Building A System Of Integrated Environmental & Economic Accounting (ESSA) for ESCWA Region: A Comment

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What is our objective?!

The ultimate objective is to develop some indicators and estimate some indices of sustainable development (SD), whatever the adopted definition of SD.

Where to Start?!

Most economists agree that the measure of (GDP) for any economy is not an accurate measure for human economic welfare and it overvalues -for many reasons- the actual level of the "net national wealth" (NNW).

Some of the *justification* include the following:

1- (GDP) measure excludes the "*negative externalities"* that come up as a result of:

- environmental pollution (water, air, and land) during the production process, or
- result from traffic congestions and delays, or
- due to the increase in health costs, etc.

2- (GDP) statistics ignores the opportunity cost of the pollution abatement costs and clean up cost.

3- (GDP) *does not account for the actual depreciation* (or exhaustion) of the natural resources' stock that serve either as "sources for production inputs" or as "sinks of the waste" created by the production as well as consumption process.

Examples include degradation of:

- **topsoil,**
- **underground water resources,**
- **non-renewable sources of energy,**
- **minerals, metals, etc.)**

What to do?!

Accordingly, since the second half of the 1980s, many became convinced that we need to adopt and implement a new system of national accounting that internalizes the costs (values) of both quantitative and qualitative changes in the environment and the stock of natural capital (the idea of green accounting).

The continuous efforts of distinguished economists, the UN bodies as well as other national and international organizations, paved the road for the "SEEA" to be widely accepted .

What is "SEEA"?!

The "SEEA" provides a comprehensive framework to incorporate the role of the environment and the natural capital in finding a substitute measure for (GDP) that better reflect the wellbeing of the economy and the ability to achieve sustainable development .

The "SEEA" embraces 4 major components that should be constructed in "physical" and "monetary" units:

1- Asset accounts: volume and economic values of stocks and changes in stocks of the natural resources.

2- Flow accounts: for materials, energy, pollution and solid-waste, collected on industry (or sector) level.

3- Environmental protection & resource management expenditure account.

4- Environmentally- adjusted indicators of sustainability, such as "net national wealth" (NNW) or "genuine savings".

NNW = GDP

+ Non-market output

- Cost of negative externalities

- Cost of pollution abatement & clean-up (explicit and hidden costs)

-Depreciation of man-mad capital

- Depreciation of natural capital

The "genuine saving" is measured as the change in real wealth.

In principle, changes in the stocks of produced, human, natural, social and institutional capital should all be measured in saving . Negative genuine saving implies un-sustainability.

In practice, however, there are data and conceptual problems associated with the measurement of assets like social capital.

So, for the moment , we will stick to "NNW" sustainability indicator.

For a society to be sustainably growing, the (NNW) measure should be rising over time.

For this to happen, the rent of the depreciated part of the natural resources should not be consumed, but instead, it should be invested in:

- **physical assets,**
- **technological capital,**
- **enhancement of human resources productivity**

How did ESCWA Countries move towards building the "SEEA"?

I believe that the on-hand theoretical and empirical studies and the rich discussions, reveal that we have to go through *three stages:*

- The current stage.
- The intermediate stage.
- The ultimate stage.

I - In the Current Stage:

The efforts and the compiled statistics are mainly directed towards *depicting the "status quo" of the economic and environmental conditions* of the country.

The professional reports show that intensive and appreciated work was undertaken in many countries to cover a number of aspects, specially in the fields of water resources and land degradation.

However, we observed the following:

1- Most of the statistics are describing "stocks", while very little is concerned with exploring the "flows". For instance, measures to demonstrate the :

- **Annual change in land productivity, or**
- **Efficiency rates of using resources in different sectors, or**
- **Annual rates of soil erosion and salinity, or**
- **Rates of depleting underground water and exhaustible resources, or**
- **Rates of depleting fish stocks, and other ecosystem resources**

were missing from the presented reports .

2- No serious attempts were geared to organize some of that data in the form of summary indices to:

- portray the overall environmental-economic performance of the country, or
- draw a time trend that highlight the significance of deterioration in the stock over time, or
- give strong accurate signals to policy makers, or

- **conduct a comparison with other countries or with the established international standards.**

3- Most of the statistics are in the form of lump-sum totals or percentages, which are not self-revealing. In other wards, *a lot of detailed data are missing*. Such details are usually necessary to:

- **Identify major users of the resources.**
- **Assess each sector's environmental burden relative to its economic contribution, i.e, the concept of "eco-efficiency" .**

- Explore the inter-relationship among various sectors of production
- Guide the resource mangers in drawing their strategies.

4- The compiled statistics do not show their impacts on "sustainability" of the:

- Natural capital, or
- Human resources, or
- Individuals' dissatisfaction, etc.

II- In the Intermediate Stage:

We should start by correcting for the pitfalls of the previous stage. Meanwhile a set of more edgy types of indicators should be prepared, such as:

- Statistics concerning "physical" and "monetized" rates of depletion of various sorts of capital (man-made, natural and human) should be arranged.

- **Statistics revealing the degree and rates of substitutability between "depletable resources" (natural capital) and other types of capital are strongly required for assessing the economic sustainability.**
- **Measures of the Impact of quality degradation and of depletion on the other resources as well as on the costs in various sectors of the economy.**

- **Resources productivity indicators" measured per unit of value added, such as:**
  - *** energy use / unit of value added.**
  - *** water use / unit of value added.**
  - *** pollution / unit of value added.**

III- In the Final Stage:

More difficult and touchy issues should impose itself on environmental economic accountants.

- **Issues such as valuing "human capital" and "social capital" should be the core.**

Valuation techniques may not reckon on market prices in many cases. In practice, environmental economists do not lack the tools of evaluation methods (travel cost, Coase theorem, Hedonic pricing, replacement cost, revealed preferences, and others).

What is the significance of such valuation?

Besides adding it the measure of "net wealth", the values can be analyzed to assess other important characteristics such as the level of diversity of national wealth.

- **Sustaining (NNW) would not be complete without assurance of justice in the distribution of that wealth. So, the issue of justice and what happen to the "median individual's income " rather than "per capita income" should come up in this stage.**

Recommendations

We should keep in mind that substitution for depleted and / or degraded natural assets is finite, i.e, there is a limit to that substitution. There are minimum basic requirement s of certain resources that should always exist for the societies to exist and for human survival.

For instance, clean water and air are basic needs for human survivals that have no close substitutes. For such "critical assets" it is better to calculate separate

measures.

- Compiling data and forming indicators is not a once and for all practice, but should be designed as a continuous systematic exercise.
- In all cases, accuracy, homogeneity and time gap are data problems to be handled carefully.