

## National Environmental Footprint – Reviewing Some Facts in the Case of Romania

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**Abstract:** In our paper we are trying to describe the national environmental footprint of Romania placing it in European context and discussing it. The base for this is the Global Footprint Network report and assessments regarding the environmental footprint and the biocapacity. Having the bio-economy as a development goal, Romania has the premises for keeping a low environmental footprint and still a good biocapacity.

**Keywords:** environment; footprint; carbon accounting; Romania

**JEL Classification:** Q01

### 1. Introduction

In the last two decades the environmental issues became more serious for both the enterprises and the national economies. The environmental accounting is not just an exotic matter and the environmental liabilities in terms of CO<sub>2</sub> emissions, non-renewable resources consume or other GHG are more than ever serious matters for decision makers. According to Schaltegger and Burritt (2000), the environmental accounting is a subset of activities meant to record, analyze and report the environmentally induced financial impacts and ecological impacts of the economic process (product, firm, plant, region, country, etc.). It is also important to observe that it has two dimensions, the monetary and the non-monetary (Burritt et al., 2002). This is quite important because it would always exist a tendency to ignore an impact you cannot directly attach to and economic activity or you cannot monetary express it.

The ecological footprint is related to the area of land or water used by people to generate the renewable resources it consumes and to absorb the waste it generates (GFN Report). The results of the assessment compares the “quantity of nature”

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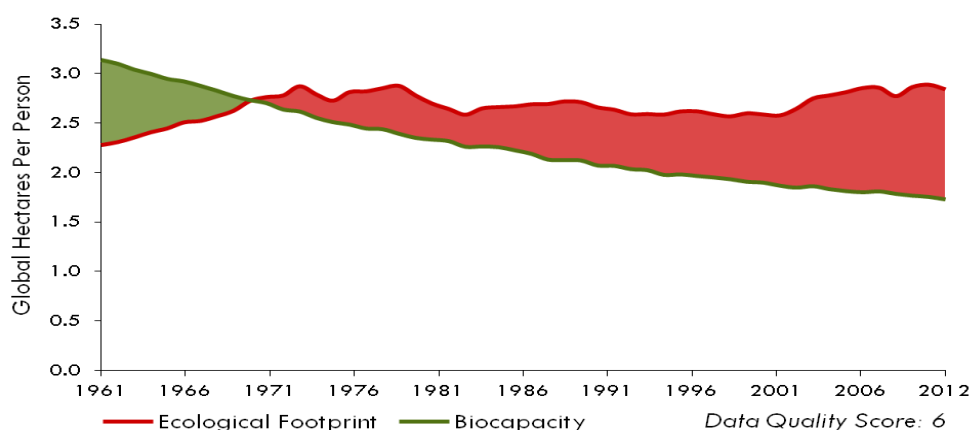
people consume and the “quantity of nature” people have at its disposal (the biocapacity). The elements of nature included by the footprint refer to the cropland (land used for producing food and fibers), the fishing grounds (an estimation of the maximum sustainable catch for different fish species), the grazing land (the land used for the livestock) and the build-up land (the areas covered by different kinds of infrastructure).

Regarding the environmental impact of the enterprises there still is a resistance and a poor understanding in terms of making available information for academic and scientific needs. At national economy level there are available a sum of public statistics and studies. Of course, not all contain data for Romania, but still is way better than you are trying to describe the company level. Also we have take into account the methodological limitations of the Ecological Footprint assessments and some discussion that were made in the academia.

## 2. Romania - An Environmental Footprint Assessment

According to the Global Footprint Network, the world lost its biocapacity by the end of the 60s. From the seventh decade of the last century our planet is not able to sustain our economic activity and the human society as a whole. Our environmental impact is harming the regeneration capacity of the planet.

In this respect different initiative exists for better understanding the scale of the problem and for proper identification (carbon emissions accounting, physical carbon accounting, accounting for GHG emissions, etc.) and active measures for reducing it, such as the international protocols for reducing the GHG emissions.

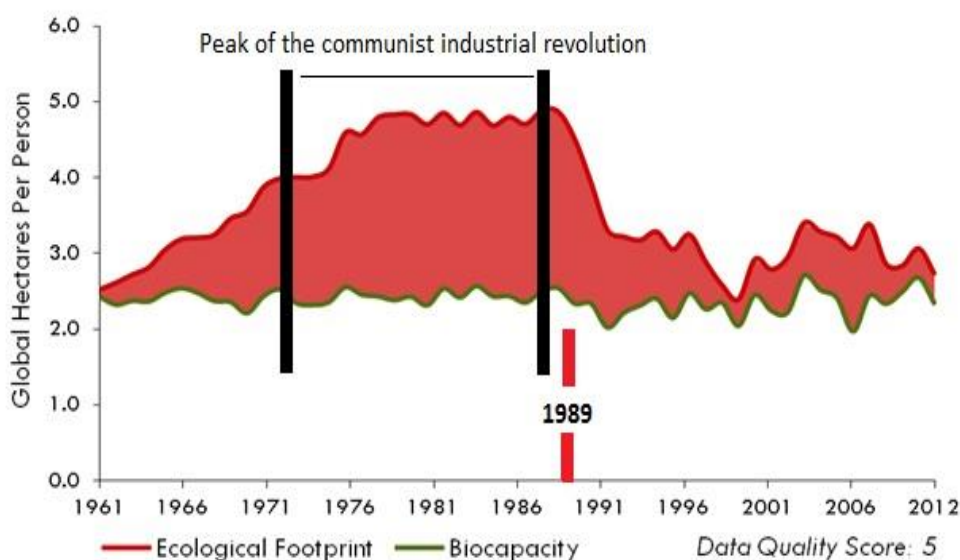


**Figure 1. NFA 2016 Report- The World**

*Source: NFA 2016 report*

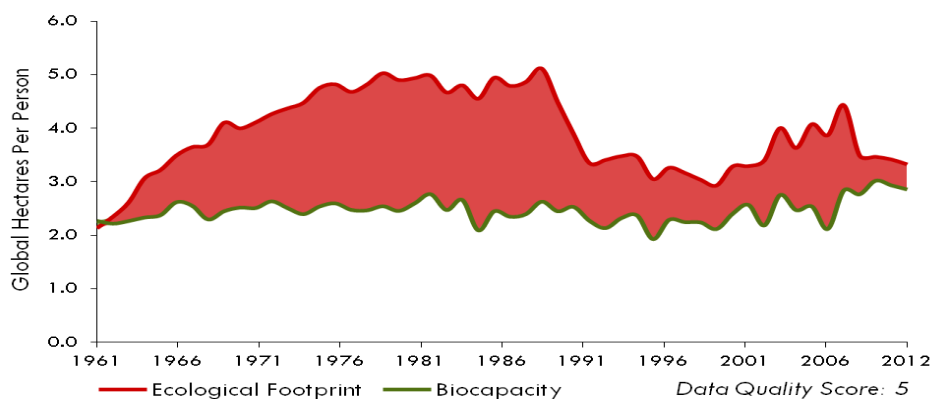
Romania's evolution regarding its ecological footprint in connection with its biocapacity is in accordance with the industrial development of the country. After the Second World War the country entered the communist regime which began a new industrial era for the country on a soviet model. The peak of this industrial revolution was in the 70s and the late 80s.

After 1989, the Romanian economy stepped into a new phase and lot of industrial capacities and big factories were closed for efficiency issues or sold to foreign investors. Many of the communist industrial pride disappeared for different reasons (real or invented). The fact is that the Romanian economy lost many of the environmental harmful activities (as the coal mines and the high energy consuming factories) and following the NFA 2016 report graph on Romania we can easily identify these historic moments.



**Figure 2. NFA 2016 Report – Romania**

*Source: NFA 2016 report*



**Figure 3. NFA 2016 Report - Bulgaria**

*Source: NFA 2016 report*

Romania's neighbor, Bulgaria is seen in many cases and assessments similar to the first. Bulgaria had the same political regime until the late 80s and afterwards knew basically the pattern for exchanging to a free market economy. These major factors influenced the natural environment the same way as it did for Romania. Given these facts the graphs of the two similar countries is also very similar in evolution.

### 3. Conclusion

Regarding the Ecological Footprint as a tool there debates whether it fits the needs for better understanding the ecological issues of our planet or its methodological flaws denies its usefulness (Galli et al., 2016). Other researchers plead that the Ecological Footprint should be better understood and took as it is and not used for issue which it does not address to such as energy security (Goldfinger et al., 2014). The trade and scale of the biocapacity (or the planetary boundaries) are also in discussion.

The externalization of pollution should be better taking into account (including the agriculture) but also the way relocation of industrial capacities is influencing the figures. There are studies showing that a better environmental quality in a country does not necessarily means an environmental friendly behavior but could be the effect of exporting the problem and only consuming the products (Asici, Acar, 2016).

Romania set as a priority the bio-economy and an economic development based on the sustainability principles. Of course much is to be done in this direction and all measures should be connected for better results (taxation, incentives, social policy, etc.).

We intend to investigate in future research some of the limitations of this approach as the free trade and the movement of the investment capital.

### References

- Schaltegger, S. & Burritt, R. (2000). Contemporary Environmental Accounting. *Issues, Concept and Practice*, Greenleaf, Sheffield.
- Burritt, R.; Hahn, T. & Schaltegger, S. (2002). *Towards a comprehensive framework for environmental management accounting - links between business actors and environmental management accounting tools*. *Aust. Accounting Rev.* 12(27).
- Stechemesser, K. & Guenther, E. (2012). Carbon accounting: a systematic literature review. *Journal of Cleaner Production*, 36(2012), pp. 17-38.
- Galli, A.; Giampietro, M.; Goldfinger, S.; Lazarus, E.; Lin, D.; Saltelli, A.; Wackernagel, M. & Muller, F. (2016). Questioning the Ecological Footprint. *Ecological Indicators*, 69(2016), pp. 224-232
- Goldfinger, S.; Wackernagel, M.; Galli, A.; Lazarus, E. & Lin, D. (2014). Footprint facts and fallacies: a response to Giampietro and Saltelli (2014) footprints to nowhere. *Ecological Indicators*, 46 (2014), pp. 622-632.
- Giampietro, M. & Saltelli, A. (2014). Footprint to nowhere. *Ecological Indicators*, 46 (2014), pp. 610-621
- Asici, A.A. & Acar, S. (2016). Does income growth relocate ecological footprint? *Ecological Indicators*, 61(2016), pp. 707-714.
- Rockstrom, J.; Steffen, W.; Noone, K., Persson, A., Chapin, F.S., Lambin, E.F., Lenton, T.M., Scheffer, M., Folke, C., 2009. A safe operating space for humanity. *Nature* 461 (7263), pp. 472-475
- \*\*\* Global Footprint Network. Advancing the Science of Sustainability, NFA 2016 and 2018 reports.