The Relevance of Environmental Accounting to National Planning and Poverty Reduction

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1. Introduction

The purpose of this paper is to share some thoughts around concepts and principles that are relevant in an exchange of experiences on how to integrate environmental concerns in national planning and poverty reduction in East Africa.

The presentation aims to generate common understanding of key concepts and principles that underlie background and methodology of ongoing work "the contribution of the environment and natural resource sectors in national economics of the three East African states in relation to poverty eradication".

2. The Imperative for Policy Makers to Link Environmental Integrity, Economic Planning, and Poverty Eradication

Growing concerns about environmental scarcities, deepening poverty and social inequalities at local, national and global levels, have called for a better understanding of the link between macro-economic planning, poverty reduction and the quality of the environment to inform policy makers. The concept of **sustainable development** with its three dimensions (protection of environmental integrity, economic development, social development) is influencing policy-making in many countries. The task of steering economies towards sustainable development through integrated planning is a challenge spelled out in Agenda 21, that was agreed upon at the Rio Summit (UNCED) in 1992.

It is with a focus on integrated planning and policy making that the World conservation Union Eastern Africa Regional Office commissioned three national studies in 2001 to look into the contribution of biodiversity, environmental and natural resources into national economies. Now that the papers have been completed, it is thought useful to share these findings in a much wider circle of conservation experts and their counterparts in economic planning and ministries of

finance and indeed the general public. It is hoped that by exposing these thoughts, a debate will be generated that will bring in more ideas in the search for out a way forward in efforts to achieve economic development by reducing poverty without jeopardizing the integrity of the environment and social stability in East Africa.

One of key issues relevant for engaging conservation and economic planners dialogue is to re-examine the way we **measure economic progress be it at at household, community and national levels.** The following guiding questions can be a useful starting for subsequent discussions:

- To what extent are our national accounting systems **integrating the values of natural resources and environmental services** into product and income calculations and poverty alleviation strategies? In other words to what extent are we taking nature into account when measuring progress?
- To what extent are conventional measures of progress such as Gross Domestic Product (GDP) and National Income, Per Capita Income capturing or concealing the **depletion and degradation of natural assets** or the to what extent are we underestimating the **benefits of nature**?
- How much **investment** goes to **prevent the erosion of natural assets**? Over time, are we experiencing a net positive investment or are we actually over drawing on natural assets so as to leave environmental debts to ourselves and to our offspring in the future?

The following are some concepts and principles that might stimulate discussion on the relationship between environmental accounting, social planning (both macro and micro) and poverty reduction measures.

3. Key Concepts and Principles

3.1 System of National Accounting (SNA)

In every country, political and economic decision makers, the business community and informed citizens are always interested to know: how much the economy has grown, and if so by how much; what is the level of national income and what kind of adjustment are needed to take the economy to desired objectives.

The answers to these questions are found in the system of national accounts **(SNA)** that are produced by statistical agencies and ministries of planning/finance. The SNA provides economic indicators such as Gross Domestic Product (GDP), Net Domestic Product (NDP), Value Added (VA) and National Income (NI) as shown briefly in the following table:

GDP	Sum of all value added produced in an economy during the accounting period (normally 1 year of 12 months)
NDP	This is the GDP **minus** depreciation of **man-made assets** such as machines, trucks, and factory buildings, and so on during the same period.
Value Added (VA)	VA is the GDP or NDP at a sector level (e.g. agriculture, forestry, tourism, mining, fisheries, etc) or industry level. It can be calculated at a gross or net level.
National Income	GDP or NDP plus net transfers from abroad such as remittances.

Much as the Gross Domestic Product has been and is still used as measure of the value of goods and services produced in an economy, it is increasingly being questioned. More improved such Net Domestic Product (NDP) is a more realistic measure of the value of goods and services because it takes into the depreciation of the **MAN-MADE CAPITAL that is consumed (or lost)** in the process of producing goods and services. Without considering such depreciation, the measure of the value of production would be overstated and thus present a false picture of national income. A country may consider itself to have done well in that year but that is not real.

However, economic planners, compilers of national accounts and informed citizens need to recognize that even this measure of Net Domestic Product (NDP) is **inadequate** as a measure of national income and economic progress. This is because it excludes the depreciation of environmental assets in terms of costs of **depletion and degradation of NATURAL ASSESTS** that are consumed or degraded in "normal" economic activities of households, firms and industries.

On the other hand, there are many environmental benefits that are never taken into account in such statistics. This leads to underestimating the real contribution of environmental assets and services to the national economy e.g. soil erosion control function of forests and trees, regulation of climate, clean air, etc upon which all economic activities eventually depend upon and therefore leading to under investing in their conservation. This is where we need to incorporate environmental accounting into national income statistics. This is likely to improve national planning frameworks such as poverty reduction strategies.

The incorporation of environmental concerns in national planning requires creating data bases from key sectoral ministries and agencies such as agriculture, livestock, forestry, fisheries, water, wildlife, minerals, etc, that will feed into statistics/planning/finance departments for planning and resource allocation purposes. This is therefore a call for creating (where we do not yet have) or improving existing databases on stocks different environmental resources, stock changes and the economic value of such change in stocks. This is likely to improve the quality of integrated planning and poverty reduction measures.

3.2 Resource Accounting

Resource accounting is a science and practice that attempts to bring into the open not only the benefits of the environment but also the depletion and degradation of the environment and natural resources into national accounts. In this way it attempts to incorporate the benefits derived from natural assets that are left out in traditional economic accounting. It is a process also popularly known as **greening the national accounts**. Greening can take place at micro level e.g. at a individual households, firms or industries or sector like agriculture, mining etc. it can also be applied at an economy-wide level of the economy (aggregation of all sectors). If properly applied at the level of a firm, it can facilitate the implementation of the **polluter-pays-principle** that requires polluting agents and others who destroy the environment to internalize costs of degradation into their day to day decision-making exercises.

Since the 1992 Rio Conference, integration of environmental and social factors into economics decision-making has become an accepted principle, yet difficult to put into practice. There must be a starting point. In order to assist counties to put this system in place, an initiative known as "Accounting for the Future" was agreed upon in1995 by international agencies (World Bank, IUCN, WWF and others) to start a process of promoting the use of **Integrated Environmental and Economic Accounting (IEEA).** This is a system that seeks to improve the traditional system of national accounts (SNA) by incorporating environmental and social concerns. It facilitates the identification, quantification and monetization of environmental costs that arise from economic activity and use this information to improve planning for sustainable use of environment and natural resources. The initiative towards promoting **IEEA** agreed to pilot implementation of this system in a number of countries, improve of IEEA methodologies and establish an international group (the NAIROBI GROUP based at UNEP) to facilitate the process of adoption in different counties.

The system of IEEA has a number of useful policy and implications for conservation and planning experts:

1) IEEA is a policy process e.g. it is more than simply an accounting exercise. It requires identifying stakeholders, engage them in dialogue to move the adoption IEEA in government, private sector and civil society as a whole.

2) IEEA helps to sharpen environmental policies and practices e.g. facilitates the creation of databases for stocks of natural resources, changes in quantity and quality of such stocks as land, soils, forests, fisheries, wildlife and water that generate "direct economic benefits". This is not to forget those environmental and natural assets that generate "indirect ecological benefits" such as forest ecosystems, marine ecosystems, wildlife ecosystems, flora, fauna, air, etc.). If IEAA is implemented in national accounting, it enables the inclusion of data on pollutants and waste discharge by particular sectors and economic activities. This data can be used facilitate the implementation of principle of the polluter-pays-principle i.e. impose costs on those who pollute or damage the environment in order to motivate them to adopt less damaging practices.

3) IEEA is relevant to economic planning and policy-making in that information generated from the process of IEEA can facilitate the production of environmetally and socially adjusted economic indicators. These indicators cab then be used to better assess economic performance in the light of desired benchmarks such as integration of environmental and social concerns into poverty eradication policies and strategies.

4) IEEA also has the potential to produce information on the constraints facing natural assets in promoting economic growth. Physical accounts of the assets indicate the availability of natural assets, whereas the monetary accounts provide information on financial constraints to economic growth. Once the financial constraints are known, they can guide decisions on how much resources should be allocated in order to maintain the functions of natural assets in a sustainable manner.

5) IEEA is relevant to social policies in that certain information from IEEA can be used to facilitate review of unfavourable social policies e.g. to question the existing distribution of environmental and natural resource assets, benefits and costs accruing to various social groups. This can support better decisions on poverty reduction measures and efficient management of natural assets.

3.3 Environments, Poverty and National Planning

There is no doubt that national planning these days is about poverty reduction. The evidence for this is the proliferation and adoption of Poverty Reduction Strategies (PRSP's) in each country as instruments of national allocation of resources.

In order to attack poverty at its roots, it is important to recognize the link between the root causes of poverty and environmental management. The premise is that although both the poor and the rich depend on the environment as a source of livelihoods, the poor are more dependent because they have fewer options. Thus any serious degradation of environmental assets implies that they suffer most.

In poverty eradication strategies, there is recognition of the fact that the rural poor need have control over productive assets such as land, water and forests and be assisted to use them in a sustainable manner e.g. meet their day to day needs, without jeopardising the integrity of those assets for future use. Thus the environment should not be seen as a peripheral issue in poverty reduction strategies because of the role it plays as a source of livelihoods for the very poor.

The environment provides a whole lot of functions that can be categorized into three groups:

(1) Regulation or Stablization Functions;
- Life support systems
- Climate

(2) Productive Functions;
- Direct harvesting

- Transformation of raw products into materials for construction, agriculture, industry, woodfuel and fertilizer.

(3) Carrier Functions;
- Ecological stability
- Space for social relations and dwelling
- Spiritual and Cultural values.

The condition of the environment in both rural and urban areas are related to poverty in the following ways:

(1) **Livelihoods**: poor people tend to be most dependent of environment and direct use of natural resources. They are most severely affected when the environment is degraded or their access to natural resources.
(2) **Health:** poor people suffer most when water, land and air are polluted.
(3) **Vulnerability:** the poor are most often exposed to environmental hazards and environmental related conflict, and are least capable of coping when they occur.

Thus, improving environmental conditions and ensuring secure and equitable access to environmental assets can be an effective and often essential means to expand poor peoples livelihood opportunities, protect their health and improve capacity to work and reduce vulnerability for risks.

3.4 The Role of Environmental Economics in Decision-Making

Due to the realization that environmental degradation imposes costs and that these costs are in most cases unevenly distributed in society, geographically and across time, and also given the fact that some environmental goods and services are taken for granted in ordinary decision-making, environmental economics attempts to incorporate such costs and values through techniques of valuation and resource accounting. The underlying logic is that those who consume environmental goods and services do reveal their preferences (or otherwise) for those goods and services they desire in monetary terms. Conversely, the loss in welfare resulting from missing such goods and services can be felt as a cost in money terms.

The economic values of the environment and natural resources consist of the total of three categories:

- Direct production and consumption benefits
- Indirect ecological support and environmental functions
- Non-use option values derived from the knowledge that such goods environmental resources are preserved for future generations.

A variety of valuation or accounting techniques to capture the benefits of keeping the environment at a high quality of and costs of degradation for use in decision-making (e.g. cost-

benefit analysis) to exist for informing policies, programmes and projects. These are categorized into two:

1. **Objective valuations:** These make use of damage functions (or environmental) restoration functions to assess physical damage (or gain) caused by offending activities. They include measurement of effects of environmental impacts on:

a) Changes in productivity (what is the value or cost of products lost or gained due to change in environmental conditions)
b) Cost of illness or benefits of good health
c) Change in human capital (lives lost or lives saved)
d) Replacement and restoration costs (or savings) of man-made and natural assets

2. Subjective valuations: These measure possible environmental damages (or gains) as expressed in revealed markets (real markets) or hypothetical markets (contingent valuation) to estimate:

a) preventive/mitigative expenditures (or savings) for health effects of environmental change (negative and positive) or changes in productivity (negative or positive)
b) assessing property or amenity value changes due to change in environmental quality
c) travel cost of visitors to quality of amenities (e.g. unwillingness of tourists to visit deteriorated amenities such as national parks or beaches)
d) Contingent valuation (surveys of preferences at different levels of environmental quality).

Valuation helps to inform decision-makers where environmental values are changing and impacting on economic activities. The studies to be presented have attempted to apply valuation and resource accounting techniques to inform decision-makers to appreciate the contribution of environmental goods and services to national economies in East Africa.