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POLICY ASPECTS OF BRYOPHYTE CONSERVATION IN THE EUROPEAN UNION

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SUMMARY — Successful conservation programmes or actions depend on the correct assessment of scientific data, the knowledge and appropriate use of legal and financial instruments and 'public support' in terms of socio-economic partners and the public at large. The European Union, although still primarily an economic organisation, paid since 1973 (First Environmental Action Programme) and more in particular since the Maastricht Treaty (1992) more attention to environmental issues.

KEYWORDS — Plant conservation, legislation, financial instruments, agriculture, European Union, policy

ZUSAMMENFASSUNG — Politische Aspekte des Moosschutzes in der Europäischen Union

Erfolgreiche Schutzprogramme oder -vorkehrungen hängen ab von der richtigen Beurteilung wissenschaftlicher Daten, von der Kenntnis und dem geeigneten Gebrauch gesetzlicher und finanzieller Instrumente und von der öffentlichen Unterstützung durch die sozio-ökonomischen Partner und die Allgemeinheit. Die Europäische Union, obwohl immer noch hauptsächlich eine Wirtschaftsorganisation, schenkt seit 1973 (erstes Umwelt-Aktionsprogramm) und ganz besonders seit dem Maastrichter Abkommen (1992) Umweltfragen mehr Aufmerksamkeit.

Introduction: the 'conservation triangle'

During the past few days of this conference, conservation needs and actions for bryophytes in Europe have been discussed. Faced with significant environmental problems resulting in the decline of several bryophyte species and important bryophyte ecosystems, the participants indicated how scientific data on endangered bryophytes and their habitats have been gathered and how on a local or regional scale conservation actions have taken place.

This second conference on bryophyte conservation in Europe, after an earlier one held in Uppsala in 1990, included the subject 'Realisation of conservation programmes'. For a number of participants this may have been the first encounter with legal, psychological and policy issues of conservation.

Being professionally involved in nature conservation policies in the European Union and with the Bern Convention, I can testify that administrations and politicians, concerned with nature conservation at the national and international level, are extremely dependent upon sound information from the scientific community and on the collaboration and experience of people in the field who are to implement the conservation programmes (the actors). Together, these three units of what I call the '**conservation triangle**' should with due respect be considered the policy makers.

Each of these partners (scientists, administrators/politicians, and actors) are equally important to develop and implement conservation programmes for bryophytes.

In order to develop a conservation policy, we can rely on three types of instruments: legal instruments (Pilch-Giering & Giering 1995), administrative instruments and financial instruments.

The aim of this presentation is to review the way in which EU institutions can be used for bryophyte conservation, or how the mechanisms or procedures set up within its entities can be "put to work" for bryophyte conservation. It is a demonstration of how a multinational organisation can promote nature conservation, but also of the existing mechanisms that counteract conservation initiatives. In particular, this paper will focus on the administrative and financial policy instruments in the European Union, and how they may be of use in central and eastern

European countries. This paper will thus not be a review of the existing legislation in the different countries in Europe.

I should point out that, for a number of reasons, the existing instruments are not always appropriate for bryophyte conservation: (1) the conservation needs of bryophytes are poorly known or rarely taken into account; (2) bryophytes differ from vascular plants in their ecological and physiological characteristics and in their response to disturbance (they are particularly vulnerable to air pollution and, potentially, climate change) and (3) bryophytes are mainly dependent on micro-habitat conditions. Consequently, the particular biology of bryophytes does force us to look critically at these instruments, which are all too often designed for 'high-profile species' such as mammals and orchids.

The administrative instruments of the European Union

The main institutions of the European Union constitute (a) the directly elected European Parliament which approves the Union's budget and has, since the Maastricht Treaty, more influence in the decision-making process; (b) the Council of Ministers, composed of one representative (minister) of each of the Governments of the Member States, which formally adopts new legislation; (c) the European Commission which has the sole power to propose legislation, it also enables the implementation of the legislation and enforces it; (d) the Court of Justice which ensures that the Union's law and Treaties are respected.

Each of these institutions has played a crucial role in nature conservation within the European Union. The following examples can demonstrate how each of these institutions served nature-conservation's cause:

- The European Parliament decided in its meeting of 24 November 1993 to raise the budget of LIFE, the financial instrument for the environment, to 95.500.000 ECU and to earmark 50% of this budget for the protection of natural habitats.
- The Council of Ministers approved in its meeting of 21 May 1992 the Council Directive on the Conservation of Natural Habitats and of Wild Fauna and Flora, the so-called 'Habitats Directive', thereby providing us with a very important piece of legislation for nature (and bryophyte) conservation.
- The European Commission is the initiator of most legislation and financial support for nature conservation and is responsible for the daily management of these instruments. It organises the meetings of the Habitats Committee and of the scientific working groups concerning its conservation policy.
- The Court of Justice decided on the 2nd of August 1993 to condemn Spain for not having classified the region 'Marismas de Santoña' as Special Protection Area (SPA) under the Birds Directive, thereby implying that Member States should classify all Important Bird Areas (IBA, Grimmet & Jones 1989) as SPAs. The IBA is a list of important bird areas drawn up on request of the EC by the International Council for Bird Preservation (ICBP) and the International Wetland and Waterfowl Research Bureau (IWRB). This has been a very important decision, potentially also for the conservation of several important bryophyte sites covered by the IBA list.

The European Commission has organised itself into 23 Directorate-Generals, the legal service and the Secretariat-General. The activities of some of these Directorate-Generals (or 'DG's' as they are commonly called) affect directly the natural environment, the rural areas or regional policies. DG XI is responsible for the environment, including nature protection, nuclear safety and civil protection. DG VI 'Agriculture', as the largest DG, implements, monitors and enforces the Common Agricultural Policy, which has important effects on the rural communities and on the environment. For example, the nitrate pollution from intensive farming activities directly affects bryophytes both inside and outside of protected areas. DG XII, in charge of the Union's Science and Technology policy, has developed important research programmes in its 4th Framework Programme. For example, it is involved in the training of bryologists in

collaboration with the Finnish Government. Finally, DG XVI takes daily care of the Union's Regional Policy by means of the Structural Funds (see below).

Legal instruments of the European Union

Environmental policy of the European Union

Since 1973, when environmental policy became one of the competencies of the European Union, the Council of Ministers approved over 200 pieces of environmental legislation (recommendations, regulations, directives and decisions) which were proposed by the European Commission. These legislative activities have been developed and proposed within the framework of Environmental Action Programmes (EAP). The ongoing EAP (1992-1996) is the fifth in the row and focuses on 'Sustainable Development' and on the integration of the environmental policies in five economic target sectors: agriculture, industry, transport, energy, and tourism.

Most of the environmental legislation concerns the quality of air, water and soil, or waste and nuclear energy problems. A number of them concern specifically nature conservation or are closely linked with the use of natural areas such as the Council Directive 85/337/EEC on Environmental Impact Assessments or the Council Regulation 3418/83 concerning Trade in Endangered Species (CITES).

Birds Directive

Council Directive 79/409/EEC on the Conservation of Wild Birds acknowledged the dramatic decline in populations of wild birds across Europe, emphasised the need for international action and set out a number of provisions for their conservation, management and control. Recognising that the loss of habitat was an increasingly acute problem, the Birds Directive requested Member States to preserve, maintain or re-establish a sufficient diversity and area of habitats for all native birds in the Union. Currently, Annex I of the Birds Directive includes 175 species and subspecies of birds for which Special Protection Areas have to be designated. Some of these SPA's are also important habitat types for bryophytes such as the Irish blanket bogs, which happen to be breeding sites for the Greenland whitefronted goose *(Anser albifrons flavirostris)*. In view of the above mentioned Court of Justice decision, it might be interesting to compare the IBA list with the Bryophyte Site Register for Europe in ECCB (in press).

Habitats Directive

Council Directive 92/43/EEC on the Conservation of Natural Habitats and of Wild Fauna and Flora, also called the Habitats Directive, was adopted in 1992. It is one of the most extensive and wide-ranging pieces of Community legislation on nature conservation to date. Together with the Birds Directive, it plays an important role, in the first place, in the maintenance of biodiversity in the European Union. Additionally, if used effectively, it can help to promote sustainable and integrated land use. As such, it attempts to move away from the concept of creating small islands of strictly protected areas for high-profile species. The Habitats Directive strives towards a widespread system of protection where human and environmental interactions are in balance. This objective must be achieved by the creation of a coherent European ecological network of Special Areas of Conservation – called NATURA 2000 – to maintain or restore species and habitats of Community interest to a favourable conservation status.

The timetable for the implementation of the Habitats Directive and for the establishment of the NATURA 2000 network is presented in Fig. 1. In addition to the Special Protection Areas which are already – and will continue to be – classified under the Birds Directive, the NATURA 2000 network will be composed of sites harbouring habitat types listed in Annex I (about 200 in total) and species listed in Annex II (more than 600) of the Habitats Directive. Several of the habitat types mentioned in Annex I are important bryophyte habitats, e.g., blanket and raised bogs, heathlands, scree vegetation, and some forest types. Annex II lists a number of bryophytes, mentioned in Tab. 1.

Mosses

Bruchia vogesiaca Schwaegr.
* *Bryoerythrophyllum machadoanum* (Sergio) M. Hill
Buxbaumia viridis (DC.) Moug. & Nestl.
Dichelyma capillaceum (Hedw.) Myr.
Dicranum viride (Sull. & Lesq.) Lindb.
Distichophyllum carinatum Dix. & Nicholson
Drepanocladus vernicosus (Mitt.) Warnst.
* *Echinodium spinosum* (Mitt.) Jur.
Meesia longiseta Hedw.
Orthotrichum rogeri Brid.
Sphagnum pylaisii Brid.
Tayloria rudolphiana (Garov.) B., S. & G.
* *Thamnobryum fernandesii* Sergio

Liverworts and Hornworts

Jungermannia handelii (Schiffn.) Amak.
Mannia triandra (Scop.) Grolle
* *Marsupella profunda* Lindb.
Notothylas orbicularis (Schwein.) Sull.
Petalophyllum ralfsii (Wils.) Nees & Gott.
Riccia breidleri Steph.
Riella helicophylla (Bory & Mont.) Mont.
Scapania massalongi (K. Müll.) K. Müll.

TABLE 1. Bryophytes listed in Annex II of the Habitats Directive of the European Union. Priority species are asterixed.

For habitat types listed in Annex I as well as for species listed in Annex II, Special Areas of Conservation have to be designated. Sites with priority species (asterixed in Tab. 1), should receive stricter and earlier protection. Priority species are defined as those species for which the European Union has a particular responsibility in view of their natural range which falls within the Union's territory. Within the LIFE Regulation financial support is restricted to sites harbouring priority species, as I will indicate below. Therefore, the definition has somewhat been 'stretched' to allow more financial support for species conservation. Member States must establish the necessary conservation measures, such as management plans to maintain, re-establish or restore the areas conservation values. In addition, Member States are encouraged to structure their land-use policies in such a way as to create links between the Special Areas of Conservation. This could be done, for example, through such linear

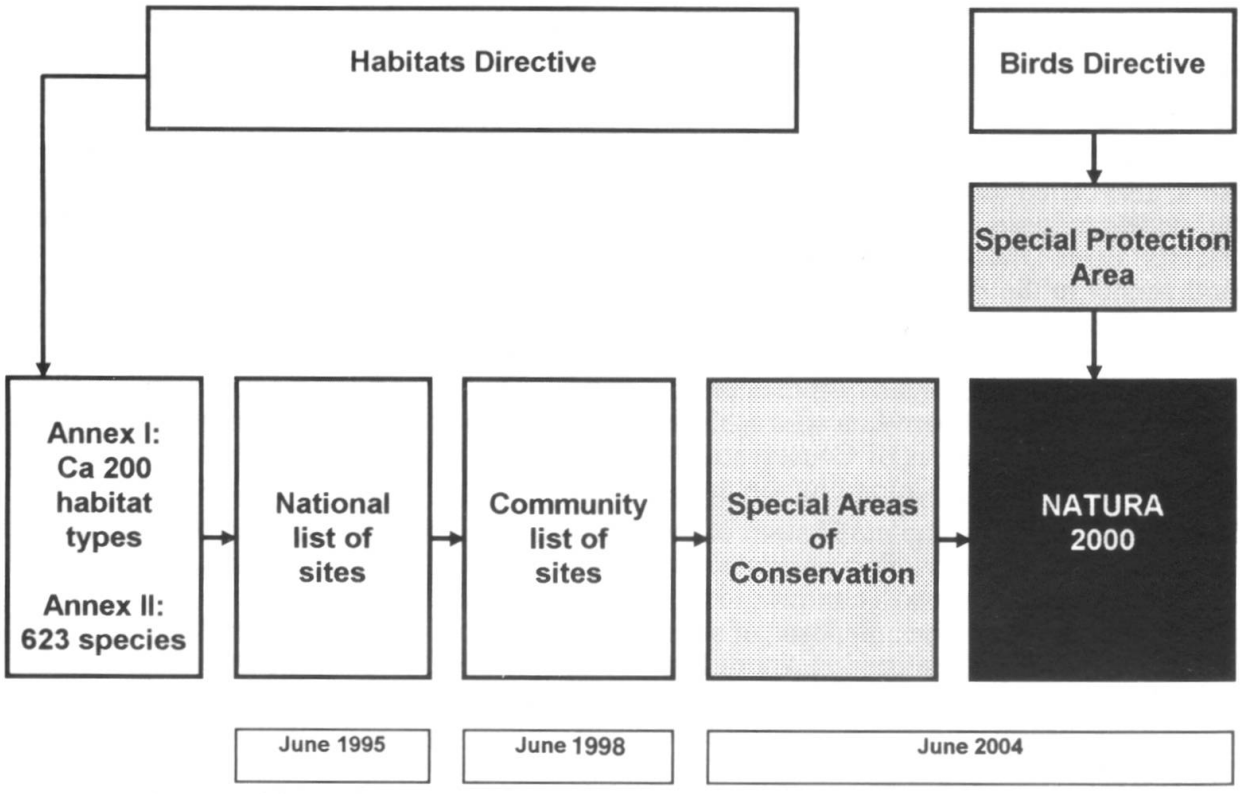

FIGURE 1. The timetable for the establishment of the NATURA 2000 network of the European Union.

landscape features as hedges, river banks, woods or small ponds which can serve as migratory stages or places of refuge for wild species.

Bryologists who would like to get involved in the implementation of the Habitats Directive should have a close look at habitat types and species included in Annex I or Annex II, respectively, present in their country and contact their national or regional authorities to include important bryophyte sites in the NATURA 2000 network of protected sites. A first list of these sites must be transmitted by the Member States to the European Commission by June 1995. However, several Member States are still working on their lists so that the competent authorities can still be contacted after this deadline.

The financial instruments

LIFE Regulation

The cost of the implementation of the Habitats Directive is very significant. A conservative estimate would be over 500 million ECU a year. In particular the southern Member States insisted on financial support from the Commission to implement their provisions adequately. This financial imperatives have clearly been recognised, not only in the text of the Habitats Directive itself, but also through the creation of the LIFE-Regulation (CEC 1992). This regulation brought together a number of budget lines from the Commission to initiate or promote nature conservation activities, in particular to protect high-profile species such as the monk seal or the brown bear, and budget lines for the protection of the North Sea or the Mediterranean Sea.

Nature conservation was given an indicative percentage of 45% of the total budget in the Regulation which was destined not only for the maintenance and re-establishment of biotopes for priority birds under the Birds Directive, but also for other priority species and habitats of major Community importance under the Habitats Directive. The priorities and resource allocation for each year are approved by the LIFE-Committee, which is made up of Member State representatives. During the first three years, the LIFE-Management Committee has allocated only 30% to actions under these two Directives. For 1994, exceptionally 45% of the 98 million ECU was reserved for projects regarding nature conservation. It is worth mentioning that the priority actions for LIFE for 1995 have been published recently (CEC 1994a). So far, the LIFE-budget has been too small to co-finance all proposed projects. Consequently, there is a considerable competition for EU-support. The whole LIFE instrument is very ambitious and is endowed with too little resources.

Thus far, LIFE-projects have not been used for the conservation of endangered bryophytes. However, several large projects have been financed for ecosystems with important bryophyte habitats, thus protecting bryophytes significantly (projects to conserve blanket or raised bogs, Caledonian Pine forests, Laurel forest in Gran Canaria and heathlands in Denmark, etc.).

Need for an integrated approach

Nature conservation has benefited from the above mentioned instruments, which are the spearheads of the Union's nature conservation policy. However, these instruments cannot operate in isolation and do not work in a number of cases which are essential for plant conservation, including bryophytes, in Europe. For example, the LIFE-Regulation and Habitats Directive concern primarily protected, or to be protected areas. Thus support for bryophytes outside protected areas (epiphytes on trees, bryophytes associated with arable land, etc.) is not a priority and these areas receive too little attention. Secondly, most of the existing EU-legislation on water, soil and, in particular, regarding air pollution, are not far enough reaching to reduce the pollution levels which presently affect sensitive plants. Thirdly, the existing instruments are not applicable in countries outside the Union, which is a major disadvantage for eastern and central European countries. The first programme of the European Union concerning the environment of central and eastern European countries was PHARE (CEC 1989), which initially concerned only Poland and Hungary, but which was later extended with two regulations to include the other central and eastern European countries. One of the support programmes of

PHARE (OUVERTURE) and a new programme, TACIS, for the Commonwealth of Independent States, provide in the first place technical assistance for institutional building of administrations responsible for environment and further down the line assistance for the improvement of the environment (CEC 1989 and 1991). As a result, the emphasis lies on improving the quality of air, water and soil. So far, the competent authorities of these countries have not given appropriate attention to nature conservation aspects of the environment, and 'sustainable development' has been taken into consideration only recently. At best, air quality will improve but not to a level to sustain sensitive bryophyte communities in the near future.

Looking back at the financial instrument for environment (LIFE) and the number of proposals from Member States and non-governmental organisations for financial support, one can only conclude that the budget earmarked for nature conservation is far too low. Considering the limited budget, we are forced to redefine the nature conservation strategy. In addition to working within the priority actions of the LIFE-Regulation and to projects connected to the NATURA 2000 network, more attention should be devoted to the use of other financial means for nature (and bryophyte) conservation, in particular the means set aside by the Regional Policy and Common Agricultural Policy affecting land-use in the Union. The overview of the Budget of the European Union for 1994 (Tab. 2) demonstrates where the taxpayer's money is being spent. Most of the budget is used to finance the Common Agriculture Policy (in particular by means of the Guarantee Fund to control prices of agricultural products) and the Regional Policy by means of the Structural Funds (see below). The importance of using budgets other than the environment one has been recognised by the 5th European Environmental Action Programme (1992-1996). This programme stresses the need to integrate the EU Environmental Policy into the other policy sectors (agriculture, industry, tourism, transport, and energy), and also to allow the possibility of these to contribute to initiatives that will actively benefit the environment. Therefore, new regulations and procedures are being developed in order to take the environment into consideration when developing or implementing other sectorial policies. For example, this may lead to better forestry management (agricultural policy), conservation of ravines which are threatened by dam building for hydro-electricity (energy policy).

The information from and collaboration with experts (bryologists and non-governmental organisations) can be instrumental to take into account the EU's environmental legislation

Title		**Million ECU**	**%**
Common Agricultural Policy		36 465	49.60
Structural Operation			
	Structural Funds	21 323	29.02
	Cohesion Fund	1 853	2.52
Internal Policies			
	Research and Technological Development	2 622	3.56
	Trans-European network	289	0.39
	Education, Training, Youth	287	0.39
	Internal Marker	170	0.24
	Environment	133	0.18
	Other	847	1.15
External Actions			
	Aide programmes and EU representatives	4 311	5.86
Administrative expenditure		3 634	4.94
Reserves		1 530	2.08
TOTAL		**73 486**	**100.00**

TABLE 2. Budget of the European Union for 1994.

into plans and programmes developed for other sectorial policies. For instance, it may happen that the Commission finances, by means of its Structural Funds, the planning or construction of a motorway affecting an important habitat for bryophytes, in particular a protected or to be protected site under the Habitats or Birds Directive (the motorway does not have to be planned through the site, it can affect the site from a distance too). In such a case, any person can put forward a complaint to DG XI, indicating that the Member State is not fulfilling its obligations under the Habitats Directive or Directive on Environmental Impact Assessments and can ask for compensatory measures. This may lead to a long and complicated procedure, but such actions from the public have been successful.

It is evident that the LIFE-Regulation, Birds Directive and Habitats Directive cannot operate effectively with a budget of 133 million ECU (about 0.18% of the European Union budget). The available environmental funds are far too limited to safeguard Europe's natural heritage.

Agricultural Policy: the new agri-environmental regulation

One of the most important new developments for integrating the Environmental Policy into other sectorial policies is undoubtedly the Council Regulation No 2078/92 on agricultural production. This regulation enables production methods compatible with the requirements of the environment and provides an aid scheme to farmers with the purpose to:

a) reduce substantially their use of fertilisers and/or plant protection products, or to keep to the reductions already made, or to introduce or continue with organic farming methods;

b) change, by means other than those referred to in (a), to more extensive forms of crop, including forage production, or to maintain extensive production methods introduced in the past, or to convert arable land into extensive grassland;

c) reduce the proportion of sheep and cattle per forage area;

d) use other farming practices compatible with the requirements of protection of the environment and natural resources, as well as maintenance of the countryside and the landscape, or to rear animals of local breeds in danger of extinction;

e) set aside farmland for at least 20 years with a view to its use for purposes for environment conservation, in particular for the establishment of biotope reserves or natural parks for the protection of hydrological systems.

The potential contribution of this regulation to nature conservation could be significant. In Spain, a five-year programme costing 216 million ECU (LIFE-budget for the nature conservation actions of 1992 was only 23 million ECU) has already been approved for 'Castilla y León' to subsidise farmers to maintain or reintroduce environmentally friendly farming methods that will restore the habitats of at least five bird species threatened with extinction (e.g., Great Bustard *Otis tarda*, Ashen Buzzard *Circus pygargus*, Little Bustard *Tetrax tetrax*, Lesser Kestrel *Falco naumanni*). In this case, birds have been the focus of this agri-environmental action, but the same instrument can be used to improve the ambient air quality or to improve the hydrological situations of wetlands, thus promoting plant, including bryophyte, conservation.

Regional Policy (Structural Fund) and Cohesion Fund

Tab. 2 gives evidence that the Structural Funds encompass a large part of the EU-budget. Structural Funds can be viewed as an assemblage of financial support instruments to implement the EU-policy in a structural manner. Principles of these Structural Funds aim to collaboration between European Commission and socio-economic partners in the different regions; additionality of the Structural Funds with national or regional aide programmes; and a programmation in the use of the Structural Funds. One of the objectives of the Structural Funds ('the 5th objective') is crucial for nature conservation since it concerns (a) the acceleration to adapt agricultural structures and areas, and (b) the development of rural areas. A number of actions financed by the Structural Funds, for example land re-allotment, irrigation, or drainage schemes, have too often been implemented without environmental consideration. As a result, several non-governmental organisations, e.g., WWF, have criticised these funds for neglecting the envi-

ronmental consequences. The new Structural Fund Regulation (CEC 1993) defines criteria and procedures to take environmental parameters into account and will, hopefully, remediate this situation. From now on, Member States or regional authorities have to inform the Commission of the potential negative environmental effect of activities financed through the Structural Funds. The 'environmental profiles' which will be developed as a mean to inform the Commission should be done in close collaboration with the competent authorities for nature conservation and if possible with non-governmental organisations (collaboration between partners of the 'conservation triangle').

Together with the adoption of the Maastricht Treaty, the European Union created the Cohesion Fund (CEC 1994b) to strengthen the cohesion between the Member States or in practical terms, to support the poorer countries such as Ireland, Portugal, Spain, and Greece. The aim of this budget is to contribute financially to projects in the environmental field and the trans-European networks in the area of transport infrastructure. The budget runs in the billions of ECUs (1993: 1.565 million ECU, 1994: 1.853 million ECU, preliminary budget for 1995: 2.152 million ECU). In principle, this budget can be used for nature conservation infrastructure works. However, only few projects relevant to nature have been proposed by the four Member States to date (e.g., one mire project for the Clara and Raheenmere Bogs in Ireland). Again as mentioned above, it is of the utmost importance that the competent authorities dealing with nature conservation and non-governmental organisations influence the national authorities responsible for the Cohesion Fund to give more attention to nature conservation programmes to strengthen the cohesion also in this regard!

Conclusion

Concluding from the present situation within the EU outlined above, two approaches seem to be the most promising for a more effective conservation of nature and natural resources: (1) appropriate LIFE-funds for the protection of species and habitats already under imminent threat; and (2) a long-term conversion towards more environmentally-friendly agricultural practices and the consideration of environmental parameters in the application of Structural and Cohesion Funds. This integrated approach may help to ensure a more widespread change in the way our natural heritage is treated. Each has its particular role to play but neither can function effectively without the other.

In the near future, the effect of the Union's Regional Policy will become even more important. In view of the new regulations of the Structural Fund, 'environmental profiles' will be developed to include appropriate environmental criteria in the management of non-protected areas. Also, in view of the Council of Europe's 1995 Year of Nature Conservation outside protected areas, botanist should become involved to improve the protection of plants, including bryophytes.

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