Resource Mobilization Information Digest N° 231 March 2013

Financial Planning for Biodiversity in Northern Europe

Contents

Denmark

Denmark's planning document[1] had a brief section on legislative initiatives and financing. Expenses pertaining to the implementation of the Action Plan will be paid within the existing financial framework of the Ministry of the Environment, Ministry of Food, Agriculture and Fisheries, and remaining ministries. There are also possibilities for EU co-financing and partnerships with private enterprises.

The document discussed financing in thematic sections, including international initiatives, the Rural Districts Programme (agro-environmental measures, organic farming, decoupling of direct support, compensation for EU environmental requirements, etc..

[1] Denmark (2004). Action Plan for Biodiversity and Nature Conservation in Denmark 2004-2009, 77 pp.

Estonia

Estonia's planning document[2] had a section on financial plan. The Biodiversity action plan (BDAP) comprises 408 activities classified by fields and intra-field aims. The financial and economic assessment of every activity was conducted in close co-operation with all teams whereby the cost of the activity, labor consumption and existing or potential source of financing were determined. As a result of the financial analysis, detailed tables for activities of every field were elaborated for costs, potential sources of financing and status of financing. As for some activities (e.g. 4.5.3.1. creation of buffer zones for feed currents of amelioration; 7.1.3.1. application of sustainable fishing methods; 10.4.3.1.-10.4.3.4. – establishment of small processing industries supporting the protection of heritage landscapes and habitats, etc.), it was not possible to estimate the costs due to lack of initial data, the data presented reflect the lowest limit of application costs of BDAP. The total cost of all activities of BDAP has been estimated at 2.15 billion Estonian kroons. Table 1 presents a summary of costs of activities of all 13 fields. Fifty-three and a half percent (53.5%) (or 1.35 billion kroons) of total costs of BDAP are connected with implementation of activities in the field of industry, including 840 million kroons for six high-cost activities (10.1.3.1. implementation of energy conservation program; 10.1.3.2. installation of electric filters in power stations; 10.3.3.1. completion of Vaivara dangerous waste deposit and collection centre; 10.3.3.3. implementation of the national program "Reduction of Atmospheric Emissions of SO2, NOX, Heavy Metals and Dust" in plants of processing industry; 10.3.3.4. implementation of the national program "Reduction of Emissions of Volatile Organic Compounds" in plants of processing industry; 10.6.3.2. recultivation of oil shale quarries). The exclusion of these activities reduces the cost of BDAP to 1.67 billion kroons; the summary is present in Table 2. Tables 3, 4, 5 and 6 present data of financial needs of BDAP activities in the years 2000-2005 by fields and across years and priorities. The implementation of very important activities (priority I) needs 607.3 million kroons, or 26.9% of total BDAP financing needs; the implementation of important activities (priority II) needs 1,365.2 million kroons or 60.4% of total financing needs; and the implementation of relatively less important activities (priority III) needs 287.6 million kroons or 12.7% of the total. About 40% of financing necessary for the activities may likely be classified as "covered" or "likely covered", and 60% of financing has been included in the "not covered" category. Estimation of labour consumption necessary for the implementation of the activities has been presented in Table 1. According to the current estimation, the implementation of BDAP needs 1,936 years of human labour or 277 conditional full-time workers annually.

Table 1. Cost of BDAP and labor consumption in 1999–2005

Sector	Total cost		Labor consumption	
	1000 EEK	%	years	%
1. Biotechnology	140 050	5.6	268.8	13.9
2. Education	132 630	5.3	201.8	10.4

[2] Estonia (1999). Estonian Biodiversity Strategy and Action Plan, Estonian Ministry of the Environment, Tallinn-Tartu, 1999, 165 pp.

3. landscape aspects in planning and land management	101 685	4.1	143.4	7.4
4. Agriculture	414 520	16.5	569.6	29.4
5. Forestry	62 790	2.5	146.4	7.6
6. Hunting	3 970	0.2	19.7	1.0
7. Fishing	27 310	1.1	68.9	3.6
8. National defence	2 080	0.1	5.8	0.3
9. Border control	3 200	0.1	10	0.5
10. Industry	1 348 365	53.7	134.5	6.9
11. Transport	109 265	4.4	32.1	1.7
12. Tourism	100 830	4.0	151.4	7.8
13. Nature conservation	61 945	2.5	183.6	9.5
BDAP total	2 508 640	100.0	1 936.1	100.0

Table 2. BDAP cost and labor consumption in 1999–2005 (excl. Expensive activities of industry sector shown in KTK)

Harukond	Total cost		Labour consumption	
	1000 EEK	%	years	%
1. Biotechnology	140 050	8.4	268.8	13.9
2. Education	132 630	7.9	201.8	10.4
3. Landscape aspects in planning and land management	101 685	6.1	143.4	7.4
4. Agriculture	414 520	24.8	569.6	29.4
5. Forestry	62 790	3.8	146.4	7.6
6. Hunting	3 970	0.2	19.7	1.0
7. Fishing	27 310	1.6	68.95	3.6
8. National defense	2 080	0.1	5.8	0.3
9. National defense	3 200	0.2	10.0	0.5
10. Industry *	509 065	30.5	134.5	6.9
11. Transport	109 265	6.5	32.1	1.7
12. Tourism	100 830	6.0	151.4	7.8
13. Nature conservation	61 945	3.7	183.6	9.5
BDAP total *	1 669 340	100.0	1937.0	100.0

*excl. expensive activities of industry sector: 10.1.3.1.; 10.1.3.2.; 10.3.3.1.; 10.3.3.3.; 10.3.3.4.; 10.6.3.2.

Table 3. BDAP need for financing in years 2000–2005

Sector	need for financing (1000 eek)	%
1. Biotechnology	140 050	6.2
2. Education	131 510	5.8
3. Landscape aspects in planning and land management	94 725	4.2
4. Agriculture	392 405	17.4
5. Forestry	62 790	2.8
6. Hunting	3 970	0.2
7. Fishing	24 735	1.1
8. National defense	2 080	0.1
9. Border control	3 000	0.1
10. Industry	1 144 825	50.7
11. Transport	98 265	4.3
12. Tourism	100 830	4.5
13. Nature conservation	60 945	2.7
BDAP total	2 260 130	100.0

Table 4. BDAP need for financing in 1999–2005 (excl. expensive activities of industry sector shown in KTK)

Sector	need for financing (1000 eek)	%
1. Biotechnology	140 050	8.8
2. Education	131 510	8.3
3. Landscape aspects in planning and land management	94 725	6.0
4. Agriculture	392 405	24.7
5. Forestry	62 790	4.0
6. Hunting	3970	0.2
7. Fishing	24 735	1.6
8. National defense	2080	0.1
9. Border control	3000	0.2
10. Industry *	473 825	29.8
11. Transport	98 265	6.2
12. Tourism	100 830	6.3
13. Nature conservation	60 945	3.8
BDAP Total *	1 589 130	100.0

* excl. expensive activities of industry sector: 10.1.3.1.; 10.1.3.2.; 10.3.3.1.; 10.3.3.3.; 10.3.3.4.; 10.6.3.2.

Table 5. Total across years

Sector	Need for financing in years 2000–2005 (1000 EEK)						
	2000–2005	across years					
		2000	2001	2002	2003	2004	2005
1. Biotechnology	140 050	22 080	24 030	23 635	23 435	23 435	23 435
2. Education	131 510	16 860	23 250	22 850	22 850	22 850	22 850
3. Landscape aspects in planning and land management	94 725	18 150	20 985	14 695	14 395	13 250	13 250
4. Agriculture	392 405	69 830	66 955	64 155	64 655	63 205	63 605
5. Forestry	62 790	12 905	12 475	10 835	9 515	9 180	7 880
6. Hunting	3 970	975	745	675	525	525	525
7. Fishing	24 735	5 560	4 925	4 500	3 250	3 250	3 250
8. National defense	2 080	950	300	215	215	200	200
9. Border control	3 000	500	500	500	500	500	500
10. Industry	1 144 825	185 615	193 280	192 580	191 750	190 800	190 800
10. Industry *	473 825	82 115	79 780	79 080	78 250	77 300	77 300
11. Transport	98 265	12 595	18 565	16 945	16 720	16 720	16 720
12. Tourism	100 830	17 430	17 400	16 650	16 450	16 450	16 450
13. Nature conservation	60 945	10 715	11 075	10 555	9 850	9 500	9 250
Total	2 260 130	374 165	394 485	378 790	374 110	369 865	368 715
Total*	1 589 130	270 665	280 985	265 290	260 610	256 365	255 215

* excl. expensive activities of industry sector: 10.1.3.1.; 10.1.3.2.; 10.3.3.1.; 10.3.3.3.; 10.3.3.4.; 10.6.3.2.

Finland

Finland's first planning document[3] had a section on development cooperation (7.6). Under the obligations of the Convention on Biological Diversity, the contracting industrialized countries are responsible for funding the incremental costs arising from the implementation of the Convention in the developing countries, as calculated in accordance with principles determined by the Conference of Parties. It is vital to the successful implementation of the Convention in the developing countries that the industrialized countries honor their commitments vis-à-vis funding and transfer of information and technology concerning the protection and sustainable use of biological diversity in developing countries. The Contracting Parties shall also promote cooperation in personnel training and expert exchange.

Since the mid—1980s, Finnish development aid cooperation has aimed at supporting the efforts of developing countries to alleviate their environmental problems and take environmental aspects into account in all endeavors, for instance by conducting environmental impact assessments of projects. In the most recent strategies, such as the development cooperation strategy for the 1990s (1993) and the Decision-in-Principle of the Council of State concerning development cooperation (1996), emphasis has been laid on helping the developing countries fulfill international environmental obligations.

It is a stated condition of the Finnish development cooperation strategy that the recipient country must participate in combating global environmental hazards. In bilateral development aid, the measures undertaken to combat the depletion of biological diversity are surveyed in cooperation with the target country.

The amount of aid allocated to target countries varies greatly according to the level of development or state of ecosystems in that country. Whenever possible the following points are considered in deciding the amount of aid to be given:

- support for the monitoring of biological diversity and for planning its protection and sustainable use;
- capacity building through training and research cooperation;
- sustainable use of biological resources and technology cooperation;
- support for in situ and ex situ conservation of biological diversity.

In order to include measures aiming at preserving biological diversity in developing countries an integral component of Finland's bilateral development aid cooperation, a fundamental analysis of the challenges posed by international conventions and a systematic survey of needs and opportunities for cooperation

[3] Finland (1997). National Action Plan for Biodiversity in Finland, 1997-2005, 29 December 1997, 166 pp.

are needed as part of development cooperation programming. The monitoring of environmental targets in development aid cooperation also requires more work.

The protection and sustainable use of biological diversity has already been a long-standing component of certain cooperation projects in the forestry sector. In recent years, however, projects have been launched and prepared that primarily focus on preserving biological diversity in developing countries. Examples of this in official development cooperation include the protection of rainforests in the mountains of Tanzania, the development of forestry and forest protection in Laos, the forest project in Vietnam, the protection project for the Machu Picchu area in Peru, and regional cooperation to promote sustainable development in the forests of the Amazon. Support has been given to biological diversity research in the Peruvian Amazon as well as certain nature protection projects undertaken jointly by Finns and international nongovernmental organizations. In 1997, new joint projects related to the Convention on Biological Diversity are being planned with Nicaragua and Peru. Development projects for environmental monitoring are being prepared with Mozambique, Namibja and Kyrghyzstan These projects include monitoring of biological diversity.

Projects based on bilateral grants always aim to improve the capacity of the recipient and to involve the beneficiaries of the projects and the people affected by them in the (planning, implementation and monitoring. Transparency is ensured in project planning and implementation. The equitable sharing of the benefit derived from genetic resources is given special consideration when allocating funds for potential projects.

Finland provided about FIM 41 million per annum in funding for GEF projects in the three—year period 1994—1996 (total FIM 124 million)

The biological diversity projects of the Ministry for Foreign Affairs were listed for the first time in 1995.

118. Finland will strive, in the selection, planning and implementation of development cooperation projects, to improve capacity-building in the developing countries to fulfill the obligations of the Convention on Biological Diversity as regards research, monitoring, administration and the conservation and sustainable use of biological diversity.

119. Technology transfer and access to information related to the conservation and sustainable use of biodiversity in the developing countries will be increased in the context of development cooperation.

120. Training and education will be increased so as to improve the capacity of Finnish biodiversity experts to work in the developing countries and to participate as partners in international biodiversity projects implemented in developing countries.

121. The impact on biodiversity of development cooperation projects will be assessed by including biodiversity assessment in the selection, planning, implementation and result evaluation of development cooperation projects.

122. The implementation of biodiversity projects will be monitored and the quality of development cooperation will be improved, for instance through EIA procedure.

The document also had a section on costs and resources (8.4). The implementation of the national action plan for biological diversity mostly involves developing the functions of branches of administration, trade and industry so as to allow for the maintenance of biological diversity. The ministries do not have significant extra resources available for implementing this action plan; rather, they will be functioning within the framework of their existing budgets. The costs of the measures proposed depend largely on how well these measures can be harmonized with other planning and development measures. The proposed measures and goals should ii fact be considered at the initial planning stage.

Meanwhile, as the funds allocated to State administration decrease, so do resources available for environmental monitoring. Thus, it is vital to enhance biological diversity monitoring and to concentrate resources on areas where monitoring is vital.

The costs of in situ biodiversity conservation and the implementation of the proposed measures will be achieved largely within the framework budget of the Ministry of the Environment. However, the action plan proposes a further allocation for the management and maintenance of nature reserves acquired by the state under the Nature Conservation Act.

Acquisition of nature reserves

Up to the beginning of 1996, about FIM 1050 million had been spent on land acquisitions and compensation paid under conservation programmes. In all, government land worth about FIN 280 million has been acquired for nature conservation purposes. The implementation of conservation programmes received a significant boost when the Cabinet Economic Policy Committee confirmed the nature conservation funding programme for 1996-2007 on June 4, 1996. Under this funding programme, a total of about FIN 3.2 billion will be spent on acquiring land for the State and for paying compensation to landowners. The aim is to ensure the resources needed for implementing the nature conservation programmes so that those programmes ratified by the Council of State can be implemented by the year 2004. Thus, the timing of this funding programme would coincide with that of the EU Natura 2000 network. The aim is to reach an agreement with the owners of land falling under the conservation programmes concerning the sale or exchange of, or compensation for, these land areas by the year 2000 so that funding will continue until 2007.

The funding programme not only makes provisions for nature conservation programmes but also for other comparable obligations incurred by the government, for instance through protected areas allocated in plans already ratified, particularly for the protection of endangered species and old-growth forests. Provisions have also been made for certain other future costs, such as those arising from the Natura 2000 network.

The budget for the funding programme is strongly weighted towards its beginning. Thus, regional environmental centers are well placed to respond to initiatives, offers of sale and applications for compensation from landowners within reasonable time, a point important for safeguarding the rights of the landowners.

As set forth in the Nature Conservation Act (1096/1996), landowners have the right to demand that land falling under a nature conservation programme be purchased by the state within a given time. The protection of Natura 2000 sites must be implemented through legislative, administrative or other measures within six years of the site being approved for inclusion in Natura 2000. This legal right does not apply to land areas approved for inclusion in the scheme before the Act came into effect. However, the option for rapid implementation of the scheme in such land areas is also provided for in the funding programme.

Sufficient annual resources for establishing protected areas under this funding programme were included in the second supplementary State budget in 1996 and in the State budget for 1997. Slightly over FIN 300 million is available in 1997 for the implementation of conservation programme. Also, FIN 200 million of the allocations for future years can be committed this year.

Supplementary funding from the EU LIFE fund is available for protecting priority natural habitat types and the habitats of priority species referred to in EU nature conservation directives. In 1995—96, Finland received a total of FIM 45 million from this source. Preliminary data show that in 1997 FIM 35 million in EU funding will be received for similar projects The funding opportunities offered by the EU Habitats Directive should also be used in the protection of priority species and habitats.

Maintenance of protected areas

Present resources are insufficient for the proper management and maintenance of the increasing number of nature reserves. The rapidly increasing number of new protected areas is creating pressures to increase the maintenance budget, particularly as existing protection programmes are still being funded out of the same programme described above. Furthermore, the decision-in-principle taken by the Council of State in summer 1996 concerning the protection of old-growth forests in northern Finland designates major expanses of new protected areas and extensions to existing ones. In taking this decision to protect old-grow forests, the Council of State also decided on compensation for the effects this has on incomes and employment. According to the compensation plan, annual cumulative compensation of FIM 1.5 million will be paid from the allocation for the management and maintenance of nature reserves for use in northern Finland. In 2006, this cumulative compensation will have grown to FIM 15 million per annum. This will seriously hinder the quality of maintenance in nature reserves in southern Finland if the total allocation is not increased. New protected areas contain an increasingly large proportion of natural environments and heritage environments that have been in commercial use and have thus lost their original ecological character. The restoration of their natural state and its continued management and the maintenance of heritage environments, are the most expensive kind of maintenance work because they are labor-intensive. Increasing the overall allocation is also important

because the availability of employment funds for nature reserve maintenance has become more difficult each year.

Nature reserve manage and maintenance allocations will be increased by FIM 6.0 million per annum between 2002 and 2005.

In situ protection under the Forest Act: Costs and resources

Section 10 of the Forest Act (1093/1996) specifies seven habitats of outstanding importance for biological diversity. If such habitats are in their natural state or in a state closely resembling it, their management and maintenance should be undertaken so as to preserve their indigenous features.

No comprehensive inventory of priority habitats has yet been compiled. Preliminary surveys show that they account for about one per cent of the land area of commercial forests. The decrease in felling caused by protection of such habitats would be under one per cent, since it is usually possible to carry out limited fellings in protected areas. One per cent of the total stumpage price income amounts to about FIM 50 million per annum.

The costs of preserving the indigenous features of priority habitats are primarily borne by the landowner. Compensation is only available if such costs cause a major loss of income to a single landowner in a given area. The threshold level is usually four per cent of the income generated by the forest; the landowner is entitled to compensation for loss of income above this. Alternatively, the landowner can apply for a special permit as per section 11 of the Forest Act to manage and use the forest in such a way that his loss of income remains minor.

According to section 19 of the Act on the Financing of Sustainable Forestry (1094/1996), a landowner can apply for environmental subsidies for major extra costs and loss of income caused by use of the forest for purposes other than timber production. Environmental subsidies are not confined to priority habitats, but these take precedence in granting environment subsidies. According to section 20 of the Act on the Financing of Sustainable Forestry, funding can also be granted for individual forest management projects. About FIM 5 million is available in environmental subsidies for forestry in 1997. Preliminary estimates show that this allocation is sufficient for environmental subsidy applications concerning priority habitats.

Biological diversity protection in agricultural environments: Costs and resources

A summary of the extent of measures funded under the environmental programme for agriculture aiming at the management and maintenance of biological diversity in agricultural environments (1995-1999) will be obtained once the final report of the monitoring group for this programme is completed in March 1998. Preparations for the new environmental programme for agriculture will begin in 1998, but the impact of this programme in funding the management of biological diversity has not yet been assessed.

According to Finland's second planning document[4], on 21st December 2006 the Finnish Government made the following decision-in-principle on the National Strategy for the Conservation and Sustainable Use of Biodiversity in Finland 2006-2016. The decision contains long term outlines for the conservation and sustainable use of biodiversity in Finland. In terms of public finance, it is intended that the strategy should be implemented within existing budget frameworks, without any separate or additional specific financing.

One measure in forest was that forest owners will be encouraged to promote the preservation and purposeful enhancement of ecologically valuable habitats and natural structural features of forests. Advice will be provided to encourage the consideration of biodiversity in timber harvesting and forestry. In commercially managed State-owned forests, the preservation of biodiversity will be given particular emphasis. The ecological characteristics of exceptionally valuable habitats referred to in Section 10 of the Forest Act and identified through the METE surveys will be preserved. Funds will be duly allocated under the Act on the Financing of Sustainable Forestry to promote the conservation and management of forest biodiversity (Ministry of Agriculture and Forestry, 2006-2016)

The document had a section on financial incentives and other incentive measures. Economic incentives, advice, guidance and the development and application of sustainable land use principles encouraging voluntary conservation measures are becoming increasingly important in various sectors, in addition to legislative controls. Economic instruments designed to promote biodiversity have already been applied in Finland, but their use has so far been on an ad-hoc basis and limited. There is a clear need for improved and expanded economic incentives, as has also been noticed internationally, for example, in the OECD work done on this topic.

The Ministry of the Environment has commissioned a basic study of biodiversity as an economic issue. This study will be based on decisions and recommendations of the OECD Working Group on Economic Aspects of Biodiversity and the CBD. It will include concrete options and recommendations (research, creation of markets, direct incentives, policy instruments, administration and infrastructure) for applying economic incentives and measures to promote the conservation and sustainable use of biodiversity in Finland.

Finland has a long history of private nature reserves established on the basis of applications made by landowners. The role of such reserves in implementing conservation programmes has been growing in recent years. Counselling has also played a central role in agriculture and forestry for many years. The METSO Programme has particularly helped to focus attention on various aspects of conserving biodiversity. The prominence of environmental issues in agriculture has likewise increased substantially.

Current situation

[4] Finland (2007). Saving nature for people, National strategy and action plan for conservation and sustainable use of biodiversity in Finland 2006-2016, Ilkka Heikkinen (eds), Ministry of the Environment, Land Use Department, 14.9.2007, 160 pp.

Environmental subsidies for agriculture and the Act on the Financing of Sustainable Forestry (1094/1996) have significantly expanded opportunities to secure financial subsidies for measures to maintain biodiversity. The procedure developed for paying compensation for damage caused to reindeer husbandry by golden eagles, whereby financial compensation is granted to a herdsmen's committee based on the number of nests producing eagle fledglings, may also be regarded as an example of a functional system of economic guidance.

Challenges:

Widespread practical application of voluntary conservation instruments and the development of forest conservation incentives to support environmental management and conservation are an essential condition for promoting nature conservation in future decades. Alongside communication, counselling and practical guidelines, it is also important to allocate new agricultural, rural development and agri-environmental financing instruments in sites and purposes that are important from the point of view of biodiversity. There is also scope for improving the role of economic incentives in species conservation.

Objectives

Appreciation of the economic aspects of biodiversity should be increased. Motivating and expedient economic instruments should be applied to promote the conservation and management of biodiversity.

Measures

- Subsidy systems will be assessed and revised where necessary to prevent incentive effects that are harmful to biodiversity. The opportunities provided by new financing instruments for enhancing agricultural environments, rural nature management and conservation, and the ecological planning of landscapes will be exploited in various ways (Ministry of Agriculture and Forestry, Ministry of Finance, Ministry of the Environment, 2007-2013)

- The results of the METSO Programme assessment, due to be completed during 2006, will be used in developing policy instruments for nature conservation. Particular attention will be paid to interaction between authorities and the public, to the extensive adoption of voluntary conservation instruments, and to the development of economic incentives for nature management and conservation (Ministry of the Environment, Ministry of Agriculture and Forestry, 2007-2010)

- Economically motivating financing instruments will be investigated in order to prevent or compensate for losses, especially those caused by large predators and seals (Ministry of Agriculture and Forestry, 2007-2010)

The document also had a section on development cooperation and technology transfer.

Background

International environmental conventions impose common but differentiated responsibilities and various duties on their signatory parties. The industrialized countries have a duty to help the developing countries to meet their own obligations, for example by supporting capacity building and promoting the transfer of technology. The Finnish government's development policy programme of 2004 also refers to the need to support developing countries' efforts to meet their obligations under environmental conventions. This policy indicates that environmental affairs should be integrated as a crosscutting theme in Finland's development co-operation work. The sustainable use of biodiversity, especially through functional ecosystem services, is considered to be particularly important for the livelihoods of poorer groups within developing countries. By providing means of livelihood, ensuring health, providing food security and safeguarding against catastrophes, ecosystem services are a fundamental factor behind nearly all of the UN millennium development goals. This means that biodiversity is very broadly linked to development as a whole, and not merely to the environmental aspects of sustainable development.

Current situation

A study (2005) conducted for the Ministry for Foreign Affairs and the Ministry of the Environment indicates that funding of development co-operation projects linked to biodiversity has increased to some extent in recent years. The most important such project supports the planning of the sustainable use of biodiversity in Peru's Amazon Region. The sustainable use of biodiversity is an important factor in many environmental sector development co-operation projects supporting the work of environmental authorities in countries including South Africa, Nicaragua, Mozambique and Kyrgyzstan. This also applies to forestry projects supported by Finland in Tanzania, Mozambique, Zambia and elsewhere. Funds channelled though the Global Environment Facility (GEF) play an important role in multilateral financing. About 33% of total financing from this source is allocated to work in support of the CBD.

Challenges

An evaluation of Finland's environmental sector's development co-operation work was completed in spring 2006. This will form the basis for policy guidelines on development co-operation in the environmental sector currently being prepared by the Department for Development Policy within the Ministry for Foreign Affairs. The sustainable use of biodiversity should be incorporated as an important factor reducing poverty in the developing countries when preparing environmental sector policy guidelines for Finland's development policy.

Objectives

Finland's environmental sector's development co-operation work should be enhanced systematically and cost- effectively to support the capacities of developing countries in the context of their objectives and actions related to the conservation, management and sustainable use of biodiversity.

Measures

- The sustainable use of biodiversity will be incorporated as an important factor reducing poverty in the developing countries during the preparation of environmental sector policy guidelines for Finland's development policy (Ministry of Foreign Affairs, 2007-2016)

- Finland will give due consideration to the objectives and obligations of environmental conventions in its development co-operation work. Environmental issues will be given prominence in bilateral relations with developing countries. A strategy will be formulated for promoting biodiversity projects financed as part of Finland's development co-operation work. Finland will actively participate in international negotiations under environmental conventions, and give due consideration to the special needs of developing countries in the negotiations and when implementing conventions. Efforts should also be made to consider the needs of developing countries when negotiating new conventions (Ministry of Foreign Affairs, Ministry of the Environment, Ministry of Agriculture and Forestry, 2006-2016)

- Efforts should be made to launch new development co-operation projects designed to alleviate poverty in developing countries through the sustainable use of biodiversity (Ministry of Foreign Affairs, 2007-2016)

- Efforts should be made under biodiversity projects and programmes financed by the Ministry for Foreign Affairs to provide more opportunities for young experts to enrol for on-the-job training in international development projects and programmes in the sector (Ministry of Foreign Affairs, 2007-2016)

The document had a section on impacts of the Action Plan that examined the costs. One principle behind the preparation of the action plan has been that the measures it contains should be implementable within existing government budget frameworks. This means that funding can be channeled into the necessary measures during current budget framework period by reallocating existing resources. Consideration has also been given to the requirement of the governmental productivity programme that human resources can only be channeled into new tasks by reallocating resources within specific administrative sectors. Some of the action plan's measures cannot be implemented without the significant reallocation of financial and human resources. Such measures particularly include the following actions to be taken within the administrative sector of the Ministry of the Environment:

28) Finland's coastal biodiversity will be assessed by completing the VELMU Inventory Programme for the Underwater Marine Environment by 2014. The total costs of implementing this measure over the period 2006-2014 are expected to amount to about €6 million. Seven ministries are involved in the VELMU project in all, but the Ministry of the Environment has so far been responsible for most of the costs. Resources for this project can to some extent be allocated through management by results. Changes in the principles applied for the exchange of information collected using public finances could also help to avoid unnecessary impacts on budgets.

41) Conservation measures will be implemented by 2012 in areas within the Natura 2000 network to meet the objectives set out in the Habitats Directive. Where necessary, management plans will be

drawn up together with stakeholders. The total costs of implementing this measure over the period 2006-2012 are expected to amount to about €15 million. Cost pressures arise in the context of existing budget frameworks wherever Natura 2000 sites are implemented by designating protected areas, since the funding needs of conservation programmes have not been fully considered in the drafting of current frameworks. In conserving Natura 2000 sites it is extremely important to exploit EU joint funding schemes such as Life+.

68) Ministries and other interest groups will work together to prepare and initiate a communications programme to improve the public awareness and social acceptability of the conservation of biodiversity and sustainable use of natural resources. The total costs of this programme over the period 2007-2010 are expected to amount to about €2 million. The programme will be jointly realized by four ministries, but the Ministry of the Environment will bear the greatest responsibility for meeting the related costs. EU funding may also be used in this programme to some extent. The programme would be impossible to implement using the resources currently available to the Ministry of the Environment for communications purposes. Communications must build on the positive experiences obtained through cross-sectoral collaboration on communications for the METSO Forest Biodiversity Programme for Southern Finland, exploiting the co-operation built up between communications in the various sectors such as agriculture and forestry and biodiversity.

94) Administration of research findings on biodiversity will be organized on the networking principle in association with all parties participating in biodiversity research and monitoring. All information on biodiversity produced with support from public funds should become universally available at minimal cost. This initiative is to be realized through co-operation between five ministries, with the administrative sector of the Ministry of the Environment bearing the greatest responsibility for meeting the related costs. Improving the administration of biodiversity data is one of the most important measures within the nature conservation administration's productivity programme. The consequent urgency of this project means that funding amounting to some €2.5 million should be available for this work over the period 2007-2010.

In terms of the national budget the action plan's most significant measure is:

1) Decisions will be made on the basis of the results of the METSO Forest Biodiversity Programme for Southern Finland to define further measures to improve the conservation of forests in Southern Finland. This work will mainly be carried out by the Ministry of the Environment and the Ministry of Agriculture and Forestry. A decision on the future funding of the METSO Programme will be made by the Government at the end of 2007. A review of the future of Finland's forest sector estimates the levels of funding needed annually for forest conservation within the administrative sectors of the Ministry of the Environment and the Ministry of Agriculture and Forestry at €50 million and €15 million, respectively. In 2005, the Ministry of the Environment spent a total of €49 million on the acquisition of land for protected areas and related compensation payments. This means that costs will not rise significantly overall, but that resources will mainly be used to protect forest habitats after the implementation of previous conservation policies is completed in 2009.

The measures specified above are especially crucial with regard to the implementation of Finland's national biodiversity strategy. The resources necessary for their realization must therefore be found through all available means. The action plan's measures have been defined on the basis of the national biodiversity strategy. The future challenges identified in the evaluation conducted during the years 2004-2005 of the National Action Plan for Biodiversity in Finland 1997-2005 have also been considered. Additionally, efforts have been made to convert the objectives and obligations defined in the CBD's programmes of work into practical measures. The action plan's own primary objectives – the conservation and sustainable use of biodiversity – clearly constitute favorable environmental impacts in themselves. The conservation of biodiversity may have positive or negative impacts in terms of social, economic and cultural sustainability, and business prospects. Many of the means chosen for the action plan have been designed to avoid such negative side effects. Voluntary conservation measures, open and participative administrative procedures and the exploitation of economic opportunities provided by biodiversity all serve to counteract the tendency for the conservation of biodiversity to entail an end to certain usages of natural resources. The measures within the action plan have been defined to allow flexibility in their implementation. This also allows the impacts of each measure to be evaluated separately and the identification of suitable means for their implementation, aiming to reduce harmful impacts and increase benefits.

Ireland

Ireland's planning document[5] contained several actions on financing:

- Consider the development of financial instruments/incentives to promote the conservation of biodiversity.
- Biodiversity will be made a specific objective of ODA, and all support to, and co-operation with, developing countries shall take account of biological diversity.
- Ireland will provide specific funding for biodiversity projects in developing countries and countries with economies in transition and for work which contributes to the identification, assessment and monitoring of the state of biodiversity at the global scale (€6.35 million (£5 million).
- Ireland will support the development of international law in accordance with the CBD.

The document discussed North-South co-operation:

In terms of biodiversity, Ireland is one biogeographical unit. Many biodiversity conservation issues would benefit considerably from being addressed by a common or co-operative North-South approach. There has been co-operation and joint initiatives - both between the authorities and between non-governmental organizations and bodies - on various nature conservation projects for many years.

Northern Ireland has published a report - Recommendations to Government for a Biodiversity Strategy. While this has been developed in the context of the UK Biodiversity Action Plan, it also considers the all-Ireland context.

This National Biodiversity Plan contains a number of specific actions that will be developed through a joint or coordinated North-South approach. These apart, there is much scope for further co-operation on biodiversity, particularly given the new cross boarder bodies and processes. Increased co-operation would benefit biodiversity in both jurisdictions. It is envisaged there will be regular North-South consultation, with a view to promoting joint actions for biodiversity.

The document also discussed resources:

In some cases additional staff will be required or existing staff will have to be assigned to carry forward the action outlined in this Plan. It is estimated that ten new staff will be required in the Department of Arts, Heritage, Gaeltacht and the Islands and the Department of Agriculture, Food and Rural Development will require 4 additional staff.

[5] Ireland (2002). Ireland's National Biodiversity Plan 2002-2006 (NBP), Department of Arts, Heritage, Gaeltacht and the Islands, April 2002, 49 pp.

Some of the action set out in this Plan will be achievable within existing financial resources. It is estimated an extra €38.60 million (£30.40 million) will be required across the State and Semi-State Sector to implement this Plan.

Latvia

Latvia's planning document[6] had a section on economic instruments for environmental protection. Economic instruments, for example, taxes, subsidies, credits, State guaranteed credits, administrative fees and fines, directly or indirectly play an important role promotion of environmental protection. Presently, the most important economic instrument is the Natural Resource Tax, which is levied for pollution emissions and use of natural resources. While the direct effect of the Natural Resource Tax on nature protection is small, it forms an important source of finances for implementation of actions.

The Natural Resource Tax contributions are divided between municipal finances for environmental protection (60%) and the Latvian Environmental Fund, from which funding is offered for environmental and nature protection under conditions specified in the Fund regulations and Council guidelines.

The Environmental Protection Fund also acquires payments from fines for environmental pollution, and from compensation for damage ensued to protected nature territories and to protected plants and animals.

Within the "Latvian Regional Development Plan for EU Pre-Entry Actions in Agriculture and Rural Development (2000-2006)", subsidies are expected for biological diversity and maintenance of the rural landscape. Presently, various projects are being developed in conjunction with the EU Regulation EEC 2078/92 "On agricultural production methods compatible with the requirements of the environment and the maintenance of the countryside", to prepare sample contracts, survey farms, and to begin discussion with land owners.

Economic interests are frequently in conflict with nature protection. To decrease social lack of acceptance of nature protection, a mechanism for compensation is required. One-time compensation may be offered for losses caused by protected animals, or for restricted use of land in protected territories, for example, regarding forest resource use. However, the effective use of economic instruments requires to:

- Develop a legal and finance mechanism for compensation;
- Determine compensation amounts to be offered for damage to species and habitats;
- Promote implementation of land tax incentives and subsidies.
- Develop model territories for protection of biological diversity on agricultural land, to aid farmers in obtaining subsidies.

Actions can be grouped into two categories:

[6] Latvia (2000). National Programme on Biological Diversity, 72 pp.

- those requiring one-time financial investment;
- those associated with continuous maintenance costs.

For implementation of the required actions, the associated costs have been estimated by categories and potential sources have been identified.

Salaries contribute the largest share of any activity. In the cost assessment, different salaries were used to various categories of workers.

Each action requires financial resources. Possible sources for, financing of actions are listed below:

State and municipal governmental budgets and the special budget:

- State budget
- Municipal budget
- Environmental Protection Fund assets (State Special Budget)
- Ministry of Agriculture Subsidy Fund

Lithuania

Lithuania's planning document[7] had a section on financing and international assistance. Implementation of the Action Plan requires financing. If there is a wish to implement Action Plan during ten years, the sum of 11.2 million litas will be required (for priority actions - 3.1 million litas) or 1.1 million litas per year (for priority actions - 0.3 million litas) based on 1997 estimates. Required funding for implementation of action plans is illustrated below. Possible sources include allocations from state and municipal budgets, state and municipal nature conservation funds, forest fund, international funds, organisations and governments, and private capital.

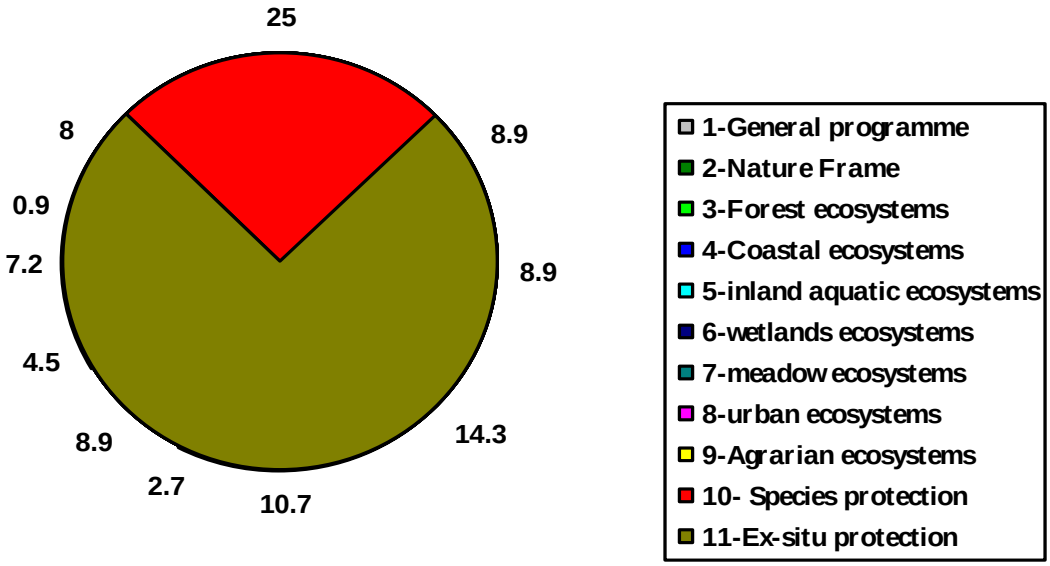

Figure. Distribution of financial resources for implementation of the action plan

The state budget for landscape and biodiversity protection and fish resources breeding and protection programmes in 1995 and 1996 was 403,100 litas ($100,800) annually (19.6% of the total funding for environmental programmes). Annual funding for ecological monitoring was 439,400 litas ($109,850) from which a major fraction was allocated for environmental quality monitoring and 155,100 litas ($38,770) was used for environmental education and publications. Approximately the same allocation is planned for future years. In 1996 allocations for landscape and biodiversity conservation were reduced

[7] Lithuania (1998). Biodiversity Conservation Strategy and Action Plan, Environmental Protection Ministry, Vilnius, 1998, 108 pp.

almost by half and in 1997 - almost by four times of those in 1994, which is inadequate for biodiversity conservation activities.

Means for implementation of Action Plan from state budget can be allotted as many as it will be foreseen in the state budget of corresponding year. Therefore, when preparing annual Action Plans for conservation of biodiversity, sources of finance will be concretized or terms for implementation of Action Plan will be prolonged. Certain elements of the action plans can be financed from state and municipal nature conservation funds. In addition municipal institutions fund the identification and inventory of biological values. Non-governmental institutions involved in the implementation of different actions in biodiversity conservation field can receive funding from various international organisations and state funds.

International assistance. Not all the problems of biodiversity can be solved by Lithuania alone. Protection of many aquatic ecosystems (Nemunas River, Curonian Lagoon, Baltic sea) and others is impossible without international cooperation because of their geographical position. Problems and goals can thus be divided into local, regional and global. For example, eutrophication or catastrophic climate events most often occur at regional or global level. In order to reach regional and global goals international agreement and cooperation is necessary. The goals of this strategy and action plan have been divided into 5 categories, accordingly different levels of decision.

Table. Evaluation of the strategy goals according to the of decision

Level of decision making					
Goal	**Global**	**European**	**Baltic region**	**State**	**Local**
Geosystem level					
G1	+	+	+	+	+
G2			+	+	+
G3			+	+	+
G4				+	+
G5		+	+	+	+
G6				+	+
G7				+	+
Ecosystem level					
E1		+	+	+	+
E2	+	+	+	+	+
E3			+	+	+
E4			+	+	
E5				+	+
E6				+	+
E7				+	+
E8		+		+	+
Species level					
R1	+	+	+	+	
R2			+	+	+
R3	+	+	+	+	
R4	+	+	+	+	
R5	+	+	+	+	+

R6				+	+
R7				+	
R8			+	+	
Genetic level					
V1			+	+	
V2				+	+
Ex1				+	
Ex2	+	+		+	
Ex3				+	
Ex4				+	
Ex5				+	
Ex6				+	

Immediate implementation of the Action Plan without the assistance of foreign governments and organisations (mostly financial, but also technical) is unrealistic. Large scale projects of landscape and biodiversity protection began only in 1996 and were financed by EU PHARE and the Danish Government. Projects that have begun or are under preparation include: landscape and biodiversity conservation in protected areas, plans for the Nemunas River Delta regional park, implementation of Curonian Lagoon regional management project, and comprehensive management of Lithuanian coastal areas.

International assistance is needed for the preparation of broad biodiversity studies in Lithuania. The country biodiversity study is one of the main documents necessary for implementation of the Convention on Biodiversity. Foreign assistance would be useful for the organisation of bioecological protection in the Nature Frame areas, for preparation of action plans for conservation of rare and endangered species, and wetlands protection and restoration. Foreign funding would be helpful for implementation of various projects, such as a biodiversity conservation plan for the Eastern Aukðtaitija region and a feasibility study on establishment of Daugai Regional Park.

The assistance of international specialists is necessary for the establishment of economic regulatory measures providing privileges for inhabitants of protected areas, compensation for losses caused by limiting economic activity within the habitats of protected species, incentives for complying with protection rules, compensation for damage caused by wild animals, etc. Such measures will be successful only if financial resources are made available.

Lithuania has no experience in repurchasing land and forest from private owners. Regulations for acquisition of land and forest are needed. Under the Law on Protected areas, the Government has the priority right to purchase land and property in national and regional parks but it has no resources to do so. It is necessary to establish a fund for acquisition of land and forest in protected areas. Such funds could be used to ensure conservation within current and proposed protected areas, including compensation to former owners in order to maintain state ownership.

There is an obvious lack of publications on biodiversity and protected areas in Lithuanian, English and other languages. Reference books containing legal acts and their interpretation are needed by specialists in various areas. Foreign assistance could considerably improve the availability of useful publications. The document further presented a list of the main projects requiring foreign assistance. Together with foreign experts a standard project could also be prepared for biodiversity conservation of

the Eastern Aukõtaitija region. Projects of this type have not yet taken place in Lithuania. Methods for regional studies of biodiversity must, therefore, be established. On this basis a biodiversity conservation strategy and action plan of the Eastern Aukstaièiai region could be prepared.

Norway

Norway's planning document[8] had a section on development cooperation. The fundamental goals of Norwegian development cooperation coincide with the main objectives of the Convention on Biological Diversity: sustainable use and conservation of biological diversity and equitable distribution of benefits. One priority in Norwegian development cooperation will be to obtain more information on the economic and direct and indirect use value of biodiversity in relation to both ecosystem services and products. Other priorities will be training and education, advisory services, capacity-building and institutional cooperation in the administrative systems of partner countries.

Norway's second document[9] contained a key priority on Greening public procurement. The Government's goal was to reduce the environmental pressure caused by the consumption of goods and services by giving greater weight to environmental considerations in public procurement processes. The situation was: In 2003, the total value of goods and services purchased by the public sector was almost NOK 240 billion, of which NOK 96 billion was in the central government sector and NOK 70 billion in the municipal sector. Publicly-owned commercial enterprises accounted for the remainder. This means that there is a substantial potential for reducing the environmental impact of the public sector. By setting higher environmental standards, the public sector can persuade suppliers and manufacturers to shift towards greener product development, and thus encourage the marketing of a wider range of products with more positive environmental attributes. In the Government's opinion, the public sector has a special responsibility to lead the way, given its size and the fact that it is responsible for managing public funds. Public-sector agencies should be aware of the environmental impacts of their purchases, set environmental standards, and choose the best solutions in environmental terms within the constraints of price and quality. The Government wishes the public sector to be a driving force in efforts to shift the pattern of consumption in Norway in a more sustainable direction. The importance of including environmental considerations in public procurement policies was emphasized at the Johannesburg Summit in 2002. The OECD has also urged member states to greater effort in this field. Moreover, public procurement is also a central element of the EU's Integrated Product Policy and its Environmental Technologies Action Plan. The Commission has urged member states to draw up their own action plans for green public procurement from 2005. Several EU states are already engaged in this work, and the Nordic countries Sweden and Denmark are playing a leading role. In the Government's view, Norway should also be at the forefront of developments in this field in Europe.

Norway's new Public Procurement Act entered into force in 2001, and requires public authorities to take life-cycle costs and environmental impacts into account when planning new investments. The

[8] Norway (2000). Summary in English: Report No. 42 to the Storting (2000–2001), Norwegian biodiversity policy and action plan – cross-sectoral responsibilities and coordination, 55 pp.

[9] Norway (2004). Summary in English: Report No. 21 (2004–2005) to the Storting : The Government's Environmental Policy and the State of the Environment in Norway, 38 pp.

requirements have been further elaborated in regulations and in guidelines published by the Ministry of Trade and Industry. In addition to environmental considerations, the legislation requires many other considerations to be taken into account during public procurement processes. For example, steps must be taken to ensure equal conditions of competition for actors in the business sector. Because several different objectives are involved, it may be more complicated to incorporate environmental considerations into procurement processes in the public sector than in the private sector. This applies, for example, to the development of environmental criteria in connection with tendering. In the Government's view, further measures are needed to build up public-sector expertise on environmental aspects of procurement, and to make the development of environmental criteria more efficient. They are needed to ensure that the public sector can achieve its full potential for influencing the market for environmentally sound goods and services and that Norway is at the forefront of developments in Europe.

The Government's response to reinforce efforts in the field of public procurement. The Government will:

- Establish a green public procurement panel as a national advisory body for the authorities. The panel will include representatives of central government and municipal agencies, the business sector, the educational sector, etc. The panel's main functions will be
    - to identify opportunities for including environmental considerations in public procurement processes, and barriers to doing so,
    - to propose new policy instruments and measures, – to evaluate the need to develop new indicators for this field or further develop existing indicators.
- Establish a programme at the GRIP Centre for Sustainable Production and Consumption. The programme will help to ensure that public-sector agencies are familiar with the environmental standards laid down by the rules relating to public procurement, and that they have sufficient expertise to comply with these rules. The programme is also intended to make it easier to set specific environmental standards in practice.

Norway's third document[10] had a section on environment and development cooperation. The Government will:

- Ensure that Norway plays a leading role in integrating environmental issues into development cooperation.
- Continue its review of multilateral and bilateral development cooperation with a view to finding new openings for environmental initiatives in individual countries and regions, including both specific environmental programmes and sector-integrated environmental assistance.

[10] Norway (2006b). Excerpts in English: Report No. 26 (2006–2007) to the Storting: The Government's Environmental Policy and the State of the Environment in Norway, 36 pp.

- Seek to ensure that environmental considerations are an integral part of UN activities when it «delivers as one» at country level, and that UNEP is brought into the reform process.
- Play a part in the development of a sound understanding between UNEP, UNDP, the international financial institutions and other development actors as regards their roles in global capacity building for environmental assistance.
- Assist developing countries to meet their international environmental commitments, and use bilateral cooperation as a tool for strategic political dialogue dealing with all areas for which environmental authorities are responsible.
- Contribute to coordinated implementation of national environmental action plans and poverty reduction strategies, and to the integration of biodiversity concerns into all sectors at country level.
- Develop environmental cooperation with the countries of Eastern Europe, Caucasus and Central Asia (the EECCA countries) through the UNECE and the Environment for Europe process.
- Make use of the comparative advantages of different organizations and use co-financing as a tool.

Another section was on environment and international trade, investment and business. The Government will:

- Seek to ensure that the international trade regime promotes sustainable development, and that environmental considerations are taken into account in all relevant areas in the WTO. The Government is also seeking to ensure that the trade regime and the MEAs are mutually supportive and promote sustainable development.
- Liberalize trade in environmentally sound products and technologies.
- Draw up new trade commitments in such a way that they take into account the need for good governance at national level and for sufficient freedom of action to develop an effective environmental policy. New trade commitments and further liberalization must not restrict national freedom of action to make use of environmental policy instruments.
- Find a balance between trade concerns and wider public interests in free-trade agreements, and develop such agreements so that they help to ensure sustainable production and consumption in developing countries.
- Generate more knowledge of the environmental impacts of trade liberalization and Norway’s trade commitments.
- Support initiatives for the use of environmental criteria when making international investments, and promote environmentally sound investments

- Contribute to more balanced development of the legal framework for bilateral investment treaties (BITs).
- Expect Norwegian firms to follow the same social, environmental and ethical standards in developing countries as they do in Norway.
- Work towards operational guidelines for corporate social responsibility that are used globally.

A section was on environmental and social responsibility in public procurement. The Government will encourage the public sector to set an example as a responsible consumer and in creating a demand for environmentally-friendly goods and goods whose manufacture complies with high ethical and social standards. The Government has therefore drawn up a three-year action plan for environmental and social responsibility in public procurement, which includes the following main points:

- Preparation of an environmental policy for government procurement specifying goals and requirements for priority product groups. Work on environmental management systems will be continued in the state sector, and central government agencies whose activities have a substantial environmental impact will be encouraged to introduce an environmental management system with third-party certification. The Government will also take steps to improve statistics and reporting on the environmental impacts of public procurement.
- Seek to ensure that counties and municipalities give more weight to environmental and social responsibility in their procurement, for example through cooperation with the Norwegian Association of Local and Regional Authorities.
- Take steps to build up expertise and advisory services related to environmental and social responsibility in public procurement at both central and local government level.
- Propose measures to promote innovation of environmental technology, including making better use of Innovation Norway's grant scheme for research and development contracts between firms and public-sector customers.
- Review how much leeway there is under current national and international law on public procurement to specify ethical and social requirements. On the basis of the results, the Government will commission a review of which product groups should be given priority when setting ethical and social requirements for public procurement processes, and how criteria for ethical responsibility in public procurement can be formulated.
- Through the UN, the EU and the Nordic Council of Ministers, cooperate closely with other relevant countries on environmental and social responsibility in public procurement.

Sweden

In Sweden's planning document[11], each section and subsection begins with a general background, to put the proposals in context. It has attempted to keep these introductions as brief as possible; it was not possible, or its intention, to include all the relevant background information in this action plan. In some cases, other documents are referred to for the benefit of readers wanting a fuller picture. The emphasis is on describing the proposed actions themselves, generally with the help of a number of recurring subheadings (based on the terms of reference set by the Government):

Background and reasons for proposal: Here the background to and the thinking behind the action proposed are outlined. In many cases, links with specific problems and existing objectives are also highlighted.

Implementation: It is important to make it clear which body or group is expected to carry out the action proposed. Where several different bodies are expected to be involved, the intended division of responsibilities is also described (e.g. who does what in each phase, roles of national and regional authorities etc.). In some cases, a strategy for implementing the action is also presented.

Timetable: Indicates the date by which the action described should be carried out. Time-frames have been determined by the nature of the measures proposed. The action plan has been drawn up with a primary focus on the period 1996-98, but many of the proposals are defined in relation to a much longer time-scale (10 years or more) when this is considered important. In some of these cases, a timetable is given for the initial steps to be taken over the next three years.

Estimated cost: Cost estimates are included wherever possible, i.e. where the necessary data are available. Many of these estimates are very approximate, the costs involved depending on a number of factors which could change. Space has not permitted the inclusion of detailed cost estimates in the action plan. In certain cases, the Environmental Protection Agency is prepared to present estimates at a later date.

Funding: Funding proposals are presented for most of the actions. In some cases, new funding arrangements are recommended (broader-based or completely new funding); in others, it highlight the need to look into new or broader sources of funding.

Briefly, its aim has been to frame the proposals in such a way as to answer -- as far as possible -- the question: `Who does what and when, what is it likely to cost, and how will it be paid for?' In certain cases, e.g. local action, international cooperation, and research, it has not deemed it possible or appropriate to express our proposals in quite such concrete terms.

[11] Sweden (1996). Action Plan for Biological Diversity, Swedish Environmental Protection Agency, Stockholm 1996, 144 pp.

The document had a section on costs and funding.

When a loss of biological diversity does not entail a financial cost, there is a tendency not to take it into account, and a danger that components of biodiversity will be misused. It is therefore important to recognize that such losses are an environmental problem and that the costs involved should as far as possible be internalized in the activities which cause them. Existing economic systems have not managed to attach meaningful values to the potential benefits of genes, species and ecosystems for present or future generations.

Internalizing the costs associated with conserving biodiversity is often quite a different matter from internalizing costs in the area of pollution control, for example. In the case of industrial emissions or remediation of contaminated land, for instance, there are often more or less clear links with specific sectors and industries. Losses of biodiversity are commonly caused by the combined impact of a wide range of activities, often taking place in a variety of sectors. As a rule it is difficult to distinguish the respective roles -- and where relevant the financial responsibilities - of individual sectors or industries.

The principal costs involved in achieving a society which maintains biodiversity in the long term will arise in those sectors in which changes and adjustments to methods and practices are required. That is to say, in primary sectors (farming, forestry etc.), as well as in sectors such as transport, energy and manufacturing. In keeping with the principle of sectoral responsibility and integration, the majority of these costs should be borne by the sectors concerned. This is true, for example, of the cost of introducing environmentally more sensitive practices in the different primary sectors.

Within the scope of this action plan, it has not been possible to estimate the costs built into specific sectors in this way. They are part of the price that has to be paid for sustainable development. To a large extent, such costs are already being incurred as a result of rules requiring care of the environment in connection with various operations in farming, forestry etc. It has not been possible, either, to carry out a comprehensive analysis of how the action needed to maintain biodiversity should be paid for. Below, however, we discuss in general terms the fundamental principles that should apply and the funding options that may be available.

How should the necessary action be paid for?

A basic point of departure when it comes to financing the measures that are needed to maintain biodiversity is that -- as far as possible -- they should be paid for by whoever has caused the damage, in line with the polluter-pays principle (PPP).

This principle was first formulated by the OECD in 1972, as one of its `Guiding Principles Concerning the International Economic Aspects of Environmental Policies'. In 1975 the Council of the European Communities adopted a recommendation on PPP, based essentially on the OECD's Guiding Principles. When the Single European Act was adopted in 1993, it was confirmed in Article 130r of the Treaty of Rome that the principle that `the polluter should pay' was to apply within the Community.

Both the EU and the OECD, however, considered it reasonable to make exceptions from this principle in the following areas:

- protection of habitats,
- reclamation of land where it can no longer be established who caused it to be contaminated,
- expenditure that can be regarded as complementary to PPP, e.g. support for the development of public transport,
- initiatives at the international level to provide grants that may be justified by common interests and reasons of efficiency and solidarity.

In view of this, it seems reasonable not to transfer the polluter-pays principle directly to the area of biodiversity. A report entitled `Nature conservation and the primary sectors' (in Swedish; Ds 1991:87) also concludes that the principle that the polluter or the user should pay cannot be directly applied to types of environmental impact primarily associated with such uses of land or natural resources as may conflict with nature conservation interests, unless pollution of air, soil or water is involved.

A report from the Environmental Advisory Council, `Biological diversity in Sweden -- how do we discharge our responsibility?' (in Swedish; 1992:3), includes a discussion of sectoral responsibility, in particular the principles governing who should pay for nature conservation in primary sectors and how those principles should be applied in practice. Sectoral responsibility is essentially a matter of a sector's responsibility to do what it can to make its activities ecologically more sustainable, with a view to achieving the environmental objectives that have been set.

There are several advantages in seeking to place the financial burden collectively on the sectors considered to have caused a given loss of biodiversity. One is that it is then not as important in unclear cases to seek a judicial determination of liability in the specific case concerned. It is possible to place less emphasis on the polluter-pays principle, while not abandoning it as a fundamental principle, and to introduce a sort of `collective/vicarious PPP'. In addition, if individuals are not singled out as solely responsible for a loss of biodiversity, there may be a greater willingness on the part of the sectors concerned to pay for action on a joint basis.

Funding action in the agricultural and forest landscapes

There are various possible ways of paying for action to maintain biodiversity. It has not been possible in the process of preparing this action plan to elaborate and put forward detailed and comprehensive funding proposals. Below, we merely draw attention to a number of questions which should be considered as a basis for future proposals on finance. Our discussion centres on the types of detrimental impact that are chiefly associated with land use in the agricultural and forestry sectors.

Agricultural sector

Since 1994, Sweden's agriculture policy has formed an integral part of the Common Agricultural Policy (CAP) of the European Union. Any changes in this policy will therefore have to be pursued largely through the EU. To bring about a process of change, attention needs to be drawn to several issues. For one thing, a study should be made of how the EU's production-related agricultural support arrangements affect biodiversity, whether they result in a depletion of biodiversity and, if so, how they could be changed. Another question to be examined is to what extent EU agricultural support could be developed so as more actively to promote and finance practices better geared to biodiversity. In this context, Sweden should seek to ensure a gradual transfer of resources to the EU's conservation-oriented instruments.

Other issues that need to be highlighted are whether the revenue from different taxes/levies aimed at the farming sector (e.g. levies on chemical fertilizers) should be used to a greater extent than at present to pay for measures to maintain the biodiversity of the agricultural landscape.

Forestry sector

In forestry -- as in agriculture and other sectors -- nature conservation should primarily be promoted by ensuring that those working in the sector pay due attention to the natural environment on a day-to-day basis. In addition, however, the forestry sector should contribute to the funding of any further action needed to conserve biodiversity.

In this context, it is important for a policy decision to be made on priorities and aims in this area, a decision which must in turn take account of both the value of protection of biodiversity and the costs which it entails.

There are various ways of financing measures in support of biodiversity within the forest sector. The Government has announced that it intends to ask the Environmental Advisory Council to look into a possible nature conservation levy on forestry.

The ideas discussed above should be seen purely as suggestions regarding possible ways of paying for the conservation of biodiversity. It is important to make a closer study of this question, as a basis for recommendations on funding arrangements.

Estimated costs

As far as more general action under central government auspices is concerned, such as research, survey work and environmental monitoring, our basic approach here is that the costs should for the time being be met out of tax revenue. Some of the costs involved are expected to be able to be met from existing allocations, but in certain cases present funding levels will need to be increased. The preliminary estimates given below relate solely to the proposals included in the present action plan.

-	SEK m.
Inventory of lakes and watercourses	26
Extended programme of environmental monitoring	27 + 16/year (excl. CORINE Land Cover)
Extended programme of research etc.	30

Information and education	4
Other actions proposed (as in summary)	20
Total	107 + 16/year

The proposed expansion of environmental monitoring will require a certain increase in resources. The possibility of finding some of the necessary funding by reordering priorities should be considered. An extended programme of research on biodiversity can only be achieved if the funding agencies concerned generally give higher priority to biodiversity-related research than they have done up to now. MISTRA and the EU are also relevant here as possible sources of additional funding. The cost of implementing the Habitats Directive, including Sweden's contribution to Natura 2000, is not included in the figures presented above; it will only be possible to estimate it when further data are available.

United Kingdom of Great Britain and Northern Ireland

In its first planning document[12], United Kingdom presented a section on research expenditure. Research relating to biodiversity is carried out by a wide range of Government Departments, including DOE, MAFF, the Forestry Commission, the Scottish and Welsh Offices, Northern Ireland Departments and Overseas Development Administration, Research Councils (NERC, the Biotechnology and Biological Sciences Research Council, – which will succeed the Agricultural Research Council on 1 April 1994 – Economic and Social Research Council and others) the statutory conservation agencies, universities, museums, botanic gardens and the private sector.

In 1991, the House of Lords Select Committee on Science and Technology estimated that £16.5 million was allocated to research in systematic biology. But this is only one element of biodiversity research. As there is no single register of research projects relevant to biodiversity, it is difficult to give precise figures on expenditure. For example, research expenditure by the Department of the Environment on projects relating to biodiversity includes work carried out under the air quality, global atmosphere, environmental protection, water and countryside research programmes, as well as by the statutory conservation agencies and National Rivers Authority.

The Natural Environment Research Council has estimated research spending of £23.3m (in 1991-2) of direct relevance to marine, terrestrial, freshwater and polar biodiversity, although much of its other research will also have a more indirect bearing. The Ministry of Agriculture, Fisheries and Food spent £16.4m of its 1991–2 Research and Development budget in the rural environment, which includes research on the impact on wildlife of different agricultural practices. For example it is funding R & D at the ADAS Research centres, Redesdale in Northumberland and Pwllpeiron in Dyfed, into developing systems of hill pasture management for sheep that conserve and enhance the structure and dynamics of the native plant and invertebrate communities. In addition, MAFF also carries out detailed ecological monitoring of ESAs and other incentive schemes, which do not appear in the research budget. MAFF also organises a register of agri-environment R & D on behalf of the Priorities Board for research and development in agriculture and food. This sets out the expenditure of a number of public sector research funding bodies, much of which impinges on biodiversity.

The Forestry Commission spent an estimated £2.3m on environmental research in 1992–3 and has recently launched a multi-disciplinary project team to undertake research on biodiversity in forests. FC also produces, through the Forestry Research Coordination Committee, a collation of publicly funded research into forestry, much of which is relevant to biodiversity. Much research in the environment sector has multiple objectives and multiple uses – for example, Countryside Survey 1990 and climate change modelling work – often with a direct or indirect bearing on biodiversity.

[12] United Kingdom (1994). UK Biodiversity Action Plan, London, January 1994, 188 pp.

In order to achieve the overall objective of maintaining and, where possible, enhancing our biodiversity across its natural ranges, the UK government and its conservation agencies have determined that:

- Sustainability will be the guiding principle underlying their actions.
- Major conservation targets will be set for the year 2000 and later which will be used to focus their actions and priorities.
- Nature conservation objectives will be drawn up for manageable sections of the countryside, working with other organisations as necessary to achieve them.
- Help and advice is provided for partners of the conservation agencies so they take positive action for nature beyond the protection of statutory sites.
- Monitoring systems will be established which are integral to all the agencies work, and focus on the effectiveness of their actions in delivering their objectives.
- Initiatives will be integrated and focus on species. The approach should deliver appropriate positive management to maintain and enhance the interest of all special sites.
- Much greater involvement will be sought from the community at large.
- The agencies will improve their understanding of the social, economic and political factors driving the broad environment in which they operate, and will seek to influence them for the benefit of biodiversity.

The document had a chapter on UK support to biodiversity overseas, describing the Darwin Initiative and its Aid Programme. The primary role of the UK aid programme, which is administered by the Overseas Development Administration (ODA), is to promote sustainable economic and social development in order to reduce poverty and improve the quality of life of poor people.

Government's support to national efforts in sustainable use and conservation of biodiversity is part of our objective of assisting developing countries to tackle national environmental problems. However, biodiversity and its conservation has a significant implication for economic growth. This is particularly the case in those countries that are highly dependent on the exploitation of renewable natural resources. As the international community has recognised in drawing up the Convention on Biological Diversity, biodiversity conservation is also an issue of global environmental significance, support for which is part of our contribution to the protection and conservation of the global commons. Its loss has potentially serious consequences for the international community.

Through our external assistance programmes we are both assisting developing countries in the sustainable use and conservation of biodiversity as a natural resource, as well as assisting them with the additional, or incremental, costs of biodiversity conservation as a global asset.

Government's support to biodiversity conservation activities in developing countries is also closely linked to ODA's other programmes concerned with the exploitation and conservation of renewable natural resources. The most significant of these programmes is in forestry, but it is also supporting work in marine ecology and coastal conservation, including research into the conservation of threatened coral reefs.

Tropical moist forests contain more species diversity than any other habitat. The benefits of sustainable forest management include the conservation of forest resources which provide food and medicines, and also include the preservation of major reserves of carbon. Our objective is to assist developing countries to maximise the sustainable exploitation of the social and economic benefits of forests, while conserving them as major factors in the conservation of global biodiversity and as factors in climate change. In November 1989, the then Prime Minister, committed a further £l00 million over three years to bilateral aid to forestry projects. This target was reached during the third quarter of 1992. Government has committed almost a further £1l0 million to 206 projects. Annual spending on bilateral forestry activities has increased from £7.4 million in 1988/89 to an estimated £28 million in 1992/93.We are also supporting multi-lateral forestry programmes, such as the Tropical Forest Action Programme, the International Tropical Timber Agreement and international forestry institutions.

In recognition of the growing sense of the importance of biodiversity resources and their conservation, the Prime Minister at the UNCED Conference in June 1992 identified biodiversity as one of five key areas of Agenda 21 on which the UK would concentrate activities and resources under the aid programme.

The UK's policies and programme of support for biodiversity conservation in developing countries were summarised in Biological Diversity and Developing Countries: Issues and Options published by ODA in June 1991.

As of July 1993 there were 78 projects either wholly or partly concerned with biodiversity and funded by Government, at a total cost to the aid programme of £37 million. Of these 6 1% were for Africa. 19.5% for Asia and 19.5% for Central/South America and the Caribbean. ODA has recently improved its project information system to enable better compilation of data on components of Government funded activities, including biodiversity.

ODA BIODIVERSITY STRATEGY

The main factor now influencing the policies and programmes of all countries in biodiversity conservation is, of course, the Convention. In recognition of its significance both at the national and global levels ODA have revised their biodiversity programme and strategy to reflect its provisions. The strategy encompasses both bilateral and multi-lateral aid, and takes into account bilateral country objectives and other natural resource strategies in existence or under development, particularly ODA's Forests Strategy.

Government support to this programme of activities will be directed through participation in the Global Environment Facility (GEF), and through continued efforts to influence its policies, programmes and the

quality of its investments, as well as through targeted activity within the bilateral aid programme. Within targeted countries, and subject to agreement with the governments concerned in the context of agreeing overall country programmes, we shall aim for integrated programmes of support to biodiversity conservation including, support for capacity building and policy development, preparation of biodiversity inventories, drafting of legislation, support for conservation projects, training and education programmes, support for projects and programmes involving cooperation between national NGOs and communities and UK-based NGOs and joint ventures involving UK research institutions and companies.

Activities within the programme will be closely monitored and reviewed at regular intervals. Progress with the elements of the strategy will form part of the UK's report to the 1995 session of the Commission for Sustainable Development, which will review the actions taken by governments to implement the provisions of Agenda 21 in relation to biodiversity and its conservation.

The priority objectives of the aid programme are:

- to promote economic reform and longer term economic growth;
- to enhance productive capacity;
- to promote good government;
- to help developing countries define and implement poverty reduction strategies;
- to promote human development, including better education and health, and family planning to allow choice in having children;
- to promote the social, economic, legal and political status of women in developing countries;
- to help developing countries tackle national environmental problems.

Biological diversity and developing countries: issues and options. Actions taken within the programme include:

- the revision of ODA's Manual of Environmental Appraisal to give improved guidance for ODA project managers in addressing biodiversity issues in project development and project management;
- the establishment of an environmental research programme within which over £500,000 worth of biodiversity research activities are under consideration;
- expanded support to NGO activity in biodiversity conservation through the ODA's joint funding scheme. About £1.5 million is committed to such activities in 1993/94;
- increased provision of training for developing country nationals in environmental issues, including biodiversity;

- support for the drawing up of the Convention on Biological Diversity;
- support to and liaison with international agencies on biodiversity issues;
- funding of the Global Biodiversity Status Report published by the World Conservation Monitoring Centre in June 1992,and of a study of costs and benefits of biodiversity conservation in Kenya in the context of work led by the UN Environment Programme on assessing the costs of specific actions to conserve biological diversity in developing countries.

Programme objectives within ODA's biodiversity strategy include:

- continued support to the Global Environment Facility (GEF) as the interim funding mechanism of the Convention with the objective of establishing it as the permanent funding mechanism. The UK has committed £40.3 million to the Pilot Phase of the GEF (1991/1993) from our programme for global environmental assistance. Provision of the new and additional funds required by the Convention will be met through our contribution to the first replenishment of the GEF;
- assistance with work to clarify the concept of incremental costs of biodiversity conservation contained in the Convention and working for prioritisation and high quality in GEF investments in biodiversity projects and programmes;
- promoting the preparation of national strategies, plans and programmes of biodiversity conservation in accordance with the Convention using GEF funds and, in selected countries, bilateral aid funding, with a view to promoting GEF investments in accordance with those national strategies and programmes so developed;
- the commissioning of further studies and research by UK institutions into biodiversity issues such as biodiversity accounting, measures to conserve habitats under immediate threat, sustainability assessments and the economic factors involved in biodiversity exploitation at the local and national levels;
- commissioning of research related to the Convention and directed specifically in support of the programmes of the Consultative Group for International Agricultural Research (CGIAR) and the International Board for Plant Genetic Resources (IBPGR);
- promoting integrated biodiversity programmes of projects, training, education and research in targeted countries;
- reviewing and further developing support to NGO activities in the context of the Convention.

United Kingdom's second planning document[13] did not address funding issues.

[13] United Kingdom (2007). Conserving Biodiversity – the UK approach, Department for Environment, Food and Rural Affairs, October 2007, 19 pp.

In its third planning document[14], United Kingdom considered financial allocations to several actions, for instance, providing £7.5 million in the period 2011 to 2015 to support the creation of Nature Improvement Areas in twelve initial areas; investing almost £5 million over the next three years in England to directly support national and local organisations, and groups that co-ordinate volunteer recording and to contribute to the work of the National Biodiversity Network; investing a further £1.2 million to support data sharing, creating a new fund for biodiversity recording in the voluntary sector and, in partnership with volunteer groups, develop new and innovative approaches to biodiversity recording.

Priority action (2.3) was to develop new and innovative financing mechanisms to direct more funding towards the achievement of biodiversity outcomes. We need to consider how we might develop new and innovative financing mechanisms. One way of achieving this is through voluntary schemes where payments, called 'payments for ecosystem services', are made to compensate for actions undertaken to deliver enhancements in nature's services. The Natural Environment White Paper sets out Government's role in enabling and facilitating these voluntary schemes to harness their potential for protecting and enhancing nature's services and commits to action including:

- Publishing an action plan in 2012 to expand schemes in which the provider of nature's services is paid by the beneficiaries, after undertaking a full assessment of the challenges and barriers.
- Introducing a new research fund targeted at these schemes and publishing a best practice guide for designing them. Pilots will also be encouraged to develop across a broad spectrum of nature's services and beneficiaries.
- More broadly, the setting up of a business-led Ecosystem Markets Taskforce to review the opportunities for UK business from expanding green goods, services, products, investment vehicles and markets which value and protect nature's services. It will report back to Government in 2012-13.
- We will continue to work with partners to help the biodiversity sector make the most of existing sources of funding, which will continue to be highly important to support the strategy's priorities.

Priority action (3.5) was to establish a new, voluntary approach to biodiversity offsets and test our approach in pilot areas. We will support biodiversity offsetting pilots through a two-year test phase, until spring 2014. Natural England will work with pilot areas, providing advice, support and quality assurance. The aim is to develop a body of information and evidence, so that the Government can decide whether to support greater use of biodiversity offsetting in England, and, if so, how to use it most effectively.

[14] United Kingdom (2011). Biodiversity 2020: A strategy for England's wildlife and ecosystem services, Department for Environment, Food and Rural Affairs, 45 pp.