actively with concrete actions for the reduction of biodiversity loss.

## 2 - BIODIVERSITY AND COMPANIES

It is recognized by all that more and more species, habitats and ecosystems are being lost and we are losing the ecosystem services that support life on our planet. Consequently, some human communities are already experiencing a decrease in well-being, with poverty in some social groups being exacerbated.

Halting or substantially decreasing the loss of biodiversity by 2010, was agreed by EU Member States in 2001 and the Parties of the Convention for Biological Diversity in 2002. This goal is a truly global challenge to which different actors around the globe should respond in different ways and according to their capacities. The effort has to be shared between governmental institutions, NGOs, the general public and public and private companies. Several initiatives started to link explicitly biodiversity loss and economic loss (e.g. The Economics of Ecosystems and Biodiversity (TEEB)) and businesses are becoming aware of their responsibilities and potential role in conservation of biodiversity and sustainable use of its components, launching different initiatives like the Business and Biodiversity.

In 2007, during the Portuguese Presidency of the European Union the Business and Biodiversity Initiative was incorporated into the EU Commission activities. During the High Level Conference on Business & Biodiversity (12-13 November 2007) European business leaders, biodiversity experts, researchers, NGOs and policy makers discussed how European businesses could improve their performance through biodiversity responsibility. The conclusions of this conference are summarized in the Message from Lisbon ([www.countdown2010.net/file\\_download/143](http://www.countdown2010.net/file_download/143)).

*“The European Commission is committed to implement the Message from Lisbon on Business and Biodiversity, and to ensure that the European Business and Biodiversity Initiative becomes a working entity that leads to measurable results”* (Demeter, 2008).

In 2008, the European Commission launched a call for tender for a service contract to assist it in setting up and operating a technical facility - a platform - to engage businesses and other stakeholders in the initiative, and to organize activities such as exchange and benchmarking of best practices and preparation of guidelines and other documents.

*“The dialogue started in 2007 will continue with a number of priority sectors in order to stimulate actions on the ground, and the Commission will continue to work with the Member States to harmonize ongoing activities at the national level with the added value at the EU level”* (Demeter, 2008).

The 2008 progress report on the EU Biodiversity Action Plan to 2010 and Beyond will report the information received from the Member States on their national actions on partnerships, including Business and Biodiversity.

### 2.1 - Initiatives on Business & Biodiversity

Table 1 presents the status of B&B initiatives in different countries according to the reports received.

Table 1 – B&B initiatives.

Country	B&B initiatives	Source
Belgium	- No real extensive implementation of the EU B&B Initiative	- NR
Cyprus	- No National B&B initiative	- NR
	- United Nations Development Program (UNDP) and the Chamber of Commerce in both Greek Cypriot and Turkish Cypriot communities are beginning to evaluate the implementation of the United Nations “Global Compact” in	- NR

	Cyprus an initiative that promotes corporate environmental and social responsibility	
<b>Czech Republic</b>	- No National B&B initiative	- NR
<b>Finland</b>	- National B&B initiative of the Ministry of the Environment to be launch in the first quarter of 2009 - To involve mainly small and medium-sized companies - Based on the voluntary measures of companies	- NR
	- Finnish Business & Society ry (FiBS)	- NR
<b>France</b>	- French strategy for Biodiversity (SNB) adopted in 2004 and more recently the "Grenelle de l'Environnement", national consultation of all economic actors and society in the field of environment, allowed to reinforce the mobilisation of all actors, publics and private, and the development of new partnerships to define the policy orientation for next years	- Hernandez and Souan (2008)
	- Guide «Integrer la Biodiversite dans les Strategies des Entreprises - Le Bilan Biodiversité des Organisations»	- Houdet (2008)
<b>Germany</b>	- German Business & Biodiversity Initiative of the Federal Ministry for the Environment, Nature Conservation and Nuclear Safety (BMU), since 2008 - Voluntary - 34 companies from Germany and beyond - Signature of a Leadership Declaration	- NR
	- Forum for Sustainable Development of German Business	- NR
	- NGO project	- <a href="http://www.business-biodiversity.eu">www.business-biodiversity.eu</a>
<b>Hungary</b>	- Business and biodiversity initiatives in the forestry sector	- NR
	- Business & Biodiversity Conference	- NR
	- BTAU Project	- NR
		- <a href="http://www.smeforbiodiversity.eu">www.smeforbiodiversity.eu</a>
<b>Ireland</b>	- Government initiative called "Notice Nature" - Not regulated	- NR
	- Other voluntary instruments: Environmental Management Systems (EMS ISO 14001; Corporate Social Responsibility (CSR); Corporate Policies	- NR
<b>Italy</b>	- Any information found	- NR
<b>Lithuania</b>	- The National Network of Responsible Business (the UN Global Compact initiative), since 2005 - Currently involves 45 companies and organisations that have implemented the corporate social responsibility	- NR
	- Corporate Social Responsibility concept: include management of waste, water, energy, hazardous substances, and biodiversity	- NR
<b>Norway</b>	- No National B&B initiative	- NR
<b>Portugal</b>	- National B&B initiative of the Institute for Nature Conservation and Biodiversity, since 2007 - Voluntary, with no formal regulation - 41 companies - MoU between companies and ICNB - Objectives, environmental assessment of the impacts on biodiversity, plan of action	- NR
	- NGO Project	- <a href="http://www.business-biodiversity.eu">www.business-biodiversity.eu</a>
<b>Russia</b>	- Some small steps in regional business and biodiversity initiative are related with usage of natural resources for hunting or fishing, managed by the Heads of some business companies	- NR
<b>Slovakia</b>	- No information presented	- NR
<b>Spain</b>	- Some companies have initiated considerable B&B programmes, but most of them have not being yet implemented	- NR
<b>The Netherlands</b>	- There are several initiatives, the most important is managed from IUCN-NI	- NR
<b>United Kingdom</b>	- Business and Biodiversity Resource Centre	- NR

	- Business and biodiversity initiatives have been set up by a variety of sectors including government, NGOs, and institutes	- NR
<b>Ukraine</b>	- No national program concerning biodiversity and business	- NR
	- Rehabilitation of lands transformed and disturbed by mostly mining industry that obviously entails the biodiversity improving	- NR
	- Renewal of populations of game species conducted by enterprises of different types, but for only utilitarian purposes	- NR

Only Portugal and Germany have a National B&B initiative in place, and Finland will have it in 2009.

However, some partners have a number of sectorial B&B initiatives in place (Cyprus, Finland, Hungary, Ireland, Lithuania, Russia, Spain, The Netherlands and UK) in different sector such as forest, agro-forest and energy and in a variety of arrangements (public or private).

The Portuguese and German initiatives and the Finish future initiative are based on the voluntary adhesion of the companies. This follows the approach of the B&B initiatives implemented by certain areas of business activity (e.g. agro-forestry) and companies are invited to commit themselves with conservation on a voluntary basis.

As is said in the Finish NR the initiative “*intends to incorporate biodiversity in a cross-cutting manner into all activities of a company. This differs significantly from the traditional approach, where companies financially support external biodiversity projects, but do little to change the overall impact of their activities*”.

## **2.2 - Measures Taken by Companies (Private or Public) Concerning Conservation of Biodiversity**

Results from the replies on measures taken by companies on biodiversity conservation are listed in Annex C.

### **2.2.1 - Accounting of their Impacts on Biodiversity**

Most of the EU companies assess their impacts on biodiversity as a result of the environmental legislation in force. In almost all countries that send a review, they also implement, voluntarily, environmental management systems (EMAS, ISO 14001), and in this context they also have to account and monitor their environmental impacts.

In the context of national B&B initiatives in place companies started to assess their impact on biodiversity and, more than that, they started to introduce biodiversity issues into company's management and business plans.

We are evolving to the situation where the companies' reports (sustainability, environmental or social responsibility) include information / data specifically related to biodiversity and to company position towards biodiversity.

### **2.2.2 - Main Measures Taken to Minimize their Impacts**

There are two types of measures:

- 1) Measures to address impacts identified under EIA or SEA process, so resulting from environmental legislation framework;
- 2) Measures to address impacts identified under voluntary schemes – Biodiversity Action Plans.

Examples of measures that impact directly or indirectly on biodiversity:

- Energy conservation;
- Waste minimization/recycling;
- Reduction of raw material utilization;
- Reduction of ecological footprint;
- Improving eco-efficiency;
- Pollution prevention;
- Adoption of environmental management systems;
- Conservation and restoration of biodiversity and habitats;
- Implementation of new technologies of production;
- Utilization of certified raw materials;
- Other

### **2.2.3 - Contribution to Conservation of Biodiversity**

Some companies implement their own conservation projects as part of the measures to address their impact on biodiversity,. But in general, companies contribute to biodiversity conservation through financial support for:

- Implementation of conservation and/or monitorization projects
- Environmental education and awareness projects
- Restoration of biodiversity and habitats
- Partnerships with environmental NGOs, sectorial association and civil society to implement conservation projects
- Environmental prizes and awards to research projects of best practices

### **2.3 - Biodiversity Research Supported by Private Companies**

#### Research priority:

Germany NR: There is further research necessary to survey the vulnerability of companies and business sectors towards production cycles using biodiversity resources, and their public biodiversity friendly company image. Economic and political tools and potentials need to be identified to allow integrating all CBD targets into core business management policy, while creating a competitive social and ecological global market (e.g. WTO, EU). Further links and incentive measures need to be sorted out and implemented between biodiversity friendly business, and economics, for instance, concerning the results demanding for action of the “Economics of Ecosystems and Biodiversity (TEEB)” interim report. Indicators, company management and market strategies need to be developed to integrate the different public and long-term values of biodiversity into business. Furthermore, political and social ways need to be identified to provide a society environment that meets the material and immaterial needs of the human being, while enhancing the real object values. A shift is decisive from a consumer orientated society based on symbolic values towards a high-life quality and long-life products supported by professional biodiversity business management.

### 2.3.1 - Existing or Past Research Activities for Conservation in General

Results from the replies on biodiversity research support by private companies are presented in Annex D.

There are evidence that companies from Belgium, Cyprus, Czech Republic, Finland, France, Hungary, Lithuania, Portugal, Russia, Slovakia, The Netherlands and UK do participate in research activities for conservation in general by funding or implementing projects, individually or in partnership.

### 2.3.2 - Existing or Past Research Activities Focused on the Impacts of the Companies Activities and Mitigation or Restoration

Following we present examples (indicated by the partners) of companies implementation / participation of/in research activities focused on their impacts on biodiversity and mitigation or restoration.

#### *Ireland*

No companies in Ireland could be identified that were directly involved in the support of biodiversity related mitigation or restoration other than the ones indicated in Appendix 1 of the NR:

- Intel Ireland Ltd. - Leixlip, Co. Kildare: enhance a tributary of the River Liffy, The Rye River
- Newtownmountkennedy, Co. Wicklow: The Druids Glen Golf Course
- CEMEX Ireland Ltd. - Block A1, East Point Business Park, Dublin 3: rathmolyon limestone quarry; kildavin sand & gravel pit; dunmore sand & gravel pit

#### *Norway*

- Some private or (mainly) publicly owned companies fund research on the effects of their activities on BD, e.g., energy companies

#### *Portugal*

- ALTRI / Silvicaima Sociedade Silvícola Caima, SA: Identification and management of forests with high value of conservation, adapting the "ProForest" method to the Portuguese reality and forest heritage; Internal Project on monitorization and conservation of the riparian species
- CTT Correios de Portugal: Participation in the International Post Corporation study on "life cycle assessment" of Direct Mail; Constitution of an internal working group to identify the opportunities related to motoring and alternative fuels; QREN project: photovoltaic production and electric vehicles utilization; Contacts with La Poste (France) to study the possibility of acquisition of electric vehicles; Adhesion to the PostEurope Greenhouse Gas Reduction Programme, that aim a reduction in 10% of the GEE emissions until 2013
- EDP - Energias de Portugal SA: EDP Initiatives; EDP Fund for Biodiversity
- Finagra, SA - Herdade do Esporão: Reforestation with indigenous species
- Herdade dos Fartos e Defesa das Cegonhas: Preservation of the natural habitats and good agro-forestry management; Dissemination and increase awareness of the civic society on nature and biodiversity conservation

- ProCME : Partnership in preparation with Grupo Lobo, in order to assess the needs and realize a plan of actions in the context of the “Conservation Plan for the Iberian Wolf and his habitat”, in the geographical zone between the Natural Reserve of Serra da Malcata and the river Douro, to provide food and shelter to the specie *Canis Lupus* in order to improve his conservation state
- REFER - Rede Ferroviária Nacional, EP: A set of action in the context of the B&B protocol
- REN - Redes Eléctricas Nacionais, SGPS, SA: Maintenance of the environmental aspects of the SIGQAS; Partnerships and investigation and development projects: LIFE-Nature Project of Conservation of Bonelli’s Eagle developed by the Iberian Avifauna Study Centre (CEAI); Landscape integration of the substations; Activities related to avifauna protection during 2006-2008: Control of white stork nidification, €375 000; Signalling lines; Environmental requalification of lines corridors; Partnerships with the entities and organizations, including ONGs, which competences for analysis and advising REN, in the context of his own activity, having in mind the best decisions on impacts mitigation; Voluntary support nature conservation initiatives related to REN infrastructures and contribute to minimize and compensate impacts
- SCC - Sociedade Central de Cervejas, SA: Stimulate the sustainable cultivation of the national barley, contributing to the intensification of the traditional agricultural systems and to the reduction of desertification; No use of genetically modified raw materials; Compensate the agricultural producers for the use of certified seed; Clarify, next to the agricultural agents, the preference for varieties that, give preference to the sustainability of the culture and not exclusively his profitability; Define content protein specifications in order to disincentive the over use of nitrogen fertilizing; Stimulate the rotation of complementary cultures that make the richness of the biodiversity; Look for new areas of cultivation of barley with sight to his propagation and increase of the cultivated area
- SECIL – Companhia Geral de Cal e Cimento, SA: Selection and Fixation of Vegetable Species in Desertified or Degraded Soils. Studies for Recuperation of Mediterranean Landscape and Ecosystems, partnership with the Centre of Ecology and Vegetable Biology, Faculty of Sciences of Lisbon University; Ecological Management of Reforest Areas: a Case Study in Mediterranean Calcareous Quarries, SECIL-Outão. Partnership with the Centre of Ecology and Vegetable Biology, Faculty of Sciences of Lisbon University; EcoQuarry – Ecotechnology for Environmental Restoration of Limestone Quarries, partnership with the Centre of Ecology and Vegetable Biology, Faculty of Sciences of Lisbon University; Ecological Management of Reforest Areas in Calcareous Quarries, partnership with the Centre of Ecology and Vegetable Biology, Faculty of Sciences of Lisbon University; Study and Valorisation of Biodiversity - Fauna in SECIL-Outão. 1st Phase, partnership with the Department of Biology of Evora University; Ecological and Landscape Restoration of Pataias Quarries, partnership with the Instituto Superior de Agronomia; Study and Valorisation of Biodiversity - Fauna in Maceira-Liz and Cibra-Pataias. 1st Phase, partnership with the Department of Biology of Evora University; Study and Valorisation of Biodiversity - Fauna in SECIL-Outão. 2nd Phase : Plan of Action for Biodiversity, partnership with the Department of Biology of Evora University.
- Somincor - Sociedade Mineira de Neves Corvo, SA: Protocol with the UTL (IST and ISA) to find the better technologies to reduce pollutants on treated industrial effluents, although the parameters are under the limits of the unloading licenses we find important to implement a constant improvement in our proceedings of objective impacts minimization.

- Sonae Turismo: Morcegário Project: During the Marina and new Ferries Wharf of Troiaresort EIA process was identified, in one of the towers to be demolished, a colony of free-tailed bat (*Tadarida teniotis*) with protection statute. Because of that it was necessary to create an alternative structure to provide refuge to the bats. This structure (the bat-house (morcegário)) was projected with the collaboration of ICNB and IMAR - Sea Institute. The capture and transfer of the bats colony was coordinated by ICNB, previously to the tower demolition. Approximately a month after the tower demolition, presence of bats in the morcegário was confirmed. Environmental monitorization program of Troiaresort was develop in partnership with the following entities: National Institute of Biological Resources, I.P.. Protocol established since 2000, for specialized scientific-technical counselling on the pine forest sanitary state, as well as the establishment of measures for his management and recuperation; IMAR, Sea Institute. Protocol since 1998, for studies related to the environment

## UK

- BP: Supports research into clean coal (with Rio Tinto)
- Anglo American plc: Tarmac in Northumberland Engaging public interest through a schools' biodiversity challenge. Schools will assess Tarmac's business and biodiversity plans and develop a BAP for their own school grounds. There are plans for this project to extend to include schools throughout Northern England.
- Rio Tinto plc: Supports research into clean coal (with BP)
- Balfour Beatty: 'I Love my Environment' – an initiative set up by Balfour Beatty, designed to help schools to become more sustainable in their buildings, curriculum and community; Balfour Beatty Construction Northern implemented several systems in Joiner's Square Primary School in Stoke on Trent to allow them to produce clean, renewable energy.
- Cadbury Schweppes: Earthshare - A project funded by Cadbury Schweppes and co-ordinated with Earthwatch and Ghana NCRC to research, conserve and increase biodiversity in the cocoa farming on regions in Ghana.
- HSBC Holdings plc: HSBC Rainforest Preservation Project in collaboration with WWF

## Ukraine

Open cast mining of manganese ore and coal mining: Public corporation "Ordzhonikidze ore-dressing and processing enterprise" (Nikopol district, Dnipropetrovs'k province); Public corporation "Ingulets ore-dressing and processing enterprise" (Kryvyi Rig district, Dnipropetrovs'k province); Public corporation "Central ore-dressing and processing enterprise" (Kryvyi Rig district, Dnipropetrovs'k province); Coal mines of Donets Basin - several enterprises (Donetsk province):

- As a result of extensive mining huge borrows and hillocks of waste matter had arisen. The slag-heaps of the moonscape had no any soil. Strong weathering of developed fields entails air and soil pollution of adjacent territories. A little number of species was presented owing to migration processes. The pits' water bodies were characterized by high turbidity, low oxygen concentration and absence of hydrocoles.
- The enterprises launched several projects on research and management of the disturbed landscapes.
- Mitigation measures were developed and introduced. The actions include:
  - Changing of a scene with creation of diverse landscapes;
  - Selection and matching of wood species for the forest rehabilitation;

- Introduction of animals, which are functionally important for pedogenesis and of commercial fauna;
  - Establishment of state wildlife preserves at rehabilitated territories.
- Extensive mining created huge borrows and hillocks of waste matter. Rehabilitation methods were limited by filling of soil and transplanting of woods, mostly poplars and birches. No other measures on biodiversity have been taken.

#### Forestry enterprises

- Forests rehabilitation by transplanting of woods

Fishing companies (many small ones, which number up to 1-3 tens of workers) that operates on large rivers, such as Dnieper, Dniester, etc.

- The fishing companies must propagate most commercial fish species and release (stocking) it in the rivers every year

#### Hunting organisations and enterprises

- Breeding and release game species. No other biodiversity initiatives or activities

### 3 - ECOLOGICAL ENGINEERING

#### 3.1 - State of the Art of Ecological Engineering Applied to Industrial Impact Assessment and Restoration / Mitigation

Results from the replies on Ecological Engineering are presented in Annex E.

Ecological Engineering (EE) is a new discipline in most countries and the definitions are not the same everywhere. For some, EE is an approach to the environmental and functional restoration of natural spaces, using a methodology of construction that follows the physical conditions of the sites, that allies the traditional engineering techniques and methods with the building potential of the vegetation, always seeking the equilibrium between the natural system functionality and the human activities. It uses vegetative material together with natural materials such as stones, wood, soil, and so on, to restore the natural equilibrium of the environmental systems and habitats.

We find some difference in terminology in the different countries.

Countries like Portugal (Associação Portuguesa de Engenharia Natural), Italy (Associazione Italiana per la Ingegneria Naturalistica) and Spain (Asociación Española de Ingeniería del Paisaje) use Natural Engineering or Biological Engineering.

At the European level we have the European Federation for Soil Bioengineering (EFIB) since 1995. The Federation gathered all the traditions and the experience of the different national European associations, which had started their activity during the years 80-90, even if in some countries such as Austria, Germany or Switzerland, Bioengineering was operative starting from the years 70. The Federation exist so far in Austria, Germany, Italy, Spain, Switzerland and it can count on the help of some experts also in France, Slovenia and United States.

In the Slovak republic the term “Environment and Environmental Engineering” came into force. It includes pollution control and prevention, recycling, remediation and waste treatment, water treatment and quality, biochemistry, biology and biotechnology, biochemistry, biology and microbiology.

In the other hand, in Ukraine EE means almost all type of activities, which concerns the environment to wide extent: from waste treatment to the quarry plant marketing.

According with the answers there is different level of implementation in: Belgium, Germany, Ireland, Italy, Lithuania, Norway, Portugal, Russia, Slovakia, Spain, Netherlands and Ukraine.

At the moment it is an emerging area of intervention for restoration/compensation of industrial impacts, used mainly for:

- Assessment and eutrophication control in lakes and reservoirs;
- Biological treatment of liquid and solid waste;
- Consolidation of slopes;
- Environmental and landscape restoration of roads infrastructures;
- Environmental restoration of degraded mining areas;
- Environmental restoration of dunes and coastal zones;
- Environmental restoration of quarries;
- Erosion control;
- Restoration and valorisation of wetlands;
- Restoration of burned forest areas;
- Sealing and environmental restoration of landfills (waste dump);

- Water and atmospheric pollution

Some research topics were suggested regarding this topic:

Germany NR: Concrete research recommendations from Germany are not available from this field at the moment. For this, the work of the SER (Society for Ecological Restoration) should be used from an international perspective, e.g. using the “SER Guidelines for Developing and Managing Ecological Restoration Projects” and recent book publications from this area like Aronson, Milton & Blignaut (2008): Restoring Natural Capital.

Portugal NR: 1 Research is needed to improve the efficiency of the ecological engineering principles for restoration and/or mitigation of the impacts on biodiversity resulting from companies activities.

Topic for discussion:

Slovakia NR: 1) Common features and differences related to Ecological engineering, Environmental engineering and Genetic engineering. 2) Practical aspects of ecological engineering

### 3.2 - Examples

#### **Belgium**

- Belspo is funding a large project: “ADAPT: Towards an integrated decision tool for adaptation measures - Case study: floods” which has a strong engagement of all stakeholders including the private sector.
- In water management, a project on ecological engineering of rivers was carried out in Wallonia: “Physical management of water streams: outcome of 10 years of ecological engineering (COURS D'EAU)”.

#### **Ireland**

- 2004 - 2008 Coillte Teoranta (The state owned forestry company) has worked towards restoring 571.2 hectares of raised bog habitat on its property in the Midland counties
- Wild Bird Conservation Project - Druids Glen Golf Resort
- Mitigation Measures for Nationally Threatened Triangular Club-rush (*Schoenoplectus triquetus*)
- Restoration of raised bogs, previously damaged by peat extraction for the fuelling of a number of power stations in Ireland and the production of horticultural products

#### **Lithuania**

Many examples of research activities related to industrial impact assessment, in the followings areas:

- Cleaner Production (CP) promotion
- Eco-Design
- Eco-tourism Development
- Energy Efficiency
- Engineering Economic
- Environmental Consulting
- Environmental Policy

- Hazardous materials management
- Land Use Planning
- Management in Industries
- Renewable energy
- Sustainable Agriculture
- Sustainable Business
- Training
- Water management

### *Norway*

- Restoration of a defence training area at Hjerkinn in the central mountains.
- Modification of water flow by artificial thresholds in regulated rivers.

### *Portugal*

- The work done by the Water Institute (INAG) in 2001, namely for Quarteira Stream (Algarve), and the Hydrographic basin of the Algarve Streams (2001) and the Rehabilitation project for impoundments (2001) carried out by the CCDR-Algarve.
- The investments made by the cementwork, Secil S.A., in the landscape restoration of the quarries that it explores.
- Between 2005 and 2008, the Ripidurable project (<http://www.rapidurable.com>), brought together partners from different institutes of Portugal, Spain, France and Greece, with experience in environmental evaluation and habitat restoration and the propagation of forest plant species, aiming to contribute to rehabilitation and/or restoration of the riparian zones; improving know-how and overcoming limitations in the development of management strategies for riparian zones; taking into account the natural characteristics, the economic potential, and the importance of those habitats as ecological corridors. In Portugal the case studies was: a) rehabilitation/restoration of the riparian zones of the Vale da Atela – Paul da Goucha; b) rehabilitation/restoration of the riparian zones of the Gandum stream, one of the Almansor river tributary.
- Restoration of the Algibre stream (Algarve), a case study of the project “PROGECO: Protection of the Territory through the Ecological Engineering in a Hydrological basin scale”, approved in the context of the Interreg IIIB – MEDOCC. The project intendeds to apply the best techniques of Ecological Engineering to a hydrological basin and to produce guidelines for the application of the ecological engineering in Mediterranean environment.
- The environmental and landscape restoration of burned and degraded road edges carried out by the AFLOPS - Association of forest producers.
- The EDM – Empresa de Desenvolvimento Mineiro S.A. has the concession in exclusive regime, for the preparation and implementation of projects of environmental restoration of degraded mining areas. Example of projects conducted by EDM is the hydrological and environmental restoration of Aljustrel mining area, to be implemented between 2005 and 2008.

### *Russia*

- Energocor-centre Engineering work in the field of implementation of progressive technologies in electric power industry, ecological supervision and consulting, but it's too far from biodiversity mitigation.

- ARS ecological engineering deals with problems of life quality standards, water resources usage, food quality.
- Energy Ecology Engineering work with industrial gas wastes cleaning, or ecological audit.
- (this activity is not connected directly with biodiversity mitigation/restoration)

### *Spain*

- “Restoration of coastal dunes with *Juniperus* spp in Valencia (Spain)” ([www.lifeenebro.com](http://www.lifeenebro.com)) is a Life-Nature project
- For over 30 years, the Alpine ski resort Valcotos (Madrid, Spain) (<http://www.parquenaturalpenalara.org/gestion/restauracion-ecologica/eliminacion-valcotos.html>) caused numerous disturbances, which affected most sensitive areas and removed natural vegetation. In 1998 it was outlined a draft environmental restoration project based on scientific criteria supported by years of research
- CLEAM Project: Building Clean, Efficient and Friendly to Environment. This is an initiative of the Spanish Technology Platform for building, within its Strategic Line "Sustainable Building". Led by Ferrovial Agroman and OHL, has been one of the sixteen projects worthy of support of the National Strategic Consortia for Technological Research (CENIT) in its third call
- Doñana 2005 project: Restoration of the wetland of the most emblematic wetland in Europe, promoted by the Ministry of Environment through the National Park Agency and implemented by the Guadalquivir River Watershed, ends to restore the most important wetland in Spain and one the most important in Europe

## REFERENCES

1. Background discussion note for workshop A: Biodiversity-related responsibility schemes. Portuguese Presidency of the EU Council and European Commission High Level Conference on Business & Biodiversity November, 2007, Lisbon, Portugal. Conference website <http://countdown2010.net/business>
2. Beirat für Naturschutz und Landschaftspflege beim Bundesministerium für Umwelt, Naturschutz und Reaktorsicherheit (1997). Zur Akzeptanz und Durchsetzbarkeit des Naturschutzes. In: Erdmann K-H and Spandau L (eds) Naturschutz in Deutschland. Strategien, Lösungen, Perspektiven. Eugen Ulmer, Stuttgart, pp 263-296.
3. BMU (2007). National Strategy on Biological Diversity. Bundesministerium für Umwelt, Naturschutz und Reaktorsicherheit, Bonn. [http://www.bmu.de/files/pdfs/allgemein/application/x-download/national\\_strategy\\_biodiv.pdf](http://www.bmu.de/files/pdfs/allgemein/application/x-download/national_strategy_biodiv.pdf)
4. COP 6 Decision VI/7 (2002). Identification, monitoring, indicators and assessments. <http://www.cbd.int/decisions/cop6/?m=COP-06&id=7181&lg=0>
5. Demeter A (2008). The European “Business and Biodiversity Initiative”. International Conference “Business and Biodiversity”, Deutsche Welle, Bonn, Germany, 2-3 April, 2008.
6. European Environmental Bureau (2005). Biodiversity in Strategic Environmental Assessment: Quality of national transposition and application of the strategic environmental assessment (SEA) directive. In: Hontelez, J. (Ed.), Brussels, Belgium, p. 58.
7. Heiland S (2005). Die gesellschaftliche Dimension des Naturschutzes. Basis für Naturschutzstrategien. In: Czybulka D (ed) Wege zu einem wirksamen Naturschutz. Erhaltung der Biodiversität als Querschnittsaufgabe. Sechster Warnemünder Naturschutzrechtstag. Beiträge zum Landwirtschaftsrecht und zur Biodiversität, vol 3, Nomos, Baden-Baden, pp 37-57.
8. Hernandez S and Souan H (2008). Quel système d’incitation pour les entreprises en vue de la conservation de la biodiversité en France? Business.2010: COP-9: business and biodiversity in Bonn. <http://www.cbd.int/doc/newsletters/news-biz-2008-04/?articleid=143>
9. Houdet J (2008). Intégrer la biodiversité dans les stratégies des entreprises. Le Bilan Biodiversité des organisations. FRB – Orée, Paris; [www.oree.org](http://www.oree.org); [www.fondationbiodiversite.fr](http://www.fondationbiodiversite.fr)
10. Spillmann W (2007). Für eine umfassendere Problemorientierung der Forschung für Natur- und Landschaftsschutz. Natur und Landschaft, Zeitschrift für Naturschutz, Landschaftspflege und Umweltschutz, Kohlhammer, Köln, 2: 68-69

## LINKS

1. AFLOPS (Association of forest producers) - <http://www.aflops.pt/content/index.php?action=detailfo&rec=335>
2. Alpine ski resort Valcotos (Madrid, Spain) - <http://www.parquenaturalpenalara.org/gestion/restauracion-ecologica/eliminacion-valcotos.html>
3. Aronson, Milton & Blignaut (2008): Restoring Natural Capital - [http://www.ser.org/content/restoring\\_natural\\_capital.asp](http://www.ser.org/content/restoring_natural_capital.asp)
4. Associação Portuguesa de Engenharia Natural (APENA) - <http://www.apena.pt/>
5. Asociación Española de Ingeniería del Paisaje (AEIP) - <http://www.aeip.org.es/>
6. Associazione Italiana per la Ingegneria Naturalistica (AIPIN) - <http://www.aipin.it/>

7. BCSD Portugal - <http://www.bcsdportugal.org/content/index.php?action=articlesDetailFo&rec=361>
8. Biodiversity economics - <http://biodiversityeconomics.org/>
9. Biodiversity Technical Assistance Units (BTAUs) - [www.smeforbiodiversity.eu](http://www.smeforbiodiversity.eu)
10. BIOSTRAT, Developing the EU Biodiversity Research Strategy - <http://www.biostrat.org/>
11. Business & Biodiversity, furthering collaboration between civil society, business sector and public authorities - <http://www.business-biodiversity.eu/>
12. CBD 2010 Biodiversity Target - [www.cbd.int/2010-target](http://www.cbd.int/2010-target)
13. CBD Conferences of the Parties (COP) - <http://www.cbd.int/convention/cops.shtml>
14. Countdown 2010 Network - [www.countdown2010.net](http://www.countdown2010.net)
15. EDM, Empresa de Desenvolvimento Mineiro S.A - [http://www.edm.pt/html/proj\\_aljustrel1.htm](http://www.edm.pt/html/proj_aljustrel1.htm)
16. European Federation for Soil Bioengineering (EFIB) - <http://www.efib.org/>
17. Le Grenelle Environment - <http://www.legrenelle-environnement.fr/grenelle-environnement/>
18. Message from Lisbon on Business and Biodiversity (2007).  
[www.countdown2010.net/file\\_download/143](http://www.countdown2010.net/file_download/143)
19. Nature and Biodiversity EU homepage - [http://ec.europa.eu/environment/nature/index\\_en.htm](http://ec.europa.eu/environment/nature/index_en.htm)
20. Portuguese Business and Biodiversity initiative -  
<http://portal.icn.pt/ICNPortal/vPT2007/O+ICNB/Iniciativa+Business+and++Biodiversity/?res=1024x768>
21. Potsdam Initiative – Biological Diversity 2010 - <http://biodiversity-chm.eea.europa.eu/convention/F1125911898/2007-03-18-potsdamer-erklaerung.pdf/download>
22. PROGECO: Protection of the Territory through the Ecological Engineering in a Hydrological basin scale - <http://www.ccdr-alg.pt/ccdr/index.php?module=ContentExpress&func=display&ceid=362>
23. Restoration of coastal dunes with *Juniperus spp* in Valencia (Spain) - [www.lifeebro.com](http://www.lifeebro.com)
24. Ripidurable project - <http://www.ripidurable.com>
25. SER Guidelines for Developing and Managing Ecological Restoration Projects -  
[http://www.ser.org/content/guidelines\\_ecological\\_restoration.asp](http://www.ser.org/content/guidelines_ecological_restoration.asp)
26. The Business and Biodiversity Offset Program (BBOP) - <http://www.forest-trends.org/biodiversityoffsetprogram/>
27. The Convention on Biological Biodiversity (1992). Text of the Convention.  
<http://www.cbd.int/convention/convention.shtml>

## ANNEX A

### Biostrat questionnaire (preparation work for the French EPBRS meeting)

#### A - National Regulations concerning impact on biodiversity and their implementation

- 1 - In your country does it exist national regulations concerning
  - 1.1 - Biodiversity impact assessments ? If yes, for which type of activities? Industry? Infrastructures (roads, dams etc..)? Agriculture? Else ?
  - 1.2 - Mitigation/compensation for biodiversity impact ?
  - 1.3 - Are these regulations implemented ? Who enforces this implementation?
  - 1.4 - Does it exist any agency, public or private, to manage impact evaluations and/or compensations-mitigations (such as mitigation banking...)?

#### B - Measures taken by companies (private or public) concerning biodiversity conservation and research and National B&B

- 2 - Do the companies in your country (list names for each question)
  - 2.1 - Have any accounting of their impacts on biodiversity?
  - 2.2 - Which main measures have they taken to minimize their impacts ?
  - 2.3 - Do they contribute to the conservation of biodiversity? through which types of actions ?
- 3 - Do you have any National or Regional Business & Biodiversity initiative? Who is managing this initiative? How is it regulated?
- 4 - Biodiversity research supported by private companies
  - 4.1 - Assess the existing or past research activities in partnership with the private sector and the public companies in the field of biodiversity
    - For conservation in general,
    - focused on the impacts of the companies activities and mitigation or restoration

#### C - Ecological engineering

- 5.1 - State of the art of Ecological engineering applied to industrial impact assessment and restoration / mitigation in your country
- 5.2 - Please describe examples that could be emphasized during the November meeting

## ANNEX B

Country	Biodiversity impact assessments	Mitigation/compensation for biodiversity impact	Implementation / Enforcement	Impact evaluations and/or compensations-mitigations management (mitigation banking)	Source
<b>Belgium</b>	- Environmental permit (specifically the impact assessment on Natura 2000)	-	-	-	NR
<b>Cyprus</b>	- EIA projects and actions - SEA plans and programmes - Habitats directive - Environmental permit laws (industries prior to EIA legislation was approved)	- As a result from EIA, EA - Environmental permit would specifies actions to mitigate biodiversity impacts	- Ministry of Agriculture, Natural Resources and Environment, and the environment services of the MANRE - Department of Town Planning (Competent Authority) - Police force (only within a legal framework)	- CA grants the environmental permit and manages the industrial project (EIA) or program (SEA)	NR
<b>Czech Republic</b>	- EIA projects and actions - SEA plans and programmes - Act on Nature and Landscape protection (legal framework for Natura 2000 sites)	- The project owner / developer has to prepare alternatives measure to avoid or mitigate adverse effects (EIA process) - Integrated Prevention and Pollution Control - Act on Claim Prevention and Compensation	- Ministry of the Environment - Nature Protection Departments in Regional Authorities	- Methodology for Environmental Management Accounting - Market conformable instruments: trading in permits for emissions of greenhouse gases; eco-labelling; voluntary activities of business entities	NR
<b>Finland</b>	- EIA projects and actions - SEA plans and programmes - Land Use and Building Act	- Environmental permits under the Environmental Protection Act - Act on Compensation for Environmental Damage	- EIA authorities	- Managing impacts under EIA procedures - Markets for biodiversity are poorly developed and there exists no mitigation banking functions	NR
<b>France</b>	-	-	-	-	
<b>Germany</b>	- EIA projects and actions - SEA plans and programmes - Natura 2000 network (Habitats and Birds Directives) - Environmental Liability Directive	- Germany's Nature Conservation Act requires theoretically compensation of impacts on nature and landscapes	- Leading administration, project owner	From flexibilisation of the impact-mitigation principle banking institutions emerged: - "Flächenpools" (provision of areas that can be used for compensation measures later) - "Ökokonten" (accounts where compensation measures are already provided)	NR
<b>Hungary</b>	- EIA projects and actions - SEA plans and programmes - Natura 2000 territories	- Most of the measures are enforced by law (EIA and SEA) - The companies working in Natura 2000 territories are obliged by conservation rules or encouraged by subsidies to apply environmentally friendly cultivation methods	- Environmental Safety Department of the Ministry of Environment and Water - Department for Use of the Environment of the National Chief Inspectorate for Environmental Protection and Water Management - Department of Impact Assessment of the Ministry of Environment and Water	-	NR
<b>Ireland</b>	- EIA projects and actions	- Compensation is paid to landowners who participate in a number of biodiversity enhancing/conservation schemes within their lands - Farmers and aquaculture license holders whose sites fall within a designated area are paid compensation for loss of earning due to the stricter practices which must be adhered to within these areas (some misunderstanding ?)	- Under the Environmental Protection Agency Act 1992 - fining persons guilty of an offence under the act - Irish Environmental Protection Agency - The National Parks and Wildlife Service (eleven different government sectors in Ireland and a number of these sectors have the power to prosecute damaging activities on biodiversity)	Management and monitoring of the licenses and notifiable actions: - Environmental Protection Agency - National Parks and Wildlife Service	NR
<b>Italy</b>	- EIA projects and actions	- As a result from EIA	- Ministry for the environment, land and sea protection	- No	NR
<b>Lithuania</b>	- EIA projects and actions	- The Law on Protected Areas" establishes a	- State Environmental Protection Inspectorate	- „Šiaulių bankas“ is one of the leaders in	NR

Country	Biodiversity impact assessments	Mitigation/compensation for biodiversity impact	Implementation / Enforcement	Impact evaluations and/or compensations-mitigations management (mitigation banking)	Source
		system of protected areas and sets objectives and status of each protected area	<ul style="list-style-type: none"> <li>- Regional Environmental Protection Departments</li> <li>- State Protected Areas Office</li> <li>- State Territorial Planning and Construction Inspectorate</li> <li>- Geological Survey Office (administers and controls the use of underground resources).</li> <li>- Municipalities</li> <li>- Committee on Environment Protection of the Parliament of the Republic of Lithuania;</li> <li>- National Control Commission for Prices and Energy</li> <li>- State Metrology Authority</li> <li>- General Forest Enterprise</li> </ul>	crediting environmental projects, was the first bank to sign an agreement with the Lithuanian Environmental Investment Fund (LEIF) and the Investment Guarantee Fund and its representative participates in the Supervisory Board of the fund. The fund finances private and public sector implementing water, hazardous waste management, waste recycling, renewable energy and energy efficiency projects on easier terms (via subsidies and soft loans).	
<b>Norway</b>	- EIA projects and actions	- As a result from EIA	<ul style="list-style-type: none"> <li>- Ministry of Environment</li> <li>- Directorate for Nature Management</li> <li>- Sectorial authorities (e.g., with the ministry of transport for road development impacts)</li> </ul>	- There is no formal mechanism for overall assessment of compensation-mitigation measures, except for the individual EIAs	NR
<b>Portugal</b>	<ul style="list-style-type: none"> <li>- EIA projects and actions</li> <li>- SEA plans and programmes</li> <li>- Environmental assessments (EA) of projects and actions in protected/sensitive areas (Habitats directive)</li> </ul>	<ul style="list-style-type: none"> <li>- As a result from EIA, EA</li> <li>- Nature conservation and biodiversity regime</li> <li>- Environmental liability</li> <li>- Environmental penalties</li> </ul>	<ul style="list-style-type: none"> <li>- Portuguese Environmental Agency (APA)</li> <li>- Institute for Nature Conservation and Biodiversity (ICNB)</li> <li>- Commission of Coordination and Regional Development (CCDR)</li> <li>- Environmental General Inspection (IGAOT)</li> <li>- Environmental services of the municipalities</li> <li>- Nature and Environment Protection Service (SPENA) of the National Republican Guard (GNR)</li> <li>- Civil society</li> </ul>	<ul style="list-style-type: none"> <li>- Measures resulting from EIA process</li> <li>- Measures resulting from EA of projects and actions in protected/sensitive areas (Habitats directive)</li> <li>- Nature conservation and biodiversity regime – legal basis for the constitution of a Fund for nature conservation and biodiversity</li> </ul>	NR
<b>Russia</b>	- Legal regulations regarding impacts on biodiversity, through order of examinations on industrial safety	- Restrictive, precautionary and preventive or mitigation measures in the case of any Infringement of Federal laws in this field	<ul style="list-style-type: none"> <li>- Ministry of Natural Resources and Ecology</li> <li>- Ministry of Agriculture</li> <li>- Federal services</li> </ul>	- Compensation - mitigation supported by governmental structures	NR
<b>Slovakia</b>	<ul style="list-style-type: none"> <li>- EIA projects and actions</li> <li>- SEA plans and programmes</li> </ul>	<ul style="list-style-type: none"> <li>- Under EIA and SEA process</li> <li>- Provisions on compensation for damage</li> <li>- Compensation for property loss due to bans and other restriction</li> </ul>	<ul style="list-style-type: none"> <li>- Ministry of Environment</li> <li>- Environmental Agency</li> <li>- Regional Environmental Office</li> <li>- District Environmental Office</li> </ul>	-	NR
<b>Spain</b>	<ul style="list-style-type: none"> <li>- Natural Heritage and the Biodiversity - legal framework for conservation, sustainable use, improvement and restoration of the Spanish natural heritage and biodiversity</li> <li>- National Inventory of Natural Heritage and Biodiversity; National Strategic Plan for Natural Heritage and Biodiversity; Plans for Natural Resource Management of each Autonomous Community; Catalogue of endangered habitats with special attention to Natura 2000 habitats; List of Species under Special Protection; The Catalogue of Exotic and Invasive Species; Spanish Inventory of</li> </ul>	<ul style="list-style-type: none"> <li>- Environmental Liability requires the offender to repair the damage caused, and compensate the damages that can not be repaired. Agents (companies, industries, etc.) are forced to establish a specific fund to cover potential damages.</li> <li>- Compensatory damages based on “objective liability” are mandatory for certain activities (those considered dangerous or polluting). Compensatory damages based on “subjective liability” are also mandatory for damages caused to protected (Natura 2000) areas, independently of the activity that caused it</li> </ul>	<ul style="list-style-type: none"> <li>- Ministry of Environment, and Rural and Marine Areas</li> <li>- Regional Governments of the Autonomous Communities</li> </ul>	<ul style="list-style-type: none"> <li>- Direction General for Environmental Quality and Evaluation</li> <li>- National Fund for the Natural Heritage and Biodiversity that will act as a co-financing instrument aimed at ensuring the territorial cohesion and the achievement of the objectives of this law</li> </ul>	NR

Country	Biodiversity impact assessments	Mitigation/compensation for biodiversity impact	Implementation / Enforcement	Impact evaluations and/or compensations-mitigations management (mitigation banking)	Source
	Biological and Genetic material of wild Species; etc - EIA concerning impacts on areas other than the Natura 2000				
<b>The Netherlands</b>	- For almost all major infrastructural works but not for agriculture	- For almost all major infrastructural works but not for agriculture	- National authorities	- The EIS Committee and its Buro	- NR
<b>UK</b>	- Identify which activities impact negatively on biodiversity - Ecological, environmental and biodiversity impact assessments	- Biodiversity offsets - Biodiversity action plans - Mitigation schemes	- Government - NGO - Ecological consultancies	-	- NR
<b>Ukraine</b>	- The Law of Ukraine from 26 June 1991 ? 1268-XII “On Protection of the Environment” - The Law of Ukraine on 21 September 2000 ? 1989-III “On formation of National Ecological Network” - Water Code of Ukraine - Land Code of Ukraine - Forest Code of Ukraine - Supreme Council (Verkhovna Rada) Decree on 5 March 1998, ? 188/98BP “Basic Lines of State Policy of Ukraine in the area of Nature Protection, Nature Resources Use and Ecological Safety”. - The Law ? 685-V “On Ratification of Protocol on conservation of biodiversity and landscapes of the Black Sea to Convention on the Black Sea contamination protection”. - The Regulation of Cabinet Council of Ukraine from 12.01.1993 ? 15 “On State Land Cadastre Practice”. - The Regulation of Cabinet Council of Ukraine from 08.04.1996 ? 413 “On Validation of State Water Cadastre Practice”. - The Regulation of Cabinet Council of Ukraine from 27.09.1995 ? 767 “On Validation of State Forest Inventory and State Forest Cadastre Practice”.	- The Law of Ukraine, 09.02.1995 ? 45/95-BP “On environmental expertise” - Decree of the Cabinet Council of Ukraine, 14.04.1997, ? 347 “On approval of procedure of rivers’ passports execution and procedure of setting coastal strips of waterways and their utilization” - Decree of the Cabinet Council of Ukraine, 28.07.1995, ? 554 “On the list of activities and facilities that are of higher environmental danger” - State building norms of Ukraine DBHA.2.2-1-95 “Composition and content of environmental impact assessment by designing and construction of enterprises, buildings and facilities”. - The Law of Ukraine, 24.06.2004, ? 1862-IV “On ecological audit” - System of Management of the Environment. State Standards DSTU ISO 14001-97, DSTU ISO 14004-97 “On execution of ecological audit”. - Requirements on Ecological Audit Implementation DSTU ISO 14010-97, DSTU ISO 14011-97, DSTU ISO 14012-97.	- Ministry of Health Protection of Ukraine. - Ministry of Agricultural Policy of Ukraine. - Ministry of Ukraine on Emergencies and Population Protection from Chernobyl Disaster - State Ecological Inspectorate, - State Inspection of the Black Sea Protection, - State Inspection of the Azov Sea Protection - State Service of Reserves. - State Committee on Nuclear Regulations of Ukraine, - State Committee of Ukraine on Land Resources. - State Committee of Ukraine on Water Industry. - State Committee of Forestry of Ukraine. - State Department of Fishery.	- The environmental impact evaluation is managed by several public agencies: 1. Administration on Ecological Safety. 2. Sanitary-and-epidemiologic institutions. 3. Department of Ecology and Nature Rational Management. 4. Ecological Inspection 5. Police. - As to mitigation in general and mitigation banking in particular there isn’t any good example in this area in Ukraine.	- NR

## ANNEX C

Country	Measures taken by companies (private or public) concerning conservation of biodiversity			Source
	Accounting of their impacts on biodiversity	Main measures taken to minimize their impacts	Contribution to conservation of biodiversity	
<b>Belgium</b>	-	-	-	NR
<b>Cyprus</b>	<ul style="list-style-type: none"> <li>- As a result of EIA, SEA and environmental permits</li> <li>- Small number of Cypriot companies do address biodiversity questions</li> <li>- ISO 14000 environmental management guidelines</li> </ul>	Mitigation of environment effects in general: <ul style="list-style-type: none"> <li>- Energy conservation</li> <li>- Waste minimization</li> <li>- Pollution prevention using sustainable transport</li> </ul> Direct measures to respond to the EIA and SEA process	Unknown direct contributions of companies towards biodiversity conservation in Cyprus. However some example are found: <ul style="list-style-type: none"> <li>- Companies may indirectly contribute towards the maintenance of biodiversity in Cyprus through the new “Golden Oak” program initiated by the Cyprus Chamber of Commerce for reforestation of burnt Cypriot forests and the greening of urban areas. Carrefour (French) has contributed with €35,000 for the reforestation of a burnt forest near Limassol</li> </ul>	NR
<b>Czech Republic</b>	<ul style="list-style-type: none"> <li>- The majority of industry enterprises take into account environmental aspects of their operation, based either on law compliance or corporate image. However, biodiversity has been only recently recognized as an important issue in accounting for environmental sustainability of industries</li> </ul>	<ul style="list-style-type: none"> <li>- Reduce the use of raw material of production (e.g. water) or saving the</li> <li>- Reducing carbon footprint</li> <li>- Recycling materials</li> </ul>	<ul style="list-style-type: none"> <li>- OKD, the largest mining company operating in the Czech Republic, is currently reforesting more than 600 ha of land</li> <li>- KOOH-I-NOOR Hardtmuth Company, one of the world leaders in the production and distribution of first-rate stationery, exclusively uses wood from tree plantations</li> <li>- Veolia Water, the largest water management company in the Czech Republic, has integrated biodiversity as a key factor when it comes to its operational activities</li> </ul>	NR
<b>Finland</b>	Companies reporting on biodiversity impacts through: <ul style="list-style-type: none"> <li>- Annual report</li> <li>- Environmental statement</li> <li>- Sustainability news</li> <li>- Environmental report</li> <li>- Corporate social responsibility report</li> <li>- Reporting to the CBD</li> <li>- Sustainable forestry website</li> <li>- Sustainability website</li> <li>- CR report</li> </ul>	<ul style="list-style-type: none"> <li>- Auditing of wood suppliers and production sites</li> <li>- Changes in product selection</li> <li>- Complying with voluntary guidelines</li> <li>- Environmental program</li> <li>- Environmental training</li> <li>- Forest certification</li> <li>- Global biodiversity program</li> <li>- Improving eco-efficiency</li> <li>- Improving eco-efficiency and environmental reporting</li> <li>- Improving maritime safety in the Baltic Sea</li> <li>- Pre-study: how to reduce impacts of hydroelectric power production</li> <li>- Pöyry Environment Oy</li> <li>- Reviving production sites and carrying out regular impact evaluations</li> <li>- Sourcing policy for fishing (under development)</li> <li>- Sourcing policy for palm oil (under consideration)</li> <li>- Sourcing policy for timber</li> <li>- Traceability of biofuels</li> <li>- UPM Chain of Custody</li> <li>- Voluntary environmental impact assessments for new sites</li> <li>- Wood origin tracking system</li> </ul>	<ul style="list-style-type: none"> <li>- 1 day event for the conservation of the ringed seal (in partnership with SLL)</li> <li>- Biodiversity awareness website</li> <li>- Cooperation with WWF</li> <li>- Donation of land for the Repovesi National Park, Finland</li> <li>- Mapping valuable biodiversity areas in Podporozhye area, Russia</li> <li>- Nature fund</li> <li>- Owned protected areas</li> <li>- Planting a tree for each new customer</li> <li>- Program: Creation of environmental awareness programs in China</li> <li>- Project: a network of rural telecenters in China</li> <li>- Project: Breathing new life into Longworth (UK)</li> <li>- Project: Protecting wading birds in Sheffield, Great Britain</li> <li>- Project: protection of the white-tailed sea eagle (in partnership with WWF)</li> <li>- Project: restoration of peat bogs in Scotland (UK)</li> <li>- Restoration of lands and water bodies in Aittalahti, Finland</li> <li>- Saving valleys for conservation in Southern Bahia, Brazil</li> <li>- Support for arranging guided tours to the nature (in partnership with SLL)</li> <li>- Support for Operation Mermaid (WWF Finland)</li> <li>- Support for an ‘environmental YouTube’ called Connect2earth</li> <li>- Support for management of traditional biotopes (in partnership with SLL)</li> <li>- Support for nature conservation projects</li> <li>- Support for Perintometsä initiative (WWF Finland)</li> <li>- Support for SLL through the use of loyal-customer’s card</li> <li>- Support for the METSO program</li> </ul>	NR

Country	Measures taken by companies (private or public) concerning conservation of biodiversity			Source
	Accounting of their impacts on biodiversity	Main measures taken to minimize their impacts	Contribution to conservation of biodiversity	
			<ul style="list-style-type: none"> <li>- Support for the Naturewatch program (WWF Finland)</li> <li>- Support for the rehabilitation of a lake</li> <li>- Support for water protection (in partnership with SLL)</li> <li>- Support to NatureGate</li> <li>- Sustainability action plan in China</li> </ul>	
<b>France</b>	<ul style="list-style-type: none"> <li>- The law on the New Economic Regulations of 2001 (Art.116) stipulates obligation for the French societies quoted in grant to include in their annual reports information on the way they take into account social and environmental consequences of their activities</li> <li>- Sustainability development report</li> </ul>		<ul style="list-style-type: none"> <li>- See Annex F</li> </ul>	Houdet (2008)
<b>Germany</b>	<ul style="list-style-type: none"> <li>- Development of biodiversity business management indicators</li> <li>- Definition of realistic and measurable objectives, monitored and adjusted every 2 to 3 years</li> <li>- Corporate activities will be analysed with regard to their impacts on biological diversity, and the protection of biological diversity will be included within their environmental management system.</li> <li>- Activities and achievements in the biodiversity sector will be published in the company's annual, environmental, and/or corporate social responsibility report</li> </ul>	<ul style="list-style-type: none"> <li>- Determination of company own steps and objectives regarding the integration of biodiversity objectives within corporate policy and activities</li> </ul>	<ul style="list-style-type: none"> <li>- BMU (2008) Catalogue of Biodiversity Relevant Technologies. Technology Transfer, Technological and Scientific Cooperation. A Selection of Biodiversity Relevant German Technologies. May 2008. Federal Ministry for the Environment, Nature Conservation and Nuclear Safety (ed.), Bonn. <a href="http://www.biodiv-chm.de/Documents/Catalogue_TT/download">http://www.biodiv-chm.de/Documents/Catalogue_TT/download</a></li> <li>- The signatory companies of the German Business and Biodiversity Initiative had a turnover of approximately €82 million in 2007</li> </ul>	NR
<b>Hungary</b>	<ul style="list-style-type: none"> <li>- Identified impacts presented in the environmental reports, sustainability reports and social activity reports of the companies</li> </ul>	<ul style="list-style-type: none"> <li>- The Clean Sky Agreement - signed by the Hungarian electricity suppliers, the Ministry of Environment and Water and the BirdLife Hungary in February 2008 to mitigate the impact sky cables have on bird life diversity</li> </ul>	<ul style="list-style-type: none"> <li>- Building study trails or taking part in landscape rehabilitation is a popular activity of multinational and national companies, even if the company's headquarters is situated in a faraway city</li> <li>- Another typical form of mitigation is to donate environmental NGOs or establish small-scale funding schemes which serve biodiversity maintenance</li> </ul>	NR
<b>Ireland</b>	<ul style="list-style-type: none"> <li>- Only if they hold a licence for their activities issued by the EPA</li> </ul>	<ul style="list-style-type: none"> <li>- Those specified under their licence agreement. This will vary from company to company</li> </ul>	<ul style="list-style-type: none"> <li>- Rarely, most companies are complying with their licence criteria to minimise their negative impact on biodiversity rather than an attempt to enhance it. Although some exceptions do apply (see Appendix 1 of NR for details)</li> </ul>	NR
<b>Italy</b>	<ul style="list-style-type: none"> <li>- As a result of EIA and EA</li> <li>- Voluntary tools, such as the European Ecolabel. From 1998 to September 2008, were released Ecolabel licences to 218 companies, for 3503 labelled products and 15 groups of products. The list of Italian companies certified can be found on the web site <a href="http://www.apat.gov.it/certificazioni/site/it-IT/Ecolabel/">http://www.apat.gov.it/certificazioni/site/it-IT/Ecolabel/</a></li> </ul>	<ul style="list-style-type: none"> <li>- Reduction of water use</li> <li>- Reduction of energy use</li> <li>- Reduction of chemical use</li> <li>- Reduction on waste production</li> <li>- Information to guests in tourist accommodation on how to contribute on the company environmental policy</li> </ul>	-	NR
<b>Lithuania</b>	<ul style="list-style-type: none"> <li>- As a result of EIA</li> </ul>	<ul style="list-style-type: none"> <li>- Implementation of progressive environmental protection measures, cleaner production methods, environmental management systems (ISO 14001 standard) and eco-labelling schemes</li> </ul>	<ul style="list-style-type: none"> <li>- Investments into ecologically clean technology in the form of environment friendly projects</li> </ul>	NR
<b>Norway</b>	<ul style="list-style-type: none"> <li>- There is no formal accounting mechanism for BD impacts</li> <li>- All companies are required to specify their environmental impact as part of their annual report, but this is mainly very general and not specifically related to biodiversity (most claim they have no negative impact on the environment)</li> <li>- Exception is the forest industry, where formal certification</li> </ul>	<ul style="list-style-type: none"> <li>- EIA required measures address the immediate effects of the planned development action</li> <li>- For forestry, measures are specified in the environmental requirements for certification procedures and include set-aside of important BD areas, boundary zones along sensitive habitats (mires, rivers etc), retention trees on clearcuts, leaving BD</li> </ul>	<ul style="list-style-type: none"> <li>- Measures in the energy sector (hydro power) and in forestry have a proven positive effect on BD</li> </ul>	NR

Country	Measures taken by companies (private or public) concerning conservation of biodiversity			Source
	Accounting of their impacts on biodiversity	Main measures taken to minimize their impacts	Contribution to conservation of biodiversity	
	procedures are linked to specified environmental requirements and all included forest. This is not mandated by laws or regulations, but is a consequence of market demand and is managed by the industry itself (in consultation with NGOs and authorities)	relevant resources (dead wood, old trees) etc. - In the energy sector, special compensation measures are implemented to create a more favourable water flow regime in regulated rivers for fish (salmon in particular), and to reduce negative effects of windmills and power lines on migrating/dispersing reindeer and birds.		
<b>Portugal</b>	- As a result of EIA and EA - Voluntary in the context of the Portuguese B&B Initiative - Voluntary in the context of public volunteers schemes: EMAS, ISO 14001; Eco-label; Blue Flag on the beaches	- Direct measures to respond the EIA process - Projects for conservation and restoration of biodiversity and habitats - Rational utilization of natural resources - Increase environmental efficiency	- Financial support to research projects - Environmental prizes and awards research projects or best practices - Environmental education projects - Increase awareness campaigns	NR
<b>Russia</b>	- Normally accounting of impact on biodiversity is carried out as a result of administrative or judicial measures after some accidents investigation	- Implementation of new technologies, or modernization of special equipment and facilities for industrial wastes recycling, purifying, etc.	- Normally restoration measures are implemented only after environmental disasters	NR
<b>Slovakia</b>	- Under EIA and SEA process - Under Environmental management systems	-	-	NR
<b>Spain</b>	- We don't know	- Remediation and reclamation	- We don't know	NR
<b>The Netherlands</b>	- Report on sustainability of their activities (banks, Unilever, Shell, etc.)	- All kinds: mitigation, compensation, philanthropy	- Mostly through philanthropy	NR
<b>UK</b>	- In the context of the Biodiversity Action Plan as part of the Environmental Management Schemes	- Biodiversity Action Plans - Environmental Impact Management Processes - Biodiversity Standard - Conduct baseline biodiversity surveys for new and existing projects. - Environmental Policy and Environmental Management System - Control on dust pollution – mobile dust suppression units, static dust sprays. - Blasting – continuous design change to reduce the potential for problems - Noise – baffle mounds, acoustic fencing - Water – all water properly treated before discharged - Topsoils and subsoils are stripped and stored separately on site in order to be used during restoration of the site - Biodiversity Strategy - Prevention, minimisation and mitigation of biodiversity risks - Rehabilitation and restoration of land disturbed by mining - Corporate Biodiversity Strategy, developed together with the Wildlife Trusts - Aim to reduce reliance on natural forests - Embedded biodiversity management into British American Tobacco activities - Manage impacts on high risk biodiversity locations - 'Fragile Earth' commitment is an ongoing approach to ensure that their actions have a lower impact on the environment - Works only with organisations with expertise and legal authority to collect plant and other natural material samples - Ensures appropriate authorities in source countries are informed of and consent to the nature and extent of any proposed natural materials collection	- Relocation of identified flora or fauna species or establishment of specific habitats after the restoration of a site - Responsible stewardship of the land they manage - Identification and pursuit of biodiversity conservation opportunities - Involvement of communities and other constituencies in their management of biodiversity issues - Works with English Nature to help get 95% of SSSIs in England to a favourable or recovering condition by 2010 - Nesting birds and protected animal species – before vegetation is cleared surveys are carried out. If a nest is found, an exclusion zone of at least 2m is set up and advice is sought from environmental groups - Work with small quantities of natural materials to discover bioactive principles - Develop sustainable harvesting procedures to preserve the ecosystem - Collaborate with organisations to educate and train local people in collecting and screening skills - Global Environmental Efficiency Programme - 'Green Option' banking – removing as much paper as possible from banking	NR

Country	Measures taken by companies (private or public) concerning conservation of biodiversity			Source
	Accounting of their impacts on biodiversity	Main measures taken to minimize their impacts	Contribution to conservation of biodiversity	
		<ul style="list-style-type: none"> <li>- Only investigate species if their supply is reproducible and sustainable</li> <li>- Only source wood from TFT or Forest Stewardship Council certified forests</li> </ul>		
<b>Ukraine</b>	<p>- In Ukraine companies have no any accounting of their impacts on biodiversity. Particular measures are taken for the biodiversity protection may be in the general frame of adhered environmental regulations. The most part of the regulations is devoted to the calculations and penalties for the environmental pollution. Biodiversity loss is implied but is not specially assessed. That is why there isn't special accounting.</p>	<ul style="list-style-type: none"> <li>- In several cases enterprises implement new technologies, which may decrease a first cost and possible penalties for the environmental pollution. In most cases it is accompanied by simultaneous reduce of the pollutants effluents that improve the environment and supports biodiversity indirectly.</li> <li>- There are a little of examples of the transfer of rare and endangered species (mostly grass plants) from the plots are planned to be destroyed to existed protected areas.</li> </ul>	<p>- Indirect influence through mitigation of the negative consequences thanks to the improving waste management.</p>	NR

## ANNEX D

Country	Existing or past biodiversity research activities supported by private companies for conservation in general	Source
<b>Belgium</b>	<ul style="list-style-type: none"> <li>- Large research project on Natura 2000 sites has been funded by Belspo: “SELNAT: How to make Natura 2000 work properly? Socio-economic, legal &amp; ecological management” and involves economic aspects and interactions with some industrial activities.</li> <li>- Research project at the Université Libre de Bruxelles specifically addresses “Criteria and impulse for change towards sustainable consumption: sector-based approach”.</li> <li>- Belspo also funded from 2003 to 2005 a project on “Sustainability of certified production systems: the case of labels in the food sector”</li> </ul>	
<b>Cyprus</b>	<p>Only companies contracted to perform EIA or SEA for other companies:</p> <ul style="list-style-type: none"> <li>- Aquarius Consulting Cyprus, Ltd., involved in biodiversity research with government departments and other companies and universities on Cyprus and abroad: Aquarius was contracted by the Cyprus Department of Geological Engineering to formulate a policy for the sustainable development of the mineral industry (i.e., the mining and quarrying industry)</li> <li>- Atlantis was also involved in a vulnerability and threat analysis for 5 of the Natura 2000 sites on Cyprus. This analysis included suggesting a number of specific measures for the protection of flora and fauna in the sites and a function analysis of the Larnaca Salt Lakes (a Natura 2000 site)</li> <li>- Atlantis furthermore has helped to develop management plans for Skoulli river and Alykos Potamos-Agios Sozomenos, two Natura 2000 sites on Cyprus</li> </ul> <p>Few small companies are involved in marine environmental research (very little research on biodiversity is performed by Cypriot companies unless in the context of EIA studies or environmental monitoring. Most biodiversity research on Cyprus is performed by the government or by universities)</p>	NR
<b>Czech Republic</b>	<ul style="list-style-type: none"> <li>- The 6th FP EU project in REMEDE (Resource Equivalency Methods for Assessing Environmental Damage in EU) deals with the implementation of resource equivalency method in the EU. Czech group of scientists focused on the revision of method in a study area heavily damaged by coal mining in the past (Bohác 2008)</li> <li>- The equivalency analysis includes methods and approaches (e.g. remediation) to determine type and range of sources and losses of ecosystem services as a consequence of environmental damage. They are dealing with Habitat Equivalency Analysis (HEA), where the loss is expressed in term of a habitat and compensated as its remediation and Resource Equivalency Analysis (REA) where the loss is expressed in the units of natural resources (e.g. number of key species)</li> </ul> <p>(research projects implemented not by companies)</p>	NR
<b>Finland</b>	<ul style="list-style-type: none"> <li>- Mitigation: Ensuring the legal Origin of Wood</li> <li>- Survey of flora and fauna in coastal areas of Guangxi (China)</li> <li>- Conservation in general: Comprehensive habitat survey (1997-2002)</li> <li>- Conservation in general: Birds as bioindicators of biodiversity</li> <li>- Mitigation: Artificial deadwood habitat for beetles (Finland)</li> <li>- Restoration: Creating habitat for fire dependent species (Finland)</li> <li>- Conservation in general: Fungi as indicators of forest health (USA)</li> <li>- Impact-oriented: The Catamaran Brook Watershed project (Canada)</li> <li>- Restoration: Recovering the black grouse (UK)</li> <li>- Conservation in general: Radio tracking of three-toed woodpecker (Finland)</li> <li>- Fortum Fondation</li> <li>- Cooperation with several Finnish research institutes (aquatic ecosystems)</li> <li>- Mitigation: ecological foot print analysis</li> <li>- Impact-oriented: Regular surveying of fish stocks</li> <li>- Home-MIPS project (in partnership with SLL)</li> </ul>	NR
<b>France</b>	- See Annex F	Houdet (2008)
<b>Germany</b>	-	NR
<b>Hungary</b>	<ul style="list-style-type: none"> <li>- The impacts of intensive game management on biodiversity in the Lónyai game park (2007-08). Initiated and financed by the Nýírerdo Ltd., a publicly owned private company dealing with forestry. Scientific work was done by the Institute of Botany and Nature Conservation, University of Western Hungary.</li> <li>- Modelling carbon fixation within climate forests (2007- ongoing). The Institute of Ecology and Botany of the Hungarian Academy of Sciences were asked to initiate a collaborative research project by the Klímafa Ltd., a privately owned company focusing on climate forests and CO2 trading.</li> <li>- “Faunagenesis” – The origin and genesis of the fauna of the Carpathian Basin (2005-07). This research project was financed by the funding scheme of the Hungarian Research and Technology Office and was realized in strong cooperation between several national park directorates, the Hungarian Natural History Museum, the University of Debrecen and the ÖKO Ltd. as the only business partner.</li> </ul>	NR
<b>Italy</b>	-	
<b>Ireland</b>	- No information could be sourced for any private or public company partnership in the field of biodiversity research	NR

Country	Existing or past biodiversity research activities supported by private companies for conservation in general	Source
<b>Lithuania</b>	<ul style="list-style-type: none"> <li>- The initiative to establish the Integrated Science, Studies and Business Centre (Valley) for the development of marine sector of Lithuania was launched by public bodies carrying out research in the area of marine science: Klaipeda University, Institute of Geology and Geography, Institute of Ecology of Vilnius University, Botanic Institute, Institute of Psychophysiology and Rehabilitation of Kaunas University of Medicine. The establishment of the Valley is supported by: Klaipeda County Governor's Administration is responsible for the strategic development of the maritime of Lithuania, aims at ensuring further sustainable development of the region in cooperation between business and academic community and is implementing the Baltic Sea Coast Preservation and Restoration Programme by decision of the Government of the Republic of Lithuania</li> <li>- In 2003, Litagra Group established public enterprises "The Foundation for the Development of Nature Protection Projects" and "The Foundation for the Development of Agricultural Sciences" which both aim at contributing to the improvement of ecological and educational system in Lithuania.</li> <li>- In the implementation of the Programme on the Formation and Management of Field Crops Yield and Quality Potential, a very active role is undertaken by the Lithuanian Institute of Agriculture (LIA) which is responsible for the selection of applications pursuant to the provisions of the tender as well as for the administration and coordination of research activities, evaluation of research outcomes and making.</li> <li>- Vilnius State Forest Enterprise (VSFE) provides qualification improvement courses in Lithuania and abroad for employees, free of charge consulting to private forest owners and collaborates with forest owners' associations; VSFE information system was created, which contains forestry library, historical forestry exhibit, environmental and awareness raising materials; support local forestry science and biodiversity preservation collaborating with Lithuanian Ornithological Society. Lithuanian Green Movement is a strong partner of VSFE in forest policy making.</li> </ul>	NR
<b>Norway</b>	- There is no private funding to speak of for conservation research in general	NR
<b>Portugal</b>	- Financial support to research projects on environmental conservation, according with their core business and intervention area (fauna, flora, biodiversity in general)	NR
<b>Russia</b>	<ul style="list-style-type: none"> <li>- There are no examples on private sector activities in the field of conservation, mitigation and restoration of biodiversity. There are some ideas in private business involvement in biodiversity conservation or mitigation, but only in the form of pilot projects.</li> <li>- Centre on Bird of Pray Monitoring and Rehabilitation "Holsan" headed by O.A.Svetlitsky registered as a non-commercial organization. The Centre is specialized in breeding and sale of birds of pray in the Ural region.</li> </ul>	NR
<b>Slovakia</b>	- Biodiversity research supported by private companies is in Slovakia almost completely represented by non-governmental organisations.	NR
<b>Spain</b>	-	NR
<b>The Netherlands</b>	-	NR
<b>UK</b>	<ul style="list-style-type: none"> <li>- <u>Shell Chemicals</u>: 'Project Better World'. Shell employees are given the opportunity to volunteer on conservation projects around the world organised by Earthwatch or Voluntary Service Overseas.</li> <li>- <u>Rio Tinto plc</u>: Funds Conservation Volunteers Australia (CVA) who organise biodiversity protection programs in Western Australia; Kew-Rio Tinto Partnership, set up in 2004 to enhance their contribution to environmental conservation through jointly planned and managed programmes; Works with Earthwatch to fund field research projects; Rio Tinto Birdwatch event in collaboration with Birdlife International</li> <li>- <u>British American Tobacco plc</u>: Internships to build capacity for South East Asian bat research with Earthwatch Institute; Conservation of Great Ape Habitats in the Forests of Nigeria and Cameroon with FFI</li> <li>- <u>Land Rover Group plc</u>: Sponsor the following conservation organisations: The Born Free Foundation, Earthwatch, The Royal Geographical Society, Biosphere Expeditions, China Exploration and Research Society</li> <li>- <u>GlaxoSmithKline plc</u>: Funds Earthwatch to develop its field research and conservation projects in the UK; Funds Earthwatch initiative to send school teachers on these conservation projects</li> <li>- <u>HSBC Holdings plc</u>: Financially supported the BBC's 'Saving Planet Earth'; 'Investing in Nature' – a 5 yr eco-partnership</li> </ul>	NR
<b>Ukraine</b>	- The only "companies", which are responsible for the conservation in general and for the restoration in particular, are the nature reserves, national and landscape parks. Those institutions have special items of expenses aimed at the biodiversity conservation and restoration. Unfortunately, sometimes even there the biodiversity may be understood as pheasants and wild boars breeding.	NR

## ANNEX E

Country	State of the art of Ecological engineering applied to industrial impact assessment and restoration/mitigation	Source
<b>Belgium</b>	-	
<b>Cyprus</b>	- Ecological engineering is not currently practiced on Cyprus and is not applied to environmental impact assessment or mitigation of biodiversity impacts on the island	NR
<b>Czech Republic</b>	-	NR
<b>Finland</b>	-	NR
<b>France</b>	-	-
<b>Germany</b>	- Restoration projects are mainly driven on this basis by private consultancies, an overview in this field is hardly achievable. - With the Ecological Society of Germany, Austria, and Switzerland (GfÖ) and its specific research group on restoration ecology and the Society for Bioengineering in Germany (“Gesellschaft für Ingenieurbiologie e.V.”) there are only smaller institutions which make the link between ecological engineering practice and science. Thus overviews are missing.	NR
<b>Hungary</b>	-	NR
<b>Ireland</b>	- Ecological engineering principles have been applied to a number of projects in Ireland	NR
<b>Italy</b>	- Natural engineering is very important in Italy	
<b>Lithuania</b>	- Environment Management And Audit Institute (EMAI) is a non-governmental organization, related to ecological engineering. The institute was founded in 1998 by the initiative of the Engineering Ecology Association (established in 1994), in cooperation with the Lithuanian Industrialist Confederation, pursuing improvement of ecological situation in Lithuania and the whole Baltic Sea Region - At the Lithuanian University of Agriculture research on landscape improvement, farming and environment, land use planning under land reform, non-point pollution in rural areas, renovation of lakes; flood risk assessment, development of water management methods in irrigation and drainage systems is carried out	NR
<b>Norway</b>	- There has been some research on ecological restoration after hydropower and road development, but perhaps little that deserves the term Ecological engineering	NR
<b>Portugal</b>	- It's a emerging area of intervention. With some work in environmental restoration of quarries and degraded mining areas; sealing and environmental restoration of landfills (waste dump); environmental restoration of dunes and coastal zones; biological treatment of water and solid waste, etc.	NR
<b>Russia</b>	- There are specializations in some Russian universities on ecological management and engineering.	NR
<b>Slovakia</b>	- In Slovak republic, ecological engineering doesn't have a very long tradition. However, during the last decade it became in one of the most progressive disciplines in several universities and faculties and also in the professional field. - Ecological engineering in Slovakia connects ecologists, environmental scientists, managers and regulators, natural resource specialists (e.g. foresters, fish and wildlife specialists), environmental and civil engineers, agro-ecologists, and landscape planners and designers: - ecological technologies using by the restoration of structure and function of disturbed ecosystems; - ecological engineering for technical solutions using for development of biodiversity; - technical solutions for providing of stability and revitalisation of ecosystems; - ecological engineering in agricultural landscapes; - ecological engineering devices for flood control; - and soil conservation, and with rural sociologists on socio-ecological studies; - environmental functions of ecosystems: goods and services; - traditional and sustainable exploitation of ecosystems; - ecological economics; - design and construction of sustainable systems; - Agro-forestry	NR
<b>Spain</b>	- Spanish reforestation programmes in the second half of the XIX century could be an outstanding reference for what was coined in the eighties as Ecological engineering. - Besides that benchmark, Ecological engineering was first implemented in Spain, as a restoration commitment regulated by the Mine Law of 1973 (22/73). Initial practices were limited to the revegetation of platforms, banks and ditches. This approach is currently considered obsolete and innovation is currently stirring great interest in the geomorphological design of fields affected by opencast mining in catchments structured by gentle slopes and watercourses. Nowadays, it is also recognized that the largest impact of mines involve aquatic pollution, and innovative designs for new (defensive design), ongoing and closer mines are being developed. - The publication in 1995 of the book “Restauración de ríos y riberas” by González del Tánago and García de Jalón guided efforts in river restoration towards a more ecological perspective. Spanish Water Law was, however, cast in a rigid utilitarian conception of water. Current activity has been reoriented and shaped by the European Water Framework Directive 2000/60/CE, as transformed into the Spanish national law (Law 62/2003). - Road and railway ecological engineering is regulated in Spain through the environmental measures to minimize their impacts. Current practices are limited to topsoiling, hydroseeding and planting. Yet, there is an increased consensus on the inefficiency of these solutions. Research results support a change towards an ecologically-oriented paradigm. The main building companies have launched a strategic	NR

Country	State of the art of Ecological engineering applied to industrial impact assessment and restoration/mitigation	Source
	initiative, named “Sustainable Construction”, within the Spanish Technological Platform for Construction. Among the regional regulations, the Andalusian Road Law (LAN 8/2001) is remarkable as it establishes that road ecological engineering deserves an independent status apart from the conventional environmental measures.	
<b>The Netherlands</b>	- Very experienced in NL, leading in land reclamation and nature development river management, developing ecological networks, etc.	NR
<b>UK</b>	-	NR
<b>Ukraine</b>	<ul style="list-style-type: none"> <li>- The first problem that exists in Ukraine in the area of ecological engineering is the absence of common understanding: what particular thing this expression used for? In consequence, “ecological engineering” means almost all type of activities, which concerns the environment to wide extent: from waste treatment to the quarry plant marketing. As an example of such misunderstanding of ecoengineering many different organisations could be noted: from the municipal refuse collection enterprises to Ukrainian State Scientific-Technical Centre Energostal’, which engaged in the steel processing technologies.</li> <li>- The real trouble, the country has faced to, is the deficiency of authentic ecological engineering.</li> <li>- Despite this, some promising research of restoration and mitigation measures were carried out in Dnipropetrovs’k National University, Donetsk Botanical Garden, Prydniprovsky Scientific Centre of National Academy of Sciences of Ukraine.</li> </ul>	NR

## ANNEX F

### Contribution of the French companies to biodiversity conservation (Houdet 2008)

#### Alban Muller International (AMI)

- Sustainable management of biodiversity: Alban Muller International sets out to control the impacts of his production techniques. Production within Cosmetic Valley is certified ISO 14001 since 2004.
- From seed to final product: Chain production control: Alban Muller International conceived a complete unique holistic approach by choosing to intervene at a every early stadium of the production chain. One of his slogans: “from seed to final product”, testifies the will to control impacts for every activity, since the selection of seeds and the culture of plants, up to the formulation of products.
- The Filtering Gardens®, the first in cosmetic industry: To improve waters treatment in Fontenay-sur-Eure, the group adopted the phytorestore, an alternative at the same time ecological and aesthetic to a classic treatment station. The original technology of Filtering Gardens® of Phytorestore society was kept: plants are used as main agent of water waste treatment. These gardens create a diverse wet environment, with a specific fauna and a flora.

#### Autoroutes du Sud de la France (ASF)

Environmental integration, major issue for ASF

- Maintaining of green areas in motorway edges: Green areas are the trees and bushes banks located on both sides of the motorway. For 1 km of road, we can count almost 4 hectares of green areas. Their management takes into consideration local features of climatology, pedology, phyto-sociology and, simply, landscape. Plant species from each region are encouraged to reforestation the places, vegetables ask for more maintenance.
- Protect natural environment – from the conception to the management and maintenance of the motorway. To avoid ecological areas of interest and the most remarkable biotopes during the conception of a motorway, a global and integrated study allows to take the inventory of vegetables and animals groups.
- Fauna passageways: To avoid discontinuity in the territories and restore wild fauna displacements, works are constructed above and underneath motorways. Accompanied with adapted fences, they are under regular monitoring, in cooperation with the federations of hunt.

#### Botanic

- Botanic settled 25 commitments for 2010 in favour of a sustainable development
- Reduction of their own impacts
- Promote local wood and guarantee that they come from sustainable manage forests
- Ecological gardening: zero fertilizer
- Promotion of products coming from organic farming

#### Carrefour groupe

- Promotion of responsible fishing since 2005, France and in Belgium.
- Wooden supply, since 1997. The Group works with the manager of his wooden supplies and, since 1998, with WWF, in the development of the certified wood FSC.
- Aprovisioning in labelled products: A track for the consumer, to promote more responsible ways of consumption, the Group displayed in all distributors their brands of respectful products

### **Crédit Coopératif**

- Develop eco-actions for the collaborators, the first approach to control the bank impact on ecosystems
- The banking tools of cooperative credit with environmental dimension
- What perspectives in terms of biodiversity?: Source of risks through environmental liabilities of its members and the companies which he finances; Source of opportunities through the development of new products and banking services, to help and to attend its clients in the recognition of this new challenge

### **Dervenn**

- Ecological engineering: from "renaturalization"» of natural environments to "biodiversity" values
- The protocol of "renaturalization" of the land areas

### **Electricité de France**

- EDF (French Electricity Company) adopts a biodiversity policy: 1) To improve in anticipation the knowledge about natural environments in their areas of activities; 2) Act in concrete terms on the field; 3) Implementation of training and awareness actions for the collaborators of EDF
- Compensatory measures associated to the construction of the Nam Theun 2 dam in Laos

### **Gaz de France**

Committee of Sustainable development and Ethics in November, 2007:

- Publication of a cartography with biodiversity issues, in partnership with WWF France;
- Improve the environment policy ;
- Contribute for the development of biodiversity indicators to report on performance indicators;
- Take biodiversity into account in the integrated management system and in the environmental self-assessment process;
- Give a reference framework for the future improvement actions.

Key partnerships as those with WWF in Marais du Vigueirat or with the National Museum of History. For example:

- Systematic realisation of impacts assessments during the construction of new facilities, as the installation of a pipeline or the establishment of liquefaction plant;
- R&D's projects on life cycle analyses, industrial ecology, development of environmental performance and biodiversity indicators, or participation in the implementation of an environmental management system, with EMAS certification, in Marais du Vigueirat;
- Support from Gaz de France Foundation to rehabilitate the most emblematic environmental areas, as pointe du Raz, or promote the forgotten or threatened gardens.

**GRTgaz** (subsidiary of Gaz de France, is the administrator of the natural gas transport system in France)

- Partnerships to improve the conservation of the natural heritage of Ile-de-France
- Implementation of "NatureParif" Agency
- Biodiversity integration in the core business of GRTgaz
- Actions In Marais Du Vigueirat, a fruitful partnership with WWF-France. Life PROMISE

### **GSM - Italcementi Group**

- Restoration of quarries at the end of working life: The example of Cayeux-sur-Mer (80) quarry. Quarry of Cayeux-sur-Mer in the discussion about the sustainable development for Baie de Sommes
- Partnership with IUCN to develop a biodiversity policy

**INERIS - Institut National de l'EnviRonnement industriel et des rISques** (National Institute of Industrial Environment and Risks)

- Approach multi-biomarkers for aquatic environment surveillance: from research to implementation, since 1999

**LVMH – Moët Hennessy & Louis Vuitton**

- Management of its own impacts through an environmental management system
- Involvement of **LVMH** in biodiversity questions: Discussion at supply level; Sustainable viticulture and reinforce biodiversity protection

**Nature & Découvertes**

- Development and transfer of three ecological micro-corridors to Lille
- Protection of Chiropteras
- Biodiversity in agriculture: A project in Mali

**Office National des Forêts (ONF)**

- General forestry rules in favour of biodiversity
- Major actor of French Natura 2000 network
- Administrator of protected areas

**Phytorestore** develop the Filtering Gardens®, environmental areas for pollution treatment

- The filtering garden of Organon, plant of pharmaceutical products, Eragny sur Epte (Oise, 2006)
- Eco-district of 50000 inhabitants in Wuhan in China
- Promote biodiversity in the filtering gardens®

**SAF - Agriculteurs de France**

- New missions for agriculture: The grasslands, open landscapes, biodiversity; Recycling of urban and industrial waste; Greenhouse effect and mitigation of climatic change effects
- Farmers producers of ecological property and services for the society

**Séché Environnement (waste recycling and treatment)**

- Sustainable management of waste storage facilities
- Integration of facilities with the environment

**Société Forestière, subsidiary of Caisse des Dépôts et Consignations (CDC)**

- Particular attention on biodiversity in forests management
- The Forested Society is at the origin of the development of the first financial operator dedicated to biodiversity in France, since February 2008 through CDC Biodiversity, subsidiary of first rank of Caisse des Dépôts with a start-up capital of 15M€

**Cosmetic Solabia Group**

- Promotion of Mata Atlantica in Brazil
- What perspectives for future?: Increase within the group the number of persons aware about sustainable development and biodiversity, by implementing actions with this purpose, namely internal communication; Promotion of products coming from this approach; Adapt the Brazilian model to other resources coming from the living world.

### **Terr'avenir**

- Protect biodiversity, by reducing the impacts of agro-industry on agro-ecosystems
- Reduction of inputs as main objective
- Reduction of fields and planting of fences

### **Veolia Environnement**

- Assess of ecological impacts and management of biodiversity at agro-companies level
- The commitment of Veolia Eau: Ecological management of particular space: the case of Crépieux - Charmy (France)

### **Yves Rocher**

- Put the emphasis on training and education
- Promote responsible supply: organic farming in Gacilly

### **Le Conseil général des Hauts-de-Seine**

- Protect the sensitive environment areas of Hauts-de-Seines
- Create a network of ecological continuity at the district level
- Towards a biodiversity regional strategy

### **Conseil régional d'Île-de-France (CRIDF)**

- Implement ecological continuity on the region of Ile-De-France
- Support an agriculture favourable to biodiversity: PRAIRIE programmes (regional agriculture programme of initiative for respect and integration of environment) and ARMAB (regional help for the preservation of the organic farming)
- Implementation of Natureparif in 2008, regional agency for nature and biodiversity of Ile-de-France

### **La région Rhône-Alpes**

- All actors of Rhône region – Alpes get involved: administration, citizens, associations and companies: Develop key partnerships with associations and residents; Involve the companies
- Biodiversity and the economic activities taking place in the mountain

### **Ville de Châtillon**

- Châtillon eco-responsible city
- Waste selection and responsible consumption
- Waste composting
- Fauna and flora in city
- Biodiversity integration into everyday city life – Utopia or reality of tomorrow?