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# PROSPECTIVES ON THE ENVIRONMENTAL ACCOUNTING MANAGEMENT

# PERSPECTIVE ASUPRA MANAGEMENTULUI CONTABILITĂŢII MEDIULUI

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*The problem any faces right now is how to use the planet's natural resources in a sustainable way. Or, in other words: how do we ensure that resources are used in a way that ensures on the one hand that the needs of the present generation are met, whilst on the other ensuring that sufficient resources remain so that future generations are able to meet their needs. In defining the sustainability, the word "resources" has a subjective valuation for an individual. The earth is full of "matter" but not all matter is a resource (i.e. carbon dioxide in excess does a lot of damage to the planet). Hence in order for a resource exploitation to be effectively coordinated, there must even be coordination of the different criteria used to establish what a resource is. But since a "resource" might be a resource for someone but not for someone else, the problem starts to be a rather big one.*
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## The impact of economy on the environment: cold facts

Each year 220 Billion cans, bottles, plastic cartons and paper cups, are thrown away in the "developed" world. Rather than attempting to compete on quality or reliability, companies prefer to fight for the "disposable" products market. More and more we realize that no matter what we buy - with limited exceptions - lasts exactly how long the warranty period is and forces us to buy yet a new product which, in 99% of the cases, impacts negatively on the environment.

While some companies are already making efforts to be more productive and efficient, discarding the old materials used often leads to a waste of energy which nullifies whatever efforts are currently made.

Environmental threats cause up to 1/3 of the Global Disease Burden and over 40% of it it's on children under 5.

Most environmental threats are associated with poverty and social inequity. Lacks of safe water as well as indoor air pollution are among the biggest problems humanity faces now.

Children are the planet's future yet children are the most affected by the environmental problems as they are more exposed to the dangerous conditions,

consume more food in order to grow properly and their bodies are more vulnerable than those of adults.

The share of GDP lost to environment degradation is close the share of the GDP allocated to health in all countries in the Middle East. Cost to health is over 61% of total cost of environment degradation in the same area.

Because of pollution, worldwide (in 2004) there were 1.8-3.1 billions cases of food borne diarrheic and 52.7-124 million cases of food borne salmonellas.

## The Theory

The Standard National Accounts (SNA) framework originated with work done during the Second World War. The basic form of the national accounts as developed by Stone (1951) can be summarized as:

**Net National Product (NNP) =**
**= Consumption + Investment – Depreciation + Exports – Imports**

During the last years though, NNP and particularly GNP (Gross National Product) have come to be regarded not simply as tools for economic management but also as indicators of economic performance and economic wellbeing, and of a country's "income". GNP measures how much of the total demand is satisfied by economic output. Hence the use of GNP to measure wellbeing is directly linked to consumption of produced goods.

But economical activity has a negative impact upon the external factors: the environment. A major impact is pollution caused by production. Some of the effects are already reflected in the reduced output – such as the reduced agricultural output due to pollution of soil and/or water supplies. The damage is hence reflected in the GNP in terms of lower numbers. But other effects are not reflected in the GNP - such as the breathing problems after inhaling the polluted air. In addition, the depreciation of natural stocks is never accounted for in the GNP. So if Romanian, for example, depletes all its forests, the income if inflated by the proceeds but that doesn't reflect the damage that has been done to the environment. Hence it's clear that standard ways of measuring the welfare are neither accurate nor reflect the future of the economy: is it sustainable or not?

The neoclassic theory has tried to account for the problems mentioned, by introducing the concept of Green Accounting. They assume, rightfully, that environmental damage caused by production and consumption has a negative effect on human wellbeing and that under the current SNA; the depletion of natural resource stocks is not counted as depreciation in calculating Net National Product.

## The practice: is theory really applied?

In 1993, the first version of the UN System for Economic and Environmental Accounting (SEEA) has been published. However, it's still based

on SNA and only contains satellite accounts which can be used to adjust the final figures to account for the environmental issues.

However, even before the development of SEEA it was clear that new indicators should be created, to account for current wellbeing and long-term sustainability. Hence the alternative framework the Index of Sustainable Economic Welfare (ISEW), which was first proposed in 1989, attempts to measure current wellbeing, adjusted to account for issues relating to sustainability. The proponents argue hat current welfare should be measured as the current flow of services from all sources, rather than current output of marketed goods.

Their estimates for USA have been followed up by an application for the USA by the same authors and estimates for Germany, Italy, Sweden and UK. Later (1997), updates to the methodology have been made when the system was applied in Austria.

This method has its critiques, evidently, which lead to the creation of yet another framework: the GREENSENSE project. They attempt to address the criticism that has been made of the existing frameworks, while capitalizing on their strengths. Their framework, known as the Index of Consumption Corrected for Environmental Damage (ICCED), has as major objectives:

1) How increases in wellbeing are reduced when (certain categories of) environmental impacts are accounted for.
2) How far current levels of environmental impacts are from (some definition of) sustainable impacts, and what dynamic policy targets could bring environmental impacts down to sustainable levels.
3) The net effect on projected (short-term) future wellbeing of implementing the policies identified in (2).

**Green(er) National Accounting**

The most developed countries have been attempting to use the green (or alternative) national account for a while. Without a doubt, the one developed by the UN under the name 'Integrated System of Environmental and Economic Accounts' (IEEA) has the highest chances of being implemented.

At their seminaries in the 1980s, two approaches were considered: create separate "satellite" accounts alongside the traditional national accounts to comprise the natural resources but not integrate the accounts in the national accounts; and, the alternative, to integrate the measures with the traditional SNA.

Based on the green approach of IEEA, it's expected that new indicators will be developed to replace the traditional GNP or GDP.

EDP (Eco-Domestic Product) is one of those indicators under which certain activities - like the extractions of minerals - would be accounted for in a different way than they are now accounted in the GNP/GDP.

In conventional accounting, when a country increases its exports of minerals it counts as an increase of GDP. But under EDP the decline in the stock of

natural resources would show up as a negative figure, reducing the gain from the production and export of the mineral.

However, there's one big problem with EDP: it amounts to double counting. When a company buys a piece of land, which it believes to contain mineral deposits, the cost of that purchase shows as an expenditure on the company accounts. In order to make the purchase, the company will use resources that could have been deployed elsewhere. The investment will therefore affect the profitability of the company:

- If it is a good investment it will increase profits – and hence show as an increase in GDP.
- If it is a bad investment it will reduce profits – and hence show as a reduction in GDP.

So the cost already shows in the GDP so to separately the depletion of the mineral reserves that result from exploiting the investment amounts to counting that depletion twice: once as the amortized cost of capital associated with the purchase, and again as a reduction in the stock of resources.

So this would lead to double taxation of mineral extraction, which is, obviously, followed by an increase in the cost of minerals and all the downstream activities that are reliant upon them. Generally speaking, the economic effect of implementing EDP would be negative.

In an effort to create the green national accounts, officials have so far mostly addressed resources, such as minerals, for which there are established markets and visible prices. Those prices fulfil a very important role: they are indicators of the future availability and the future valuation of a resource. The prices also act as information. If one resource is being replaced by another, or its supply is increasing, its price will be falling, increasing the incentive to consume it. If demand for a resource is increasing or its supply falling, its price will be rising, reducing the incentive to consume it and creating incentives to find and develop alternative resources.

How about if we try to do some accounting without prices? Prices are formed when the free exchange between parties takes place. In short, a price is the ratio of exchange between two owned things. So the existence of prices requires the freedom to make contact and property rights that may be legally enforceable. The absence of either requirement means that the price cannot be formed.

For those who want the introduction of EDP, society is something that needs to be guided by a central planner. And planners need feedback in order effectively to implement their plan; hence the need to develop instruments such as green accounting. However, isn't planning which brought the worse aspects of communism and eventually led to its destruction in Europe?

## Conclusions

GNP does not include negative effect on welfare from environmental pollution, nor does it give any indication as to whether the country's economic activity fulfils any criteria of environmental sustainability, however defined. As a result, several attempts have been made to introduce frameworks which can comprise the effect of production upon the environment.

However, at present time it is perhaps fair to say that the lack of environmental data availability - or the lack of interest by governments to provide it - somewhat limits the empirical results for policy purposes, though the magnitude of the estimates made in the various research initiatives indicate that welfare and sustainability issues associated with the environment should remain high on the policy agenda.

Central planning has been tested over the 20$^{th}$ century for couple of times and has consistently failed to produce economic benefits.

Attempts to make central planning function more effectively by accounting for inputs and outputs made little difference to the effectiveness of Soviet and other communist systems. So what reason do we have to believe that green national accounts will make central planning of the environment any more effective?

However the recipe for green account is not new at all or linked to the socialist and communist writers. It emerged from the very heart of mainstream neoclassical economics. The argument is advanced following what is called "market failure theory" and the supposed inability of market institutions to solve problems that have the characteristics of "public goods", or, better said in this case, "bads".

Suffice it to say that after the disastrous results of economic planning in the former socialist countries - Romania included - and the existing developing ones, the burden of proof should lie on the planners to show they can outperform property rights, markets and the rule of law in the protection of the environment.

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