

ENVIRONMENTAL ASSESSMENT IN MID-TERM EVALUATION OF STRUCTURAL PROGRAMMING

METHODOLOGY AND EXPERIENCES FROM SPAIN

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Summary

With a view to the mid term evaluation of structural programming, in 2002 the Spanish Environmental Authorities Network prepared a manual to provide guidance in the environmental evaluation of the current programming period. The intention is that all evaluators should be in possession of common criteria which are coherent with those developed and applied to date.

This paper introduces the methodology prepared to evaluate "environmental integration", which is one of the two horizontal objectives of the current programming period. The interest of this approach is that up to date there are not many methodologies to this end, and therefore it's a contribution for further developments.

Introduction

To contribute to the process of environmental integration in structural programming, in December 1997 the Environmental Authorities Network was constituted¹. Its objectives include furthering the definition of concepts and the design of strategies and methodologies for evaluation and monitoring.

In order to progress in its objectives, in 1999 the Environmental Authorities

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Network adopted a common methodology for ex ante environmental evaluation of structural programming, which has been used by all the Regions and by the State administration².

With a view to the mid term evaluation of structural programming, in 2002 the Environmental Authorities Network prepared a guide for the mid term environmental evaluation³. The intention is that all evaluators should be in possession of common criteria which are coherent with those developed and applied to date.

Both methodologies were prepared by TERRA environmental policy centre. Some comments on the methodological approach for the ex-ante evaluation were presented in the IV European Conference on Evaluation of the Structural Funds⁴. In this paper we present the methodology for the mid-term evaluation of environmental integration on to the structural funds programming.

Key issues

Before going forward it is important to make the difference between environmental integration and the environment as a sectorial policy.

The environment as an horizontal discipline. One of the priorities of European Union policy is the integration of the environment in other sectorial policies. This need has been promoted by the coming into force of the Amsterdam Treaty, whose article 6 makes environmental integration obligatory with the aim of fostering sustainable development.

In order to fulfil this mandate, in 1998 the Commission presented a strategy to the European Council held in Cardiff⁵. In this strategy it identified cohesion policy as a priority area for environmental integration.

The challenge of sustainable regional development lies in the need to make changes in other policies that are critical for the environment, and thus it is necessary to integrate environmental objectives from the earliest stages of planning. To this end the integration of the environment as a horizontal objective consists of the adoption, by all the sectors and policies considered in the programming, of certain measures with environmental objectives that contribute to socio-economic development in harmony with the environment.

The new general provisions on the Structural Funds have responded to this need and the integration of the environment in all structural policy is one of the two horizontal objectives of the current programming period, at the same level as equal opportunities⁶. This is therefore an important aspect that must be evaluated during the mid term evaluation.

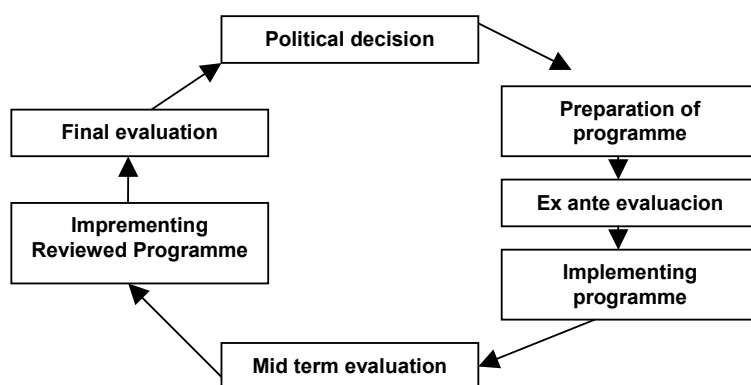
The environment as a sectorial policy is the conjunction of activities undertaken by the environmental authority with the aim of achieving the objectives that are within its competency. In structural programming there are many programmes with environmental measures (e.g. waste management, soil erosion control). These programmes must be evaluated like any other component of the programming.

In this paper we are presenting the methodological guide for carrying out the mid term evaluation in relation with environmental integration, which has been distributed in Spain to the independent evaluators.

Methodological base

The design of the methodology is based on continual improvement system, where all the assessment stages are intimately related (e.g. ISO 14.001). This is because the structural funds programming in some way resembles this process, including a self-evaluation (Ex-ante and Ex-post evaluations) and audit (mid term evaluation).

The mid-term evaluation is an opportunity to improve the programme in the way to achieve its objectives. It works as a third party audit because it must be carried out by an independent assessor. Its results must be submitted to the monitoring committee and to the Commission.



The evaluation of environmental integration is divided into three phases, each of which has several objectives:

Phase 1 interacts with the ex ante environmental evaluation, which is where the recommendations for improving environmental integration in the programming are noted, and with the programming document, where these recommendations should have been taken into consideration. This reexamination of the ex-ante evaluation is a key issue in the process⁷.

Phase 2 interacts with the results of the programme's implementation, with the aim of evaluating compliance with the horizontal objective of environmental integration.

The drafting of the final report is key issue, and has therefore been included in a final phase.

PHASE	OBJECTIVE
Phase 1 Analysis of coherence of programming	Objective 1.1. Validation of ex ante environmental evaluation
	Objective 1.2. Validation of corrective and environmental integration measures
Phase 2 Analysis of impact of integration	Objective 2.1. Effectiveness of corrective and integration measures. Indicators
	Objective 2.2. Evaluation of environmental impact in implementation
	Objective 2.3. Participation of environmental authorities
Phase 3 Final report	Drafting of final report

PHASE (1) ANALYSIS OF COHERENCE OF PROGRAMMING WITH ENVIRONMENTAL SUSTAINABILITY CRITERIA

The object of Phase 1 is to verify whether the programme continues to be appropriate for the environmental sustainability criteria that were identified and defined by the environmental authorities during the ex ante evaluation.

The methodology is similar to that employed for the ex ante environmental evaluation. In this way it is intended that the results of the two evaluations will be comparable and thus useful for validation purposes.

OBJECTIVE 1.1.) Validation of ex ante evaluation

The ex ante evaluation is a fundamental requirement for correct monitoring of the programme, since it conditions the subsequent stages of monitoring and evaluation. The better it is performed, the greater its utility for monitoring the programme.

The results of Objective 1.1. will be the establishment of a framework for all the mid term evaluation process. It includes three chapters a, b,c.

a) Identification of environmental aspects and impacts

The environmental evaluation of structural programming is an extremely ambitious objective if it is wished to get an exhaustive overview of cause-effect relations. In

order to achieve greater effectiveness in the evaluation it is vital to delimit and order the framework of the evaluation. To this end it is necessary to identify the aspects⁸ of programming with the greatest potential environmental impact, since it is here that the subsequent evaluation will be focused.

For this purpose a matrix is constructed whose first column contains, in hierarchic order, the Programmes-Objectives-Measures-Actions of programming. After this their potential cost/benefit will be evaluated by means of a questionnaire (Table 1). If this questionnaire has not been designed by the environmental authorities during the ex ante evaluation, that given in Table 2 may be used.

In the following stages of the process consideration will only be made of the aspects selected in this matrix, which are referred to as the environmental aspects of programming.

Table 1. Questionnaire for selection of measures.

Does the measure include actions directly related with:

- land use, physical development or transport infrastructures?
- environmental management (pollution control, resource saving)?
- environmental training and dissemination?
- natural/cultural heritage: habitats, species, landscapes?

Table 2. Matrix for identification of environmental aspects of programming

	Programmes and measures	Evaluation questions				
		Relation with land use, physical development, transport infrastructures. Relation with environmental management	Relation with environmental management.	Relation with environmental training.	Relation with natural heritage (natural sites, species, landscapes, resources).	Potential environmental cost/benefit of the action (*)
1	IMPROVEMENT OF COMPETITIVENESS					
1.1	Support to industrial, trading and service companies					
1.2	Improvement of transformation of agricultural products					
1.3	Provision of productive spaces and services for companies					
1.n					

(*) Column for evaluating magnitude of environmental cost and/or benefit

- C: The measure may include actions that originate environmental costs
- B: The measure may include actions that originate environmental benefits
- C/B: The actions may originate environmental costs and benefits
- 0: The environmental cost or benefit of the action is neutral or very low
- SIG: The environmental cost or benefit of the action is significant

b) Definition of environmental sustainability criteria

In order to have a coherent framework for the evaluation it is necessary to define the sustainability criteria necessary for environmental integration. These emerge from an analysis of Community, State and regional legislation.

As a general rule the environmental criteria used should be the same as those considered in the ex ante evaluation. However, in certain cases it may be necessary to modify them, for instance if new environmental legislation with significant effects has been incorporated. Another possible situation is that environmental sustainability criteria were not used in the in the ex ante evaluation. In this case those indicated in Table 3 may be used.

Table 3. Environmental sustainability criteria ^{Error! Marcador no definido.}

SUSTAINABILITY CRITERION	RECOMMENDATIONS
Reduction in use of non-renewable natural resources	Lower consumption of non-renewable resources. Preferential use of renewable resources. Preferential use of recycled or reused materials. Preferential choice of public transport systems. Fostering of energy efficiency in designs and technologies.
Use of natural resources within the limits of their regeneration capacity.	Do not overexploit natural resources. Foster the regeneration of degraded natural resources. Use of sustainable agriculture, husbandry and forestry practices.
Responsible use and management of hazardous substances and wastes.	Reduce the use of toxic materials. Reduce the production of wastes. Foster technologies with low consumption of primary resources. Careful management of wastes.
Maintenance and improvement of natural resources: habitats, species and landscapes.	Avoid damage to protected species and habitats. Foster the improvement of habitats. Foster knowledge and enjoyment of the natural heritage. Conserve the landscape, including the cultural landscape (walls, hedges, canals, etc.).
Maintenance and improvement of natural resources: soils.	Minimise discharges on soils. Avoid activities that can cause erosion. Foster activities involving regeneration of polluted sites.
Maintenance and improvement of natural resources: waters.	Minimise discharges in water. Integrated management of surface and groundwater resources. Foster water saving (management of demand). Foster activities involving regeneration of polluted zones.
Maintenance and improvement of local environmental quality.	Minimise emissions into the atmosphere. Incorporate the noise factor in planning. Foster the access of the population to green spaces.
Protection of the atmosphere.	Minimise the consumption of fossil fuels. Improve energy efficiency. Create CO ₂ sumps. Promote alternative energies.

c) Validation of ex ante evaluation

In the preceding sections the framework has been identified for the evaluation. This section now addresses the first objective of the mid term evaluation: validation of the ex ante evaluation.

For this purpose a matrix will be created (Table 4), whose first column will list the environmental aspects of the programme (section a) and whose top row sets out the environmental sustainability criteria (section b). Each intersection will be scored.

The result of this matrix is to identify the potential environmental impacts, and this

should coincide with the result of the ex ante evaluation. Given that this type of analysis is subject to a certain degree of subjectiveness, it is logical for some differences to arise compared with the ex ante evaluation. However, if these are significant they must be justified by the evaluator.

On the basis of the results of this analysis the evaluator will validate the ex ante valuation.

Table 4. Environmental evaluation matrix (example).

	Programmes and measures with potential environmental impact	Environmental sustainability criteria				
		Lower consumption of renewable resources	Preferential use of renewable resources	Preferential use of recycled materials	Preferential choice of public transport
1	IMPROVEMENT OF COMPETITIVENESS AND DEVELOPMENT OF PRODUCTIVE CAPACITY					
1.3	Provision and adaptation of productive spaces and services for companies					
...					
...						
2	INFORMATION SOCIETY					
2.1	R&D infrastructures					
....					

- O Has no relation or lacks significant impact
- B Significant beneficial impact
- C Significant adverse impact
- ? Unpredictable impact

OBJECTIVE 1.2.) Validation of corrective and environmental integration measures

In the ex ante evaluation those aspects of the programme with a potential environmental impact were identified. When a negative impact was foreseen, corrective measures should have been proposed. It is now necessary to validate whether these measures are appropriate for the envisaged impacts, and the coherence of the strategy with environmental sustainability criteria.

To check whether there is adequate environmental integration in the programme it is also necessary to verify whether measures have been included to promote the environmental sustainability criteria (see Section b of Objective 1.1).

For this analysis a table will be constructed, whose first column will list the environmental aspects with a potential environmental impact (see Section c of Objective 1.1). In the second column the most significant impacts will be identified, followed by the corrective and integration measures that were proposed during the ex ante evaluation. Finally the evaluator must analyse whether these proposals

have been included in the programming, for which a study must be made of the programme (Table 5).

Table 5. Example of evaluation of corrective and integration measures.

Aspects with potential environmental impact	Environmental impacts	Corrective and integration measures proposed in ex ante evaluation	Is it included in the programme? (Yes/No)
Telecommunication networks	Landscape impact	Make use of existing sites	Yes
		Landscape integration	No
		EIA on Natura 2000 network	Yes
Roads	Fractionating of habitats	EIA on Natura 2000 network	Yes
	Landscape impact	Landscape integration	---

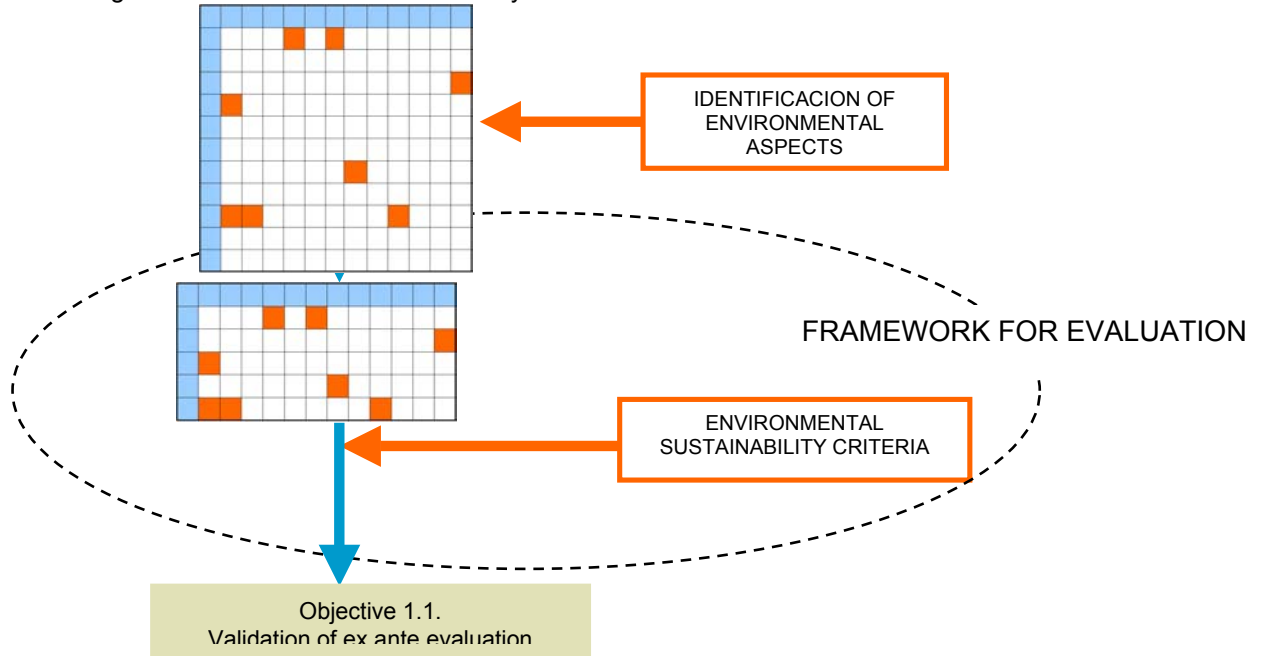
This analysis makes it possible to:

- Identify the proposed corrective measures.
- Identify the foreseen integration measures.
- Evaluate whether they are adequate in relation with the envisaged impacts.
- Verify whether they have been included in programming.

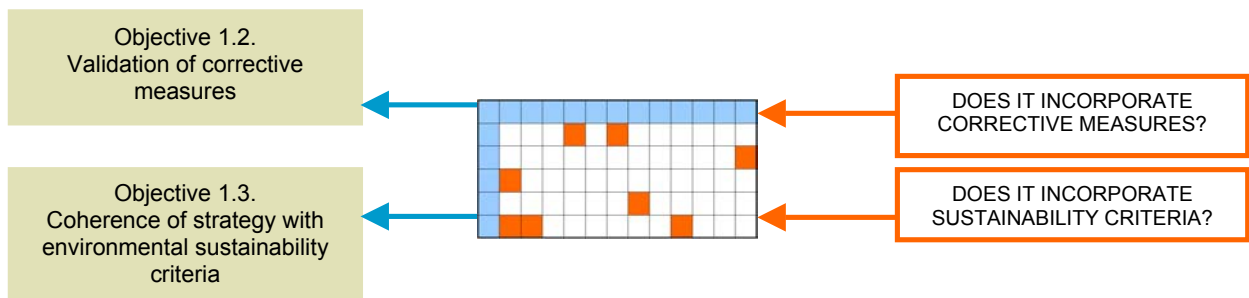
In the event that no corrective or integration measures were proposed or that these are inadequate, the evaluator must propose new measures. These should be specified in the corresponding chapter of the final report.

SCHEME OF PHASE 1

A framework for the evaluation is established. Environmental aspects are identified and environmental sustainability criteria are established. Later, environmental aspects are evaluated according to the environmental sustainability criteria.



It is verified that the corrective or integration measures proposed in the ex ante environmental evaluation are incorporated in the programming.



PHASE (2)

ANALYSIS OF IMPACT OF ENVIRONMENTAL INTEGRATION

This second component of the mid term evaluation has the aim of evaluating the impact of environmental integration on implementation of the programme.

OBJECTIVE 2.1.) Effectiveness of corrective and integration measures. Integration indicators

One of the objectives of the mid term evaluation is to review the progress made in the implementation of the programming, in this case in relation with environmental integration, with the aim of suggesting, if necessary, improvements to achieve the proposed objectives of environmental integration.

During the ex ante evaluation the environmental authorities identified and proposed a series of corrective measures to reduce the environmental impact of programming and to strengthen its environmental integration. They also prepared a series of indicators to measure the environmental integration of each programme. The objective now is to evaluate the efficiency of their application and to quantify the indicators.

To this end first of all it is necessary to identify the corrective and integration measures proposed in the ex ante evaluation (see Objective 1.2). To evaluate their application a sample of projects for which these measures have been proposed is selected. The study of this sample will consider:

- The effective application of the corrective and integration measures proposed in the ex ante evaluation.
- Evaluation of their efficiency.
- If necessary, make proposals to improve their application and efficiency.

Also during this stage, environmental integration indicators will be constructed for the different programmes. These indicators have been recorded for each programme under the heading “environmental indicators”. The steps to be followed to validate and construct these indicators can be seen in Box 1.

Box 1. Validation of indicators

During programming an effort has been made in the design of indicators to quantify environmental integration. However, for an indicator to be useful it must be well devised and basic data must be available for its definition.

Now the indicators proposed for the monitoring of the programme will be validated. To organise this process it is proposed to construct a table where the item to be evaluated is set against an assessment of the proposed indicator. The indicators will be evaluated according to the following criteria:

- reflect a causal relationship between the programme and the impact.
- The initial situation must be quantified.

- There must be a quantified final objective.

The first column of the matrix indicates the item to be evaluated, the second column the indicator proposed by the Programme, and the third column assesses the suitability of the indicator.

e.g. Validations of indicators

Item to be evaluated	Indicator	Suitability of indicator	
		Is there a causal relationship?	Yes/No
Energy saving	Kw/year	Is there a causal relationship?	
		Is the initial situation quantified?	
		Is the final objective quantified?	

If there is not a clear relationship between the indicator and the item, then the indicator can not be validated. Also it can be difficult to assess its final sense if the initial situation is not quantified or if there is not clear final objectives to be achieved.

OBJECTIVE 2.2.) Evaluation of environmental impact in implementing the programme

The environmental impact assessment (EIA) of certain activities has been regulated in the European Union since 1985. The current legislation regulating EIA is Directive 97/11/EEC, which was transposed into Member states legislation.

Also, according to Habitats Directive (92/43/EEC) for all projects that have a potential repercussion on a site in the Natura 2000 network, irrespective of whether or not they require an environmental impact assessment according to Directive 97/11/EEC, it is necessary to check their impact on the natural values that gave rise to the protection of the site.

In this section the application of both Directives will be checked in a sample of projects.

From the measures with a potential environmental impact, select a sample of projects that require an environmental impact declaration according to the annexes of Directive 97/11/EEC and check whether the impact assessment has been performed according to the terms of the Directive. If the impact has been evaluated, check whether the envisaged corrective measures have been applied (Table 6).

Table 6. Assessment of environmental impact of implementation.

Environmental impact assessment	Has EIA been applied?	Have the envisaged corrective measures been applied?
Measure 1	Yes/No	Yes/No
Project x	Yes/No	Yes/No
Project xx	Yes/No	Yes/No
.....	Yes/No	Yes/No

Select another sample of projects with a potential impact on the Natura 2000 Network and check their possible effects (Table 7). In the event of a potential impact check whether this has been evaluated. If the project with a potential impact has been carried out, check the application of corrective or compensatory measures.

Table 7. Assessment of environmental impact of implementation on Natura 2000 network.

Projects with potential impact on Natura network	Has the environmental impact been evaluated?	If impact on the site, have compensatory measures been applied?
Measure 1	Yes/No	Yes/No
Project x	Yes/No	Yes/No
Project xx	Yes/No	Yes/No
.....	Yes/No	Yes/No

OBJECTIVE 2.3.) Participation of environmental authorities

Environmental authorities have participated in the ex ante environmental evaluation of the current programming period, in the design of environmental monitoring indicators and monitoring of programming with the aim of promoting environmental integration.

In this respect it is necessary to study:

- The participation of environmental authorities in the evaluation and monitoring process.
- The responsibilities and division of tasks of environmental authorities in the scope of programming.
- The mechanisms for coordination between environmental authorities and the authorities responsible for the programme.
- The provision of human resources for the environmental monitoring of programming, by both the environmental authorities and the authorities responsible for programming. In this case it is necessary to indicate the number of persons, their professional qualifications and the number of days spent performing this work.

**PHASE (3)
EVALUATION REPORT**

Once the foregoing phases have been completed it is necessary to draft the evaluation report. Its objective is to inform in a brief and concise way on the most outstanding aspects encountered in the evaluation. To this end it must consider all the headings of the evaluation and include a summary.

Furthermore, at the end of the report a chapter must be included which sets out proposals to improve the programme. These must be very specific and must identify the necessary actions and actors.

References

¹ The Spanish Environmental Authorities Network was constituted in December 1997. It is a forum for cooperation and coordination between authorities responsible for the environment and authorities responsible for Structural Fund and Cohesion Fund programming at the different administrative levels: European Community, State and Autonomous Region. Its priority objective is to oversee the integration of environmental protection in initiatives cofinanced with Community funds.

² Environmental Authorities Network. 1999. Strategic Environmental Assessment of Regional Development Plans: 2000-2006. Common Basic Methodology. Madrid.

³ Environmental Authorities Network. 2002. Guideline methodology for environmental evaluation in mid term evaluation of structural programming 2000-2006. Practical guide for evaluators. Madrid.

⁴ Manteiga, L. & Sunyer, C. 2003. Quantification for environmental impact: Methodology and practical aspects. IV European Conference on Evaluation of the Structural Funds 18-19 September 2000 Edinburgh.

⁵ EC. 1998. Commission communication to the European Council: Cooperation for integration – A strategy for the integration of the environment in the policies of the European Union. COM(1998) 333 final. Brussels. 27.05.1998.

⁶ Art 1 Regulation EC 1260/1999 laying down general provisions for the Structural Funds.

⁷ EC. 2000. The mid term evaluation of Structural Funds interventions. The 2000-2006 programming period methodological working papers. Working paper n° 8.

⁸ Environmental aspect is any element in the programme that can interact with the environment.