Structural funds and sustainable development in Greece

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1. Introduction

There is a close and interactive relationship between the economy and the environment regarding sustainable development. The availability of funding resources is a major issue each time, thus the role of Structural Funds from the EU in the sustainable development of member countries' progress is essential. The significant role described matters more in countries such as Greece where Structural Funds are almost the only funding tool due to the country's domestic economic weakness and its inability to allot sufficient resources on its own.

The importance of the contribution of Structural Funds to the economy of the country has some contradictions, therefore, conflicting views have ben developed on both the input and the level of the contribution. This ambiguous situation regarding the impact of Structural Funds is emphasized in the research of Boldrin and Canova (2001) and Beugelsdijk and Eijfinger (2005). Other studies (e.g. De La Fuente, 2002) highlight the correlation between the impact of Structural Funds and the institutional framework in the beneficiary countries. Furthermore, Bahr (2008) sets as a parameter the degree of decentralization connecting the positive impact of Funds with the degree of decentralization, while the same finding about the effect of the decentralization parameter is also pointed out in Stegarescu's (2004) study. Liargovas and Apostolopoulos (2014a) indicate that an enhanced sub-national autonomy as a primary factor along with opportunities arising from structural funds can boost sustainability and Europe 2020 performance. The level and degree of impact on the domestic economy vary in studies depending on the data and methodological approaches applied in each case. However, in several surveys, Structural Funds contribute strongly to finding a direction towards economic progress (Funck and Pizzati, 2003; Cappelen et al, 2003)

Moreover, as Puigcerver-Peñalver (2004) states, by applying a 'hybrid structural' model the impact of Structural Funds becomes important economically, especially during the first funding period and for Objective 1 areas. Less important, though not negligible, are the findings of the second period. Lima and Cardenete (2008) observe a positive relation between Structural Funds and their impact on economic growth. As Marks (1993) pinpoints, Structural Funds are "the leading edge of a system of multilevel governance in which supranational, national, regional and local governments are enmeshed in territorially overarching policy networks" (1993: 401). Nonetheless, some sceptical views have been expressed about the impact of Structural Funds, such as those of Ederveen et al. (2006). In their research, Mohl and Hagen (2010) report that their findings show that there is a positive impact from structural funds on Objective 1, whereas the impact is negative on Objectives 2 and 3. Bradley et al (2003) believe that the long-term positive effect on growth is not uniquely attributable to Structural Funds. Overall, the studies and investigations on Structural Funds are conflicting about how much they contribute and which sectors of the economy benefit, without questioning the contribution of Structural Funds.

The approach of issues related to sustainable development and the impact of Structural Funds present a literature gap which, in the opinion of the author, is primarily attributable to three main factors: 1) the general difficulty in and complexity of approaching issues related to sustainable development, 2) research on Structural Funds has focused on overall effects, 3) and perhaps most importantly the launch of Europe 2020 (Commission of European Communities, 2008a), which has set goals for energy and environment in the area of sustainable development, this has been linked to the objectives of Structural Funds.

According to EU regulation No. 1303/2013 about the common rules and aims of structural and investment funds, Europe 2020 is at the epicentre of fulfilling the objectives of structural funds. The operation of the European Regional Development Fund is directed by regulation 1301/2013. Based on this regulation, the ERDF is committed to enhancing Europe 2020 with certain actions, such as promoting the transition to a low-carbon economy, raising the share of renewable energy, supporting sustainable transport, promoting the energy efficiency of enterprises and boosting the environmental quality during economic activity. EU regulation 1300/2013 on the Cohesion Fund set the investment and funding priorities for a low-carbon economy and climate-change adaptation while promoting resource

efficiency coordinated with Europe 2020. Even the European Social Fund, which embodies Europe 2020 in its social indicators in regulation 1304/2013, promotes sustainable development through education and training systems. These systems should embody the necessary adjustments in order to promote the upgrade of skills and qualifications needed to transform the economy.

In order to evaluate the impact of structural funds on Greece's sustainable development, the environment and energy were set as parameters, since they contribute significantly to sustainability and the national economy. Another major reason for using these parameters is that during the next period, 2014–2020, and the last two years of the last period, 2007–2013, the Europe 2020 strategic plan is embodied in the functions and objectives of structural funds. Europe's 2020 aim is to lead Europe to sustainable growth and take it permanently out of perhaps the worst phase Europe has encountered since its creation (World Economic Forum, 2012). Consequently, Europe 2020 sets its main priorities, targets and flagship initiatives (Commission of European Communities, 2008a) for sustainable growth. The environment and energy, which are one of the five objectives, have a central position in the strategic plan. Hence, the targets for greening the economy and production, known as '20/20/20', concern a 20% increase in renewable energy production, a 20% reduction in carbon emissions and an increase in energy efficiency of 20%, which should be achieved. In addition, "Resource-efficient Europe" is one of seven flagship initiatives.

Thus, this study focuses on the 20/20/20 indices and 'resource-efficient Europe' indices in order to monitor and analyze the impact of structural funds on Greece's sustainability. As Ekins et al. (2008) mention, one approach to evaluate sustainable development is to select a group of indicators related to the subject under investigation.

Additionally, the European Commission (1999) mentions that indicators that adjudge structural funds should be of relevance to the context and aims of structural funds.

From the above analysis, three key questions arise concerning the matter under consideration. How do structural funds aim to boost sustainable development? How much progress did Greece make in sustainable development during the last decade? What can be achieved through policy reformation? Consequently, this work is structured in such a way as to answer these three questions in six sections, including the current introductory one. The second section includes a brief historical overview of the relationship between sustainable development and structural funds in Greece. The third section describes energy priorities and the fourth one environment priorities. In the fifth section, the main problems and obstacles are described. Finally, the last section summarizes the findings and develops policy proposals.

2. Historical review of Structural Funds priorities in sustainable development

The basic financial leverage for projects and actions affecting the environment, energy, competitiveness and entrepreneurship in Greece was the funding from European Structural Funds.

- In the period 1989–1993, financial resources were mostly directed to environmental studies and the procurement of equipment of environmental parameters related to air pollution and water resources.
- In the period 1994–1999, the actions of the previous period were continued and more were added in the field of wastewater treatment and the management of urban waste and rehabilitation interventions, as well as environmental and urban planning. Finally, private investment in energy, industry and agriculture were boosted in order to ameliorate the energy and environmental performance of business and support environmentally-friendly farming.
- In the period 2000–2006, much of the funding was directed to support the management of municipal wastewater and solid waste, as well as urban-environment regeneration and protection of the natural environment. Energy and environmental business actions were supported in order to improve the business environment, support and encourage entrepreneurship, and promote operational excellence, technological innovation and research. Economic activity, regional development and employment

[1] http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:32013R1303.
[2] http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:32013R1303.
[3] http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:32013R1300.
[4] http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:32013R1304.

were also reinforced. In addition, there were activities to secure energy supplies so as to become independent of imported primary energy through the diversification of energy-supply sources. Finally, resources were allocated to educate and train students and unemployed workers on environmental issues.

- In the period 2007–2013, the main strategic objective was the protection, enhancement and sustainable management of the environment in order to support the competitiveness of the economy, the quality of life of Greek citizens and public health. Actions were financed according to convergence with the environmental 'acquis' of Europe. Substantial resources were used to curb the growth of greenhouse gas emissions, double the contribution of renewable energy to reduce the use of coal in electricity production and substitution by natural gas, eliminate the uncontrolled disposal of solid waste, restore uncontrolled dumping sites, create a recovery unit, Urban Waste, draw up a National Programme for Production and Waste Prevention and a National Waste Management Plan to improve the energy efficiency of transport, and finally enhance the tourism product using cultural environmental benefits.

In the Operational Programme 'Competitiveness and Entrepreneurship', four priorities were set:

i. Improve the business environment
ii. Strengthen entrepreneurship and extroversion
iii. Promote innovation and
iv. Complete the energy system of Greece and promote sustainability

According to the aforementioned operational programme, private SMEs were reinforced to develop energy measures, incorporate an environmentally-friendly technologies environment, environmental-management certification systems and product-certification systems.
The period 2014–2020 aims to prioritize completion of the Trans-European Transport Network, enhance regional mobility, reduce the adverse effects of climate change, reduce emissions and implement the Community's 'acquis' for protection of the environment. Moreover, it focuses on prevention and risk management, energy saving, developing clean urban transport, waste management, increased recycling and enhanced resource productivity.

3. Energy priorities

In order for Greece to actualize its economic development, utilizing the resources of the European Structural Funds, actions have been undertaken to adapt the Greek legislation to Directive 96/92, achieve a smooth transition towards a free energy market, promote competition and establish a framework for a free market in natural gas.

In the period 2000–2006, the third funding period included two axes for energy-policy issues: 'Security of the Energy Supply and Promotion of the Energy Market' and "Energy and Sustainable Development".

a) The first aforementioned priority axis aimed to supply the country with energy, contribute to the security of the EU's energy supply and promote energy-market liberalization. These objectives were to be achieved through access to gas-supply resources, the strengthening of specific concrete actions for the island regions of Greece, the penetration of renewable energy sources through cogeneration, energy release in the country and energy-saving policies. This specific priority axis included such measures as: "Access to alternative gas supply sources and promotion of natural gas penetration", "greater flexibility, stability and reliability of the gas system", "special energy infrastructure for the islands and renewable energy promotion", an "energy liberalization mode" and "renewable energy systems promotion, cogeneration in the energy system of the country [to make] energy savings".
b) The second priority aimed to support the production, distribution and sustainable use of the energy resources of the country in compliance with the country's commitment to reducing greenhouse-gas emissions and the rational use of water resources. By implementing the above objectives, it was sought to create a natural-gas distribution network, this to be created in Attica, Thessaloniki and Thessaly, supply natural gas for industrial consumption, reduce the number of on-road fuel tankers in Attica, promote the penetration of natural gas in the transport sector, reduce the pollution in Athens and rationally manage raw-energy materials and mineral wealth. The specified axis included measures for: the "penetration of natural gas in the residential and tertiary sector, industrial production and the transport sector", a "secure infrastructure for petroleum handling" and the "exploitation of natural resources and support for meeting environmental commitments".

In July 2000, Greece set up a regulatory authority for energy (RAE). The objective of RAE is to control the energy market in all areas and continuously update the EU on the progress of electricity-market liberalization (RAE, 2005). As a result, in the third funding period and especially in the period 2005–2008, RAE received funding for its infrastructure and operation. Furthermore, it received funding to support long-term energy planning for gas and electricity, and finally to encourage investment in the energy sector.

With resources from European Structural Funds, entrepreneurship in the energy sector and especially in the renewable energy sector was supported to promote sustainability during the period 2002–2006. More particularly, investments projects that were supported are as follows (Ministry of Development, 2002):

- Photovoltaic parks
- Small hydroelectric power projects up to 10 MW in watercourses
- Biomass utilization
- Wind systems for the production of electricity (wind turbines)
- Geothermal applications
- Saving energy for companies already in operation
- Substitution of electricity with natural gas or LPG in existing enterprises

Private-sector initiatives had the right to participate in the above initiatives and the level of their own economic participation was at least 30 per cent of the budget. In these projects, legal entities had a participation right under private law and the level of their participation in the investment project amounted to at least 30 per cent of the budget.
In the operational programme for 2007–2013, the importance of enabling Greece to secure its energy supply by steadily reducing its dependence on oil by developing renewable energy was emphasized. Within this framework, many actions were undertaken in order to achieve energy-market liberalization, resource productivity, the proper management of natural resources, energy security and Greece's adaptation to European Directive 2009/28/EC on energy and climate change. (Operational Programme Competitiveness and Entrepreneurship 2007–2013, 2013).

The interventions in the aforementioned fields aimed to achieve the following:

- To promote the use of natural gas in residential and tertiary sector development.
- To modernize the country's electrical grid with the interconnection of the islands to the main power and renewable energy sources on the mainland.
- To promote renewable energy penetration and save energy through interventions in public buildings and to support citizens, businesses and government's awareness.
- To support actions related to the hydrocarbons sector

The beneficiaries of the priority axis 'Completion of the energy system of the country and sustainability enhancement' were businesses of all sizes and legal forms as well as households in areas where the gas network was expanded. In addition, businesses that invested more in saving energy and improving energy performance in the municipalities benefited (Ministry of Economy and Finance, 2007).

Among the works constructed with support from structural funds are the following: the gas-compression station in New Mesimvria Thessaloniki, the pipeline for high-pressure natural gas in Agioi Theodori-Megalopolis and Aliveri, expansion of the natural-gas distribution network in Inofita Halkida, modernization of the electricity grids, the realization of investment in 74 renewable-energy projects, the realization of programmes such as 'saving at home' and 'saving in local authorities', the implementation of 32 energy-saving projects in schools and hospitals, the implementation of seven projects in bioclimatic schools (Ministry of the Environment, Energy and Climate Change, 2013).

These projects along with others in the energy sector have managed to reduce energy consumption and achieve a 15 per cent reduction in the projected levels for 2020 (Ministry of Development, Competitiveness, Infrastructure, Transport and Networks, 2012).

4. Environment priorities

This chapter will examine the contributions made by resources from the European Structural Funds in the fields of:

- Solid-waste management
- Atmospheric environment (air pollution / climate change)

Solid-waste management

The management of solid waste is a difficult and complex process, thus large sums from the Structural Funds have been spent to address it. In 2006, Greece produced 4.6 million tons of municipal solid waste originating mainly from households and commercial activities, and it is expected that Greece will produce 5.2 million tons in 2006 (Technical Chamber of Greece, 2006). Of the above amount of solid waste in landfill, 4.56 million tons were driven to uncontrolled dump sites, 300,000 tons of waste, approximately 140,000 tons were composted while 870,000 tons were recycled (Ministry of the Environment, Energy and Climate Change, 2013). In 2012, of the 325 municipalities in the country, 240 had set up a recycling system. This led to performance in recycling being somewhat improved (Ministry of the Environment, Energy and Climate Change, 2013).

Community policy on solid-waste management has always been based on waste prevention and its integrated management by developing recycling and reuse as well as improving the conditions of disposal. Structural funds were also used in the implementation of these policies.

Greece's policy on the issue of solid waste moves along the axes for the prevention of waste achievement and the objectives that the EU has set for recycling, the completion of waste facilities and financing innovative environmental technologies.

In the operational programme 2000–2006 "Environment", there was a "Solid Waste" axis including actions for the remediation of uncontrolled dump sites, a coastal clean-up, the construction of landfill sites on small populated islands, updating and parallel awareness of social organizations and local government (Ministry for the Environment, Physical Planning and Public Works, 2007). The total budget of the 'Environment' programme, after its revision on 7 December 2006, amounted to € 522,649,462. Of that, community participation was 76.2% and the state share was 23.8%. For the priority axis 'Solid Waste', the budget was € 18,433,013, of which the Community contribution was € 13,382,823 (72.6%); for the measure for 'non-hazardous solid waste management' Community involvement was € 7,854,263 (71.6%); and for the measure for the 'management of hazardous waste', Community involvement was € 5,528,560 (74%) (Ministry for the Environment, Physical Planning and Public Works, 2007).

In the Operational Programme for Environment and Sustainable Development for 2007–2013, there was a priority axis for the protection of soil systems and solid-waste management with an overall objective to protect the public health, groundwater aquifers and the quality of soil resources from uncontrolled waste disposal. The above priority axis also had, among others, the following specific objectives: to complete projects which were financed by Structural Funds in the period 2000–2006, give the country its necessary waste-management infrastructure, implement the regional planning of the country for the management of solid waste and to support recycling (Ministry for the Environment, Physical Planning and Public Works, 2007).

As a result, in this area, 305 projects were financed by Structural Funds under the heading "Management of household and industrial waste" and a budget of € 594,319,600. Most of them, 183 in total, were related to the remediation of uncontrolled dump sites, material supplies at transfer stations, balers and many more (Ministry of the Environment, Energy and Climate Change, 2013).

Atmospheric Environment (air pollution – climate change)

Structural Funds have paid particular attention to the problem of air pollution in Greece. The first mapping of air pollution on Greek territory was accomplished with financial resources from Structural Funds during the programming period 2000–2006.

With resources from the Structural Funds for the period 1994–1999 and within the framework of the Operational Programme 'Environment', Greece upgraded the few existing air-pollution monitoring stations and founded new ones in major cities across the country. In 2001, the National Air Pollution Monitoring Network was established with the intention to continuously access to data (Ministry of the Environment, Energy and Climate Change, 2010).

The research study "Assessment mapping of atmospheric pollution in Greece" was also founded through structural funds (Special Management Service for the Information Society, 2006). The purpose of that particular study was to assess air quality based on data gathered by the National Air Pollution Monitoring Network. The major cities and industrial areas showed high levels of air pollution.

The operational programme "Environment", in the period 2000–2006, included a priority axis entitled "Atmospheric Environment" concerning measures for "Air pollution" and "noise reduction" and with a budget of € 15,301,177, to which the Community contribution was € 11,754,824 (76.8%). The measure for the "Reduction of air pollution" had a budget of € 12,545,267, with a Community contribution of € 9,677,419 (77.1%), and the measure for "noise reduction" had a budget of € 2,755,910, with a Community contribution of € 2,077,405 (75.4%) (Ministry for the Environment, Physical Planning and Public Works, 2007). The planned actions concerned the adaptation of Greece to European directives, controls on air pollution, soundproofing protection and Greece's adaptation to international conventions relating to air pollution and climate change. Furthermore, resources from structural European funds were received to develop action plans that would address air pollution (Ministry of Environment, Physical Planning and Public Works, 2007).

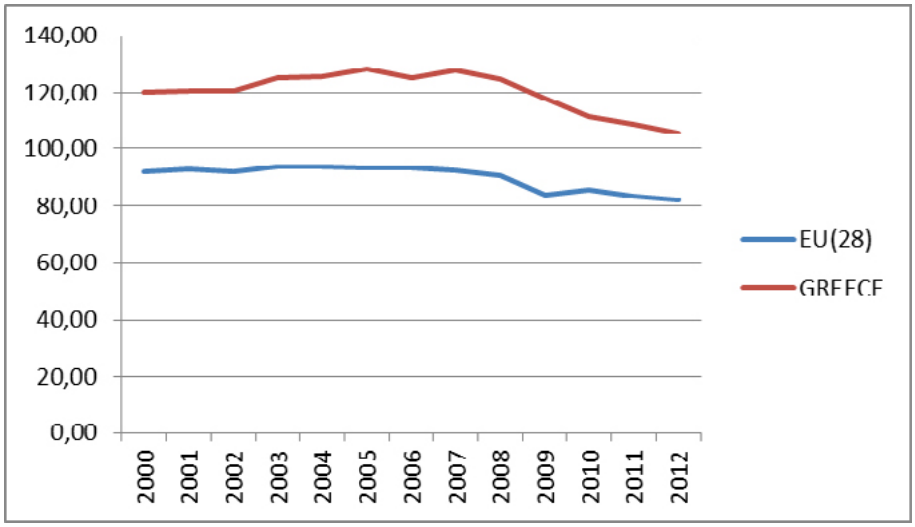
The operational programme of 2007–2013 for protection of the atmospheric environment and climate change was financed by the Cohesion Fund and the European Regional Development Fund, with the aim to reduce the greenhouse-gas emissions that contribute to global warming and protection of the ozone layer. Until 31 December 2014, the total expenditure of the operational programme on the environment in the field of "Atmospheric environment protection – Tackling Climate Change – Renewable Energy" was € 475,560,000 and the absorption rate was 94.07 per cent in Priority Axis 1. For the sixth priority axis, "Atmospheric environment protection – Tackling Climate Change", the total expenditure was € 48,489 and the absorption rate was 93.44 per cent.

5. Progress towards sustainable development

In order to evaluate and analyze Greece's progress in sustainable development, we used the indicators of Europe 2020 which are directly related to sustainable development, as Europe 2020 is associated with the Structural Funds for the next funding period. The analysis focuses on the 20/20/20 targets of Europe 2020 and the indicators are included in the flagship initiative 'resource efficiency'.

Carbon emissions: Greece differs significantly from the EU average on greenhouse-gas emissions and these are growing much more rapidly compared to that. Emissions of carbon dioxide where 120.21(base year 1990) in 2000, 125.55 in 2004, 124.61 in 2008 and 105.71 in 2012, while the corresponding European performances were 91.96, 93.80, 90.41 and 82.14, respectively (Table 1). Greece's performance vias-à-via a low-carbon economy fell considerably. In the period 2000–2009, it enjoyed high growth rates, but these were not accompanied by similar environmental performance. In 2009, it started to reach a turning point in emissions, mainly due to the economic crisis, the decline in industrial production and the shrinkage of movements. At the most basic measure of sustainable development and in conjunction with the amounts paid from Structural Funds in Greece, there are no recorded positive effects of financial support in this area.

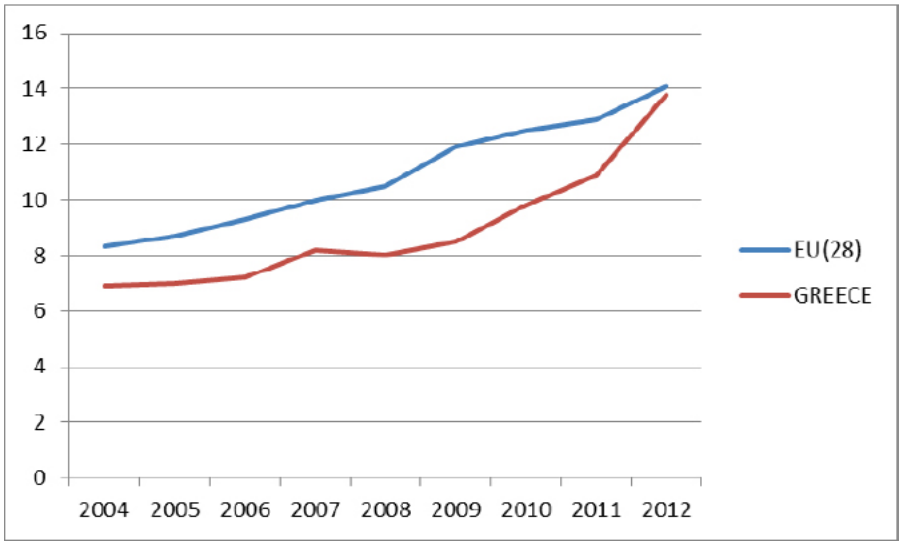
Table 1: Greenhouse-gas emissions, base year 1990



Source: Eurostat

Share of renewable energy: Regarding the contribution of renewable sources to the energy mix of Greece, a significant improvement and increase in the rate are presented. The share of renewable energy increased significantly from 6.9% in 2004 to 13.8 in 2012, while the European Union's share in 2004 was 8.3 and in 2012 it was 14.1 (Table 2). Greece showed an upward trend for this target of Europe 2020 which approached the European average. In the 2000–2006 programming period, incentives were given through the Structural Sunds, as mentioned in the previous section, resulting in significant investment in renewable energy sources. Greece took advantage of certain Structural Fund initiatives in an effort to improve the energy mix and tried to become independent of coal as a raw material, while green business was significantly promoted in the energy sector. It could however display even better performance, since it has great potential, due to its natural resources, not only to achieve improvements but a comparative advantage over other European countries (Liargovas and Apostolopoulos, 2014b).

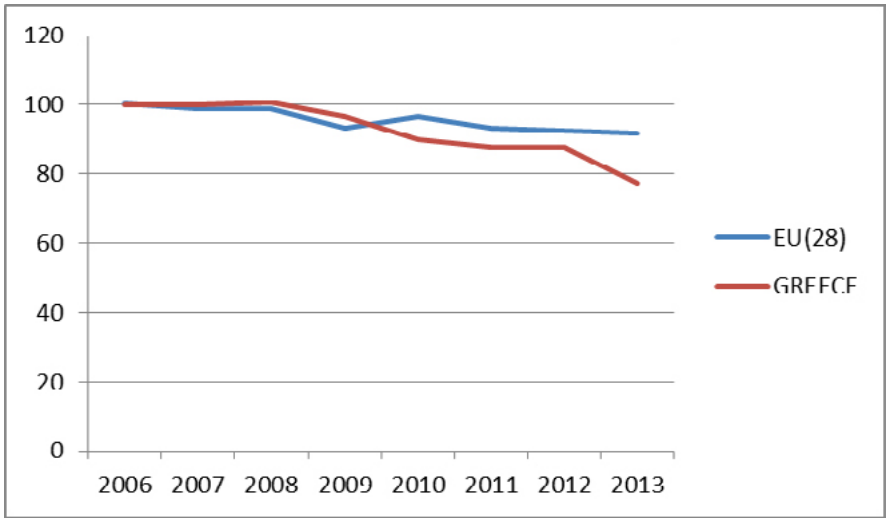
Table 2: Share of renewable energy in gross final-energy consumption (%)



Source: Eurostat

Primary-energy consumption: Greece's progress in primary-energy consumption (base year 2005) moved marginally above the European average in the period 2006–2009, while from 2009 onwards (Table 3) it has exhibited a downward trend. The year 2009 is a turning point due to the decrease in consumption as a result of the economic crisis and a reduction in productivity. Various measures and initiatives, even through European funds, appear to have had no direct effect on the rational use of energy resources or the use of energy-efficient technologies. The above finding concerns both Greece and the European Union. Besides, as mentioned by the Committee of the European Commission, the target of 20 per cent savings in this area is very hard to achieve.

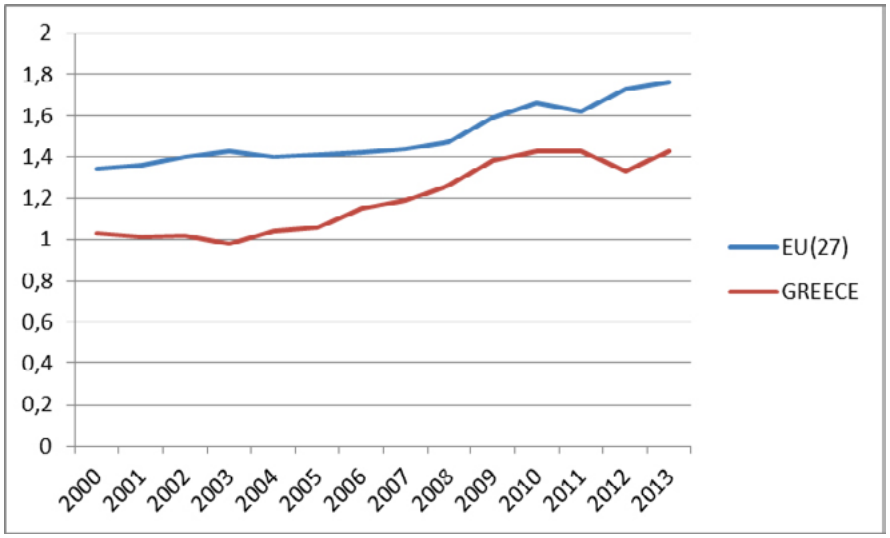
Table 3: Primary energy consumption, base year 2005



Source: Eurostat

Resource productivity: Regarding the resource productivity, Greece shows some deviation from the European average (Table 4), although its performance appears relatively high compared to other European countries (in euro per kilogram in linked chained volumes, 2005). Resource productivity is calculated by dividing the GDP by domestic material consumption (DMC). In the period 2000–2008, an increase was noted in the DMC at both European and Greek levels. Beyond that point, DMC appears to drop; in Greece it is around 35%, accompanied by a contraction in GDP which appears in the numerator of the fraction. Undeniably, the fall in consumption contributed to the relatively good performance of resource productivity. Given the increase in incomes and GDP per capita which derived to a certain extent from the Structural Funds, particularly in the period of 2000-2009 although Greece moved to below the European average, its performance was ranked in the top-ten European countries.

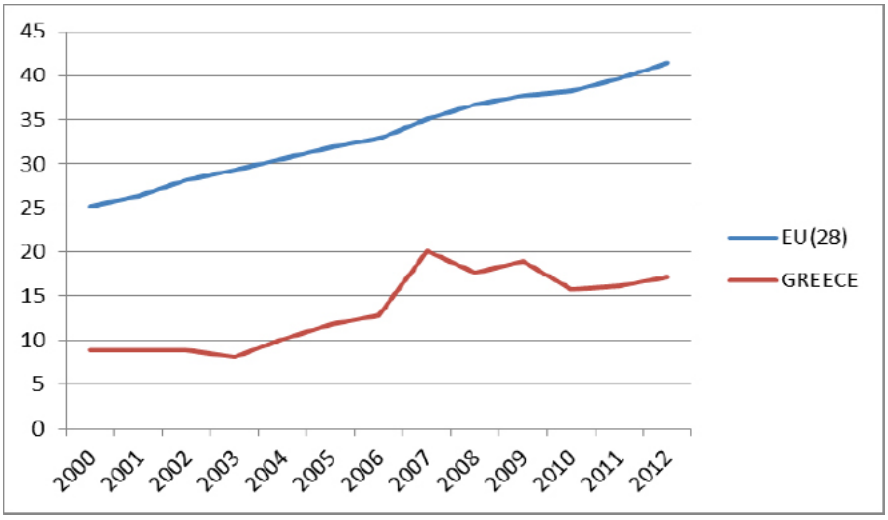
Table 4: Resource productivity (in euro per kilogram in linked chained volumes, 2005)



Source: Eurostat

Recycling: In the field of recycling, Greece lags far behind the EU average as the recycling rate in Greece in 2000 was 8.8% and in 2012 it was 17.2, while the European performance was at 25.2 and 41.5, respectively (Table 5). The fact that Greece increased its recycling rate from 8.8 in 2000 to 20.1 in 2007 is of particular interest. It is apparent that this exhibits a significant positive change, since the country began to comply with European standards and exploited the European funds for waste management. However, in the period 2007–2012, the upward trend stopped, even though the environment continues to be strongly supported by European funds. From 2008 onwards, it displayed a downward tendency, and finally, in 2012, it dropped to 17.2. Thus, the efforts towards an economy that efficiently exploits all the available resources and manages its waste as useful materials is not being achieved, while the European Union continues its upward course. The transition to a sustainable economy, as expressed through the recycling ratio, connotes delays and failures.

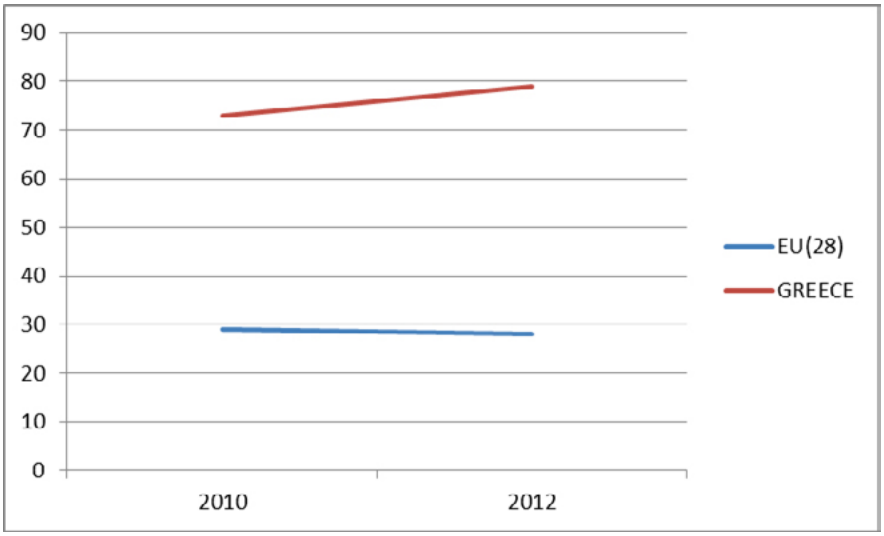
Table 5: Recycling rates for municipal waste



Source: Eurostat

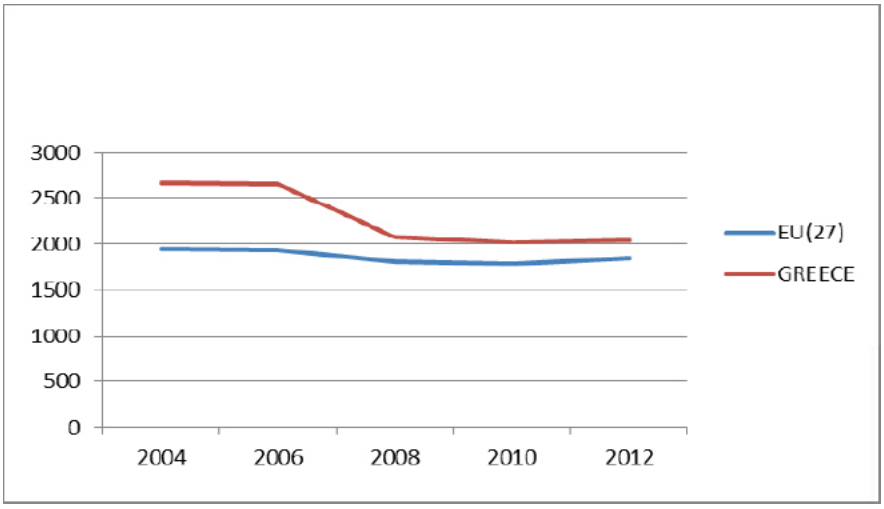
Landfill: In addition to the recycling index, the landfill index denotes a transition towards sustainable development, priorities, strategies and effectiveness. Greece, as will be discussed below, and the problems of waste management have failed or even squandered European funds, without being able to manage the waste produced effectively. Waste management is a key financial objective of Structural Funds, yet Greece displayed a landfill rate of 73% in 2010, which increased to 79% in 2012, while the corresponding European rates were at 28 and 29%, respectively (Table 6). Additionally, Greece produces significantly more waste per capita compared to other European countries (Table 7). Also, in 2013, there were still 78 active uncontrolled dump sites and another 318 uncontrolled dump sites which needed environmental restoration. This performance in an area of utmost significance for most European countries is a serious failure to develop strategies and utilize European funds effectively.

Table 6: Landfill rate for waste, excluding major mineral waste



Source: Eurostat

Table 7: Generation of waste, excluding major mineral waste (kg per capita)



Source: Eurostat

6. Problems and obstacles

The issue of misused money (fraudulent and non-fraudulent irregularities) from the Structural Funds has occupied the European Anti-Fraud Office (OLAF) targeting both the EU (European Commission, 2013) and Greece (Ministry of Regional Development and Competitiveness, 2014). The continuous increase in fraud in 2013 led the EU to request the establishment of a European public prosecutor to deal with the phenomenon (European Commission, 2013). Fraud affecting the Structural Funds in Greece usually entailed virtual service providers, product substitution, fraudulent reimbursement, work-cost swelling, large consultancy fees, distortion. In 2013, 15,779 competitions were reported as being fraudulent, and non-fraudulent irregularity cases reported to OLAF concerning EU countries involved the amount of € 2.14 bn. Indeed, in the period 2009–2013, the cases reported to OLAF increased by 22% and the reported amounts increased by 48%. Of the 15,779 cases reported in 2013, 1,609 cases were declared fraudulent and concerned € 309 million. Greece is among the States that have been identified as having

large numbers of fraudulent cases (European Commission, 2014). The rate of successful prosecutions related to fraud against European funds has an average of 42.3% in the EU. This rate in Greece is 19.2%, which means that successful prosecutions in Greece are small in number due to insufficient controls and the many gaps in the legal framework of the country that contribute to impunity.

A major obstacle to the effective use of Structural Funds from Europe is the delayed dispensing of justice in Greece. According to the Ministry of Justice, in 2012, 27,975 cases were pending with the Council of State, with an average of five years for litigation. This means that in order to get a case to the State Council and for it to become final, other levels of justice must have preceded it and there will be a delay of at least another five years if an adjournment occurs, which is a frequent phenomenon in the Greek legal system. It is interesting to note that Greece has been condemned by the European Court of Justice for delaying one case for 27 years, and all this at a time when the prompt and effective administration of justice is a key factor for investment in all economic sectors, including those directly related to sustainable development. The Commissioner of the EU for Economic and Monetary Affairs[5] notes that effective justice can be instrumental to development. Particularly in relation to issues of solid-waste management, there are many investment hindrances in Greece because citizens, agencies and constructors litigate very often. One of the many instances could be the landfill in Western Aigialeia, in Papanikolaou in the former municipality of Confederacy. The landfill was situated and environmental terms approved in 2003. A year later, the project was financed by the Cohesion Fund. Litigation and social reactions blocked the project. The financial plan of the Cohesion Fund 2000–2006 had eligible costs up until 31 December 2011. On this date, the task had not materialized and, pending litigation, this resulted in the exclusion of the project.

Values, and more particularly temporary values, of expropriated properties which are judged by Greek courts are often multiples of objective values. This fact inhibits the financial aspect of projects funded by European Structural Funds, because above a certain percentage, i.e. 10 per cent of the eligible expenditure, the charge for expropriations comes from national resources, which in most cases do not exist. An example is the landfill in Western Aigialeia, where the First Instance Court of Aigaio gave temporary prices for expropriated properties that were multiples of objective values and against the proposals of the Public Real Estate Service. This decision, which was unexpected, increased the cost above 10 per cent. Hence the regional authorities were forced to appeal the decision and although the prices were lowered they were still above 10 per cent of the eligible expenditure. Eventually, the aforementioned case, which is not the only one, saw an increase in the project budget of € 820,000 which came from national resources.

Social reactions, regardless of the source of funding, have always been an issue in Greece, in most cases regarding wind-farm, biogas and landfill installations, such as the installation and operation of wind farms on Mount Pantokrator, Corfu, in the Spina and Plakakia areas in Crete, Mount Kochylo in Skyros, the establishment and operation of biogas in Mantineia and the landfill sites in Grammatikou Attica, Oihalia Messinia and Skopou Zakynthos. A characteristic case is the construction of a landfill site in Lefkimmi in Corfu, where the project was completed but did not operate due to social reactions and protests. The project was co-financed by the Cohesion Fund for the period 2000–2006 with a total budget of € 3 m. Complaints from residents to the State Council were rejected in their entirety. The landfill was built but today is not in operation due to residents' protests, and as a European Parliament (2014) document mentions, there is no political will for it to work.
Finally, the continuous administrative changes that occurred in Greece within the last years, such as 'Kapodistrias plan' and 'Kallikratis plan' created constant alterations in the plans of the projects which were implemented through European Structural Funds. A typical example is the waste management planning where jurisdictions among national, regional and local authorities are not clearcut and properly distributed. Thus, waste management is characterized by failures.

7. Conclusion and policy remarks

Greece made controversial progress towards the indicators for 2020 in the last decade, in spite of the fact that Europe 2020 was launched in 2010. Nevertheless, the question that arises is whether Greece can use structural funds further so that the effects can be maximized. The answer is definitely no.

[5]http://europa.eu/ rapid /press-release_IP-13-285_en.htm?locale=en.

Although many indicators show progress, these are still well below the European average. Apart from the target for "Share of Renewable Energy", for all other targets (carbon emissions, energy savings) the progress is affected not only by the initiatives and investments from Structural Funds, but also by the slowdown in the Greek economy from 2009 onwards due to the economic crisis. In anything regarding solid-waste management, which is indirectly associated with resource productivity, Greece exhibits tremendous delays and failures. Note that, in 2005, Greece was condemned by the European Court of Justice for not complying with EU legislation in relation to the uncontrolled disposal of solid waste. Since then, although many years have elapsed and many funds have been allocated from Structural Funds, this problem has not been solved and the country has not complied with the court order. Thus, on 20 February 2013, the Commission took Greece to the European Court again. Faced with this situation, from 2013 onwards, Greece claims that only 73 uncontrolled dump sites of waste are in operation and that these are constantly decreasing while all the others are in a process of recovery, assisted by European Structural Funds.

Greece presents a serious inability to resolve these issues, despite the fines imposed by the European Courts and the money received from European funds which have been allocated for this purpose. Furthermore, in the indicators for recycling, these show stagnation from 2006 onwards.

This paper is in accordance with de la Fuente (2002), in that the institutional and regulatory framework significantly affects the overall impact of Structural Funds, focusing on three main issues:

1) The lack of a comprehensive strategy for sustainable development which has resulted in major projects having no continuity and a lack of support after the end of their funding.
2) The delegation of responsibilities among decision-making bodies is not clear, so that sustainable development and the initiatives that accompany lack dynamism.
3) Greece has not had a clear strategy concerning sub-national autonomy and decentralization, so the impact of Structural Funds appears to lack direct social effects.

Based on the substantive proposal above, reforming the institutional framework in the direction of decentralization and the empowerment of sub-national authorities could give an impetus to sustainable development through Structural Funds. Besides, the modern bibliography in terms of sustainable development requires a bottom-up approach (e.g. Nijkamp, 2011; OECD, 2012; Quaas et al., 2007; Salvati and Zitti, 2008) and regional governments have an essential role to play in planning and decision-making (Galarraga et al., 2011). The above adds up and can be combined with the standpoints of Stegarescu (2004) and Bahr (2008), i.e. that decentralization could have a positive impact on the effects of Structural Funds. Decentralization will create increased citizen participation in issues of sustainable development. This citizens' pressure could lead to stronger cooperation (Klinke, 2011), and as a result Bohme's fears (2011) for stakeholders' cooperation in Europe 2020 may be mitigated. Finally, the most important issues relating to sustainable development, such as climate change and energy efficiency, have a local or regional character in the Region 2020 report (Commission of the European Communities, 2008b).

Therefore, boosting decentralization and increased responsibilities for regional or even local authorities' peripheral government will lead to positive effects from structural funds in the direction of sustainable development.

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