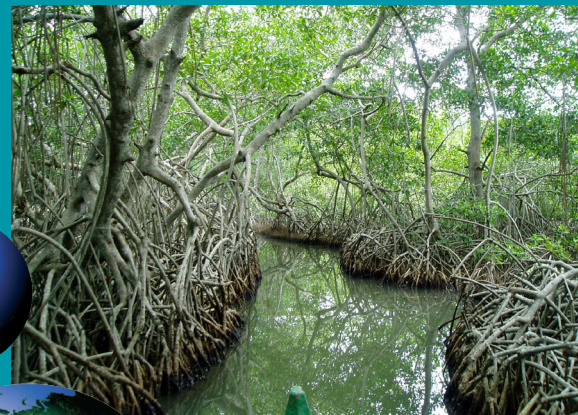


APPLICATION OF THE ECOSYSTEM APPROACH IN INTEGRATED ENVIRONMENTAL ASSESSMENTS

Thematic Module of Volume
2 of the Training Manual on
Integrated Environmental
Assessment and Reporting



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Table of Contents

1.	Introduction and objectives	1
2.	Context	2
2.1	Background	2
2.2	Concepts and terms	3
2.2.1	The ecosystem concept and the ecosystem approach	3
2.2.2	Ecosystem services	5
3.	Integration of the ecosystem approach into IEAs	8
3.1	Delimitation of the study area	10
3.2	Developing the ecosystem conceptual model	12
3.3	Delimitation of ecosystemic units of analysis	16
3.4	Data analysis tools	21
3.4.1	Non-spatial analysis	21
3.4.2	Spatial analysis	24
3.4.3	Multiscale analysis	26
3.4.4	Use of indicators	28
4.	Considerations for the application of the ecosystem approach in future IEAs.	36
5.	References	38
6.	Annexes	42
7.	Glossary of terms	51

List of Figures

Figure 1. Simplified analytical structure for integrated environmental assessment and reporting (adapted from Jäger and others, n.d., Training Module 1 of the IEA Training Manual.)	3
Figure 2. Interconnections among the principles of the ecosystem approach that help answer key questions in an IEA assessment process	8
Figure 3. Methodology for incorporating the ecosystem approach into IEAs	9
Figure 4. Example of a qualitative analysis of changes in the state of the environment and its relationship with humans	22
Figure 5. Essential stages for conducting a spatial analysis in an IEA	25

List of Boxes

Box 1. Principles and operational guidelines of the ecosystem approach	4
Box 2. The “Amazonias” after the application of GEO Amazonia	11
Box 3. Example and identification of environmental services in the sub-global Millennium Assessment of Colombia’s coffee-growing region (Armenteras and others, 2005)	13
Box 4. Possible DPSIR conceptual framework for analysing ecosystem services for Amazonia. Adapted from the Millennium Ecosystem Assessment (2005) and UNEP (2007)	14
Box 5. Example of the development of an ecosystem model and analysis of an ecosystem service	15
Box 6. Examples of structural ecosystemic units of analysis	17
Box 7. Use of remote sensors to map functional ecosystem units	20
Box 8. Use of non-spatial data in an IEA. Example: number of species by biological group reported, per country and per Amazon region (source: GEO AMAZONIA 2009)	22
Box 9. Ecosystem services of Amazonian forests: regulation of water flow and evidence of the effect of deforestation at multiple scales (Foley and others, 2007)	26
Box 10. Example of a multiscale spatial analysis to evaluate supply of and demand for an ecosystem service	27
Box 11. Summary of the status of global indicators by thematic areas as set forth in the 2010 Biodiversity Indicators Partnership project (Biodiversity Indicators Partnership, 2010)	32

List of Tables

Table 1. Definitions of types of goods and services related to forest and coastal/marine ecosystems	6
Table 2. General indicators for assessing the state of ecosystem services (Millennium Ecosystem Assessment, 2009) and a proposal for possible indicators for Amazonia	25

List of Acronyms and Abbreviations

ACTO	Amazon Cooperation Treaty Organization
BIP	Biodiversity Indicators Partnership
CBD	Convention on Biological Diversity
DPSIR	Drivers-Pressure-State-Impact-Response
FAO	Food and Agriculture Organization of the United Nations
GEO	Global Environmental Outlook
GIS	Geographic information systems
IEA	Integrated environmental assessment
NVDI	Normalized Difference Vegetation Index
ROLAC	Regional Office for Latin America and the Caribbean

1. Introduction and objectives

Our modern-day society, and consequently the decision makers who represent us, increasingly needs reliable, up to date answers to questions as fundamental as some of those posed by the integrated environmental assessments (IEAs) of the United Nations Environment Programme (UNEP) since IEAs were introduced. For example: how is our environment changing? Two decades or more ago, IEAs began to provide information on this topic and to highlight some trends related to environmental changes. The new environmental challenges of this century —during which such issues as invasive species, climate change and others have emerged— are now demanding an increasingly large number of comprehensive answers as well as effective access to high-quality, objective, science-based information that will make it possible to firmly strike a balance among our societies' diverse objectives.

On the basis of the progress outlined in *Global Environmental Outlook: Environment for Development (GEO 4)* (UNEP, 2007), one of the strategies adopted by the Division of Early Warning and Assessment, Regional Office for Latin America and the Caribbean (ROLAC), UNEP, is to incorporate an ecosystem approach into its IEAs. This approach and its by products (such as the ecosystem service approach) have proved highly useful for examining the state of the environment by including human well-being in the analyses. The ecosystem approach, along with its 12 principles, was first proposed by the Convention on Biological Diversity (CBD) in 2000 in Nairobi (decision V/6) as a strategy for the integrated management of land, water and natural resources along with the recognition that humans are an integral component of all of the world's ecosystems. The fundamental unit of this approach is the ecosystem, understood as the combination of "living organisms and their non-living environment". In addition to having an intrinsic value, ecosystems provide fundamental services to support life on Earth.

This thematic module, prepared as an addition to the **Training Module of the Training Manual on Integrated Environmental Assessment and Reporting** (formerly, the *GEOResource Book*), provides a set of basic guidelines for applying the ecosystem approach in future regional and subregional IEAs. The module will help users:

1. become familiar with the conceptual, methodological and technical aspects of the ecosystem approach and serve as a guide on how to incorporate those aspects into an IEA;
2. understand the importance of the ecosystem concept and of the services that ecosystems provide, in order to prepare this type of assessments

Throughout the sections of the module, concepts and methodologies are provided along with specific examples on using geographic information systems (GISs) and remote sensors, developing indicators, and carrying out spatial modelling and information analysis. In addition, some exercises are proposed to encourage discussion and support users with elements that will allow them to consider incorporating this approach into the stages of their IEAs that examine the state of the environment.



2. Context

2.1 BACKGROUND

Since 1995, UNEP has helped develop methodologies to design, plan and implement integrated environmental assessments at the global, regional, subregional, national and local levels. These processes are traditionally participatory, multidisciplinary and multisectoral and in many cases are also considered multidimensional and even multiscaled (Jäger and others, n.d., Training Module 1). Through IEAs, evaluations of the state of environment have been developed, on the basis of the Drivers-Pressure-State-Impact-Response (DPSIR) analytical framework, composed of these five main elements. This analytical framework establishes a relationship and directionality among the constituent components, and it is the reference point for assessing the direct factors (pressures) and the indirect ones (drivers) that influence the state of the environment, as well as the possible impacts of these actions, in order to sustainably manage the environment through timely responses. The use of this framework in IEA processes has helped provide answers to five fundamental questions (figure 1):

1. What is happening to the environment and why? (state, pressures, drivers)
2. What are the consequences for the environment and humanity? (impact)
3. What is being done, and how effective is it? (responses)
4. Where are we heading?
5. What actions could be taken for a more sustainable future?

The first three questions are directly related to the environmental assessment process and to the contents of this module.

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