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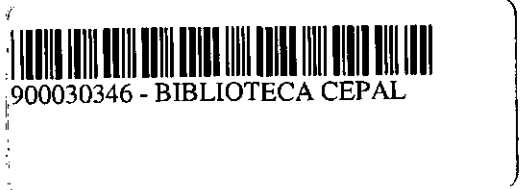
CARIBBEAN DEVELOPMENT AND CO-OPERATION COMMITTEE

AD HOC WORKING GROUP FOR PHYSICAL AND REGIONAL  
 PLANNING



REPORT OF THE FIRST MEETING  
 OF THE AD HOC WORKING GROUP  
 IN PHYSICAL AND REGIONAL PLANNING

16-17 September 1981  
 St. George's, Grenada



**UNITED NATIONS**

ECONOMIC COMMISSION FOR LATIN AMERICA Office for the Caribbean



REPORT OF THE FIRST MEETING OF  
THE AD HOC WORKING GROUP IN PHYSICAL AND REGIONAL PLANNING

1. The First Meeting of the Ad Hoc Working Group in Physical and Regional Planning was held in St. George's, Grenada from 16-17 September 1981, in accordance with the mandate provided by the Second Meeting of Planning Officials and endorsed by the Fifth Ministerial Meeting of the Caribbean Development and Co-operation committee (CDCC) held in Kingston, Jamaica from 4-10 June 1980.

2. Representatives of the following CDCC member states participated:<sup>1/</sup> Republic of Cuba, Grenada, Guyana, Jamaica and Suriname. The following regional institutions were represented: The Caribbean Community (CARICOM) Secretariat and the East Caribbean Common Market (ECCM).<sup>2/</sup>

3. The ECLA representative in opening the meeting drew attention to the mandate of the Working Group which proposed that the group focus on:

"Physical and Regional Planning including the relationship between planning for the environment and other aspects of planning, and taking into account the importance of the marine environment to the CDCC member states and also the importance of planning in coastal area development".

4. In accordance with this mandate two projects were submitted for the consideration of the Working Group:

- (a) "Development and Strengthening of the capability of the nations of the region to prepare environmental impact analyses of major development projects and plans in order to incorporate the dimension of the

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<sup>1/</sup> The List of Participants is at Annex I.

<sup>2/</sup> A consultant, Dr. M. Gajraj, specialist in the field of environmental planning, attached to the PAHO Office of Mexico and formerly Project Officer at the ECLA/UNEP Caribbean Environmental Project also attended the meeting as a resource person.

environment and natural resources in the planning and implementation of socio-economic development programmes".<sup>3/</sup>

- (b) "Formulation of advisory coastal zone management schemes with particular reference to the preparation of guidelines for land use, resource management and environmental protection and support for national endeavours in this area".

5. Within the framework of the overall Work Programme in planning as approved by the Fifth Session of CDCC, the task of the Physical and Regional Planning Working Group was outlined by the ECLA representative as follows:

- (a) To evaluate the projects listed above in the light of their needs;
- (b) To suggest any modifications to the Regional Co-ordinating Unit which may be needed to increase their relevance or their capacity to be implemented;
- (c) To suggest ways in which the Working Group will be able to facilitate the implementation of the projects;
- (d) To select one of the projects which would be considered a priority for implementation by the Working Group.

6. In introducing the subject to the Working Group, the ECLA representative commented that concern about environmental deterioration had been growing, with the increased knowledge about its consequences. Greater reflection on the issue led us to the conclusion that environmental change is inextricably linked with the process of economic development. We were now fully aware that environmental transformation was one of the causes and also one of the effects of economic activity. We also knew that the nature and extent of such environmental transformation was to some extent amenable to control. Too often, however, we had come to this conclusion only with hindsight, after a project had been implemented and had demonstrated serious environmental damage.

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<sup>3/</sup> A list of Documents presented to the meeting is at Annex II.

7. He indicated that the task of the planner would therefore have to be to foresee the future impact upon the environment of a particular project or development path. We would need to devise some systematic basis on which to determine the stage at which the necessary trade-offs would be made. Put another way, perhaps in the negative, the planner would need to make a judgement about the level of environmental damage that was sustainable at any one point in time in order to achieve his other social and economic goals.

8. He stated that both the projects submitted for evaluation by the Ad Hoc Working Group addressed these issues.

9. Mr. Gajraj presented a paper entitled "Some Thoughts on the Role of Environmental Impact Assessment for Developing Countries and ECO's (The Pan American Centre for Human Ecology and Health) Role in the Americas" which delegates found of great use in helping to ventilate the issues. It was requested that the paper be included as an annex to the report.<sup>4/</sup>

10. The Working Group expressed the view that concern for the environment was an issue that needed to permeate all levels of the society if the task of planners was to have the maximum benefit. It further noted that as a multi-disciplinary subject there was the need for a high level of co-ordination in government policy if environmental issues were to be translated into concrete benefits. Examples were given of units responsible for environmental preservation acting in isolation and of projects and programmes being formulated and implemented without inputs from such institutions. In other cases, projects were submitted for the consideration of environmentalists in their final stages of preparation. It was recommended that if development plans and projects were to effectively take into account the environmental aspects, there was the need for all projects to be evaluated to ensure that the environmental dimensions be considered at

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<sup>4/</sup> The text is attached at Annex III.

the earliest stages of project formulation. In this respect, it was also proposed that procedures should be adopted which would require comment on the environmental impact of a project in its very formulation.

11. In so far as these comments referred to the project relating to strengthening the capability of the nations of the region to prepare environmental impact analyses, it was felt that the project should focus greater attention on the question of institutional linkages and co-ordination.

12. In an attempt to reach a wider audience, it was proposed that seminars and training programmes scheduled to include planners and engineers of the wider Caribbean region might usefully be broken down to service specific sub-regional groupings. This disaggregation might also take place along linguistic lines.

13. During the discussion of the project relating to formulation of advisory coastal zone management schemes, it was suggested that the formulation of the objectives could profit from greater precision. The concept of "carrying capacity" is too often seen to be a static consideration which did not take fully into consideration the influence of technology and of effective resource management. In the case of small Caribbean states which had no hinterland into which to expand, it was questioned what other options that country had even if it had already by some theoretical calculation exceeded its carrying capacity. In such a case the focus would have to be on a better management of its resources to improve the long term viability of its territory. Similarly, the Meeting felt that the concept of sustainable life style needed to be placed in a more dynamic context.

14. With respect to the workshop proposed in the project, the view was expressed that care would be needed in the structuring of the decisions as well as in the selection of participants. It was suggested that representatives of the various disciplines would meet first among themselves to agree to common positions before meeting together in the second phase for a multi-disciplinary exchange.

PRIORITIES AND WORK PROGRAMME

15. After extensive discussion of the two projects submitted to the Working Group, it was decided to choose the project relating to environmental impact assessment as the first priority. The Meeting was also informed that member governments had already been seeking assistance from ECO in environmental impact analyses. It was, however, the view of ECO that the subject could be more effectively addressed at the Caribbean sub-regional level. Since the Ad Hoc Working Group had chosen the same subject area as a priority, it was considered that the matter should be submitted to the next ministerial meeting of CDCC for a mandate at the regional level. The view was also expressed that such a ministerial mandate might assist in the search for funding as this was not currently available to ECO. If mandates were given the ECO representative was of the view that activities on the project could begin in early 1982. The Meeting agreed that the mandate of ministers should be sought at the next meeting of CDCC in order that the project could be expedited. The next Meeting of the Ad Hoc Working Group would be convened once the project commenced. In the interim phase, it was agreed that participating countries with focal points for environmental matters would produce a short note showing the interface between such focal points and the physical/regional planners. If possible, mention should also be made of their relationship to the national focal points for the implementation of the Caribbean Environmental Programme. It was noted that this exercise would lead the deliberations of the Working Group into the first phase of the project. Participating governments were asked to submit their comments to the ECLA Secretariat by the end of November, and that Office would circulate them to interested planning agencies.

16. It was nevertheless felt that the project relating to advisory coastal zone management schemes while not the first priority contained useful elements for the planners. It was agreed that the project with the emphasis given during its discussion should be reserved for action by the Working Group as soon as the priority project was underway.

## 1. Introduction

The purpose of this study is to investigate the effects of

the proposed system on the performance of the users.

The study is organized as follows:

### 2. Methodology

The methodology used in this study is

described in detail in the following sections.

The data collection process is as follows:

The data is collected from the users

using the proposed system.

The results of the study are as follows:

The proposed system has a positive effect

on the performance of the users.

The study concludes that the proposed system

is effective in improving the performance of the users.

The study also identifies some limitations

of the study and suggests future research.

The study is limited to the users of the proposed system.

Future research should investigate the effects of the proposed system

on other users and in other contexts.

Conclusion

The proposed system is effective in improving the performance of the users.



LIST OF PARTICIPANTS

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LIST OF DOCUMENTS

<u>Document No.</u>	<u>Title</u>
CDCC/PWG:P/81/1	Draft Provisional Agenda
CDCC/PWG:P/81/2	Background and Mandate of Ad Hoc Working Group on Physical and Regional Planning
CDCC/PWG:P/81/3	Future Work Programme of Ad Hoc Working Group on Physical and Regional Planning
CDCC/PWG:P/81/3A	Project proposal entitled: "Development and Strengthening of the Capability of the nations of the region to prepare environmental impact analyses of major development projects and plans in order to incorporate the dimension of the environment and natural resources in the planning and implementation of socio-economic development programmes".
CDCC/PWG:P/81/3B	Project proposal entitled: "Formulation of advisory coastal zone management schemes with particular reference to the preparation of guidelines for land use, resource management and environmental protection and support for national endeavours in this area".



SOME THOUGHTS ON THE ROLE OF ENVIRONMENTAL IMPACT ASSESSMENT  
FOR DEVELOPING COUNTRIES AND ECO'S ROLE IN THE AMERICAS

Historical Background.

The concept of Environmental Impact Assessment (EIA) came to the fore of world attention after the United States of America's National Environmental Policy Act (1969) (NEPA) was passed on the 1st January 1970. One of the key sections of the Act [s.102(2) (c)] states that "whenever a federal agency proposes to take a major action having a significant effect on the quality of the human environment, it must prepare a detailed statement of the environmental effects and make this statement available to the President, the Congress, and the American Public" (emphasis added). Five requirements must be dealt with in a U.S. Environmental Impact Statement (EIS):

- (a) the environmental impact of the proposed action;
  - (b) any adverse environmental effects which cannot be avoided should the proposal be implemented;
  - (c) the alternatives to the proposed action;
  - (d) the relationship between local short-term uses of man's environment and maintenance and enhancement of long-term productivity;
- and (e) any irreversible and irretrievable commitments of resources which would be involved in the proposed action should it be implemented.

The law does not specify what is a major or a significant effect, nor does it stipulate what a detailed statement is. It was subsequently left to the courts during some 250 litigations within the first five years of the Act's existence, and to the Council for Environmental Quality (created by NEPA) to give more precision to those words.

Since the implementation, controversy has raged within and without the U.S.A. There are many people, including concerned environmentalists who believe that the EIS regulations have become a tool for obstruction,

a procedural roadblock or a giant paperwork machine and that they have become far too physically and ecologically oriented to the detriment of the socio-economic benefits. Others believed that the regulations have become a highly significant and effective environmental tool for decision-making. No doubt there is some justification for both observations: the application of NEPA to specific projects has had the effect of improving planning processes in the U.S.A.; it has highlighted many of the nation's environmental problems and encouraged agencies to improve their programmes; and the flexibility of the laws has made it applicable in areas where more substantive standards or controls would not have been feasible. On the other hand, application of the Act has not filled the need for improved policy and institutions to deal with nationwide environmental problems; it has caused inordinate and costly delays in the implementation of some projects and programmes; and the preparation of the required detailed EIS has in many cases been very costly, several millions of dollars in some cases.

Consequently it should not appear to be unreasonable to suggest that a comprehensive environmental impact statement, in the U.S. context, may be beyond the capabilities, either technologically or economically or both, of many of the developing countries of the world. Indeed the U.S. experience has led many countries, developed and developing, to reject the concept out of hand on the bases that: it would be too expensive; the necessary human and technological resources do not exist; and that development would be stalled. The latter is a particular concern of developing countries. Indeed the phrase "environmental impact statement" has become so emotive that a British Government official at a seminar was most insistent that the term should not be used at all in the EEC. He suggested instead the phrase "development impact analysis".

#### The Need for EIA

Nevertheless, regardless of the phraseology or semantics, it has generally been recognized by most countries of the world - developed and developing - that some form of environmental impact assessment (procedure) is required,

particularly for major development projects. Major funding institutions have also adopted policies for ensuring that environmental impact analyses be conducted for major projects to be funded by them.

The serious long-term effects of some major development projects such as the Aswan Dam in Egypt or on the Brokaponda Dam in Suriname are well documented and fairly well known. The effects of other projects such as major irrigation schemes, power plants and tourism complexes have generally not been so well advertised.

However, even when generalised long-term environmental consequences have been even cursorily considered, short-term social, economic and health effects have often been ignored. The latter can often be quite severe, particularly during the construction phase of a project.

Examples of such effects are:

- increased heavy vehicular traffic occasioned by movement of materials and construction personnel. This leads to increased road noise, increased accidents, rapid deterioration of road surfaces and sometimes damage can be caused to the foundations of nearby buildings;
- an increase in mud on the roads and airborne dust which can affect a sizeable population;
- increased noise (after 24 hours per day) due to construction activity;
- scars on the landscape from borrow pits used for construction materials. Borrow pits often disturb the local watershed equilibrium, can lead to rapid erosion, landslides, temporary blocking of natural and man-made drainage channels, siltation of rivers etc;
- an overburdening of the social services such as schools, and medical facilities; the latter particularly due to increased accident rates among construction workers;
- an overburdening of the housing market;

- dock congestion, since in most developing countries a large proportion of the construction materials, plant and machinery have to be imported. Dock congestion can lead to serious delays in unloading and subsequent increased costs of essential imports of foodstuffs, medical supplies and raw materials for industry. Spoilage of cargoes is often the result of congested docks;
- overloading of the bureaucratic machinery also often manifests itself throughout the society;
- blocking or diversion of rivers, streams, or drainage channels, or the alteration of drainage characteristics of the land can damage the breeding and dispersion patterns of disease vectors.

#### Type of Activities to be Assessed

This brings us to the question: what type of activities should be subjected to EIA; large projects or small ones; public projects or private ones? It has generally been recognized that the following should be subjected to EIA as a minimum:

- all major installations for extractive or manufacturing industry;
- power plants of all types; water supply and sewage treatment and disposal schemes;
- major transport infrastructure projects;
- new towns and other large-scale urbanisation schemes.

However, it is difficult to decide whether or not only large projects should be subjected to an EIA. The incremental effects of a number of small impacts, with the added danger of synergism, can have more serious environmental consequences than one large project.



### Content of an EIA

The exact content of an environmental impact assessment is also open to question and different interpretation in different countries. However, for the exercise to be worthwhile and meaningful, there are certain essential elements which should be considered. These are:

- a description of the project (from the pre-construction to the fully operational phases) being assessed, in particular its characteristics with regard to emissions to the environment, etc;
- a description of the environment into which the project is to be placed, including wider locational, socio-economic and cultural aspects;
- a description and preferably a quantified estimation of each separate impact of the project on the environment, including synergistic and antagonistic effects;
- consideration of alternatives, if available, including comparison of "with project" and "without project" future situation;
- an analysis of the environmental impacts leading to an overall assessment and recommendations.

The relative importance and depth of analysis of each of the above elements will vary from country to country depending on their individual priorities and information/data base. Nevertheless every effort should be made to identify each separate impact possible and the relative importance of each impact should be estimated. It is worthwhile here to mention the case of the virtual disappearance of the Egyptian sardine industry following the completion of the Aswan Dam. It was not foreseen that the dam would prevent the annual transport of nutrients into the Mediterranean, thereby drastically reducing the sardine food supply. As a result the annual catch of that fish dropped from a pre-dam figure of 18,000 tons to 500 tons in 1975. At the same time, millions of dollars were raised internationally to save and protect ancient Egyptian archeological sites and ruins. That is not to say that the priorities were right or wrong or that the dam's design would or should have been

changed had the destruction of the sardine industry been foreseen. The point is, that the effect could have been planned for and it need not have had such a dramatic and disastrous effect on the lives of those people whose livelihood depended on the sardine industry. The unforeseen serious spread of bilharzia is another dramatic example of what can happen in the absence of serious consideration of environmental impact.

On the other hand it is not seen as necessary that EIA's go as far as has been required in the U.S.A. where court rulings on NEPA have established that the EIS must discuss "all known possible environmental consequences" (emphasis added).

#### Classification of Impacts

There are many ways to classify the various environmental impacts and new methods are constantly being tried and evaluated. It is sufficient to say here that the assessment should at least differentiate the impacts according to whether they are:

Permanent/irreversible	or	temporary/reversible
Short term	or	long term
Localised	or	strategic/widespread
	or	distant
Primary	or	secondary (or tertiary)
Direct	or	indirect

#### Quantification of Impacts

The quantification of the various impacts is perhaps the most controversial aspect of EIA particularly when second or third order effects are considered. Very often there is an insufficient data base from which to work. Data are particularly lacking in the developing countries, and collecting such data is very costly. However where there appears to be sufficient quantitative information causal relationships are often not well understood. Many methods

exist for making quantitative estimations of environmental impact. Possibly one of the best management and decision making tools, which can be used in developing countries where the data base is poor, is simulation modelling. These techniques enable the decision makers to determine those elements of the environment (including socio-economic) which are sensitive to management alternatives and those which are more robust. The technique does not give the decision maker definitive answers (they don't exist in the real world); rather it shows how ecological understanding can be used to improve management and to guide development; it shows how different management options impinge differently on the environment; and it forces the decision makers to consider all of the parameters which have to be considered.

#### Legislative Requirements

It would not be possible nor desirable to prescribe a universal legal framework for encompassing environmental impact assessment for developing countries. The best method for incorporating such requirements into their existing constitutional and legal framework must be found. Nevertheless, it is generally felt that the requirement for EIA's will have to be embodied in some form of legal framework and will require institutional reorganisation in order to introduce the multidisciplinary needs of such exercises and also to reduce the departmentalizing and inter-departmental rivalries which exist in most governmental bureaucracies.

#### Human Resource Development

Three levels of required skills have been identified, depending on the management functions of the people involved in EIA.

Firstly, there is the cadre of public authorities who should be able to make a sound review of an assessment to detect both inadequacies and inaccuracies. These people generally would have the responsibility

for the issuance of terms of reference of the assessment and the issuance (or recommendation for the issuance) of permits for the proposed action. Those involved would normally be government technical officers and they would not normally require detailed knowledge of methodologies employed in the assessment, although experience in the field would greatly enhance their competence.

Secondly, there are those personnel who would have the responsibility for establishing the nature of an environmental/health impact assessment and the planning and supervising of the actual study, but who would not themselves conduct the individual investigations. Such people would require detailed knowledge of appropriate methodologies, but not necessarily the intricate details. They should be especially competent in data interpretation and evaluation and they should be able to specify elements of key concern and to deemphasize those of limited significance.

Finally, there are those people who have to carry out the assessment. Those people require the most detailed knowledge of specific research methodologies to be employed in the study. The disciplines involved here may include several or all of the following, depending on the nature of the project being evaluated: biology, chemistry, meteorology, environmental sciences, chemical engineering, ecology, toxicology, industrial hygiene/occupational health, epidemiology, sociology, anthropology, economics and systems analysis.

The above listing of specialities, which is not exhaustive, is not intended to imply that for each assessment a huge multidisciplinary team should be assembled. It is far more cost-effective and efficient to have a small team (three to five persons) with key skills. The services of other specialists are then drawn upon when needed.

### Implementation

The analysis of the environmental consequences of a proposed development should not be seen as an end in itself which ends with the presentation of a report. Rather it should be seen as the beginning of a continuous process of monitoring environmental quality. It is consequently very important that the assessment pay careful attention to the key concerns associated with the long-

term operation of the project to enable an efficient monitoring programme which would not be necessarily costly. Special emphasis should be accorded to any toxic materials involved in the project and an emergency/disaster plan should be prepared, including an atmospheric dispersion model. Involvement of the local community who would be most affected by the project should also be encouraged from very early on in the planning process.

#### The Pan American Centre for Human Ecology and Health (ECO)

ECO was established by the Pan American Health Organization PAHO/WHO at the request of the member governments. The Centre is physically located at Metepec, forty miles from Mexico City, and serves the entire Americas including the Caribbean. The staff establishment consists nine professionals who embrace the following disciplines: ecology, epidemiology, occupational health, ecotoxicology, social anthropology, environmental systems analysis and engineering.

The main priority work programme areas of the Centre are: prevention and control of chemical hazards to health; occupational health; ecological strategies to prevent or control disease; and community organization and environmental health. The major activities in the above fields are: technical assistance to governments; human and institutional resource development; information analysis and dissemination; and research.

ECO can provide assistance to the Caribbean governments in the field of environmental impact analysis as outlined below.

ECO's Rôle should not, and could not, be to undertake environmental impact assessments for PAHO member governments, rather it should be catalytic and co-ordinating.

ECO can act in an advisory capacity; can maintain a roster of consultants; recommend and/or engage consultants; and assist in the process of evaluation of assessments. It should however be emphasized

that ECO's Rôle need not, and should not, end with the presentation of an assessment; it can assist with the implementation of the various recommendations particularly in so far as the establishment of a monitoring programme may be called for.

Training programmes in the three levels of skills identified in the previous section can be developed by ECO and regional courses can be organised using regional consultants as far as possible.

ECO can also play a useful role in helping to identify legal requirements of the member governments and in helping them to develop the necessary institutional structures.

A most important role for ECO would be in the area of information gathering, analysis and dissemination.

The foregoing was based partly on the following references:

1. Environmental Impact Assessment, edited by T. O'Riordan and R. Hey (1976), Saxon House, Westmead, England (Book)
2. Environmental Impact Assessment -- Analysis of Environmental Consequences of Significant Public and Private Projects OECD (1979), Paris (Book)
3. Adaptive Environmental Assessment and Management, edited by C.S. Holling (1978), John Wiley, England (Book)
4. Environmental and Health Impact Assessment -- Dr. S. Pier delivered to Regional Workshop on Human Ecology in Development in the Caribbean, Barbados, 28 April, 2 May 1980 (Mimeo)
5. The Environmental Consequences of the Industrialisation of the Commonwealth Caribbean with Special Reference to Trinidad and Tobago -- A.M. Gajraj (1977) mimeographed report for the Caribbean Technology Policy Studies Project, Inst. of Development Studies, University of Guyana and the Institute of Social and Economic Research, University of the West Indies.

