

ASPECTS REGARDING QUALITY AND RELATIONSHIP WITH THE ENVIRONMENT - ECOLOGICAL FOOTPRINT

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Abstract

The economic crisis continues to raise serious problems of all countries of the world, but this is not the only problem of humanity. The real reason for concern is another. Planet's ability to sustain itself becomes becoming less sustainable given that world's population now exceeds 7 billion people and approximately 1.9 hectares return of a person for needs daily. The 13.6 billion hectares of land and water on Earth, us provide the necessary resources for food, clothing, energy and living spaces and must filter waste and currently our daily us consume per year as we produce per year and half. For this reason is required finding solutions for solving these realities even partially.

Key words: ecological footprint, environment, green energy EUREAPA

JEL classification: F64, O1, Q56, Q57

Introduction

Globalization is a considerable force for global economic growth and for providing means of solving international problems assigned. In view of that global market forces generates and amplifies the inequalities and exclusion that can cause irreparable damage to the environment globalization must be accompanied by measures to prevent and / or alleviate these effects.

Present habits of consumption and production have generated an unprecedented increase in emissions of greenhouse gases and pollution causing depletion of natural resources among others. In recent years, the European Union. is aware of the upward trend in consumption and production desiring such a development without additional costs for producers and consumers. Moreover, in 2008, the EC proposed a package of measures and proposals [COM (2008) 397] designed to increase environmental performance of of the products and demand for goods and production processes as possible environmentally friendly.

Thus aims to stimulate and encourage those industries, which adopt new opportunities and innovate in order to ensure its continued status of leader in environmental performance. Policy adopted at the EU level aims to identify ways to promote the sustainable production and consumption internationally (Apostol M., Bălăceanu C., 2012).

Present concerns concerning the green energy

Environmental studies recently finished at international level recommend the Europe as a the main ecological motor in the world. The European Union has the ability to produce clean electricity and this will be be the main factor that will keep EU in the head of the race for environmental protection (Milea O., Nedea P., 2012).

Nowadays, at least in words, we are all more or less ecologists. To quantify this situation, a study relatively recent made by Reader's Digest, proposes a set of five indicators enabling an evaluation as possible realistically with Green Index - iV. They can be summarized as follows (Reader`s Digest, 2011):

Indicator 1 - EPI - Environmental Performance Index, was developed by Yale and Columbia Universities. He follows developments of 25 parameters (pesticides, air quality, waste, natural habitats, etc.) And allows obtaining of hierarchy according to the results obtained.

European countries dominate the list and 24 from 29 countries are ahead of the United States. Iceland is the first in the world, mainly due geothermal clean energy type. follows then Switzerland, Sweden and Norway, along with Costa Rica.

Indicator 2 – HPI - Happy Planet Index, was designed by New Economics Foundation in London, with the support of Friends of the Earth UK and is considered a unit of measure for standards of living, more truthful than GDP (gross domestic product). The indicator reflects own life satisfaction, life expectancy and carbon footprint.unit of measurement.

Indicator 3 – CCPI - Climate Change Performance Index, compares 57 countries that hold 90% of carbon emissions in the world and was designed by Germanwatch in Berlin and Climate Action Network Europe in Brussels. calculation of this indicator analyzes the greenhouse gas emissions (CO₂) and effectiveness of government policies on climate change.

Indicator 4 – Biodiversity - virgin forests, mountains, lakes and shores where flora and fauna that is thrive favorably situated areas. Biodiversity is considered almost unanimously the safest measurement unit of health and the general welfare of the planet.

Indicator 5 - RES - Renewable Energy Systems

From the available data concerning environmental performance, at the level of EU Member States, the results lead to next hierarchy where the greenest countries are the smallest iV.

Table 1. The hierarchy of EU Member States with green index (iV)

State	EPI	HPI	CCPI	Biodiv.	RES	iV	Ranking
Sweden	2	1	1	8	3	15	1
Switzerland	1	3	7	1	4	16	2
Norway	3	2	5	6	1	17	3
Austria	5	9	22	5	2	45	4
Latvia	13	10	8	13	5	49	5
Finland	6	15	21	3	10	55	6
Germany	10	14	2=	11	18	56	7
France	4	17	4	20	15	60	8
Portugal	12	21	6	16	6	61	9
Denmark	16	5	10	23	8	62	10
Great Britain	9	20	2=	12	20	63	11
Malta	6	8	20	2	29	65	12
Slovakia	8	22	15	9	11	65	12
Italy	11	13	24	22	14	74	14
Slovenia	23	6	23	15	8	75	15
Spain	15	11	19	19	12	76	16
Czech	14	23	16	14	22	79	17
Romania	21	19	18	17	9	84	18
Netherlands	22	7	17	28	21	85	19
Hungary	17	25	12	25	7	86	20
Luxembourg	19	28	29	7	27	91	21
Cyprus	29	4	27	18	26	94	22
Ireland	20	12	14	29	17	95	23
Lithuania	18	24	11	24	24	101	24
Poland	25	18	26	10	23	102	25

Belgium	28	16	9	26	25	106	26
Bulgaria	26	27	25	21	19	113	27
Estonia	24	29	20	4	28	115	28
Greece	27	26	28	27	16	124	29

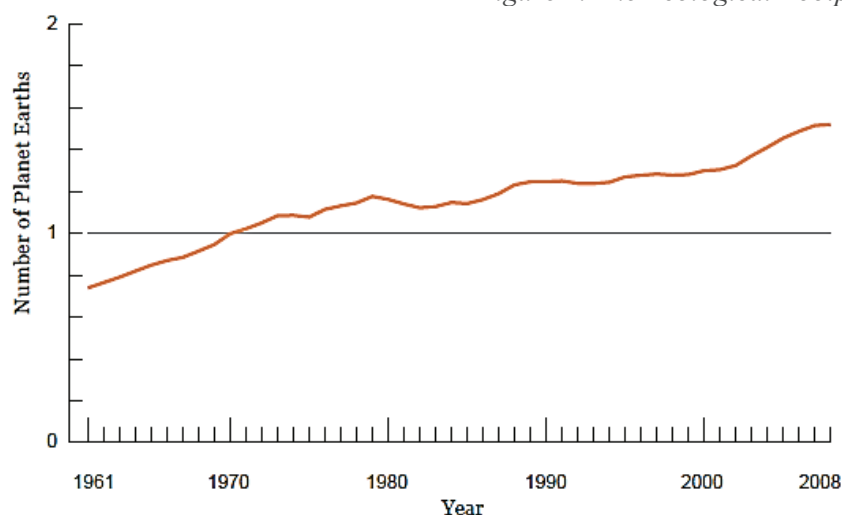
Source: http://www.erd.ro/Care_este_cea_mai_verde_tara

Parameters of the ecological footprint

In view of ecological deficits increasingly bigger observed at the level EU Member States and not only, it is necessary manifestation of economic initiatives and innovative actions enabling transformation of exploited resources in social welfare. For this, binds expectations increasingly higher as social ecology and eco-economy will give a pronounced character ecological/eco-social consumption habits (Nicolau I., 2012).

Recent studies (*Living Planet Report 2012*, published by the World Wide Fund for Nature), warns that of humanity, the ecological footprint has doubled from 1966 until now and projections are not optimistic: for an increase at the same rate of needs as until now, in a few years we will consume resources of two planets.

Figure 1. The Ecological Footprint of Earth



Source: WWF, The Global Conservation Organization, *Living Planet Report 2012*

Global ecological footprint concept was first used in 1992 by William Rees, ecologist from the University of British Columbia.

The Ecological Footprint is calculated by reporting human consumption of natural resource at the earth's capacity to produce them again and is expressed in global hectares (Stanciu M., 2009).

In some developed countries, consumption is well above the Earth's regenerative capacity (e.g. Qatar, Kuwait, UAE, Denmark, United States, Belgium, Australia, Canada, the Netherlands and Ireland have the largest ecological footprint per capita, according to the *Living Planet Report 2012*) and if everyone consumed like the inhabitants of these countries, we would need some planet Earth to be able to provide sufficient resources.

Romania has an average footprint of 2.8 hectares/capita - which means that each of the country's inhabitants used, on average, 2.8 hectares of the globe for resources required for food, fuel, clothing and construction materials. But Earth can not offer than 2.33 hectares of land and water. Although our impact on nature is below the level of some more developed countries, Romania consumption of natural resources and lifestyle exceeds support capacity of natural ecosystems (*European Parliament*).

For an accurate picture of the current situation regarding the use of natural resources as well possibility of reduce wastage by rational use of resources, at the level U.E. was created a tool called EUREAPA. He is intended as a response to the need for measures for finding viable solutions to the problem that we face.

He is intended as a useful for decision makers, primarily through its ability to integrate indicators determinants indicators resource consumption footprint on the environment at multi-regional level. Second, EUREAPA supports decision makers in respect of those policies that militate for environmental conservation.

For creating EUREAPA were selected three indicators, which are characterized by their ability to estimate the consequences of human activities on environment (www.eureapa.net):

- **The Ecological Footprint** - can be used to inform about at the pressure on biosphere by estimation resources consumption and waste emissions due to human activities. Despite the expected benefits, the ecological footprint known certain limits that allow only certain scenarios. For example, based on the relations established between evolution of the GDP and resource consumption of a state can be shown that the pressure will act on the environment.
- **Carbon footprint** - show areas subject at high pressures as a result of quantifying the effect of consumption of resources that cause evolution of carbon into the atmosphere. It refers simultaneously to sum of all emissions linked to the consumption of a country including imports, but excluding exports;
- **Water footprint** - is an indicator of the total volume of fresh water and can be used to inform the most sensitive places as a result of direct or indirect consumption of fresh water to produce goods and services that are consumed individually or the community. Water footprint of an individual, a community or a business environment is defined as the total volume of freshwater that is used to produce goods and services consumed by the individual / community / business products (Hoekstra et al 2009). Quantity of water consumed be expressed as water volume consumed (evaporated or incorporated into the product) and polluted per unit of time. Water footprint is a geographically explicit indicator, because in addition to the volume of water used and pollution results indicate also critical locations.

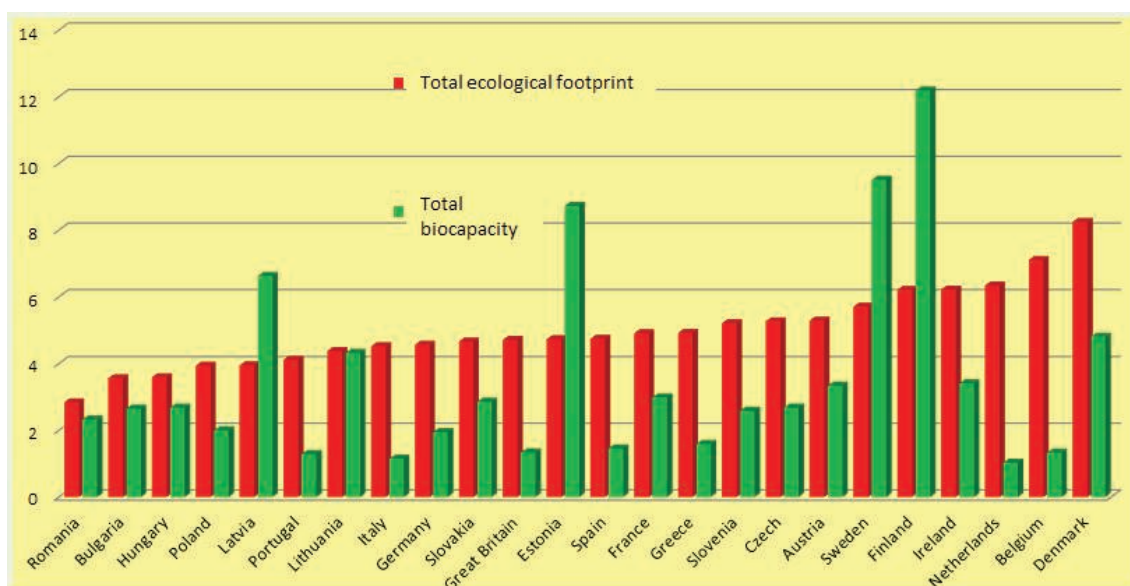
Table 2. The ecological footprint of Member States U.E.
(global hectares/person)

State	Total ecological footprint	Total biocapacity	Ranking
Romania	2,84	2,33	1
Bulgaria	3,56	2,65	2
Hungary	3,59	2,68	3
Poland	3,94	2,00	4
Latvia	3,95	6,63	5
Portugal	4,12	1,29	6
Lithuania	4,38	4,32	7
Italy	4,52	1,15	8
Germany	4,57	1,95	9
Slovakia	4,66	2,86	10
Great Britain	4,71	1,34	11
Estonia	4,73	8,73	12
Spain	4,74	1,46	13
France	4,91	2,99	14
Greece	4,92	1,59	15

State	Total ecological footprint	Total biocapacity	Ranking
Slovenia	5,21	2,59	16
Czech	5,27	2,68	17
Austria	5,29	3,34	18
Sweden	5,71	9,51	19
Finland	6,21	12,19	20
Ireland	6,22	3,41	21
Netherlands	6,34	1,03	22
Belgium	7,11	1,33	23
Denmark	8,25	4,81	24
Luxembourg	Missing data	Missing data	-
Malta	Missing data	Missing data	-
Cyprus	Missing data	Missing data	-

Source: data processed

Figure 2. Hierarchy of member countries U.E. according to the size of the ecological footprint



Source: data processed

EUREAPA is a project that is part of a series of innovative policies at the European level and provides many advantages to users because it allows current analyzing data as well realization of real-time scenarios and observe of results and impact on the environment.

Seen as a tool EUREAPA can be used to overcome some shortcomings of collecting data on the impact life cycle of various activities, and contribute to future policy development in the areas (Bassi S., Cranston G., and other, 2011):

- agriculture
- biodiversity and fishing
- energy and climate change
- raw materials
- regional development - cohesion policy
- sustainable Consumption and Production
- transport

- water

Environmental policies that can be implemented using EUREAPA require going through of some activities. According Eureka, developing a policy pass through several stages such as problem identification, evaluation, etc..

Cycle includes various intermediate steps such as planning, implementation, monitoring, etc. (*Bridgman and Davis, 2004*).

- Identification of the problem
- Establishment of activities
- Defining the of the problem to be solved
- Identification of possible solutions
- Analysis and evaluation of alternatives
- Selecting
- Implementation
- Monitoring and reporting
- Evaluation
- (Dis-) continue.

EUREAPA tool utility of resulting from the international context in which the EU has made commitments to reduce emissions of greenhouse gases. Instrument could be used for purposes advisory or with communicator role for consumers concerning individual responsibility for global climate change.

The tool is very useful during development / adoption of decisions regarding the environment, because it allows users to assess the impact of current on environment problems, it can also estimate the impact of future scenarios using general and detailed and provide useful information for prioritizing policy options.

Conclusions

The results of this study reveal that planet status concerns us all wherever we live and no matter how rich or poor we are. Our daily activities as little have an impact on the quality of the environment and any time we depend on the available resources of the planet.

Since many of these are not completely renewable, will have to develop new policies and tools to support the conservation of natural resources, protect the environment and also more active in disaster areas to help restore the environment.

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