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A comparison of sustainable development consumption and production in the countries of southern and northern Europe based on selected indicators

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Introduction

Sustainable socio-economic development is one of the most important challenges of the contemporary world. There are many definitions of what exactly sustainable development is but the most popular is the first one created by World Commission on Environment and Development (WCED) in 1987, which says that it is "development that meets the needs of the present without compromising the ability of future generations to meet their own needs" (Oxford: Oxford University Press, 1987). However, this definition raises a lot of questions that are not easy to answer. For example, can the long term economic objective of sustained agricultural growth be met if the ecological objective of preserving biodiversity is not? What happens to the environment in the long term if a large number of people cannot afford to meet their basic household needs today? For that reason, during the United Nations Conference on Sustainable Development, Rio+20, they proposed a new vision of sustainable development, "people centred and planet sensitive". Since 2012, the priority for the future has been described as poverty eradication, changing unsustainable and promoting sustainable patterns of consumption and production and protecting and managing the natural resource base of economic and social development (Melamed and Ladd, 2013).

The European Union is the world leader in promoting the sustainable approach. As an institution acting on behalf of sustainable development, the most important priorities include balanced economic growth and price stability, a social market economy with high competitiveness, aiming at full employment and social progress and a high level of protection and improvement of the environment. The main tool to implement those goals is the long-term EU Sustainable Development Strategy and many others documents like "Strategy 2020".

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The EU Sustainable Development Strategy includes (GUS report, 2011):

1. protection of the environment
2. justice and social cohesion,
3. economic prosperity,
4. implementation of the EU commitments on an international scale.

Basic challenges of the strategy adopted include:

1. climate change and clean energy,
2. sustainable transport,
3. sustainable consumption and production,
4. protection of natural resources and waste management,
5. public health,
6. social inclusion, demography and migration.

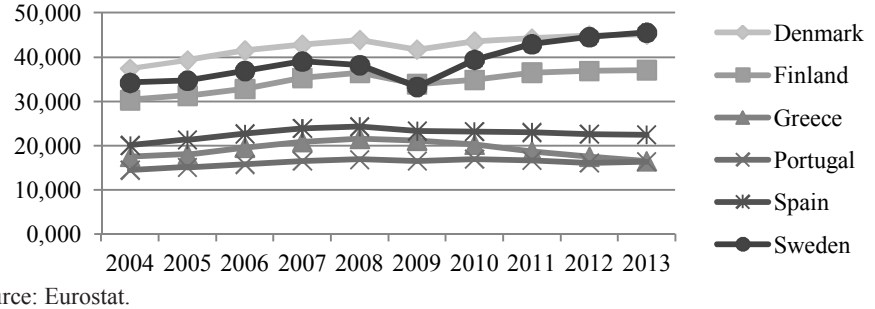
However, there are very large differences in the approach to this difficult topic between countries belonging to the European Union. It was noted that in the northern states of the EU they are more inclinedto be involved in promoting and subsidizing sustainable consumption and production than the countries of southern Europe. The main purpose of the article is to compare sustainable development in the countries of southern and northern Europe to comprehend what the reason forthose differencesis based on specific and selected indicators and influences on countries' economic development.

The research is based on indicators of, among others: domestic material consumption, recycled and composted municipal waste, atmospheric emissions and organic farming. Taken intoconsideration were such countries as Finland, Sweden, Denmark, Spain, Portugal and Greece.

Socioeconomic situation

Differences between southern and northern countries have been observed for centuries. The reasons for this state of affairs are seen in the differences of the historical background and political systems of these countries and also human mentality. The abovementioned differences are reflected in the inequalities of the socio-economic characteristics of the described regions.

Figure 1. Gross domestic product at market prices (2004-2013)

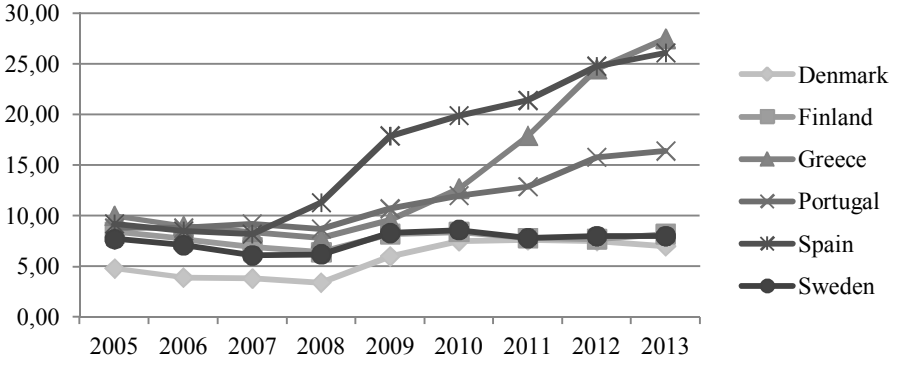


Source: Eurostat.

All of the Nordic countries have a higher GDP per person than the EU (in 2013, the EU 28 countries =26,600 EUR/per person) (Eurostat) and all of the Southern countries have a lower GDP per person than the average. What is also worth noting is that in the Nordic regions GDP is increasing all the time even if it is a slow increase,whilein the south of Europe there is visible stagnation or even a decrease. The financial crisis which hit in Europe in 2008 caused a lot of damage, especially in the financial system, but it is not the main reason for such enormous differences between countries. For example, the sectors that generate the largest profits are much more important. All countries derive the greatest benefits from the services. The share of services in GDP is higher than 70% regardless of the country. Industry stands at about 20%, and agriculture is no more than 4% in Greece, 2-3% in Spain, Portugal and Finland, and about 1.4% in Denmark and Sweden (World Bank, 2013). However, the biggest difference is that the Scandinavian countries' suppliers provide services in the field of high technology and innovative solutions while those from the south of Europe are based on services, mainly in the field oftourism.

Unemployment is described as the percentage of the total labour force that is unemployed but actively seeking employment and willing to work. Eurostat estimates that more than 24 million men and women in the EU-28, of whom over 18 million were in the euro area (EA-19), were unemployed in December 2014. That indicator is one of the most important in judging economic development in a country.

Figure 2. Unemployment rate (2005-2013)



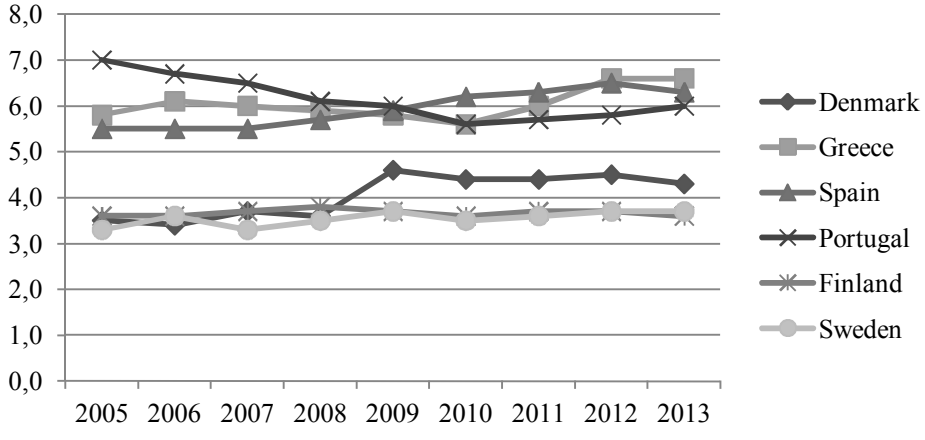
Source: Eurostat.

As canbeseen in Figure 2, the most stable and the lowest unemployment rate is in the north of Europe, although all Nordic countries have experienced a rise in unemployment since the financial crisis began in 2008. In 2010, Denmark, Finland and Sweden reportedtheir highest rates, at about 8 per cent. The situation in Portugal, Spain and Greece drastically changed after 2008. They are currently experiencing their highest unemployment rate,which affectsalmost 30% of the

population. The best situation is in Portugal, but that indicator is increasing year by year. Moreover, all countries have been forced to deal with the difficult situation in which there is a decrease in global demand. The slight hesitation on the labour market in the Nordic countries is largely due to the fact that they are knowledge-based economies and a decline in production has not affectedthem so much.

Inequality of incomedistribution is the next indicator which has a lot in common not only with socio-economic situation in the EU but also with sustainable development. Reducing inequalities contributes to the EU Sustainable Development Strategy's goal of achieving a high level of social cohesion. A useful way to do this is to divide the population by income, into so-called 'income quintiles', and then look at the lowest and at the highest of such income groups and calculate their ratio. In this way, it is possible to see how many times the average income of the highest group is bigger than that of the lowest income group. The quintile share ratio does not measure inequalities that occur in the middle segment or within the poorest or richest segments, it focuses on the gap between the poorest and richest strata of society (Pisano and Berger, 2014).

Figure 3. Inequality of income distribution: S80/S20 income quintile share ratio



Source: Eurostat.

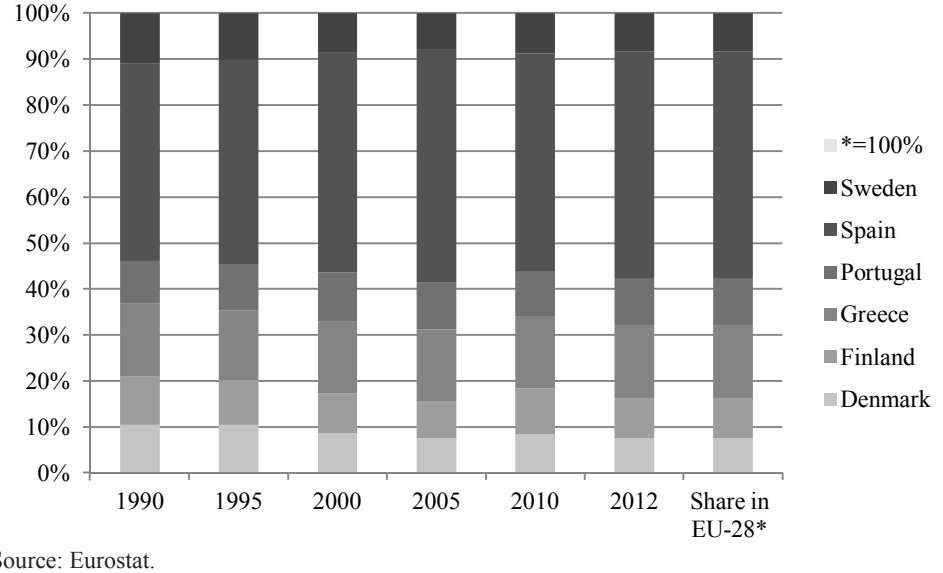
It is said that with a growing GDP in a country, bigger inequalities of income appear at the same time. The situation in the Nordic countries, where the income of the richest 20% of society is about four times as high as the income of the poorest 20% of society, is characterised by lower inequality. The income distribution across Greece and Portugal, on the other hand, is becoming more divergent within those societies and the income of the richest is over six times higher than the poorest. Economic inequality is a critical factor in determining how poverty affects everyone in a society, including those who have the most. A number of

studies and reports from around the world show that where societies have a fair income distribution, everyone is better off. And where there is a huge gap between rich and poor – where there is significant economic inequality – everyone in a society is worse off. The Nordic countries stand as evidence that reducing inequality through tax measures, labour practices and overall social policy improves the health and well-being of everyone in a nation, and is actually a benefit to economic growth (Manitoba Centre for Health Policy, 2012). Additionally, a national minimum wage is sufficient to maintain basic standards of living, and it is not necessary to claim any extra benefits from the state.

The environmental dimension

Foralmost three decades, the European Union has strived for a"green economy". The definition of a green economy is that used by the United Nations Environment Programme (UNEP): "A green economy results in improved human wellbeing and social equity, while significantly reducing environmental risks and ecological scarcities. In its simplest expression, a green economy can be thought of as one which is low carbon, resource efficient and socially inclusive. Practically speaking, a green economy is one whose growth in income and employment is driven by public and private investments that reduce carbon emissions and pollution, enhance energy and resource efficiency, and prevent the loss of biodiversity and ecosystem services. These investments need to be catalyzed and supported by targeted public expenditure, policy reforms and regulation changes. This development path should maintain, enhance and, where necessary, rebuild natural capital as a critical economic asset and source of public benefits, especially for poor people whose livelihoods and security depend strongly on nature." A very important environmental indicator in the European Union is the reduction of greenhouse gas emissions, something that is included not only in the EU SDS (European Strategy for Sustainable Development), but has also been chosen as a fundamental objective of the Europe 2020 Strategy. The Europe 2020 Strategy committed the EU to reducing its GHG emissions (including emissions from international aviation) by 20% compared to the level in 1990.Climate change caused by the emission of carbon dioxide and other greenhouse gases is one of the foremost global environmental problems today. Traditionally, there has been a strong link between economic growth and increased greenhouse gas (GHG) emissions.

Figure 4. Greenhouse gases emission (1990-2012) (million tonnes of CO^2equivalents)



Source: Eurostat.

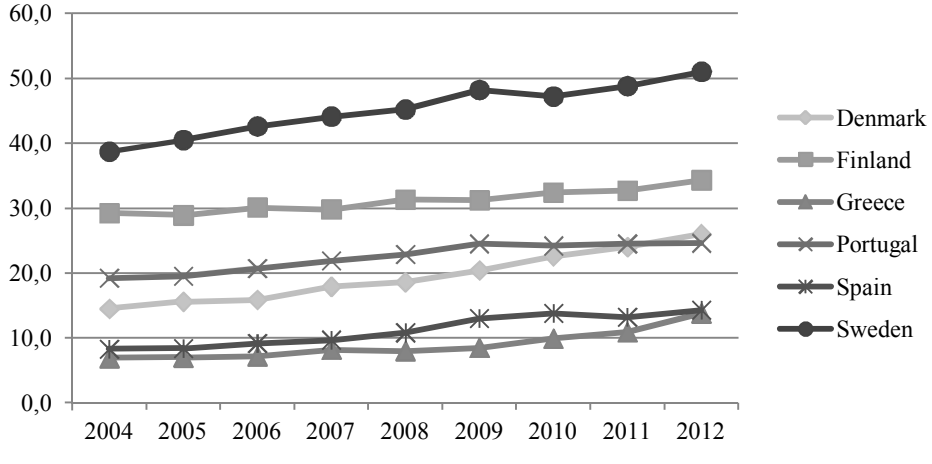
Eurostat reports that between 2008 and 2012, GHG emissions dropped sharply. The main driving force was the economic crisisas it led to a reduction in industrial activity, transport volumes and, as a consequence, energy consumption and emissions, which also resulted in fewerGHG emissions. It does not change the fact that Portugal, Greece and Spain produce almost 70% of the greenhouse gases in comparisonwith the30% of the Nordic countries. These differences are due especially to the fact that the basic needs of the majority of residents in the Nordic countries are satisfied, which is why environmental protection is a goal that can be carried out. Certain services, such as education and healthcare, the provision of political freedoms, or the expansion of incomes to a basic minimum level, are central to eradicating poverty, and can be met with little impact on overall global resource use. It should not be forgotten that the wealth of the Nordic countries was built on natural resources like forests. What is more, environmental protection is mainly supported by governments, and policy makers provide for it in national policy. For example in Sweden,with its overall generational goal for 2020, theenvironment policy is based on 16 environmental quality objectives (EQOs) sanctioned by the Government and Riksdag (parliament). These goals are reduced climate impact, clean air, natural acidification only, a non-toxic environment, a protective ozone layer, a safe radiation environment, zero eutrophication, flourishing lakes and streams, good-quality groundwater, a balanced marine environment, flourishing coastal areas and archipelagoes, thriving wetlands, sustainable forests, a varied agricultural landscape, and a magnificent mountain landscape. In 2002, the Environmental Objectives Council, a special government-appointed

body, was charged with co-ordinating and following up efforts to reach the EQOs. This responsibility for Sweden's environmental policy was later taken over by the Swedish Environmental Protection Agency.

Sustainable development is also visible in the share of renewable energy in the gross energy supply. There are many reasons to foster the growth of renewable energy sources (RES) in Europe. Reducing the impact of local and global pollutants and greenhouse gases has been a major incentive for RES policies in the last two decades. Considering Europe's growing dependency on foreign energy sources, the security of energy supply by replacing foreign fossil and nuclear fuels withdomestic RES is another motivation gaining more and more attention. Renewable energy sources contribute very differently to energy supply in the individual EU Member States. There are many variables which determine that situation (Nitsch, Krewitt and Langniss, 2009).

1. the country-specific potentials of the different RES,
2. the existence of other cheap and abundant domestic energy resources (e.g. coal, naturalgas)
3. structural boundary conditions like population density, structure of settlements, ratio ofrural to urban areas, extension of electricity grids and district heating networks
4. economic conditions like national energy prices and taxes
5. level of economic wealth
6. levelof energy consumption
7. conditions of energy policy like promoting instruments for RES, targets of national energypolicy.

Figure 5. Share of renewable energy in gross energy supply

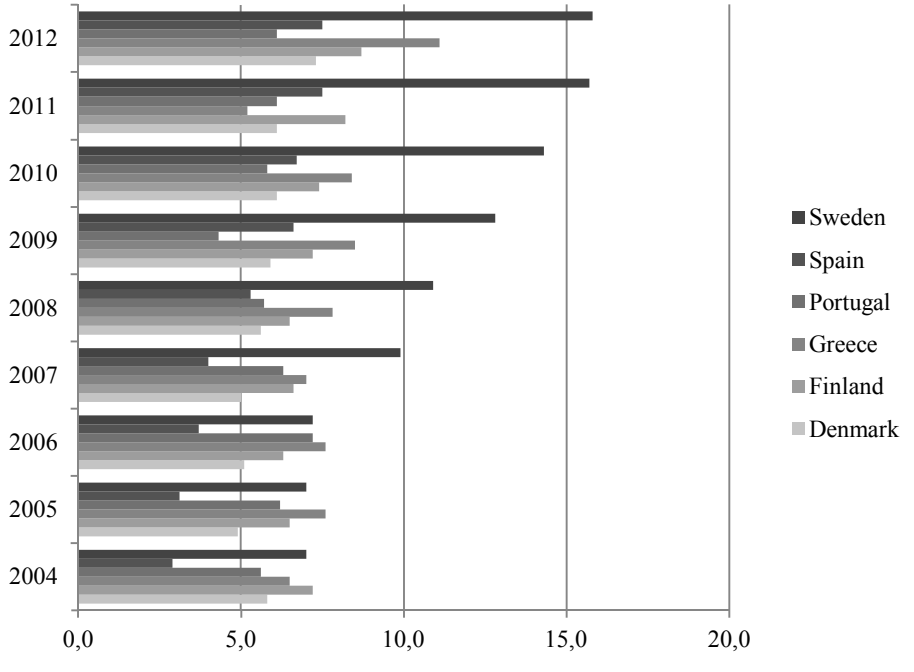


Source: Eurostat.

Countries with large land areas, correspondingly low population density and, at the same time, abundant hydropower, have a relatively high contribution of RES. This applies to Sweden, Finland and Portugal whereprimary energy consumption and electricity generationaccounts formore than 20%. In densely populated countries, RES contribute less than 15%,asin Spain and Greece. Moreover, renewable energy has become quite expensive and caused higher energy prices overall, while expenditures are very high especially at the beginning. It is not surprising, then, that in countries where unemployment is at 30% and production is decreasing, renewable energy expenditures are not high (Nitsch, Krewitt and Langniss, 2009).

The organic food market in Europe has been increasing for two decades.As of the end of 2007, 7.8 million hectares in Europe wasmanaged organically by more than 200,000 farms. In the European Union, 7.2 million hectares wasunder organic management with more than 180,000 organic farms. 1.9 percent of the European agricultural area and four percent of the agricultural area in the European Union is organic. Twenty-four percent of the world's organic land is in Europe. Organic farming is also a huge chance for countries, which exploit benefits from agriculture, good examplesbeingSweden and Greece. The area involved inorganic farming has been increasing there year by year.

Figure 6. Area under organic farming (percentage)



Source: Eurostat.

Sustainable Development Strategy

The renewed EU Sustainable Development Strategy sets out a single, coherent strategy on how the EU will more effectively live up to its long-standing commitment to meet the challenges of sustainable development. It recognizes the need to gradually change our current unsustainable consumption and production patterns and move towards a better integrated approach to policy-making. It reaffirms the need for global solidarity and recognizes the importance of strengthening our work with partners outside the EU, including those rapidly developing countries which will have a significant impact on global sustainable development (European Union Commision, 2014).

Each country in Europe has its own strategy which defines the main goals of sustainable development. Sweden and the UK adopted their first National Sustainable Development Strategies (NSDS)as far back as 1994, followed by several other countries (e.g. Finland in 1998, Belgium in 2000). Most countries, however, developed their first NSDSs in preparation for the UN World Summit in Johannesburg in 2002; other European countries followed later in the 2000s.

The Nordic countries have consistently common views on key social issues, and the countries agree that social development must be sustainable. The Nordic countries have well-developed welfare services, relatively small differences in income, and effective public institutions. Moreover, Nordic countries have co-operated with each other since 1952.The Nordic Council is a geo-political inter--parliamentary forum for co-operation between the Nordic countries that was established after World War II. Its first concrete result was the introduction in 1952 of a common labour market and free movement across borders without passports for the countries' citizens. In 1971, the Nordic Council of Ministers, an intergovernmental forum, was established to complement the Council. The Nordic region has a long tradition of working together to develop common solutions to common challenges. One challenge is sustainable development and the Nordic countries have createda common solution and program to achieve that goal. The strategy for sustainable development is the overriding and cross--sectoral framework for the work of the Nordic Council of Ministers. There are three interdependent dimensions of sustainable development: economic, social and ecological. The most important thing is to save welfare model of life and support education, research and innovation and the sustainable use of the earth's resources(Norden).

The NSDSs of Greece, Portugal and Spain were developed in the form of a single policy strategy document. However, NSDSs come in various types and differ from each other in terms of structure, focus and length. What most have in common, though, is that they formulate a vision for SD, include objectives on the three dimensions of SD (economy, social issues, environment), and describe a governance process for implementing the strategy, including monitoring and

evaluation schemes.Monitoring is an assessment activity, usually based on a set of quantitative indicators. The higher and stronger the link between policy objectives and indicators in the NSDSs, the more measurable the delivery of the strategy objectives.

In Portugal, the 80 Sustainable Development Indicators (SDI) are intended to evaluate the progress of Portugal concerning sustainable development in terms of the objectives and targets set in the strategy. They are classified into seven strategic objectives and ranked on three levels. The indicators' framework is a contract signed with Eurostat to develop a set of indicators to monitor the National Strategy for Sustainable Development. The development of such indicators was done by Statistics Portugal, in close collaboration with the organisations of the Ministry of Agriculture, Sea, Environment and Spatial Planning responsible for the monitoring of the NSDS.

In Spain, the NSDS explicitly states a set of 74 indicators for its monitoring. The Spanish set of indicator was developed in 2007 and hasnot been revised since then.

In Greece, the National Centre for the Environment and Sustainable Development (NCESD), in close co-operation with the National Statistics Service, published the current set of SD indicators in the "State of the Environment" report produced by NCESD in 2010. The new indicator set was developed after the EU SDS Implementation Report (2007) was adopted. The financial crisis started in 2008, putting Europe in a time of severe challenges, especially from economic (i.e. stagnation) and social (i.e. unemployment) points of view. Additionally, environmental problems continue to be more intertwined than ever before as in the case, for instance, of climate change and related floods or heat waves, to cite only a few issues. In this context, such a period of crises particularly affected the EU Member States in the southern part of the EU (Pisano, Berger).

Sustainable Development Index

The Sustainable Society Index (SSI),based on 21 indicators which arein accordance with the definition of the World Commission on Environment and Development,shows the level of sustainability in each country, and has been in operation since 2006.These indicators are clustered in 5 categories (Table 1). Data are collected by scientific institutes and international organizations.

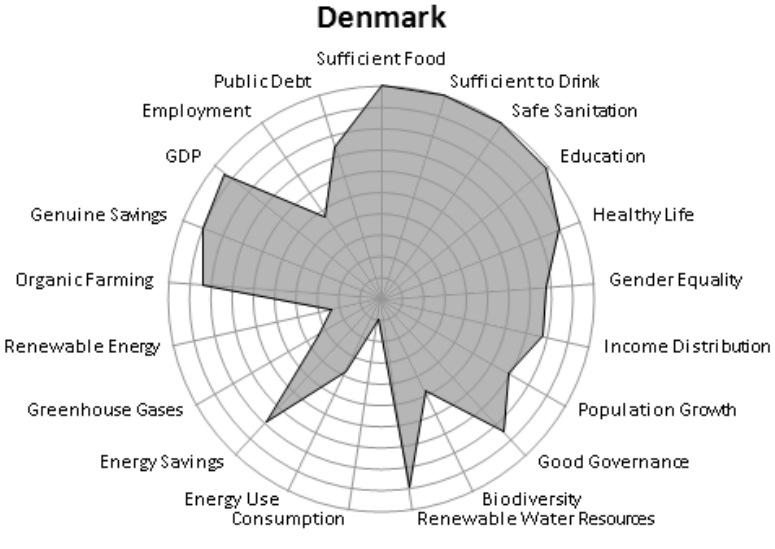
Due to thelack of a scientific basis for the attribution of different weights to the indicators, every indicator has received the same weight for the aggregation into dimensions. All totals, be it for the world as a whole, per income class or per region, are weighted for population size. This means that an inhabitant of Iceland has an equal weight as an inhabitant of China. The Sustainable Society Index has been developed for as many countries as possible. This offers the option of

comparison between countries using various viewpoints: neighboring countries, more or less similar countries, regional comparisons, comparisons between rich countries, like the OECD members, and comparison between North and South.

Table 1. Sustainable Society Index indicators

I Personal Development 1 Healthy Life 2 Sufficient Food 3 Sufficient to Drink 4 Safe Sanitation 5 Education Opportunities 6 Gender Equality **II Healthy Environment** 7 Air Quality 8 Surface Water Quality 9 Land Quality **III Well-balanced Society** 10 Good Governance 11 Employment 12 Population Growth 13 Income Distribution 14 Public Debt	**IV Sustainable Use of Resources** 15 Waste Recycling 16 Use of Renewable Water Resources 17 Consumption of Renewable Energy **V Sustainable World** 18 Forest Area 19 Preservation of Biodiversity 20 Emission of Greenhouse Gases 21 Ecological Footprint

Figure 7. Sustainable Society Index for Denmark

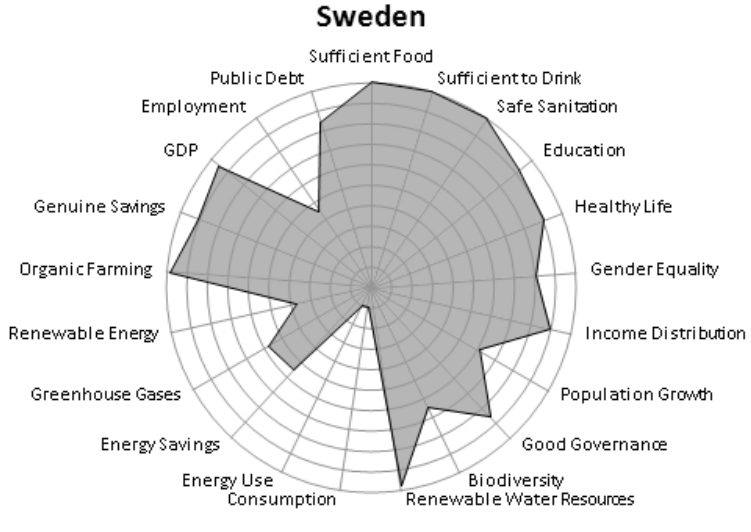


Source: www.ssfindex.com/conomics and Business (date of access: 13.02.2015).

Figure 8. Sustainable Society Index for Finland

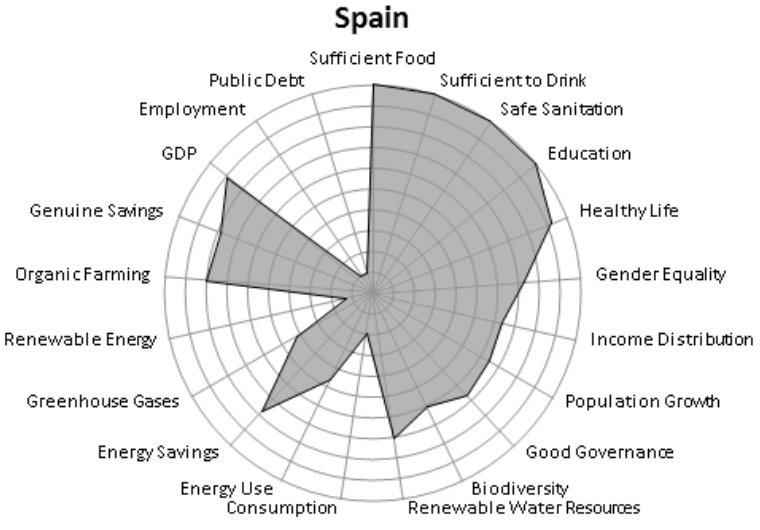
Source: www.ssfindex.com/conomics and Business (date of access: 13.02.2015

Figure 9. Sustainable Society Index for Sweden



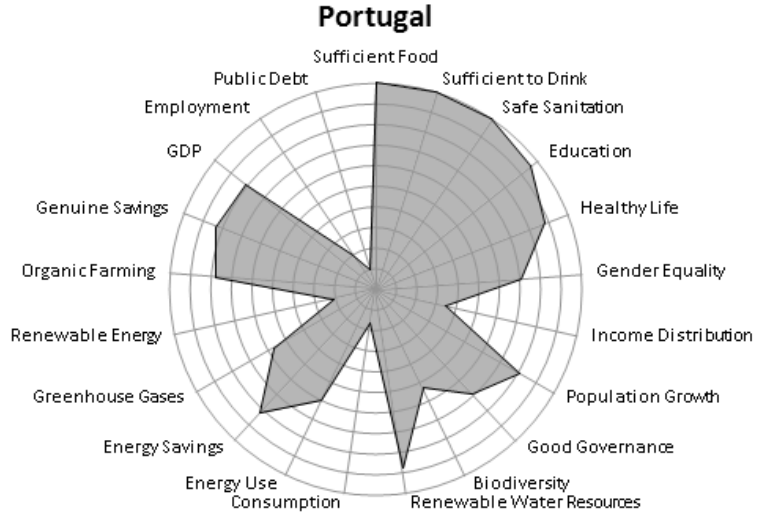
Source: www.ssfindex.com/conomics and Business (date of access: 13.02.2015).

Figure 10. Sustainable Society Index for Spain



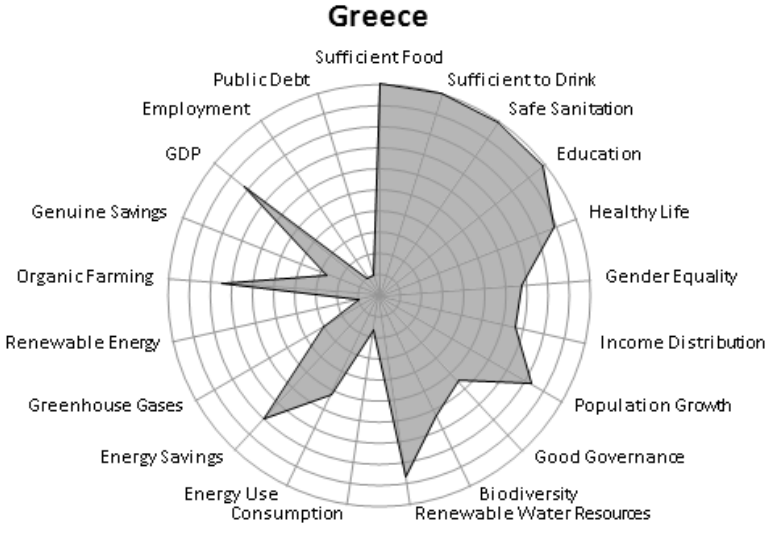
Source: www.ssfindex.com/conomics and Business (date of access: 13.02.2015).

Figure 11. Sustainable Society Index for Portugal



Source: www.ssfindex.com/conomics and Business (date of access: 13.02.2015).

Figure 12. Sustainable Society Index for Greece



Source: www.ssfindex.com/conomics and Business (date of access: 13.02.2015).

Conclusion

The widespread rise of interest in, and support for, the concept of sustainable development is potentially an important shift in understanding the relationships of humanity with nature and between people. It is in contrast to the dominant outlook of the last couple of hundred years, especially in the "North", which was based on the view of separating the environment from socio-economic issues.

However there are very large differences in the approach to this difficult topic between countries belonging to the European Union. It was noted that the northern states of the EU are more inclinedto be involved in promoting and subsidizing sustainable consumption and production compared to countries of southern Europe. Nordic countries are much richer, and thanks to cooperation they are able to fulfill goals of sustainable development and care about welfare status. Southern countries face a lot of problems caused by the recent financial crisis and activities related to sustainable development at the moment are in the background. Nevertheless, the goal of every state is to accomplish sustainable development and environmental protection.

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Summary

Sustainable consumption and production has been the subject of keen demand in many countries around the world for over 20 years, especially in the countries of the European Union. Despite this, negative environmental effects are still observed,caused by growing consumption and excessive economic growth. Many environmental strategies involve the usual increased resource efficiency and eco--efficiency of processes and products.However, this does not fully balance the environmental impact caused by the increased consumption, which in the EU is four times higher than public expenditure. However, there are very large differences in the approach to this difficult topic. The northern states of the EU turn out to be more inclinedto being involved in promoting and subsidizing sustainable consumption and production than the countries of southern Europe. The main purpose of the article is to compare sustainable development in the countries of southern and northern Europe andto fathom what the reason forthose differences is,based on specific and selected indicators and influences on countries' economic development. The research is based on indicators of,among others: domestic material consumption, recycled and composted municipal waste, atmospheric emissions and organic farming.

Key words: sustainable consumption and production, Europe, sustainable development indicators

JEL: Q01, O11, O13