ECOSYSTEM MANAGEMENT APPROACH

Piciu, Gabriela-Cornelia[1]

Abstract

The purpose of this article is to highlight the need for the existence of which is an ecosystem management approach to natural resource management, focused on supporting ecosystems to meet environmental and human needs in the future. In this respect it is emphasized that systems management is adaptive to changing needs and new information, promoting an integrated view on the prospects of social, economic and environmental, to preserve and protect the environment and also to promote human welfare through various services that environment can provide.

One of the six priorities of the strategy the United Nations Environment Programme (UNEP) is that countries utilize the ecosystem approach to enhance human well-being. Ecosystems Management Programme of UNEP is focused on the functioning and resilience (flexibility) ecosystems and the services it provides, this program supporting countries and regions for greater integration of ecosystem management approach in the development and planning.

1. Introduction

Ecosystem management is an approach to natural resource management, focused on supporting ecosystems to meet environmental and human needs in the future. Management systems is adaptive to changing needs and new information, promoting an integrated view on the prospects of social, economic and environmental, to preserve and protect the environment and also promotes human welfare through various services that environment provides.

One of the six priorities of the 2010-2013 strategy of the United Nations Environment Programme (UNEP) is that countries utilize the ecosystem approach to enhance human well-being, ecosystem management program of UNEP is focused on the functioning and resilience (flexibility) ecosystems and the services it provides, this program helping countries and regions to:

- Increased integration of ecosystem management approach in the development and planning;
- building capacity to use ecosystem management tools;
- harmonize their environmental programs and financing priority environmental protection and environmental services.

They can be identified five main goals management ecosystem approach (MEA):

- Maintenance of viable populations of all native species;
- Existence (protected areas) for all types of native ecosystems in their natural variation;
- maintain evolutionary and ecological processes
- maintain the evolutionary potential of species and ecosystems
- Adaptation uses and human occupation.

There is a general opinion that maintaining ecosystem integrity should take precedence over any other goal management, arguing that people must prioritize this objective with ethical content.

2. The implementation of the MEA

The implementation of the MEA is difficult to transform this theoretical approaches in a practice aimed ecosystems, identifying themselves at least two constraints:

- minimal knowledge of ecosystem functions;
- Ignorance immediate human needs on landscapes.

The existing literature attribute different meanings long term management of ecosystems, depending on the current management approach, difficulties and costs of

[1] Scientific Researcher II, Ph.D., Financial and Monetary Research Center „Victor Slăvescu", Bucharest, *e-mail: gabriela_piciu@yahoo.com*

implementing the Foreign Ministry and identified three main approaches to management ecosystems.

The first approach is one that focuses on the factors anthropocentric in ecosystem management, with the aim of maximizing the number of people who can use a resource or ecosystem under environmental constraints.

A second approach is bio-center that promotes sustainable human use, while maintaining the ecological integrity of the ecosystem.

The third approach is eco-center promoting sustainable human use, by managing cross-regional level, this approach focusing on maintaining and restoring ecosystem functions; eco-region is defined as the area that characterizes the relative homogeneity in terms of ecological systems, involving bodies and environmental interdependencies.

MEA takes into account man's relation to other participants in the ecosystem, providing human ecosystem goods and services, which refers to the benefits derived by humans, directly or indirectly, from the natural system. They were divided into four categories of services eco-system supporting human welfare, among them being found services that direct economic value, such as providing food, but many services, such as on the importance of spiritual ecosystems or climate regulation and it is more difficult to understand in economic terms.

The four categories of ecosystem services are:

- Manufacture and supply of services by ecosystems: food, fresh water, forest wood, fiber, bio-chemicals, genetic resources etc.

- Non-material benefits obtained from ecosystems: spiritual, recreational, aesthetic, educational, symbolic, utilities, etc.

- Benefits obtained from regulating ecosystem processes: climate regulation, disease, water cycle, detoxification, etc.

- Services needed for production services to other ecosystems: soil formation, nutrient cycle, primary production, etc.

MEA application requires that the following minimum requirements for achieving sustainable development: economic growth resizing; enhance people's lives; conservation of environment and natural resources;

Eco-center governance of the economy and the environment, sustainable development involves a balance between economic growth and environmental protection. The main lines of sustainable development are: sustainable environment; social equity - intergenerational, economic prosperity, responsible for the implementation of the axes organizations (companies, firms, etc.) and society (individuals).

There is no generally accepted definition of ecosystem management, but being able to highlight some of its dimensions, namely:

- Approach that goes beyond natural resource management, including economic, political, social as well as natural environment;

- Environmental strategy formulation development (sustainable, durable);

- Natural and anthropogenic resources allocation so as to obtain optimum use of the environment to satisfy basic human needs;

- identify the best environmental options for promoting sustainable development;

- Control of all human activities that have a significant environmental impact;

- The organization environmental performance management, organizations and companies;

- decision-making that limit the impact of human activities on the environment.

Ecosystem management must address the following aspects: identifying environmental objectives; the extent to which they can be achieved; identifying, developing and implementing tools that can be attained.

Putting the MEA involves the following steps: identifying needs / objectives and formulating problems; establishing appropriate actions (impact analysis, uncertainty, risk assessment) development plan.

Action implementation (impact assessment); development and implementation of management actions; evaluation and adjustment of management to achieve each step being necessary data, information and knowledge.

It requires an integrated approach to the MEA, and the following reasons:
- to avoid reactive measures, insufficient focus, fragmented and poorly coordinated;
- decisions involve integrating knowledge from different fields of interest - decisions are natural environmental border, the economic, social and political;
- environmental issues spreads easily between three natural environments: air, water, earth.

MEA has two defining dimensions, namely: integrated and strategic vision.
- MAE involved development integrated management system combining the health, safety and the environment, basics of being integrated MEA: coordination, control, leadership and influencing all human activities, formulating and implementing a set of activities; a default approach.

-MEA's strategic approach involve s strategic environmental assessment - a process comprehensive, systematic and formal evaluation of the environmental effects of a policy, program, plan or alternative strategic management of environmental compartments and the preparation and implementation of policies aimed at sustainable development environment, basics of strategic MEA is: long-term vision; monitoring, auditing and proper assessment of local problems, regional, national or global.

MEA is promoted interactive two perspectives, contributing to strengthening national ecosystem management, these perspectives are:

MEA local, regional, community and sector is a multilayered process, involving many interrelated levels, some sectors developing their own ways of approach, standards and sources of experience;

Cross-Border MEA or global, global interdependence and common global systems means assuming the existence of international coordination and control, environmental issues across borders and globally should be based on international cooperation - such services is more difficult than their conclusion.

MEA conceptual framework is presented synthetically in Figure 1.

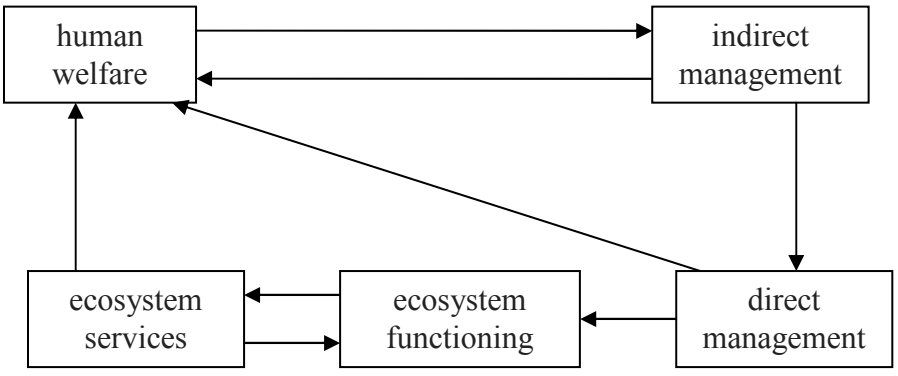

Figure 1: MEA conceptual framework

3. MAE principles

MAE orient by following principles are complementary and interdependent:

Objectives of natural resource management, organic and inorganic, are a matter of societal choices. Different sectors of society according to their own needs ecosystems considers economic, cultural and societal. Indigenous peoples and other local communities living in certain ecosystems are key players and their rights and interests must be recognized and protected. Both cultural diversity and the biological are central components of the ecosystem approach, and MFA should take account of this, societal choices must be expressed as clearly as possible, and ecosystems should be managed for their values intrinsic and tangible benefits or intangible for people in a fair and equitable manner.

MEA should be decentralized to the lowest appropriate level. Decentralized systems can lead to greater efficiency, effectiveness and equity, management must involve all stakeholders and balance local interests with the broader public interest. The management is closer to the ecosystem, the greater the responsibility, ownership, accountability, participation and use of local knowledge.

Ecosystem managers should consider the effects (actual or potential) of their activities on adjacent ecosystems and other ecosystems. Interventions management in ecosystems often have unknown effects or unpredictable on other ecosystems and therefore requires a careful analysis of these effects, requiring arrangements or ways of organizing new institutions involved in the decision-making if necessary, appropriate compromises.

Recognizing potential gains to management, there is usually a need to understand and manage the ecosystem in an economic context, any such MEA program must consider:
- reduce those market distortions that adversely affect ecological diversity;
- harmonization of incentives to promote biodiversity conservation and sustainable use;
- internalization, where possible, costs and benefits in the given ecosystem to the extent possible.

The greatest threat to biological diversity lies in its replacement by alternative systems of land use, it often appeared through market distortions, which undervalue natural systems, providing perverse incentives and subsidies to favor the conversion of land to less diverse systems. Often those who benefit from conservation cannot pay the costs associated with conservation and, similarly, those who generate environmental costs (e.g. pollution) escape responsibility eviction. Harmonization and alignment of incentives allows those who control resources to ensure that those who generate environmental costs will pay.

4. Conclusions

Conservation of ecosystem structure and functioning, in order to maintain ecosystem services, should be a priority for the Foreign Ministry. The operation and ecosystems resistance depends on a dynamic relationship within species, between species and between species and their non-living environment as well as in the physical and chemical interactions. Conservation and, where appropriate, restoration of these interactions and processes is of greater importance for long-term maintenance of biological diversity than simply protection of species.

Ecosystem must be managed within the limits of its operation. Taking into account the probability or possibility to achieve management objectives should be given to the environmental conditions that limit natural productivity, ecosystem structure, functioning and diversity. The limits of ecosystem functioning may be affected to different degrees of temporary conditions, unpredictable, artificial and therefore, management should be appropriately cautious.

MEA should be applied at the appropriate spatial and temporal scale, it must be limited spatial and temporal scales that is suitable targets. Limits for operational

management should be defined by users, managers, scientists and resident populations, indigenous and local communities, where necessary must be promoted connections between areas.

The ecosystem approach to management should be based on the hierarchical nature of biological diversity characterized by the interaction and integration of genera, species and ecosystems.

Recognizing the different temporal scales and lag effects that characterize ecosystem processes, objectives for ecosystem management should be set on the long term, this conflict with the tendency of humans to favor short-term gains and immediate benefits, to future long-term, specific ecosystems.

MEA must recognize that change is inevitable, ecosystems are changing, both as taxonomic composition and abundance as the population and, therefore, management should adapt to changes. Besides their inherent dynamics of change, ecosystems are faced with a complex of uncertainties and potential surprises in human spaces, biological and environmental disrupting traditional regimes may be important for ecosystem structure and functioning, being necessary to maintain or reestablish. MAE must utilize adaptive management in order to anticipate and respond to such changes and events and should be cautious in making any decision that could block options, but at the same time are necessary mitigation actions to face changes long term, such as climate change.

The ecosystem approach to management should seek appropriate balance and integration of conservation and use of ecological diversity, this diversity is critical both for its intrinsic value and the key role they play in providing ecosystem services and other services, which it depends, ultimately, human existence. Compared to the trend of the past management components of biological and ecological diversity, protected or unprotected, currently requires a change in the sense of situations more flexible, strictly protected from natural ecosystems to those built by man.

MEA should consider all forms of relevant information, including the knowledge, innovations and practices of scientific, indigenous and local information from all sources are necessary to achieve effective management strategies ecosystems. All relevant information from any the area in question must be shared with all stakeholders, taking into account the assumptions underlying management decisions, must be explicit and verified by considering the available knowledge and views of stakeholders.

The ecosystem approach to management must involve all relevant disciplines and sectors of society, most problems are complex MAE, with many interactions, side effects, implications and therefore would must to engage the necessary expertise and stake-holders local, national, regional and international levels, as appropriate.

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