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POVERTY AND ECOSYSTEMS: SYNTHESIS OF A CONCEPTUAL FRAMEWORK

Note by the Executive Director

The present note presents a conceptual framework to analyse the linkages between poverty and the environment, in keeping with Governing Council decision 21/15 of 9 February 2001. The text of the following paragraphs has been reproduced without formal editing.

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Poverty and Ecosystems: a conceptual framework A Synthesis

I – Context, Aims and Relevance

1. Following the Malmo Ministerial Declaration (2000) and the United Nations Millennium Declaration (2000), Governing Council decision 21/15 of the Global Ministerial Environment Forum requested the Executive Director of UNEP to “develop and promote understanding of the linkages between poverty and the environment, means of making people’s livelihoods more productive and environmentally sustainable, and appropriate policy options for Governments, a significant priority which should be to assist governments in integrating environment in central social and economic processes, including the poverty reduction strategies and the comprehensive development frameworks.”
2. The main objective of this document is to present a conceptual framework to analyse the linkages between poverty and the environment. It aims to i) demonstrate how the poor depend on ecosystem services for achieving basic constituents of well-being, ii) identify barriers and drivers that prevent the poor from using those services, and iii) identify policy response options to remove the barriers, redesign or introduce new drivers to allow the poor to improve their well-being.
3. The contribution of this work to the poverty-environment debate is manifold: i) the use of a multidimensional concept of poverty based on capability deprivation, ii) the development of an integrated framework of instruments, institutions and organisations to address the provision of instrumental freedoms, and iii) the strong emphasis on the investigation of the complex and multi-dimensional nature of poverty-environment linkages. The proposed framework aims to meet the criteria of specificity, clarity and practicality.
4. There is a high degree of compatibility between the concept of well-being proposed here and the World Bank’s broad classification of health, vulnerability and livelihoods. Similarly, the concept of ecosystem services used here draws on the work done by the Millennium Ecosystem Assessment (MA). The introduction of innovative methodology of instrumental freedoms in this paper allows exploring further links between the multilateral environment agreements (MEAs) and poverty reduction.

II - Constituents of Well-Being Related to Ecosystems

5. All people depend on services provided by ecological systems. Yet, the poor are more heavily dependent on these services than the rich, since the rich can buy clean water or air-cleaners or build appropriate shelters to isolate themselves from environmental degradation. Ecosystems do affect well-being. The final selection of well-being constituents and their relevance must be determined by the communities or individuals concerned, ideally from a participatory process. The paper identifies 10 basic constituents of well-being:
 1. being able to be adequately nourished
 2. being able to be free from avoidable disease
 3. being able to live in an environmentally clean and safe shelter
 4. being able to have adequate and clean drinking water
 5. being able to have clean air
 6. being able to have energy to keep warm and to cook
 7. being able to use traditional medicine
 8. being able to continue using natural elements found in ecosystems for traditional cultural and spiritual practices
 9. being able to cope with extreme natural events including floods, tropical storms and land slides
 10. being able to make sustainable management decisions that respect natural resources and enable the achievement of a sustainable income stream

6. This list is not meant to be complete. It is important to note that there is a large degree of complementarity and synergy among the 10 constituents of well-being.

III – Ecosystems and Ecosystem Services

7. The concept of ecosystems is used to cover a range of issues related to the environment. Ecosystems, as defined by the MA, refer to “A spatially explicit unit of the earth that includes all of the organisms, along with all components of the abiotic environment within its boundaries”. Ecosystem services are the conditions and processes through which natural ecosystems and the species that make them up, sustain and fulfil human life. Ecosystems provide several services which can be categorised into the following components:

- i) provisioning: covering natural resources that are primarily used for economic activities, such as food, micro-organisms, plant and animal products, genetic material, fuels/energy, fiber, non-living materials and fresh water;
- ii) regulating: providing actual-life supporting functions provided for the existence of humans, such as purification of air and water, mitigation of floods and droughts, detoxification and decomposition of wastes, generation of renewal of soil and soil fertility, etc;
- iii) enriching: providing cultural and religious services that are important to many people in developing countries, such as spiritual components, aesthetic values, social relations and education and scientific values.

IV - Poverty-Environment Linkages

8. The linkages are established by relating the 10 relevant constituents of well-being to the three services that ecosystems provide. The information of driving forces or drivers provides information to develop intervention strategies or commonly called response options:

- i) being able to be adequately nourished: the provisioning of natural food is essential to improving diets, providing relief during times of famine, crop failure, pest attack and drought;
- ii) being free from avoidable diseases: many diseases are linked to ecological conditions, such as man-made malaria caused by irrigation projects, standing water and poorly drained areas, and respiratory diseases. The impacts of these diseases are much greater on poor people than rich people;
- iii) being able to have adequate and clean drinking water: destruction of watersheds and over-harvesting of water tables for human activities has caused serious disruptions in water supply. Mostly rural poor still don't have access to clean water; this leaves many of the poor with no other option but to drink contaminated water or spend a larger portion of their income on buying water;
- iv) being able to live in a clean and safe house: poor people often have no choice but to live in undesirable habitats like next to disposal dumps, industrial plants, major highways, polluted lakes or rivers, or in areas that are constantly prone to landslides and floods;
- v) being able to have clean air: with the excessive release of pollutants into the atmosphere and a disproportionate conversion of the natural ecosystem into a human dominated system, the lives of the poor have been overexposed to air pollution. To be able to have clean air, people will need also to improve ventilation within the house and switch to cleaner fuels;
- vi) being able to have sufficient clean energy to keep warm and to cook: the poor use firewood because it is cheaper than other fuels and also because it has been freely available. Yet, biomass stoves have traditionally being inefficient. The increasing scarcity of firewood has a more pronounced impact on women and children who need to walk longer distances to search for firewood;
- vii) being able to use traditional medicine: the reduction of biodiversity and the increasing scarcity in supply have affected the use of traditional medicine, that plays an integral part in the health care systems of the poor. Traditional medicine is relatively cheaper and of easier access to the poor who have been able to go to the traditional medicine doctors without fear of intimidation;
- viii) being able to continue using natural elements found in ecosystems for traditional cultural and spiritual practices: the decision to change or convert ecosystems, especially those that have

- spiritual and cultural values, has often been taken by a small-elite in developing countries at the expense of the traditional and spiritual interests of many of their inhabitants;
- ix) being able to cope against extreme natural events like floods, tropical storms and landslides: the removal of forest cover for commercial and/or subsistence activities leaves hillsides vulnerable to soil erosion and increases the probability of landslides as well as floods. This disproportionately affects the poor because they live in areas and in shelters that are more susceptible to these extreme events. Moreover, they do not have the resources, neither the access to safety nets, to cope with these events;
 - x) being able to make sustainable management decisions that respect natural resources and enable the achievement of a sustainable income stream: natural resources are one of the main sources of income for the poor (e.g. subsistence farming). With the pursue of unsustainable activities, like over-harvesting, there has been a reduction of flow from the provisioning component.

9. It must be noted that there is a close interdependency and synergy among the constituents of well-being. Similarly, there is a close relationship between the components of ecosystem services. Over-harvesting, over-use, mis-use or excessive conversion of ecosystems into human or artificial systems “damages” the regulation service which in turn reduces the flow of the provisioning service provided by ecosystems. As a result, the poor bear disproportionately a heavier burden of the impacts of ecosystem degradation that in a majority of cases were produced by the “non-poor”.

V - Instrumental Freedoms

10. There are many reasons, or “drivers” that inhibit the poor from accessing or using ecosystem services. In order to provide a systematic framework we have classified the drivers into four broad categories: 1) economic drivers, 2) governance drivers, 3) social drivers and 4) ecological drivers. Instrumental freedoms, as conceptualised by Nobel Laureate Amartya Sen, enable people to make sound decisions on the type of tools, institutions and organisations that they want in order to define policy intervention strategies to achieve desired well-being. The five instrumental freedoms that address the four broad categories of drivers are:

- i) participative freedom: when people have the freedom to take part, in an active manner, in the deliberations on the use of ecosystems in which they live, they can define and address their own needs and aspirations. In order to facilitate participative freedom, we need to not only have the necessary instruments to facilitate participation, but also the institutions and organisations. People –and especially poor people- need assistance in getting organised and articulating their views and positions on issues;
- ii) economic facilities: individuals need enabling conditions for converting the provisioning services (the natural resources) for production and/or exchange. In order to earn a sustainable income from the provisioning services offered by ecosystems, the poor 1) need a clear ownership of and transparent access to a variety of resources and 2) need help in facing higher transaction costs for transforming the provisioning services into income. Among the most important economic facilities we could mention, financial help (e.g. micro-credit schemes) and access to information (e.g. environmentally sound technologies). A combination of instruments (land titles), institutions (land tenure acts) and organisations (land office) will be necessary to address the issue of ownership status of natural resources;
- iii) social opportunities: the arrangements that society makes for education and health are critical instruments in the improvement of the agency aspect of women. It has been widely acknowledged that poor women and children are much more susceptible to becoming impoverished from ecosystem degradation due to social and cultural values inherent in the society. Many of the traditional chores involving ecosystem uses, like collecting firewood and subsistence farming, are allocated to women and children. However, in spite of this, control and ownership of these resources lies outside their domain;
- iv) transparency guarantees: high levels of corruption and inefficiency in the bureaucracy, the polity, the judiciary and business prevent societies from achieving openness and trust in their social relations. Corruption increases the costs for the poor, being one of the driving forces for the breakdown of the social fabric within societies. Inefficiency has also adverse impacts on ecosystem management, affecting environmental restrictions and the possibility of sustainable

- farming in poor countries. Improving the level of trust will involve a concerted action by all stakeholders in the community; it will focus primarily on poverty reduction by addressing sustainable ecosystem management;
- v) ecological security: the provision of ecological safety nets is important to individuals who depend on ecosystem services for achieving many of their constituents of well-being. The specific form of an ecological safety net would depend on the community and its links with the ecosystems. The actual specification of the ecological safety net should of course be determined by all individuals within the community. The intrinsic difficulty in portioning the ecosystem into its three services provides a challenge for society's determination of the critical levels or safe minimum standards necessary if ecological security is to be seen as an instrumental freedom.

11. The five instrumental freedoms are not mutually exclusive. They only make sense from the perspective of the integration of instruments, institutions and organisations necessary for the implementation and improvement of policy options.

VI - Policy Options and Response Strategies

12. In order to correct or remove the drivers that are causing the destruction of ecosystems and the subsequent deprivation of the poor from achieving the 10 constituents of well-being an integrated approach needs to be elaborated. A response strategy would comprise two elements: i) the tools of intervention and ii) the enabling conditions needed for the successful development as well as implementation of the tools.

13. We classify instruments, institutions and organisations as tools. The difference between the approach taken here compared to other existing policy frameworks is the integration of instruments, institutions and organisations within a single frame of reference. In many cases instruments do not work because the institutions and organisations needed to implement the instrument were not put in place or were inefficient in allowing the successful implementation of the policy. We use here an overarching framework to provide the enabling conditions for the successful development and implementation of the tools.

14. Policy intervention or response strategies to reduce poverty through an ecosystem approach should be developed in a framework that embraces the five instrumental freedoms through an integrated approach. Response options can be designed to intervene at two points. The first intervention can come at redesigning existing drivers of formulating new drivers to have a direct impact on any one of the constituents of well-being related to ecosystem services. The second intervention can come at addressing drivers having a direct impact on ecosystem services.

VII - The UNEP Poverty-Environment Road Map

15. The road map presented below gives a step-by-step description of the process that policy-makers need to undertake if they want to incorporate ecological systems into poverty reduction strategies. It is simply an illustration of how the conceptual framework can be operationalised.

Stage 0 – Setting the Stage: review of existing initiatives on the poverty-environment nexus to identify what has been done and what information is available and further needed;

Stage 1 – Poverty Assessment: use of Participatory Poverty Assessment (PPA) and avoidance of macro or aggregated statistics to collect information on the poor;

Stage 2 – Ecosystem Assessment: map out the ecological system the community depends on for the constituents of its well-being;

Stage 3 – Poverty-Ecosystem Mapping: overlap of the poverty maps and the environmental resource maps to identify “hot spots” that need attention;

Stage 4 – Poverty-Environment Assessment Analysis: identification of the main drivers from the PPA, carrying out an analysis of trade-offs or synergies among the three ecosystem services and the various constituents of well-being. Then, formulation of responses with respect to instruments, institutions and organisations with the primary objective of ensuring that the constituents are provided by the ecosystem. Finally, compilation of appropriate indicators that will provide information on the success of the policy interventions;

Stage 5 – Integration into local, regional and national policy frameworks: evaluate and appropriate the funds needed for implementing the recommendations. Next, decisions will need to be made on what flows can be financed by the public sector and those that need to be supported by the private sector and the international community. The work concludes with the determination of the composition of funding and a budget process.

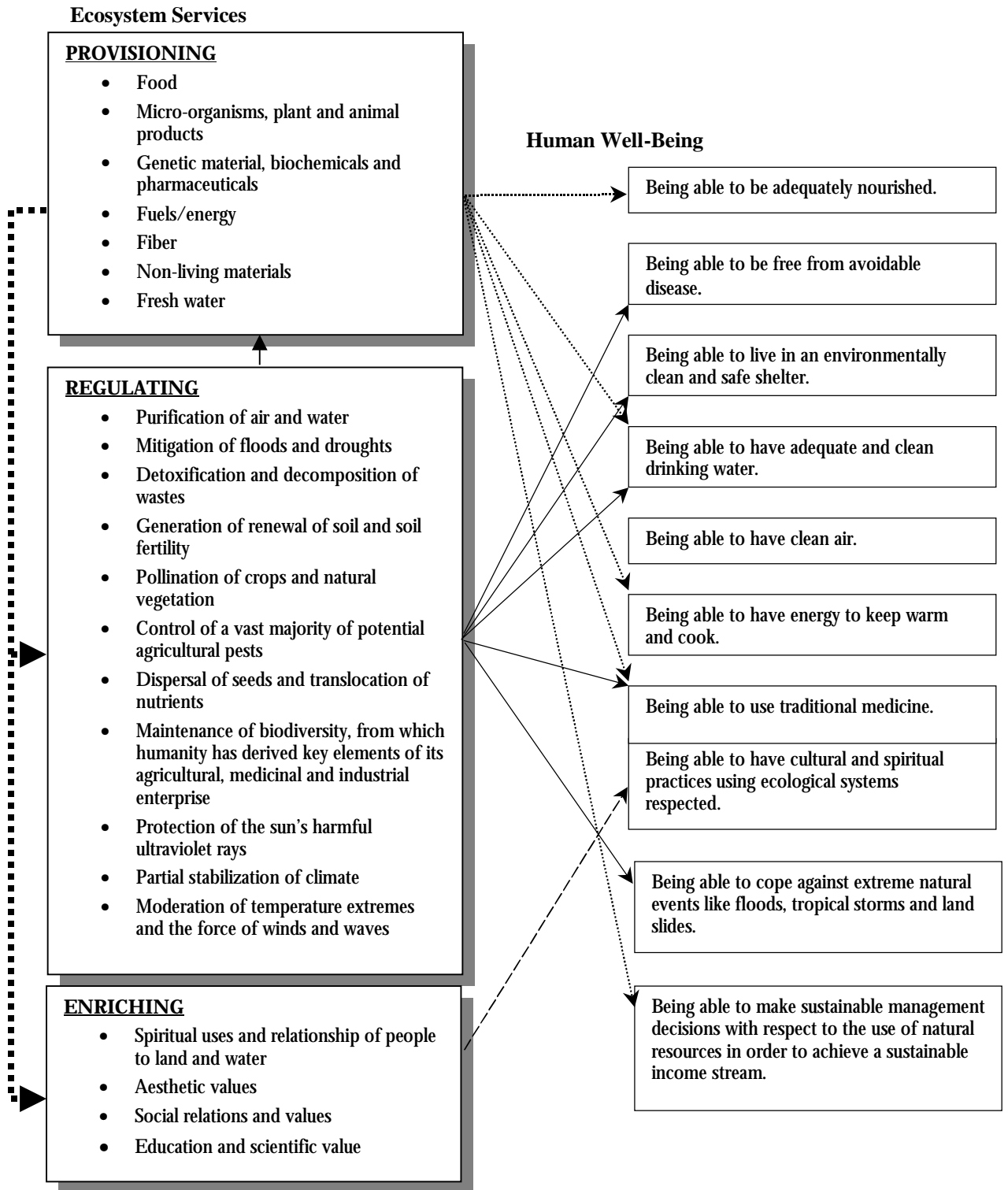


Figure 1. The links among ecosystem services and between human well-being