

SUSTAINABLE PRODUCTION AND CONSUMPTION IN ROMANIA

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Abstract

The purpose of this study is to assess the situation of sustainable production and consumption in Romania in the period 2007-2015 based on the indicator resource productivity. Production and consumption of goods and services, generate better quality of life through the increased economic development, but creates pressure on the environment in the form of natural resource consumption and those residues that cannot be used, called waste. The study was made based on the statistical data available online, at Eurostat.eu. Data refer to a period of 8 years, from 2007 to 2015. At European level sustainable production and consumption are assessed using the indicator, resource productivity, calculated as ratio between gross domestic product and consumption of raw materials. Resource productivity is an indicator of macroeconomic efficiency, relevant to sustainable development and saving it material resources, its growth trajectory pointing a progress on sustainable development and a decrease rather a setback. The value of resource productivity in Romania in analyzed period has been an oscillatory evolution and it should be kept consideration that this indicator is dependent on the economy. For a sustainable production and consumption it is necessary to have a continuous increase of resource productivity, to avoid stagnation and syncope at the macroeconomic level.

Key words: consumption, production, resource productivity, Romania, sustainable

INTRODUCTION

The society we live in nowadays is based on economic growth and development. Consequently, any country's main objective is economic growth and development. The economic activities should take into account the principles of sustainable development, so it need to ensure economic growth, environmental protection and social equity.

The term of sustainable development (sustainable) is used from the early 80 at the International Conference on Environmental Conservation, was launched with the publication of the Brundtland Report of the World Commission on Environment from 1987.

In this report sustainable development is definition like "development that meets the needs of the present without compromising the ability of future generations to meet their own needs".[8]

Sustainable development it was meant to be a solution to the ecological crisis caused by industrial exploitation of resources and

environmental degradation, but the concept was extended to the quality of life from the economic and social point.

Sustainable development was the focus of the Lisbon Strategy, adopted by EU countries in 2000 which wanted until 2010 to transform the European economy into "the most dynamic and competitive economy in the world, based on knowledge, capable of sustainable development, with greater social cohesion and who is environmentally friendly" [1]

Sustainable development requires a multidimensional approach that takes into account at least three dimensions: economic, social and environmental.

Sustainable development is meant to be, by definition, a human development; achievable through the human will and that aim for their individual and collective good.[3]

Production and consumption of goods and services, generate better quality of life through the increased economic development, but creates pressure on the environment in the form of natural resource consumption and

those residues that cannot be used, called waste.

According to the World Business Council for Sustainable Development in 2008, sustainable consumption involves "the use of goods and services that satisfy basic needs and achieve a better quality of life, while minimizing the consumption of natural resources, generation of toxic materials and the emission of waste and pollutants during the life cycle, so as to exclude any risk inability to meet the needs of future generations.

Reorientation of national and international environmental agendas for sustainable production and consumption problem is caused by the negative environmental impact of industrial and agricultural activities, and increasing energy consumption, problems in water supply and waste management.[4]

Economic growth and gross domestic product of countries developing generates increasing social pressure on demand for goods and services, so the concept of sustainable consumption concerns several levels like: meeting basic needs, improving quality of life, increase resource efficiency, growth use of renewable energy sources, minimizing waste etc.[4]

Romania as a EU member state, has developed the National Strategy for Sustainable Development of Romania Horizons 2012-2020-2030 in order to fulfill its obligations under the Treaty of Accession.

According to the National Strategy for Sustainable Development of Romania the general objective of the European Union in terms of sustainable consumption and production is the promotion of sustainable consumption and production practices.

National objectives for sustainable consumption and production are: [7]

Horizons 2013: Managing the eco-efficient consumption of resources and to maximize its by promoting a model of consumption and production that makes sustainable economic growth and long-term gradual approximation of the average performance of EU countries.

Horizons 2020: Decoupling economic growth from environmental degradation by reversing the ratio between resource consumption and create added value and closer to the average

EU performance of sustainable consumption and production.

Horizons 2030: Approaching the average level achieved at the time of the EU countries in terms of sustainable production and consumption.

Considering that sustainable development is a complex process, its monitoring system involves the use of common indicators and a system of indicators that vary from country to country.

Common systems of indicators of sustainable development, adopted by consensus at the international level (UN, OECD, EU, etc.) are grouped into the three pillars of sustainable development like: economic pillar, the social pillar and the environmental pillar.

The purpose of this study is to assess the situation of sustainable production and consumption in Romania in the period 2007-2015 based on the indicator resource productivity.

MATERIALS AND METHODS

The study was made based on the statistical data available online, at Eurostat.eu. Data refer to a period of 8 years, from 2007 to 2015. The analysis methods used were: comparison method, index method.

Based on the comparison method, the events are compared in time and space.

Because indicators effectively show the evolution of a phenomenon, and also the annual increase rates[2], they were used for gross domestic product (GDP), domestic material consumption (DMC) and resource productivity.

At European level sustainable production and consumption are assessed using the indicator, resource productivity, calculated as ratio between gross domestic product and consumption of raw materials.

National indicator system for evaluating sustainable production and consumption are more numerous and includes 22 indicators. Besides the resource productivity are included indicators such as: municipal waste deposited, the degree of recycling of waste, electricity consumption, average consumption of meat, livestock density index etc.

Resource productivity is gross domestic

product (GDP) divided by domestic material consumption (DMC).

DMC measures the total amount of materials directly used by an economy. It is defined as the annual quantity of raw materials extracted from the domestic territory of the focal economy, plus all physical imports minus all physical exports. It is important to note that the term 'consumption', as used in DMC, denotes apparent consumption and not final consumption. DMC does not include upstream flows related to imports and exports of raw materials and products originating outside of the focal economy.[5]

RESULTS AND DISCUSSIONS

Sustainable production and consumption is one of the objectives of the National Strategy for Sustainable Development of Romania.

To achieve this objective at national level are using 22 indicators, but resource productivity is the most relevant indicator of sustainable production and consumption. So in this paper I decided to analyze only resource productivity.

Resource productivity is an indicator of macroeconomic efficiency, relevant to sustainable development and saving its material resources, its growth trajectory pointing a progress on sustainable development and a decrease rather a setback.

At EU level 28 resource productivity in 2007 was equivalent to 1.58 euros per kg and has grown to 2.00 equivalent per kg, according to figure 1, which shows an increase of 26.5%.

It may be noted that resource productivity in Romania in 2007 was equivalent to 0.30 euros per kg (figure 1), being on the penultimate place, ahead of Bulgaria, according to data from Eurostat. The country with the highest value of resource productivity, according to Eurostat, in 2007 was the Netherlands.

In 2015 in Romania increased resource productivity equivalent to 0.31 euro per kg, being also on the penultimate place, ahead of Bulgaria. The first place in terms of resource productivity in 2015 according to Eurostat, was the UK.

The highest value of resource productivity in Romania was registered in 2014 and was

equivalent to 0.33 Euros per kg.

According to Table 1, in Romania compared to 2007 the highest growth of resource productivity was in 2010, with an increase of 10%, and according to Table 2, the highest growth was recorded in 2009 compared to 2008 by 18.3%.



Fig.1 Resource productivity in Romania and European Union

Source: eurostat.eu

Table 1. The evolution of resource productivity (%)

Specification	2008	2009	2010	2011	2012	2013	2014	2015
Romania	84.5	99.9	107.3	96.4	99.6	102.5	110.8	104.5
EU	101.4	109.9	115.6	113.1	121.3	124.5	124.7	126.9

Source: Own calculations based on Eurostat.eu

Table 2. The evolution of resource productivity (%)

Specification	2008/2007	2009/2008	2010/2009	2011/2010	2012/2011	2013/2012	2014/2013	2015/2014
Romania	84.5	118.3	107.5	89.8	103.3	102.9	108.1	94.3
EU	101.4	108.4	105.1	97.9	107.2	102.6	100.2	101.7

Source: Own calculations based on Eurostat.eu

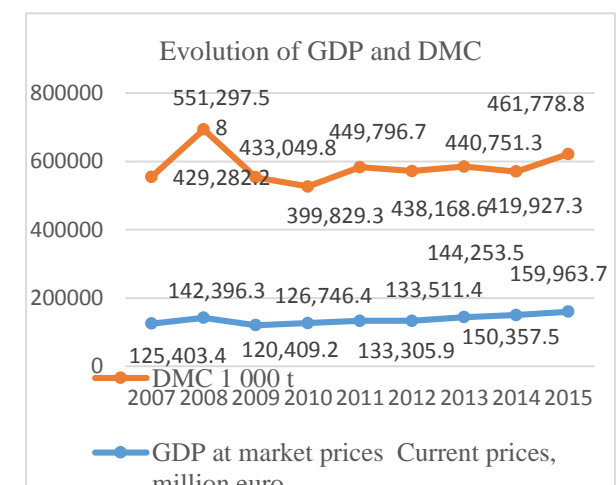


Fig.2. Evolution of GDP and DMC in Romania

Source: Eurostat.eu

Considering that this indicator is calculated by dividing the GDP to DMC, it is important to analyze the evolution of these indicators order to be able to identify the causes that result for low productivity of resources.

Romania's GDP recorded an increase compared to 2007 of 27.5% in 2015, but in 2009 compared to 2008 is a decrease by 15.5%. This negative impact on GDP was due to the financial and economic crisis which started in 2008.

Domestic material consumption in Romania increased by 7.6% in 2015 compared to 2007. This increase is an unwanted effect given that the effectiveness of the activity is necessary to reduce domestic material consumption. For efficiently use of material resources must be used modern technologies. The use of these technologies implies a reduction of consumption non-renewable energy, getting a smaller quantity of waste that pollute the environment as little as possible.

The evolution not so favorable for resource productivity at national level can be caused by a complex of factors among which we can mention: price increase of raw materials and materials, low added value products, diminished recovery of the economy, non-use of eco-technologies, appearance the economic crisis which led to a decrease of GDP.

CONCLUSIONS

The value of resource productivity in Romania in analyzed period has been an oscillatory evolution and it should be kept consideration that this indicator is dependent on the economy.

For a sustainable production and consumption it is necessary to have a continuous increase of resource productivity, to avoid stagnation and syncope at the macroeconomic level.

Should not be lost sight of that increase of resource efficiency in Europe is a means by which the objectives of economic policy, social and environmental development can achieve easier, safer and with lower costs. Improving resource efficiency will sustain the economic health of key sectors such as agriculture, forestry and fisheries. EU industries that use their products based on the

surfaces / quantities available of the land, the soil, the water and biodiversity, so a higher efficiency will bring greater benefits.[7]

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