

Fact Sheet: Biodiversity in the Beverage Industry

This Fact Sheet assists environmental and sustainability managers as well as auditors with analyzing biodiversity and integrating it into corporate management systems. The sheet contains references to legal guidelines and provides, where possible, suggestions to industry specific operating figures and indicators for the continuous improvement of corporate biodiversity management.

According to the UN Convention on Biological Diversity the term biodiversity describes the diversity of life on the different levels of the biological organization. This includes the diversity of species (plants, animals, fungi, microorganisms) and ecosystems as well as the genetic diversity within species and populations. Biodiversity is the basis for functioning and stabile ecosystems and ensures their ability to provide the economy and society with essential goods and services. These include raw materials, like food and clean water as well as numerous biological resources that serve as natural ingredients for beverages.
The scientific community is convinced that due to human influences, species are becoming extinct at up to 1,000 times the rate that natural condition would cause. Without effective measures, biodiversity loss will continue to accelerate leading to unforeseen effects on the economy and society.

Drivers of Biodiversity Loss

From a global perspective, the following factors are the primary drivers of biodiversity loss:

- Degradation and destruction of habitats and ecosystems
- Overexploitation of natural resources
- Climate change
- Emissions/Pollution
- Invasive alien species

Whereas the reduction of emissions is a „traditional goal“ of environmental management systems and climate change increasingly taken into consideration via the reduction of energy consumption and greenhouse gases, other aspects are rarely considered. Therefore, this Fact Sheet places special emphasis on the degradation of ecosystems, overexploitation of natural resources and invasive alien species, and describes direct and indirect opportunities for companies to take these aspects into account. The following chapters describe direct and indirect influence of beverage companies on these aspects.

The Beverage Industry benefits from biodiversity
This Fact Sheet covers the beverage industry, with a focus on the soft drink and juice producers. For both these industries biodiversity and ecosystem services are essential. For example the cultivation of apples and oranges, which are the two favorite juice varieties on the German market, just like that of any other fruit needs intact and diverse ecosystems, that – just to name a few exemplary benefits – guarantee the existence of insects or other pollinators or provide ecological pest control. Replacing these services with technical alternatives would be costly or even impossible. It is therefore in the beverage industry’s own interest to actively contribute to the protection of biodiversity.

An impressive example for the vulnerability of the beverage industry to ecological imbalances and consequent supply chain risks is provided by the spread of the Huanglongbing infection (citrus greening disease). World trade has allowed the disease to move from one growing area to another and has, according to experts, destroyed more than 100 million citrus plants. The disease is treated with a radical cure, using pesticides and removing the affected trees. Success of

these measures is however not clear yet.[1] Therefore, alternative and ecological means, such as the introduction of wasps, are tested as well.

Rising consumer demand for natural ingredients and sustainable products mean that biodiversity is increasingly becoming a strategic issue for the beverage industry. Sustainable companies that are engaged in the protection of biodiversity could therefore capitalize on this market potential and gain a competitive advantage.

However, biodiversity does not yet rank highly on the priority list of the biggest juice and soft drink producers in Germany. If environmental management is in place it focuses mostly on climate change or waste reduction and then mostly at the company's own locations. The supply chain, which is often responsible for the lion's share of corporate environmental impacts, is considered by only very few companies. At the same time, the industry trend to increasingly offer "regional and native" products is positive as it strengthens the producers' influence on the cultivation practices and increases the leverage to implement biodiversity-friendly measures.

Potential impacts of the beverage industry on biodiversity

The most significant direct and indirect negative effects on biodiversity are generally related to the cultivation of biological raw materials. The main environmental impacts are the (indirect) land usage for resource production, the destruction of natural habitats and ecosystems, pollution through the use of pesticides and fertilizer and erosion promoting cultivation methods.

Water as well is highly affected by agricultural production especially in arid countries. The export of (processed) fruits from these regions is therefore equivalent with an export of scarce water resources.

Positive influences of the beverage industry

As for the negative impacts the potential positive effects can especially be found in the agricultural production. Local biodiversity can for example be strengthened if intensive cultivation practices were substituted with extensive ones. The trend towards meadow orchards is a case in point that is being pursued by some juice producers. The diversity of cultivated fruit species can moreover be strengthened by using rare breeds, which do also have the positive side effect of increasing the variety of tastes. For non-domestic raw materials the selection of the country of production is relevant as indirect impacts on water availability or environmental impacts associated with transport can be minimized.

Strategy/Management

Strategic management allows for the continuous improvement of the biodiversity performance of the company. The integration of the topic into the corporate mission and anchoring it both strategically and operatively in the company is the basis for a successful biodiversity management. Producers of juices and soft drinks are highly dependent on biological raw materials and ingredients. In addition, they are often sourced from biodiversity-rich regions such as Brazil which for example is the biggest exporter of oranges.

Environment and sustainability managers, as well as auditors, should assess to what extent the strategic importance of biodiversity is known as well as anchored in the company. In order to accomplish this, it is recommended to analyze the corporate mission and environmental policy.

Questions to the strategic management…

- *Does the company operate in regions with a special protection status or in regions with a high significance to biodiversity?*
- *Does the corporate environmental policy support the goals of the UN Biodiversity Convention?*
- *Does the environmental/sustainability policy contain goals and measures for the protection and conservation of biodiversity?*
- *Are the consequences of global biodiversity loss assessed in the corporate risk management?*
- *Is there a contact person for the topic of biodiversity or nature conservation?*

[1] http://www.huffingtonpost.com/2013/08/30/citrus-greening_n_3780984.html

Procurement/Supply Chain

The procurement department can heavily influence the corporate performance in the area of biodiversity through the choice of suppliers and production factors. In addition to quality and cost aspects, purchasing should be bound by sustainability criteria concerning biodiversity and minimum requirements for suppliers should be formulated.

A prerequisite for the operating guidelines is the traceability of natural resources or ingredients to their geographic origin. The first step is an internal analysis and a supplier survey to identify the type, quantity and origin of the used materials by own analyses and by directing enquiries to suppliers. Suppliers should be questioned about measures for the protection and sustainable use of biodiversity. Suppliers with a certified environmental or sustainability management system should have corresponding measures in the environmental program or action plan. Suppliers with a higher environmental awareness are likely to be more open to biodiversity conservation measures. At the same time the company's location should not be forgotten since production of water intensive goods in water scarce regions is inefficient and damaging to the environment.

For the beverage industry sugar can be a critical raw material. The cultivation of sugar beet or sugar cane is associated with different environmental impacts. Fire clearing for sugar cane for example adds to air pollution and increased carbon emissions and can be found in Brazil, one of the main sugar cane producing countries. Sugar cane is often cultivated with major pesticide use and the growing area is encroaching into highly sensitive tropical forest areas more and more. For sugar beet on the other hand, pesticide use is the main threat to biodiversity. The use of genetically modified crops (e.g. the modified sugar beet H7-12) constitutes a grave danger for, but not limited to, biodiversity and should therefore be avoided.

A best practice example for the sugar production is the Brazilian company "Native" that integrates "biodiversity islands" into its plantations and only harvests the fields once a year. In doing so, habitats for birds, reptiles, amphibians and mammals are created.

Biodiversity in standards and quality labels of the food industry

The Lake Constance Foundation and the Global Nature Fund have screened the criteria of 20 standards and labels for the food industry with regard to their relevance to the protection of biological diversity. The results and the conclusions were summarized in a baseline report:http://lebensmittelstandards.business-biodiversity.eu/global/download/%7BDYECBZXKUA-34201417130-JODYYDSFGD%7D.pdf

The conclusions offer a good orientation for the development of the company's own guidelines for producers and suppliers of private labels.

Generally it is positive when a beverage producer offers drinks that have been produced according to social and ecological criteria. Here, the regional origin of the raw materials should be considered as well. However, it should be stated that "regional" is not automatically environmental and/or biodiversity-friendly and that also organic farming needs improvement related to the protection of biodiversity. In Germany, agriculture is the most important driver for biodiversity loss. With regional raw materials, the buyer has the opportunity to speak directly to regional producers or suppliers and to find out whether specific actions in favour of biodiversity are taken. This should be used to increase the share of "organic" certified products and ingredients.

An example of where the producers can engage with the growers is the reduction of pesticides. In the fight against pests still mainly chemical means are used, while there are increasingly attempts to use ecological pest controls, such as wasps or other species. By creating blooming meadows and hedges or the erection of nesting aids for wild bees, habitats for bees or other insects are created and the pollinating services are supported. These actions should increasingly be pursued in collaboration with contracted farmers and cooperatives.

As mentioned earlier (strategy/management), the training of employees is of great relevance to procurement, destination and product managers, because they decide whether the final product is biodiversity-friendly or not. Purchasing managers should be provided with guidelines how they can include criteria for the conservation of biodiversity. Of course, support from the management to withstand the price pressure is crucial.

[2] http://www.greenpeace.de/files/20120515-Gen-Zucker-in-der-Schokolade.pdf

The questions from the Chapter "Strategy/Management" should also be used for supplier assessments.

Possible Measures:

- *Identification of geographic origin of biological raw materials and ingredients*
- *Identification of biodiversity rich areas and regions in countries of origin*
- *Check the main product, raw materials and services in terms of their relation to and impacts on biodiversity*
- *Identification of the products/services with the most negative impacts on biodiversity (significance test) – delisting or designing them to become more biodiversity-friendly*
- *Analysis of possible impacts of resource procurement on biodiversity*
- *Identification of sustainable cultivation methods for the development of according requirements for producers*
- *Inform suppliers and service providers that the protection of biodiversity is one of the major goals of the company and ask them what measures they take*
- *Integrating criteria for the protection of biodiversity in the specifications for suppliers/services and monitor their compliance*
- *Analysis of sustainability performance of suppliers focused on the area of biodiversity*
- *Implementation of supplier audits*
- *Integrate biodiversity aspects into professional training of suppliers/services*

Significant Figures and Indicators for Purchasing/Supply Chain:

- *Number and volume of natural raw materials and ingredients which originate from biodiversity-rich regions; share of commodity portfolio*
- *Number and volume of natural raw materials and ingredients which acreage stem from areas inside or adjacent to protected areas or areas with high biodiversity value; share of commodity portfolio*
- *Number of product/services with existing purchasing instructions in terms of biodiversity criteria*
- *Number of certified biological raw materials and ingredients; share of commodity portfolio*

Background Information for Risk Assessment of Commodities Portfolio

Possible criteria for the assessment of natural raw materials or ingredients from a biodiversity perspective could be the biodiversity value of the region of origin, the proximity of the cultivable area to protected areas or biodiversity-rich areas, the method and intensity of cultivation or the conservation status of species from wild collection.

The greater the diversity of species and ecosystems in the region of origin of a raw material, the greater the negative impact from the raw materials production can be. Helpful tools for the initial assessment are global and regional survey maps of biodiversity. Likewise important is the question whether a biological raw material stems from a region with water scarcity or soil erosion.

There are numerous concepts developed by nature conservation organizations together with scientific institutions to rank the **biodiversity-richness of a specific area and region** that is not necessarily protected. Established concepts are the **High Conservation Value Areas** (HCVA; Forest Stewardship Council) or the **Key Biodiversity Areas** (KBA; International Union for the Conservation of Nature – IUCN).

Research and Development

The variety of economically used fruit species has been strongly reduced over the last years. Old species, which used to be common, are becoming rare today but offer different taste and color characteristics. This wider range can be interesting for consumers and the natural character of the product can be highlighted. Fruit producers should examine how these older varieties can be sustainably cultivated and used. Old species are often more resilient than those who have been bred to achieve the highest yield. For support in selecting the species experts such as the Association of Pomologists can be approached.

For beverage producers that source ingredients from genetic resources it is important to consider the requirements of the Nagoya protocol of the UN Convention on Biological Diversity, which aims to ensure the fair and equitable sharing of the benefits arising out of the utilization of genetic resources.

Possible Measures:

- *Evaluation of possible cultivation of old species*
- *Observance of the criteria of the UN CBD on Access and benefit sharing.*

Possible Indicators:

- *Share of products based on old species in the assortment*
- *Number of genetic resources being researched or developed with existing ABS policy*

Production and Packaging

Similar to the land use of the raw material production, companies should assess the geographic location of its own production sites as well as those of its suppliers and undertake a risk assessment. Especially suppliers operating in biodiversity-rich regions should have a functioning and certified environmental management system (ISO 14001, EMAS III).

Besides biological resources it is necessary to refer to the impacts of producing the packaging. Cans should not be part of the product line as their production is associated with the negative impacts of aluminum mining. According to the German Environment Agency cans are having a much worse environmental performance compared to deposit bottles. PET-bottles are no alternative either. Deposit bottles are saving natural resources and energy. A simple example shows how refundable packaging can contribute to waste avoidance. One box of sparkling water with 12 deposit bottles (0,75 l) that can be refilled 53 times on average, replaces 480 PET-disposable bottles (1,0 l).[3]

To secure the high grade water quality the Payments for Ecosystem Services approach has been well-proven. The idea is that a resource, e.g. clean water is negatively affected by the behavior of other actors. The resulting societal or private costs are not accounted for. By setting incentives e.g. as payments to polluting actors this negative behavior can be countered. The classic example is a water company that needs clean drinking water for its production. Often fertilizer and pesticides or the deforestation of upstream areas deteriorates the water quality downstream. A water producer may therefore pay the farmers to refrain from these negative activities. Farmers are thus compensated for foregone revenue and the water producer benefits from the intact ecosystem therefore secure its economic foundation and profits from the reduced water treatment costs. One of the biggest water producers in Europe for example follows this model.

Possible Measures:

- *Assessing proximity of production sites (own and suppliers) to protected areas or areas of high biodiversity value (analogue to the Environmental Indicator EN 11 of the Global Reporting Initiative)*
- *Examination of correspondent sites for existence of a functioning environmental management system*
- *Bottling and distribution in refundable glass bottles*

Stakeholder

Since biodiversity is a complex sphere of activity, companies often rely on external expertise. Through scientific institutions, nature conservancy agencies or environmental organizations, companies can access information on biodiversity relevant questions. Also, NGOs and research institutes can be helpful in the planning and execution of pilot projects, e.g. in the field of sustainable resource use and supply chain management.

[3] http://www.duh.de/2636.html

According to EMAS Annex II B.5, the integration of stakeholders is necessary. In order to facilitate a successful integration, an adequate framework must be designed and implemented. Existing participation structures including transparent handling of requests related to biodiversity by stakeholders can be seen as a proxy indicator for a successful biodiversity management.

The number of organisations is not an indicator revealing the quality of collaboration. However, it is difficult, to define an indicator for the quality of co-operations, projects, dialogues etc. Characteristics such as continuity of collaboration or degree of implementation of the expert recommendations might be an indication of the collaboration quality.

Possible Measures:

- *Stakeholder-mapping: analysis of stakeholders and their objectives as well as potential contribution for the company in promoting biodiversity*
- *Collaboration with international/national/local organisations in the area of biodiversity*
- *Framing of transparent structures for stakeholder dialogue i.e. participation of interest groups*

Transport/Logistics

The most important environmental aspect in the area of logistic and transport is the emission of greenhouse gases. Options to reduce the emissions are for example short transportation routes and concise supply chains. Beverage companies should also focus on the proliferation of potential invasive species through commodity flows and logistic processes. Invasive species are organisms that are introduced into a habitat where they naturally do not occur. Highly competitive species that find no natural predators and competitors can spread to the detriment of local species and thereby become invasive. In some cases, these biological invasions can disrupt the composition and functioning of ecosystems and can cause high economic costs. Especially beverage companies working with plant based raw and fresh material from foreign countries can be susceptible to this. Companies should take action to stop the proliferation of potentially invasive alien species. The precautionary principle should be considered.

Incoming goods with biological raw and fresh materials should always be subjected to encompassing visual inspection for possible stowaways (i.e. insects). If “contamination” is observed, the organism concerned should be destroyed.

Possible Measures:

- *Identification of possible gateways for potential invasive species in the company (i.e. goods entrance)*
- *Process description and procedure for “contaminated” material*
- *Development of protocols for documentation of material contamination*

Corporate Facilities and Properties

EMAS has set land consumption as a performance indicator for biodiversity. For the biodiversity management in the beverage industry, land consumption through production and administrative buildings plays a minor role. However, a nature-oriented design of the properties can be a contribution to the corporate engagement for local biodiversity conservation.

Possible Measures:

Nature-oriented design of facilities; Creation of ecological value structures for promotion of local biodiversity i.e.:

- *Native bushes and trees (orchards, hedges, forest etc.)*
- *Unfertilized flower meadow and herb lawn, flower strips, meager meadows*
- *Sparsely vegetated areas such as gravel and marl soils, fallow land*
- *Dry walls, stone piles, wood piles, dead wood structures*
- *Nature -oriented designed stagnant or running waters, (temporary) wetlands*
- *Creation of ecological value structures (i.e. dead wood piles, nesting aids, insect hotels)*
- *Biodiversity friendly green roofs*
- *Traffic areas (streets, paths, parking lots) with permeable surface without runoff drainage*
- *Reduction or elimination of synthetic pesticides*
- *Creation of botanical education gardens*

Marketing/Communication

The growing interest of consumers in products with natural ingredients offers beverage companies a chance for communication. Natural raw materials allow stories to be told about them that together with product and brand advertisement raise the awareness of consumers to biodiversity. For the conservation of domestic agricultural biodiversity and species variety the increased cultivation of meadow orchards is a positive development which allows highlighting not only the organic cultivation but also the regional origins of the products. If fruits for processing can be delivered by local citizens this offers a good opportunity for a biodiversity communication strategy. Private growers can be provided with guidelines and ideas how they can contribute to biodiversity conservation in their orchards. A special role is played by old species whose conservation enriches the variety of fruits and tastes. It can also be used for product differentiation. A large Swiss retailer for example has developed a special label for this purpose to sell products stemming from old species and to contribute to their conservation.

As the term „meadow orchard" is not protected, every company can use it for advertisement. But differences exist here as well, standard fruit trees are more valuable for biodiversity than bush trees and it has to be ensured that the processed fruits really originate from that region. Juice producers can for example obtain the NABU Quality seal for meadow orchards and fulfill the according requirements.

Significant Figures/Indicators for Corporate Facilities and Properties:

- *Percentage of unsealed surface area compared to total surface area of the site*
- *Percentage of nature-oriented area of corporate facilities compared to total property*
- *Preservation or restoration of ecosystems as compensation for sealed surfaces above legal minimums through i.e. reforestation, (financial) support of protected areas (% in comparison to unsealed surface)*

For exotic sorts ecological and social sustainability can be achieved as well. The company LemonAid for example introduces different farmers and especially works with small cooperatives. It is therefore possible to raise awareness among consumers for biodiversity. It is however important to notice, that use of natural ingredients is not equal to biodiversity protection.

Dialogs and critical assessments of the own sustainability reports by external actors can help to bring a company's communication and performance in line. It's desirable that a company supports projects for the protection of ecosystems or biodiversity, virtually as a compensation of the ecological footprint which cannot be prevented. NGOs and the public sector (e.g. the administration of sanctuaries) are always looking for financial support, especially in times of scarcer resources. But the sponsorship of biodiversity projects should by a "voluntary exercise", not a surrogate for a continuous reduction of negative impacts. Furthermore, the projects should fit in the product range and be developed in cooperation with an NGO or an agency on a partnership basis. It's not about buying a service! The suspicion of green washing has to be and can be avoided by communicating the cooperation and results in a trustworthy and realistic way. It must not be talked up as the solution of all problems.

Possible Measures and Figures/Indicators:

- *Awareness raising campaign for private growers*
- *Certification of meadow orchards with Quality Seal (e.g. NABU in Germany)*
- *Compliance with GRI criteria for biodiversity for sustainability reporting*
- *Supported projects for the conservation of biodiversity (number of projects, quality of goals, measures and results)*
- *Active involvement of stakeholders (i.e. nature conservation organisation) in the environmental/sustainability reporting (number and quality of involvements)*
- *Biodiversity as a topic for media communication (number of press releases, reached journalists….)*
- *Consumer activities for biodiversity protection (number of activities, quality of goals, measures and goals)*

Legal Compliance

The legal compliance in the area of environment is an important element of the EMAS validation. The ISO 14001 also requires an assessment of legal compliance (§ 5.2.). Companies should not only know the national law sources concerning nature and species conservation but also the European legislation. A compendium of important legal sources and texts as well as further detailed information can be found on the website of the European Business and Biodiversity Campaign: http://www.business-biodiversity.eu/default.asp?Lang=ENG&Menue=140

Following is a selection of relevant legal sources:

International Law

- Convention on Biological Diversity CBD, 1992),
- Cartagena Protocol on Biosafety (Cartagena-Protocol, 2000)
- Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from Their Utilization Nagoya-Protocol, 2010)
- Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES, 1973)
- Convention on Migratory Species (Bonn Convention, CMS, 1979)
- Convention on Wetlands of International Importance, especially as Waterfowl Habitat (Ramsar Convention, 1971)

European Law

- Council Directive 92/43/EEC on the Conservation of natural habitats and of wild fauna and flora
- Council Directive 2009/147/EC on the conservation of wild birds
- Directive 2004/35/EC of the European Parliament and of the Council of 21 April 2004 on environmental liability with regard to the prevention and remedying of environmental damage
- Council Regulation (EC) No 338/97 of 9 December 1996 on the protection of species of wild fauna and flora by regulating trade therein

National Law - See, for example, national ministries of environment or relevant databases

Significant Figures/Indicators for Legal Compliance:

- *The company has an overview of the current legislation concerning biodiversity. Employees are informed about said legislation and have access to the texts (Law collection, access to official law databanks) (yes/no)*
- *Training of employees in the case of new legislation and amendments (number of qualified employees)*
- *The company requires from all suppliers/service providers a declaration that environmental and nature conservation legislation are respected (number of suppliers/service providers who have signed this declaration)*
- *Continuous increase in the number of suppliers/service providers holders of environmental management certification (percentage of the total number)*
- *Training of suppliers/service providers in legislation relevant to biodiversity (percentage of qualified suppliers and service providers*

Glossary

Access and Benefit Sharing: Goal of the UN Convention on Biological Diversity (CBD) that seeks the equitable sharing of benefits from the use of genetic resources.

Biological Resources: genetic resources, organisms or parts thereof, populations, or any other biotic component of ecosystems with actual or potential use or value for humanity (according to CBD)

Biodiversity: the variability among living organisms from all sources including, inter alia, terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are part; this includes diversity within species, between species and of ecosystems (according to CBD)

Biodiversity Hotspot: Regions of high biodiversity and a high percentage of endemic flora and fauna that are especially endangered and are a protection priority. To be a biodiversity hotspot, a region must be home to 1500 endemic species of fauna (=0,5% of global plant species) and must have lost over 70% of its original size (according to Conservation International).

Ecosystem: means a dynamic complex of plant, animal and microorganism communities and their non-living environment interacting as a functional unit (according to CBD)

Genetic Material: All material of plant, animal, microbial or other origin that contains functional hereditary units or genes.

Genetic Resource: genetic material with actual or potential value

GRI: Global Reporting Initiative

High Conservation Areas: natural habitats, which are of outstanding significance or critical importance due to their high environmental, socioeconomic, biodiversity or landscape values (according to Forest Stewardship Council; FSC, WWF)

Invasive Species: Non-native species that have detrimental effects on other species, biotopes and habitats (German Federal Agency for Nature Conservation, BfN).

NABU: Naturschutzbund Deutschland e.V. – Birdlife Germany

Sustainable Use: means the use of components of biological diversity in a way and at a rate that does not lead to the long-term decline of biological diversity, thereby maintaining its potential to meet the needs and aspirations of present and future generations (according to CBD)

Natural Ingredients: ingredients stemming from plants, animals, fungi or microorganisms in whole or parts thereof, even if substantially processed (in reference to the Biotrade Standard from the Union for Ethical Biotrade)

Protected Areas: means a geographically defined area that is designated or regulated and managed to achieve specific conservation objectives (according to CBD)

UN Convention on Biological Diversity: (CBD) In 1992 ratified treaty signed by over 190 states creating the central framework for biodiversity. The convention has three main objectives namely: protection of biodiversity, sustainable use of biodiversity, and access and benefit sharing.

Links and Publications

Regions of high biodiversity and protected area

Protected areas map material: www.protectedplanet.net

Protected areas map material, Key Biodiversity Areas etc. on the IBAT Portal (subject to charge): www.ibatforbusiness.org

Overview of High Conservation Value Areas Concept: http://www.hcvnetwork.org/resources

Overview of Key Biodiversity Areas Concept: http://www.biodiversitya-z.org/areas/22

Information and Overview of Biodiversity Classification Concepts on Portal: www.biodiversitya-z.org/areas

Endangered Species

Red List of endangered flora and fauna from the International Union for Conservation of Nature (IUCN) www.iucnredlist.org

Payments for ecosystem services

Payments for Ecosystem Services – Explanation and examples: www.ecosystemmarketplace.com

The Payments for Ecosystem Services Project of Vittel: http://www.katoombagroup.org/~katoomba/documents/tools/TheVittelpaymentsforecosystemservices.pdf

Guidelines and Tools for the Integration of Biodiversity in Corporate Management

Corporate Biodiversity Management Handbook. A guide for practical implementation www.bmu.de/fileadmin/bmu-import/files/english/pdf/application/pdf/handbuch_biodiversitaetsmanagement_bf_en.pdf

Guideline on greening of premises „Moderne Unternehmen im Einklang mit der Natur“ Landesanstalt for Environment Baden-Württemberg (in German only) http://www.lubw.baden-wuerttemberg.de/servlet/is/224023/moderne_unternehmen_im_einklang.pdf?command=downloadContent&filename=moderne_unternehmen_im_einklang.pdf

Greening of premises. Stiftung Natur und Wirtschaft, Switzerland http://www.naturundwirtschaft.ch

Biodiversity initiatives for companies

European Business and Biodiversity Campaign – Knowledge pool, Case studies, Experts www.business-biodiversity.eu

Biodiversity in Good Company – Member initiative http://www.business-and-biodiversity.de/en/

European Business and Biodiversity Platform http://ec.europa.eu/environment/biodiversity/business/index_en.html

Additional information

The Economics of Biodiversity and Ecosystem Services (TEEB) is a study about the value of the natural capital http://www.teebweb.org

TEEB for Business puts a special focus on the impacts on and dependence of the private sector regarding biodiversity and ecosystem services http://www.teebweb.org/teeb-study-and-reports/main-reports/business-and-enterprise/

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