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**Meeting of the Signatories to the Convention
on Environmental Impact Assessment
in a Transboundary Context**

(Fourth meeting, Geneva, 14-17 March 1995)
(Item 8 of the provisional agenda)

**SPECIFIC METHODOLOGIES AND CRITERIA TO DETERMINE THE
SIGNIFICANCE OF ADVERSE TRANSBOUNDARY IMPACT**

Report by the secretariat */

1. The present report aims to specify ways and means of determining the issue of the significance of an impact in a transboundary context. It emphasizes the early determination of significance, which precedes the notification from the country of origin to the affected country. It takes into account the information contained in document ENVWA/WG.3/R.13 as well as the information provided by the delegations of Armenia, Belarus, Czech Republic, Finland, Germany, Hungary, Ireland, Latvia, Lithuania, Netherlands, Poland, Russian Federation, Sweden, Ukraine and United Kingdom in accordance with the decision taken at the third meeting of the Signatories (ENVWA/WG.3/6, para. 21). All the countries that submitted case-studies had been able to identify the possible transboundary impacts. Most countries reported only a limited number of significant transboundary impacts. The information provided by delegations covered the following types of activities: long-distance railways; trading ports and inland waterways; waste disposal; large dams and reservoirs; pulp and paper manufacturing; major mining; off shore hydrocarbon production. The transboundary impacts of sewage treatment plants, building materials industry, power lines and fixed links accross sea areas were also considered.

*/ Based on the results of the consultation of governmentally designated experts from Austria, Finland, Norway, Poland and Slovenia, pursuant to a decision taken at the third meeting of the Signatories (ENVWA/WG.3/6, para. 21).

I. APPLYING A FRAMEWORK TO DECIDE ON THE NEED TO NOTIFY

2. The identification of likely transboundary impacts and the determination of significance for the purpose of transmitting the notification to the affected country could be set in a general framework, which would give a structured starting-point for further discussions between the competent authorities in the country of origin, the proponent and the affected country. The key element in such a framework is the format for the listing and identification of impacts.

3. A common format listing the impact clarifies the considerations of the competent authority and its discussion with the proponent after it has received information on a proposed activity. When the competent authority in the country of origin has identified possible transboundary impacts, it continues to evaluate their significance. This evaluation will often take the form of a dialogue between the proponent and the competent authority. The scale or characteristics of the impacts are the basis for determining their significance. Case-studies on transboundary impacts show that it may be difficult to obtain even tentative quantitative information on the characteristics of the likely transboundary impacts at this stage. Therefore, the competent authority of the country of origin may also consider the general characteristics of a proposed activity. A possible structure for listing and identifying impacts is given in annex I below. It attempts to clarify whether transboundary impacts are possible or not.

4. The information to be submitted to the affected country in the notification could include a description of the impacts and indicate which impacts are considered to be possibly significant. A possible format for providing this information to the affected country is given in annex II below.

5. In all cases of likely transboundary impacts, a central consideration will be the likely area of impact relative to the border. This consideration covers two aspects:

- (i) The border between the country of origin and the affected country
The key points of interest are the areas where the greatest impacts are expected in the affected country;
- (ii) A specified area of likely impact in the affected country
The competent authority in the country of origin will have to decide the likely area of impact and on the criteria by which it is delimited. Reference should be made to relevant environmental standards and threshold values. These values should be derived from national laws or regulations, international agreements or past experience. The area of impact is seldom unambiguously defined, because the type of emission or other factors determine the spatial distribution of the impact. In practice, the affected country may have different standards, thresholds or past experiences for determining the area of impact. This could result in different perceptions in the affected country and in the country of origin regarding the significance of the impacts. The exchange of environmental information may provide details for determining the possible area of impact for specific types of activities. The harmonization of standards and threshold values between parties to the Convention are likely to alleviate this problem.

6. Annex II provides a tool to assemble relevant factual information on the characteristics of transboundary impacts. Annex III provides preliminary criteria for determining the "significance" of the impacts, including the situations in which the affected country should always be notified. Annex III also refers to situations in which the decision on significance depends on several characteristics of the impacts or the affected area. As more experience is gained of the actual impacts of activities listed in Appendix I to the Convention, this part of annex III could be developed further to give more precise activity-specific criteria for determining the significance of an impact.

7. The consultation stressed that as a general rule, notification should be transmitted whenever there is a possibility, no matter how uncertain, that an impact may be significant. This additional information on the characteristics of the impacts and uncertainties should also form part of the notification.

II. DEVELOPMENT OF FURTHER GUIDELINES FOR THE DETERMINATION OF SIGNIFICANCE

8. Cases of transboundary impacts have so far not been systematically documented. Cooperative action to provide activity-specific guidance could focus on the areas of impact of specific activities listed in Appendix I to the Convention. To provide a starting-point for this work, information according to annex IV could be collected. The information is expected to relate not only to environment impact assessment (EIA) in a transboundary context, but more generally to cases where transboundary impacts were considered. In identifying cases with transboundary impacts attention should be paid not only to the point of view of the country of origin, but also to how an activity was perceived in a potentially affected country.

9. On the basis of this information it could be possible to compile data on the area of impact of activities included in Appendix I to the Convention. An attempt to formulate models explaining the size and type of the area of impact could be made. By identifying explanatory variables, the results of the research could serve as a first approximation when considering potential transboundary impacts. The advantage of an international effort is that a larger number of cases in different environmental settings can be covered, because the national EIA procedures tend to be applied primarily to large-scale activities, of which there are only few in each country.

10. The research programme should specifically address the question of particularly sensitive areas and subregions within the ECE region, such as the Arctic and Alpine subregions. In sensitive subregions there may be a need to agree on lower thresholds for activities in Appendix I, also taking into account Article 2, paragraph 5, and Article 8 of the Convention. An overview of observed areas of impact would provide a scientific basis for setting these thresholds.

11. Developing a detailed study programme and carrying out this programme will demand some resources from all participating countries. Experience has shown that high quality information cannot be obtained from individual countries without nominating in each country a scientific focal point, which has access to the necessary expertise, is committed to the programme and can compile the relevant information.

III. PROPOSALS FOR FURTHER WORK

12. The consultation recognized that there was a need for a common notification format. Accordingly, the Meeting of the Signatories could make the necessary arrangements so that a format for notification documentation is drawn up, taking into account annex II to the present report.

13. Further work could be undertaken with respect to the preparation of guidance in order to support the determination of the significance of a transboundary impact. To use existing experience on transboundary impacts the Meeting of the Signatories could collect information on past experience with transboundary impacts in accordance with the questionnaire contained in annex IV to the present report.

14. The Meeting of the Signatories may also wish to set up a cooperative programme under the Convention in order to further develop and determine effective activity-specific guidance with respect to all relevant issues concerning the "significance" of adverse transboundary impacts, taking into account the criteria for significance presented in annex III. As a first step, a focal point on methodological aspects could be nominated in each country. The focal points would be expected to participate actively in developing the cooperative programme by preparing the information related to the questionnaire included in annex IV to the present report and analysing this information at a meeting of focal points on methodological aspects. Such a meeting could aim at working out the details of the programme to be undertaken and finding ways and means of implementing the cooperative programme, including cooperation with other scientific institutions and international bodies, as referred to in Article 11, paragraph 2 (c), of the Convention.

Annex I

IDENTIFICATION OF ADVERSE TRANSBOUNDARY IMPACT

1. Can the proposed activity or its reasonable alternatives result in one or more of the following adverse transboundary impacts:	Specify type of expected impact
<p>AIR</p> <ul style="list-style-type: none"> - Changes in ambient air quality - Release of any toxic or hazardous air pollutant, radiation, or genetically engineered organisms - Changes in noise levels and level of vibrations - Other (specify) 	
<p>WATER</p> <ul style="list-style-type: none"> - Surface water: Changes in water quality or water quantity - Groundwater: Changes in water quality or quantity - Coastal water: Changes in quality - Sediments: Changes in quality and quantity (riverine, estuarine, coastal) - Release of any toxic or hazardous water pollutant, radiation, or genetically engineered organisms - Other (specify) 	
<p>CLIMATE</p> <ul style="list-style-type: none"> - Microclimatic changes (temperature, rainfall, wind) - Other (specify) 	
<p>2. Can the proposed activity, or the related emissions listed above, result in one or more of the following adverse transboundary impacts:</p>	
<p>SOIL</p> <ul style="list-style-type: none"> - Changes in soil acidification, nutrification or other contamination - Changes in deposition or erosion - Other (specify) 	

<p>LANDSCAPE/HISTORIC MONUMENTS OR OTHER PHYSICAL STRUCTURES</p> <ul style="list-style-type: none"> - Changes in land use - Decreased aesthetic appeal or changes in visual amenities - Changes in historical, archaeological, paleontological, architectural, or cultural assets - Changes in quality and quantity of recreational opportunities or amenities - Changes to present or potential use of natural resources (e.g. fisheries, hunting, agriculture/forestry, tourism) - Impacts on ecologically sensitive areas or areas of special environmental value - Other (specify) 	
<p>HUMAN HEALTH AND SAFETY</p> <ul style="list-style-type: none"> - Changes in human health and safety - Changes in disease incidence - Changes to well-being and quality of life - Other (specify) 	
<p>FLORA, FAUNA</p> <ul style="list-style-type: none"> - Changes in migratory patterns (birds, fish, mammals, etc.) - Disturbance of habitat - Decrease in biological diversity - Impacts on threatened species - Changes in species composition - Other (specify) 	
<p>3. Can the proposed activity cause accidents with transboundary impacts ?</p>	
<p>4. Can the proposed activity invoke any existing international agreement on environmental matters?</p>	
<p>5. Can the proposed activity affect interactions among environmental factors?</p>	

Annex II

ELEMENTS FOR THE DETERMINATION OF THE SIGNIFICANCE OF IMPACTS

Type of activity								
Location, distance from border and general description of the environment								
Size and nature of the activity (technology, material and energy use, production level, and emissions)								
	Characteristics of impact _a /							
Likely transboundary changes in	Area of transboundary impact	Number of potentially affected people _b /	Impact on areas of special environmental value (yes/no) _c /	Magnitude of area of impact _d /	Probability of impact _d /	Duration of impact _e /	Frequency of impact _f /	Reversibility of impact _g /
1. Human health and safety								
2. Flora and fauna								
3. Soil								
4. Air								
5. Water								

6. Climate								
7. Landscape								
8. Historic monuments or other physical structures								
9. Interactions between 1-8								
10. Cultural heritage or socio-economic conditions related to 1-9								
Transboundary impacts related to accidents								
Does the activity invoke international agreements on environmental matters <u>h</u> /								
Others								

a/ Give tentative quantitative information or expert judgement on the characteristics of the impact whenever available. If no information is available, although an impact is expected, note uncertainty with a question mark as a sign of need for additional information.

b/ The information can often be presented in a semi-quantitative form indicating classes such as less than 10, 10-100, 100-1000 etc., when tentative quantitative information is available.

c/ If available, give an expert judgement on the affected proportion of the area of special environmental value.

d/ Qualitative statements such as "small", "intermediate", "large" can be used when tentative quantitative information is unavailable.

e/ Can be classified as days, months, years, decades.

f/ Can be classified as permanent or times of occurrence >1/month, 1/month-1/year, 1/year-1/5years, < 1/5years, etc.

g/ Can be classified as rapidly reversible (days-weeks), slowly reversible (months-years) or practically irreversible (> decades).

h/ If significant impacts are expected only in the event of an accident, the full table can be filled in to illustrate the worst case scenario. A separate full table illustrating accident conditions could also be used whenever considerations of possible accidents are expected to play a key-role in determining the significance of the impact.

* * *

Comments on the general characteristics of the activity: ... (for example: uncertainty of the information and data used).

Annex III

TENTATIVE CRITERIA FOR THE DETERMINATION OF SIGNIFICANCE

1. Criteria for the determination of significance can be divided into two groups. The first group of criteria are those which should always lead to the notification of an affected country, whenever an impact meets any of the criteria. The second group contains those criteria that involve a greater element of judgement and that require further work in particular with respect to impact- or activity-specific guidance.

2. Impacts that meet any of the following criteria should always be considered significant in the context of the Convention and thus lead to the notification of an affected country.

- (i) The magnitude of the expected impact in a transboundary area exceeds environmental objectives or safety and health standards of the affected country;
- (ii) The expected impact in a transboundary area is virtually reversible;
- (iii) The expected impact leads to an adverse change in a protected area in the affected country; or
- (iv) Impacts that are due to accidents and that may meet any of the criteria (i)-(iii).

3. The rate of recovery in case of reversible impacts as well as the duration and frequency of an impact are characteristics which in practice would always be considered together with the magnitude of impact, the area of impact and the number of affected people. For example, slowly reversible impacts with an observable magnitude and a moderate to high frequency in a transboundary area would usually be considered significant, although they would not meet the criteria of paragraph 2 above. If only a marginal change is expected in a small area affecting few, the impact will usually not be considered significant in the context of the Convention.

Annex IV

**QUESTIONNAIRE ON PAST EXPERIENCE WITH TRANSBOUNDARY IMPACTS
OF ACTIVITIES LISTED IN APPENDIX I OF THE CONVENTION**

1. Identify the number of cases initiated or completed during the past four years. The information is expected to relate not only to EIA in a transboundary context, but more generally to cases where transboundary impacts were considered.

Activity	Number of cases from 1990 to the end of 1994 in the country	Number of cases from 1990 to the end of 1994 with transboundary impacts	Minimum distance between activity with transboundary impacts and the border	Maximum distance between an activity with transboundary impacts and the border
Crude oil refineries and installations for the gasification and liquefaction of coal or bituminous shale				
Thermal power stations and other combustion installations and nuclear power stations and other nuclear reactors				
Installations for the production or enrichment of nuclear fuels, the reprocessing of irradiated nuclear fuels or the storage, disposal and processing of radioactive waste				
Major installations for the initial smelting of cast iron and steel and for the production of non-ferrous metals.				

Installations for the extraction of asbestos and for the processing and transformation of asbestos and products containing asbestos				
Integrated chemical installations				
Construction of motorways, express roads and lines for long-distance railway traffic and of airports				
Large-diameter oil and gas pipelines				
Trading ports and also inland waterways and ports for inland-waterway traffic				
Waste-disposal installations for the incineration, chemical treatment or landfill of toxic and dangerous wastes				
Large dams and reservoirs				
Groundwater abstraction activities				
Pulp and paper manufacturing				
Major mining, on-site extraction and processing of metal ores or coal				
Offshore hydrocarbon production				

Major storage facilities for petroleum, petrochemical and chemical products				
Deforestation of large areas				
Other, specify	- not applicable-			

2. For the future development of activity-specific guidance on the determination of significance in a transboundary context specify which type of activities listed above should be considered first.

- 1.....
- 2.....
- 3.....
- 4.....
- 5.....