CONCLUSIONS AND AREAS OF POSSIBLE POLICY APPLICATIONS

CONCLUSIONS

The conclusions that can be drawn following the first phase of the ESDP Programme of Studies, at least from the standpoint of "Natural Assets" indicators, should be limited to expounding some reflections on the construction of a system of indicators. The state of the work underway does not allow for a reliable diagnosis and therefore, to determine spatial conclusions and territorial implications would be extremely risky without a solid base upon which to base them. Therefore, some final reflections regarding the work and the proposal put forth are included under this heading:

ENVIRONMENTAL FOCUS

Having carried out a detailed analysis of the various ESDP official documents, it has been observed that the objectives and the focus pursued greatly exceed the concept of natural assets that was originally intended to be used in Topic 1 of the Study Programme. These official documents (Noordwijk and Potsdam) adopt an environmental vision of the European territory.

The most important environmental studies that exist with regard to the European territory (among which the "Dobris Assessment, on the environment in Europe" and "Europe's Environment: The Second Assessment" can be highlighted) confirmed the need to adopt this point of view. By limiting the

scope of study to strictly include natural assets, numerous aspects, which are of vital importance to spatial differentiation, are ignored.

Therefore, the first conclusion arrived at is to overcome the natural assets focus and to adopt an environmental vision.

CONCEPTUAL FRAMEWORK

Once the decision to use an environmental focus was made, the main proposals of existing systems of environmental indicators were gathered together. From among them, and for various reasons, we can highlight those elaborated by the following organisations: European Environment Agency, U.S. Environment Protection Agency, United Nations Department for Policy Co-ordination and Sustainable Development, or those elaborated by the OECD. Although with some variations, a coincidence can be observed in the conceptual framework (Pressure / State / Response). For those reasons, and in order to maintain a certain methodological consistency, it was decided that this structure be adopted. Despite more complex ways of focussing on this issue (Driving Force / Pressure / State / Impact / Response), we consider that this structure, due to its simplicity, can perfectly satisfy the needs of this project.

PRIMARY INDICATORS

Taking documentary sources and the systems of indicators consulted as a starting point, a long list of indicators, which we term primary indicators, in which all the indicators of use for carrying out an environmental characterisation of Europe were compiled. Said list is organised by subject (atmospheric, inland waters, coastal and marine environments...). In this way it hopes to maintain a certain scientific scrupulousness and to effect an initial spatial approach taking into account all the territorial characteristics.

At this point a direct relationship between the ESDP environmental indicators and the future European system of environmental indicators must be established. We believe that the list of primary indicators might be made up of said European system of environmental indicators on which the EEA is already working. For this it would be necessary to achieve compatibility, at least for certain indicators, above all in areas such as resolution or scale that made it possible to undertake the territorial analysis. Adopting this outline would at the same time allow for an improvement in the definition and quality of spatial indicators.

SYNTHETIC INDICATORS

The list of primary indicators is very long and exceeds the needs and objectives of the ESDP. For this reason the task of elaborating a proposal that could be viable and appropriate for the project was undertaken. The objective

was to create a short list of aggregate or synthetic indicators, attempting to conserve the main approach initially established.

To do so, in addition to the consideration made for the indicators in the ESDP official documents as a whole, the following conditions were taken into account:

- They should be spatial indicators, with territorial implications and serve as spatial differentiation criteria. It is not a question of making an environmental diagnosis of Europe, and therefore it is not a typical system of environmental indicators. In practice, it becomes a predominance of the territorial characteristics of the information (in this way, for example and from this perspective, the sources of polluting gases is of greater interest than air quality).
- The need to combine the indicators in this area with other spatial differentiation criteria must be remembered. In practice, this means adjusting to spatial units, which are different from those of the natural processes, which can bring about problems. The danger of detracting from the results, since some of the processes are very localised spatially, whereas others cross regional and national borders and has effects in far-off territories.
- The need to specify a limited number of indicators to make the system as such viable. This meant selecting issues and giving up some problems or natural characteristics of great relevance for a system of environmental indicators.
- The data sources must have European coverage. The use of national data sources or sources of some other territorial area is therefore ruled out.

After several revisions, the list of indicators proposed is made up of 12 synthetic indicators that we believe can cover the ESDP needs. These 12 indicators are:

	Indicator	Type
S1	Pressures on the environment	Pressure
S2	Emissions of polluting gases	Pressure
S3	Water quality	State
S4	Water resources	State
S5	Coastal value	State
S6	Ecosystem diversity	State
S7	Biodiversity	State
S8	Value according to directive 92/43/CEE	State
S9	Potential productivity	State
S10	Natural hazards	State
S11	Threats on natural resources	State
S12	Designated or protected areas	Response

We have managed to carry out a trial for six of these indicators. The objective was to have indicators available in the area of "natural assets" in order to cross check them with indicators for the other spatial differentiation criteria and obtain some preliminary results. The indicators for which it has been possible to do some kind of trial are:

- S1, Pressures on the environment
- S2, Emissions of polluting gases acidifying gases
- S5, Coastal value
- S6, Ecosystem diversity
- S10, Natural hazards
- S12, Designated or protected areas

Many different sources of data of methods have been used for these trials. Therefore, the need to reduce the number of indicators has meant that some of them refer to complex processes and concepts, or are the result of the joint treatment of several data bases, on occasions of different characteristics (ecosystem diversity; pressures on the environment).

On the other hand, there have been several factors that have reduced reliability from the results of the trials. From among the most important ones, worthy of special mention are: inadequate data sources, or ones that do not cover the whole territory under study; not having passed a process of validation; using the NUTS 2 which is too extensive for the objectives of this project in the case of environmental variables. We therefore understand that these trials have only served as an initial approach and perhaps as a starting point for discussion. In other words, it is not possible to draw reliable territorial conclusions from them.

SCALE AND RESOLUTION OF THE ANALYSIS

It is important to adequately define the scale of spatial analysis (*figure 9*). This aspect is vitally important to the results of the project. Perhaps in other areas, such as economic or social analyses, the analysis using large spatial administrative units can obtain reliable results. Nevertheless, when dealing with environmental issues, scale is not only important from a quantitative perspective, but also from a qualitative one as well. In short, one can state that, at a certain scale or using large administrative units, it makes no sense to strive to analyse if what you are attempting to do is to obtain spatial results, since the very size of the unit itself alters the results. The use, as units of reference, of some divisions of a natural or environmental type, such as biogeographical regions or the hydrographical basins should be closely studied. Nevertheless, the need to maintain the capacity of integrating the indicators of the ESDP should not be overlooked.

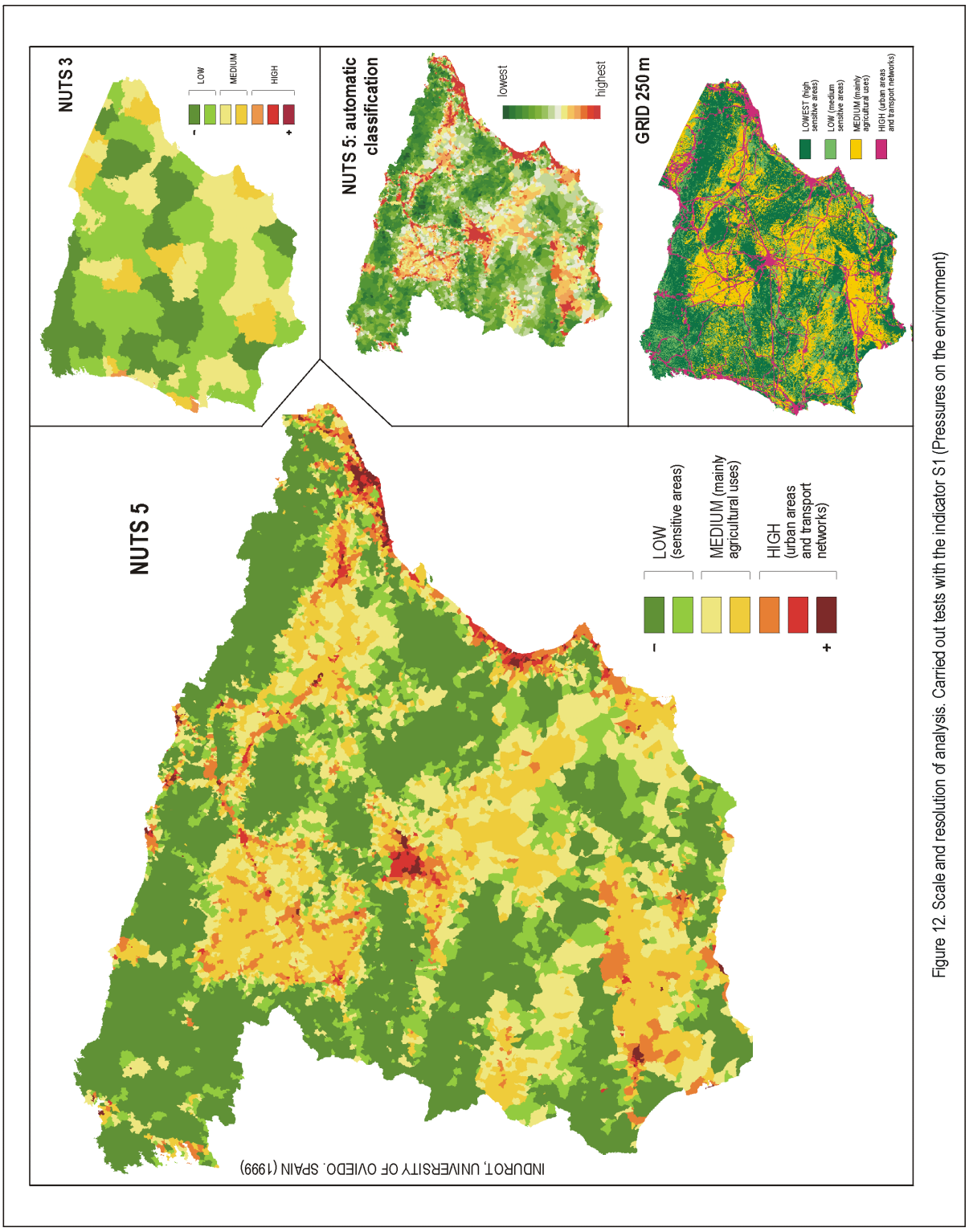

Figure 12. Scale and resolution of analysis. Carried out tests with the indicator S1 (Pressures on the environment)

The capacity of the ESDP system of indicators to act as a spatial differentiation instrument leads us to believe that one of the final objectives of the system of indicators could be the definition of what we could term "Homogenous Spatial Units". These HSU could be defined as the parts of Europe with similar characteristics, not only according to the natural or environmental criteria, but also with regard to the rest of the criteria of spatial differentiation.

The definition of these units on a detailed scale (for example: sets of NUTS 5 that constitute homogenous areas within the regions) would allow us to obtain conclusions in terms of strengths, opportunities, weaknesses and threats. It also would make it easier to achieve the objectives and purposes that the ESDP pursues (cohesion / balance; sustainable development / protection; territorial competitiveness / development).

DATA SOURCES

An important part of the effort put into the work has been in finding and making a primary inventory of the data sources on environmental issues. The panorama of these sources caused us to be optimistic at the beginning of the work, mainly due to the existence of some sections of GISCO, of the CORINE Programme, with their different projects and various environmental reports that gave information about Europe with a view of the whole, even beyond the EU borders. The reality of the matter, as we later discovered, despite the cordial and efficient collaboration of the EEA, has been quite different: the following is a detailed report on some of the difficulties related to data sources that showed up during our work:

- The version of the CORINE Land Cover to which we had access, gives rise to quite a serious problem which consists of the lack of uniformity of the legends for some countries. Nevertheless, it has turned out to be the only data source that has enabled the carrying out of a spatial analysis of the European territory to the necessary scale.
- The data sources consulted regarding inland waters or polluting gas emissions had a resolution that did not advise their treatment, since this would make it impossible to obtain spatial results.
- The access or availability to some data sources that we had planned to use required complicated paperwork that would probably exceed the time allotted to conclude the assigned work (biodiversity or threats on natural resources). In spite of all these problems, we must point out that the institutions and organisations that possess them have been willing to collaborate at all times.
- Other data sources are not yet available (for example, CDDA).

- The reports on environmental issues elaborated for Europe do not appear to have given rise to a cartographic database and the EEA does not have the corresponding digital information.

The following are some complementary considerations referring to data sources:

- It is essential to have environmental databases that are adequately georeferenced, with complete European coverage and proven consistency and homogenisation, these being characteristics that are vital if we are to adapt to the objectives of territorial analysis.
- One of the important gaps observed is the lack of a data source that allows for the establishment of a degree of naturalness of European forests. Without this source of results, the naturalness analysis of the territory is greatly altered.
- It is necessary to fill some important gaps such as the availability of a Digital Model of the Terrain for Europe with appropriate resolution.
- In order to elaborate territorial indicators with environmental response, it is necessary to have data bases related with environmental economy and expense, that offer information regarding the investment in environmental improvement programmes, investment of funds from the EU, from the States and from the Regional and Local Administrations.

AREAS OF POSSIBLE POLICY APPLICATIONS

As can be deduced from the results and conclusions presented in this report, the scope and validity of the environmental indicators obtained thus far, are clearly inadequate to make a reliable diagnosis of the natural assets in Europe. For the same reason we cannot make a spatial differentiation of the European territory from an ecological point of view. As a result, no scientifically sustainable or merely justifiable policy implication can be derived from this diagnosis, using objective criteria, apart from those that can be derived from the analysis of pre-existing data or from the political opinions and policies already expressed.

However, some comments on the “Policy Options” included in the “European Spatial Development Perspective Potsdam Document”, May 1999, with regard to the issue of “Natural Assets” are made under this heading. In addition to the “Policy Options”, other ideas are mentioned that are deemed relevant to this topic. At the beginning of each paragraph the numeration belonging to the cited document has been included to make it easier to locate said references.

(79.5) The idea of strengthening trans-national border co-operation between the countries included in the Northern Europe, Central and Eastern, and the Mediterranean Regions, to create a polycentric and balanced system of spatial development should be adopted in the different sectorial foci of the work. In the case we are presently concerned with, the promotion of international programmes and experiences in natural resources management is considered to be most advisable. In this respect, the obvious diversity of natural characteristics between the different areas in Europe, suggests a certain interest in prompting the spreading of the notion among the different Member States and their inhabitants, of the effects of environmental processes that cross national borders. It is necessary to undertake endeavours, at times important and costly endeavours, to nip controversies in the bud that may not necessarily be felt directly from a local perspective, though they are significant from a European perspective.

It becomes equally advisable to stress how necessary it is that environmental management programmes (improvement, conservation, restoration, development...) tend to adapt their area of intervention, not to administrative limits, but to environmental limits. The intervention area should be determined by the extension of the ecological problem that must be stopped or by the natural characteristics of the area to be worked on. It is therefore imperative that some of the programmes that promote sustainable rural development be conceived as inter-regional programmes, covering territories with homogenous cultural, economic or natural, and environmental characteristics.

(99.14) Within the strategy of strengthening population structure (small and medium-sized towns) in rural areas, the ecological aspects must play a fundamental role. Not only should the promotion of tourism or other activities complementary to the local economy be taken as benchmarks. This vast network of small and medium sized population centres must play a basic role in environmental research and training, strengthening the creation of small infrastructures in selected places to the effect.

(99.17) Use of the potential for renewable energy in urban and rural areas, taking into account local and regional conditions, in particular the cultural and natural heritage. Cultural factors, and natural factors in particular, should play an important role when it comes to making decisions regarding the location for new renewable energy source centres (aeolic energy, small hydroelectric power plants...). Despite having an environmentally sound location in certain areas, they can bring about an alteration and deterioration of the natural or scenic values that would then be difficult to recover.

(99.18) The development of tourism that is both “soft” and environmentally compatible is a good option. However, the growing expansion of this sector leads one to believe that the in-take capacity of the environment

could be overextended. In this way, it may be opportune to establish measures that would adequately guarantee some conservation objectives in a given territory, such as the European one, which has been highly interfered with by mankind. Those areas that are susceptible to maintaining intense and prolonged exploitation must be clearly differentiated from those that are sensitive, fragile, or endangered.

(117.29) The pressure put on the environment must be taken into consideration when evaluating the territorial impact that large infrastructures will have on the territory. Not only the direct impact derived from the construction of new infrastructures, but also that which is derived from the new access conditions that the area takes on and which put pressure on the environment over an expanse at times hundreds of kilometres in area.

(137) It is evident that designating a natural protected space affords new opportunities for economic development. Perhaps the most evident and profitable one over a short period of time is tourism. Nevertheless, efforts must be made to promote activities related to environmental conservation, improvement, and management that will open new economic opportunities for territories affected by a protection figure. This idea also ties in with the one noted for point 99.14 regarding the opportunity that the decentralisation of some scientific research and training infrastructures can mean for some small and medium-sized towns.

(139) To put this idea of making protection and development without any cost to the local inhabitants, and without deteriorating either of the two initial objectives compatible, it becomes necessary to undertake a strict evaluation of the European natural protected spaces. Through the use of this evaluation, which should be carried out from a natural point of view (quality, uniqueness, representativity...), the degree of protection necessary for each space, the restrictions to development that they would imply, and the compensation measures necessary to guarantee the survival of human populations could be estimated. This idea ties in with the one put forth in 143.40 “Continued development of European ecological networks”, as proposed by Natura 2000, including the necessary links between nature sites and protected areas of regional, national, trans-national, and EU-wide importance”.

(140) The role that the forest plays in the European environment is undeniable; not only as “green lungs” that help to reduce the “greenhouse effect”, but also as natural ecosystems. However, and despite their transcendence in European environmental policy, little is known about the characteristics of the European wooded masses at a continental level. It therefore becomes imperative that an inventory of European forests be undertaken, in which, among other considerations, their degree of naturalness, age, state, etc...This information is essential when it comes to evaluating the environmental characteristics of the European territory.

(143.40) One of the aspects that should be included in the preparation of spatial development strategies for areas with specific environmental characteristics would be the creation of co-operation and experience exchange networks between areas of similar characteristics, but which present specific aspects derived from their different geographic locations. We think that this would be especially useful for areas like protected areas, environmentally sensitive areas or areas of high biodiversity such as coastal areas, mountain areas and wetlands. The different administrations (European, National, Regional, and Local), as well as the civilian, scientific, and technical societies should be involved in order to create an awareness of the importance, threats, opportunities, and tendencies of these areas within the European context.

(143.43) Greater use of economic instruments to recognise the ecological significance of protected and environmentally sensitive areas. This idea ties in with the one noted for point 139. Moreover, the possible implications that the start up of the Natura 2000 Network will have in this sense, as well as the role that will be given to the other protection figures at a national, regional, and local level should be clarified as soon as possible.

(143.45) Protection of the soil as the basis of life for human beings, fauna, and flora, through the reduction of erosion, soil destruction, and overuse of open spaces. A clear stand must be taken in favour of promoting alternative uses for those spaces whose soils have suffered more intense degradation, aiming these uses towards the recovery of their natural character and their fertility.

(143.46) Development of strategies at regional and trans-national levels for risk management in disaster prone areas. The high incidence of some of these natural hazards can even go so far as to compromise the development of some areas and to threaten the objectives of territorial convergence and balance in Europe. It is imperative that we advance at an extraordinary rate in the evaluation of the territorial incidence of potential natural hazards in Europe. In this way, the limitations put on development derived from this factor and preventive measures that need to be undertaken, can be estimated, as well as their economic repercussions.

(150) Water must be appraised not only as a resource for the development of human activities, but also as a key element in the environment, essential for the development of numerous natural processes. This aspect reaches the entire European territory and not only those areas where natural characteristics are strongly dependent on this element (for example, wetlands). A balance must be reached between human consumption (households, agriculture, industry, and tourism) and the ecological needs of the ecosystems. This aspect should be included in both sectorial policies, as well as in those regarding rural development.

FUTURE WORK

The development of the work on environmental indicators for the ordinance of the territory in Europe has brought some very important deficiencies in the state of the support databases to light. In consequence, the following proposals are made:

- To complete the compilation of databases and reports that could help to better define indicators or to obtain results from these indicators regarding environmental issues. The short period of time that this phase has lasted has resulted in numerous gaps in this area. In this sense, close collaboration with the European organisations involved in this issue (EEA and EUROSTAT) is therefore necessary. Certain aspects, such as the perspectives for bringing gaps up to date in the sources of data which is important for the development of these indicators (CORINE Land Cover).
- As regards the issue of environmental indicators or of the ESDP "Natural Assets", the endeavours being made by the EEA in order to create a system of environmental indicators for Europe must be remembered. The set of ESDP environmental indicators must be fed the data generated by the system devised by the EEA. An additional effort must be made to co-ordinate and make both systems compatible.
- A period of validation of the results of the indicators must be undertaken. This is the only way in which a system can be endowed with reliability. Once the indicators are perfectly defined from a scientific point of view and the results are obtained, it becomes necessary to contrast these results with reality to see if differences exist. An analysis must be made as to whether the differences are due to problems with the data source, or to the methods employed in the elaboration of the indicator. This is especially relevant in the case of

indicators that use several objective data sources (air pollution or water quality).

- The need to delve deeper into the development of interpretative models of territorial reality is observed. These models of territorial characterisation allow us to obtain results regarding complex aspects or concepts for which a single indicator or a single data source is insufficient. It is our belief that a good example can be found in the indicator proposed for ecosystem diversity. The models available appear to be insufficient or non-existent for territorial reality analysis. Another issue, on which work should be carried out in this regard, is the biodiversity indicator.
- In order to advance in the direction already begun, we feel the application of the complete system of ESDP indicators to several pilot areas in Europe to be of interest. Obviously, a much more detailed resolution for territorial diagnosis is necessary. The NUTS 5 is proposed as being the most suitable. For each pilot area, an integrated diagnosis would be elaborated from which reliable conclusions could be taken, both in terms of the solidity of the system of indicators, as well as the differentiation of European territories.
- Finally, it is of interest to gather critical reports of the European organisations that are competent in the area, regarding the viability of the system of indicators. It is important to know the opinion of the General Directions involved in this issue and know if the technical results that the system of indicators appears to point, respond to previous expectations or if they do not satisfy the predicted needs. Once the initial period is over, the intended political and technical objectives for the ESDP Study Programme system of indicators should be made clear. In this way, it would be possible to adapt the system even more closely to the required needs.

KEY CONCEPTS AND DEFINITIONS

FUNCTION OF THE SPATIAL DIFFERENTIATION CRITERIA

To make it possible to carry out a comparative analysis of the different cities, towns or zones of Europe and their situation with respect to the three fundamental goals of the PEOT.

AIM OF THE SPATIAL DIFFERENTIATION CRITERIA

To establish a classification of the regions, towns and cities, axes… that go to make up the European space.

INSTRUMENTS OF SPATIAL DIFFERENTIATION CRITERIA

The ESDP lays down that the analysis of the differentiation criteria is carried out by means of the creation of a system of territorial indicators and the generation of maps which express the results of the same.

CHARACTERISTICS OF THE SPESP SYSTEM OF INDICATORS

- One or more indicators for each criterion
- Quantitative or qualitative character
- It must enable the assessment of European space components, based on the established criteria
- The choice of indicators should be made according to: Ability to faithfully reflect the spatial reality; Ability to reflect temporal changes; Volume and coherence of available information regarding the whole European territory

- In addition to reflecting issues concerning spatial differentiation criteria they must include references to innovation ability and to the impact of great scale infrastructure.
- They must be useful to make spatial differentiation as detailed as possible

NATURAL ASSETS CRITERIA OF SPATIAL DIFERENTIATION

Characteristics of ecosystems and other natural areas – their relative importance, sensitivity, size or rarity. It can supply a basis for the assessment of related functions of different natural assets across Europe and the habitat of different species. It may also supply the basis for a certain division of tasks regarding the development of specific types of nature.

ENVIRONMENT AS CRITERIA OF SPATIAL DIFERENTIATION

A list of the components of the European territory with their specific environmental characteristics or those that surround them. This list must be analysed in various different terms such as: the natural and ecological characteristics; the assessment of the ecological state of the habitats and ecosystems in a European context; the incidence of human activities on the medium and viceversa; or the preservation, improvement or management brought about in each territory to achieve a balanced development.

P-S-R ENVIRONMENTAL INDICATORS' SYSTEM

Conceptual framework of environmental indicators system that pay attention to the environmental decision-making process. It is based on a causality pattern. Anthropic actions make some pressures on the environment modifying its quality and properties. Society then reacts to keep the balance and to reach sustainable development.

D-P-S-I-R ENVIRONMENTAL INDICATORS' SYSTEM

Developed from the P-R-S model in which human activities (driving forces) with environmental incidence are differentiated, the part of the human activities that have consequences for the environment such as emissions, ground occupation, waste (pressures); the quality of the environment (state); the effect of human activity on the quality of the medium (impact); and the actions directed towards solving environmental problems (response).

PRIMARY INDICATORS (ENVIRONMENTAL)

A set of indicators that would form part of a future System of European Environmental Indicators. On the basis of these, and from the data bases from which they feed, the synthetic indicators would be calculated. It has been

proposed that this system of indicators be organised in accordance with a conceptual framework (P-S-R or D-P-S-I-R) and a structure by habitats (Atmosphere, Water…).

SYNTHETIC INDICTORS (AGGREGATE OR TERRITORIAL)

A set of aggregate indicators, built from the primary ones. This will have to fulfil the requirements of the ESDP with the predominance of a spatial character of the function of characterising territories or components of the European territory.

ACRONYMS

AIRBASE ..... Database that combines GIRAFE and APIS

APIS ..... Air Pollution Information System

CDDA ..... Common European Database on Designated Areas

CDS ..... Catalogue of Data Sources (EEA)

CORINAIR ..... Air emissions inventory in EC CORINE project

CORINE ..... Experimental Programme for Gathering, Co-ordinating and Ensuring the Consistency of Information on the State of the Environment and Natural Resources

D-P-S-I-R ..... Driving forces – Pressures – State – Impacts – Responses

DTM ..... Digital Terrain Model

DPCSD ..... United Nations Sustainable Development Commission

ECE ..... Economic Commission for Europe

EEA ..... European Environment Agency

EMEP ..... Co-operative Programme for Monitoring and Evaluation of the Long Range Transmission of Air Pollution in Europe

ESDP ..... European Spatial Development Perspective

EUROSTAT ..... Statistical Office of the European Union

GIRAFE ..... Information Guide on the Air Quality Networks in Operation in Europe

GISCO ..... Geographical Information System of the European Commission

GRID ..... Global Resource Information Database

ISRIC ..... International Soil Reference and Information Centre

IUCN ..... International Union for the Conservation Nature

NFP ..... National Focal Point

NUTS ..... Nomenclature of Territorial Units in the UE

OECD ..... Organisation for Economic Co-operation and Development

P-S-R ..... Pressure – State – Response

SPESP ..... Study Programme on European Spatial Planing

UNEP ..... United Nations Environment Programme

USEPA ..... U.S. Environmental Protection Agency

WCMC ..... World Conservation Monitoring Centre

SOURCES AND BIBLIOGRAPHY

AALST, R.M. van: Annual Summary Report 1996 – Air Quality. European Environment Agency. Copenhagen, 1997.

BENITO, J.M. de: Annual Summary Report 1996 – Nature Conservation. European Environment Agency. Copenhagen, 1997.

EEA: Catalogue of Data Sources. ETC/CDS European Topic Centre on Catalogue of Data Sources, European Environment Agency. http://www.mu.niedersachsen.de/system/cds/

EEA: The Environment in the European Union 1995; Report for the revision of the fifth action programme on the environment. Directed by Kiempe Wieringa. European Environment Agency. Luxembourg, 1998.

EEA: The Environment in Europe. The Dobris Report. European Environment Agency and the Ministry of the Environment. Madrid, 1998.

EEA: Europe's Environment: The Second Assessment. European Environment Agency. Luxembourg, 1998.

EEA: List of Contents 1999 Yearly Indicator Report; DRAFT. European Environment Agency.

EEA: NATLAN Final Report; Map Production and Spatial Analysis. Draft. European Environment Agency, Geographic Information Management, November de 1998.

ETC/LC: Workshop on Land Cover Applications Using Land-Cover data. Copenhagen, 1997. European Environment Agency, European Topic Centre on Land Cover.
http://www.mdc.kiruna.se/projects/etc/index.htm

EUROPEAN SPATIAL DEVELOPMENT PERSPECTIVE: Towards Balanced and Sustainable Development of the territory of the UE. Final Discussion at the Meeting of Ministers responsible for Regional/Spatial Planning of the European Union. Potsdam, May 1998.
http://www.inforegio.org/wbdoc/docoffic/official/sdec/sdec_en.htm

EUROPEAN COMMISSION: Land Information Systems. Developments for planning the sustainable use of land resources. European Commission, European Soil Bureau. Italy, 1998.

EUROPEAN COMMISSION: Strategic Environment Assessment; Existing Methodology. European Commission, Directorate General Environment, Nuclear Safety and Civil Protection. Luxembourg, 1994.

EUROPEAN COMMISSION: Indicators of Sustainable Development. European Commission. Luxembourg, 1994.

EUROPEAN COMMISSION: The EU compendium of spatial planning systems and policies. Regional development studies. European Commission. Luxembourg, 1997.

EUROPEAN COMMISSION: European spatial development perspective. First official draft. Noordwijk, 9 and 10 June 1997. European Commission. Luxembourg, 1997.

EUROPEAN COMMUNITIES: Indicators of sustainable development; Pilot study in accordance with the methodology of the Sustainable Development Commission of the United Nations. 1998. EUROSTAT.

EUROPEAN COMMUNITIES COMMISSION: Europe 2000; Development perspectives of the Community territory. General Direction of Regional Policies. Luxembourg, 1992.

EUROSTAT: Europe's Environment: Statistical Compendium for the Dobris Assessment. Statistical Office of the European Communities. Luxembourg, 1995.

EUROSTAT: Eurostat catalogue; publications and electronic services. Statistical Office of the European Communities. 1997.

EUROSTAT: REGIO; Regional data bank; Description of Contents, June 1995. Statistical Office of the European Communities.

EUROSTAT: Regions. Statistics Yearbook 1997. Office of the European Communities. Luxembourg, 1997.

HALL M.: *Environmental indicators using land cover data: Spatial and territorial indicators.* Topic report, version 17/09/99. European Environment Agency.

HILLE J.: *The Concept of Environmental Space, Implications for Policies, Environmental Reporting and Assessments.* EXPERTS' CORNER NUMBER 1997/2. August 1997. http://themes.eea.eu.int:80/showpage.php//?pg=37493

IZZO G.: Annual Summary Report 1996 – Marine and Coastal Environments. European Environment Agency. Copenhagen, 1997.

KOCH, D.: Annual Summary Report 1996 – Air Emission. European Environment Agency. Copenhagen, 1997.

MAEZTU UNTURBE, Josefina: The environmental indicators and how we are using them. Preliminary Document of Work Group 4 (Economic Development and the Environment) from the IV National Environment Congress. Madrid, from 23 to 27 November 1998.

MANUEL WINOGRAD: Conceptual Framework for Development and the Use of Environmental Indicators of Sustainability for the Making of Decisions in Latin America and the Caribbean. Mexico D.F., Mexico, November 1995. http://www.ciat.cgiar.org/land/indicators.

MMA: Environmental indicators. A proposal for Spain. Ministry of the Environment; General Quality Management and Environmental Assessment. Monographic Series. Madrid, 1996.

MMA: Spanish system of environmental indicators: sub-areas of biodiversity and forests. Ministry of the Environment; General Quality Management and Environmental Assessment. Monographic Series. Madrid, 1996.

MONTOYA MORENO, R. Y LÓPEZ ARIAS, M.: The European network of forestry damage follow-up (level-1) Spain, 1987-1996. National Parks. Madrid, 1998.

MOPT: 1. Water Protection; Dangerous Substances. Ministry of Transport and Public Works, State Secretariat for Water and Environment Policies. Standards Series; Management of the UE Directives on the Environment. Madrid, 1993.

ORENSANZ, Juan: Towards an environmental statistics system of Autonomous Communities. Statistical Seminars of the Autonomous Communities. San Sebastian, 1998.

LACK, T.J.: Annual Summary Report 1996 – Inland Waters. European Environment Agency. Copenhagen, 1997.

SYDOW, U. von: Annual Summary Report 1996 – Land Cover. European Environment Agency. Copenhagen, 1997.

UNITED NATIONS: Fourth ministerial conference, Environment for Europe. Report on the conference. United Nations, Economic Commission for Europe. Denmark, 1998.

USEPA: Environmental Indicator Technical Assistance Series. Volume One: Catalogue of Environmental Indicators. United State Environmental Protection Agency and Florida Centre for Public Management of Florida State University. October 1996. http://www.fsu.edu/~cpm/segip.html.

USEPA: Environmental Indicator Technical Assistance Series. Volume Two: Catalogue of Data Sources. United State Environmental Protection Agency and Florida Centre for Public Management of Florida State University. October 1996. http://www.fsu.edu/~cpm/segip.html.

USEPA: Environmental Indicator Technical Assistance Series. Volume Three: State Indicators of National Scope. United State Environmental Protection Agency and Florida Centre for Public Management of Florida State University. October 1996. http://www.fsu.edu/~cpm/segip.html.

USEPA: Environmental Indicator Technical Assistance Series. Volume Four: Directory of Environmental Indicator Practitioners. United State Environmental Protection Agency and Florida Centre for Public Management of Florida State University. October 1996. http://www.fsu.edu/~cpm/segip.html.