

Topic of dissertation:
**Sustainable Development as a
Component of Economic Policy**

Case Study: Greece

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ABSTRACT

The last decades just a few things have happened for the protection of the environment and the sustainable growth, in comparison with those that happened for economic growth, without taking into consideration that environment should not be taken for granted. At the altar of wealth, money and promiscuity, people have committed many “crimes” which harmed our planet, hopefully not irreversibly. Although there are some legislations and reforms which were instituted for the protection of the environment and the promotion of sustainable development, the measures have not been really strict and usually, people were not willing to adopt “sustainable” practices in their everyday life or their businesses, as it seemed to be too costly. What people do not know – and this is the major obstacle for the adoption of sustainable practices – is that these practices may seem costly but only in the short-run. Sustainable development and its principles comes to convince us that in the long-run such practices are very profitable and also, can ensure us for a safe and healthy environment for the next generations, for the maintenance of our cultural and natural heritage. In other words, environment and economic growth are not “enemies” but “allies”. The following thesis, tries to give an answer – by analyzing the existing situation and by making recommendations - on how can these two (environment and economic growth) coexist, how could economic policy be sustainable and how sustainable development could become a part of our lives.

Contents

1	Introduction	<i>pg.: 5</i>
2	Notions of Sustainable Development	<i>pg.: 6</i>
3	Sustainable development at international level	<i>pg.: 7</i>
4	EU & Sustainable development , Historical background	<i>pg.: 9</i>
	4.1.: 6th Social Action Program for the Environment 2003-2012	<i>pg.: 11</i>
5	Greece and Sustainable Development, Institutional Framework - Action Plan	<i>pg.: 12</i>
	5.1.: Economic and Development policy	<i>pg.: 13</i>
✓	5.1.1.: Macroeconomic Indicators	<i>pg.: 13</i>
✓	5.1.2.: Tax Reform	<i>pg.: 14</i>
✓	5.1.3.: Investment Policy	<i>pg.: 15</i>
✓	5.1.4.: New programmatic period of the Common Support Framework 2014-2020	<i>pg.: 16</i>
	5.2.: Illegal land uses and buildings: an environmental and economic crime	<i>pg.: 18</i>
	5.3.: Society	<i>pg.: 20</i>
✓	5.3.1.: Civil Society	<i>pg.: 20</i>
✓	5.3.2.: Social Economy	<i>pg.: 21</i>
	5.4.: Sustainable Development by sector, Data and Recommendations	<i>pg.: 22</i>
✓	5.4.1.: Primary Sector	<i>pg.: 22</i>
✓	5.4.2.: Secondary Sector	<i>pg.: 24</i>

✓	5.4.3.: Tourism	<i>pg.: 26</i>
✓	5.4.4.: Energy Sector	<i>pg.: 28</i>
✓	5.4.5.: Finance Sector	<i>pg.: 31</i>
6	Prerequisites of Green Growth	<i>pg.: 34</i>
	6.1.: Green Entrepreneurship in Greece	<i>pg.: 35</i>
7	Conclusion	<i>pg.: 36</i>
8	References	<i>pg.: 37</i>

■ 1. Introduction

Greece is a European, Mediterranean and also Balkan country. Its position in Southeastern Europe gives to Greece unique geopolitical and physical characteristics. The size of Greece is 130.100 Km² of which 20% corresponds to 3.000 islands. The extremely diverse, fragmented and rough terrain of the country, hosts major ecosystem types and a high biodiversity. Almost 70% of the area is hilly or mountainous with steep slopes and many peaks, often exceeding 2,500 meters. It has the longest coastline in Europe with a total length of over 13,000 km, of which about 5% belonging to ecologically sensitive areas of international importance.

Greece's population is approaching 11 million, and its density is lower than in the EU (84 inhabitants per km²). Large areas, especially mountainous and island remain uninhabited in winter, as a result of massive post-war movement, which devastated 40% of rural municipalities. The population of Greece is concentrated in 33% along the coast, while during the summer in some of these areas the population is ten times up.

The Greek economy should not ignore how dependent it is on its wonderful natural wealth: the rich biodiversity, beautiful landscapes, natural resources, abundant wind and sun which are its main competitive advantages in today's globalized world¹. However, during the last century, the progress and development of Greece's and world economy relied upon the exploitation of natural environment and the extensive use of natural resources. This had as a consequence, the existence of an imbalance in the environment and the creation of the threat of serious environmental damage, the most basic of which are the following:

- *Anthropogenic emissions of greenhouse gases causing global warming.*
- *Increase waste leading to the loss in biodiversity and reduce soil fertility.*
- *Transport congestion mainly in urban areas.*

During the 1980's, it started to be acknowledged the need to follow a new growth model where environment and quality would be the basic priorities of the Greece's development plan. The environmental dimension should be integrated into all aspects of economic policy and particularly in the areas of agriculture, energy and transport, where the environmental impact is tremendous. This does entail an additional financial burden but growth although more expensive, is much more fair for environment and human.

In the following chapters, initially are mentioned the most basic notions of sustainable development. Then follows a reference on the international and European level of sustainability as well as a short historical background of reforms and processes which took place during the last decades and changed radically the way we face the issue of sustainable development. In the next chapter, there is an analysis on sustainable development of Greece, and five different economic sectors: primary, secondary, tourism, energy and financial. Using these sectors as "tools", which are of a paramount importance, there is a trial to answer in three different questions:

1. *How economic policy could be sustainable?*
2. *What holds nowadays in Greece? – always in respect with sustainability and,*
3. *How and with which means could sustainable development be improved?*

Furthermore, the last chapter of the main body of this paper, includes a short analysis of the prerequisites of green growth and green entrepreneurship in Greece and finally, the conclusive chapter comes, including the most basic things mentioned in the previous chapters, as well as the most basic conclusions of this research.

1. : <http://www.wwf.gr/images/pdfs/Living-Economy-Vision-in-Greece-EN.pdf> pg1

■ 2. Notions of Sustainable Development

Sustainable development is a theory of resource use and “is about respecting nature, but also about respecting ourselves and the very foundations of our wellbeing and economic prosperity”². Sustainable development has been defined in many ways, but the most frequently quoted definition is from “Our Common Future”, also known as the Brundtland Report:

"Sustainable development is the development that meets the needs of the present without compromising the ability of future generations to meet their own needs. It contains within it two key concepts:

- ***the concept of needs, in particular the essential needs of the world's poor, to which overriding priority should be given; and,***
- ***the idea of limitations imposed by the state of technology and social organization on the environment's ability to meet present and future needs."***³

All definitions of sustainable development require that we see the world as a system—a system that connects space; and a system that connects time. When you think of the world as a system over space, you grow to understand that air pollution from North America affects air quality in Asia, and that pesticides sprayed in Argentina could harm fish stocks off the coast of Australia. And when you think of the world as a system over time, you start to realize that the decisions our grandparents made about how to farm the land continue to affect agricultural practice today; and the economic policies we endorse today will have an impact on urban poverty when our children are adults.

We also understand that quality of life is a system, too. It's good to be physically healthy, but what if you are poor and don't have access to education? It's good to have a secure income, but what if the air in your part of the world is unclean? And it's good to have freedom of religious expression, but what if you can't feed your family?

In an ideological and policy level, sustainability is the contemporary response to objections for excessive or insufficient protection of the environment. In practice the term means the balance between the economic growth the environmental conservation and society. The growth to continue unimpeded should use natural resources rationally.

Sustainability has an important social dimension based on solidarity of today's people as well as between generations. The sustainable development of Europe under the Lisbon Strategy is primarily defined with economic and social criteria, on the basis of the established belief that economic growth is a prerequisite for reducing unemployment, social inequality and environmental pressures.

However, there are some differences between sustainability and green growth. Characteristic is the issue of energy policy. Sustainable development is considered to be compatible with each power source that ensures environmental protection, as for example, fossil fuel use but in accordance with the storage of the carbon dioxide produced, or even the production of electricity from nuclear plants if the security measures used are adequate. On the contrary, green growth will mainly promote the production of renewable energy and energy conservation.

2.: <http://www.wwf.gr/images/pdfs/Living-Economy-Vision-in-Greece-EN.pdf-pg:1>

3.: <http://www.iisd.org/sd/#one>

■ *3. Sustainable Development at International Level*

At the level of international organizations, the term “Sustainable development” was first specialized in 1980 by the World Conservation Union or International Union for Conservation of Nature and Natural Resources as a task of combining economic growth and environmental conservation concepts, which up to then considered incompatible. However, it received a broader meaning and was recognized as a global issue in 1987 by the United Nations Commission for Environment and Development in its report entitled "Our Common Future", commonly called the “Brundtland Report”.

The United Nations Conference on Environment and Development which was held in Rio in 1992 adopted the "Rio Declaration on Environment and Development", displayed the sustainable development as an international ideal and key concept that incorporates three components: social, economic and environmental, recognizing that the fundamental cause of the prolonged failure for the implementation of a policy on the environment and development, was the ignorance of the interaction between nature, economy and society. At the same time the actions that should be undertaken to achieve the objectives of sustainable development, were determined.

The action program “Agenda 21” contained guidance for establishing decision-making process for sustainability, since they expected that an integrated system of environmental and economic accounts would be a first step towards the integration of sustainability in resource management.

In June 2009 the Council of Ministers of OECD Ministerial Council Meeting, in which Greece is also involved, signed the "Declaration of green growth". The Member States recognized that the term "green" and "growth" can go together and proclaimed that will strengthen their efforts to implement a strategic green growth and encourage "green" investment and sustainable management of natural resources.

They also declared that will encourage the reform of internal policy, in order to remove or prevent environmentally harmful policies which cancel green development and will proceed to place appropriate regulations and policies that will ensure the long term and clear economic incentives to promote the construction of environmentally friendly infrastructure.

According to the economic recovery programs announced by various countries around the world, a large share of public aid is given for the green economy, with emphasis on clean energy technologies. By the first quarter of 2009 the United States spent 112.3 billion dollars (12% of the stabilization package), N. Korea 30.7 billion dollars (81%), Germany 13.8 billion dollars (13%), France 7.1 billion dollars (21%) and Britain 2.1 billion dollars (7%). In Greece, the Ministry of Employment announced a program aimed at job subsidies to innovative actions with ecological direction while the NSRF would have channeled about 5.5 billion EUROS in green investments, by 2013 (table 1).

Source: "Green and Sustainable development, EU and Greece" pg. 4-5)

Table 1: Share of public aid given for the green economy(1st quarter of 2009)

COUNTRY	AMOUNT (in billion dollars)	% OF STABILIZATION PACKAGE
USA	112,3	12
N. KOREA	30,7	81
GERMANY	13,8	13
FRANCE	7,1	21
BRITAIN	2,1	7

Source: "Green and Sustainable development, EU and Greece", pg. 5

■ 4. EU and Sustainable Development Historical Background

Until the end of 1960's, no European country has not had a clearly defined environmental policy. However, the last thirty years there has been considerable progress in establishing a comprehensive system of environmental controls in the European Union. Today, a wide range of issues is covered, from noise to prevention of waste, from chemicals to airborne particles, from the bathing water up a pan-European network for dealing with environmental disasters such as oil spills or forest fires.

1972, The Paris Summit Meeting

The decision makers recognized that in the context of economic development and improved quality of life should be given special attention to the environment. The result was the first "action plan for the environment" (1973-1976). Followed several identical multi-annual programs and a set of guidelines.

1987, Single European Act

The most significant reform in the environmental field, since its effect was to devote a separate chapter of the Treaty for the establishment of the European Community. Henceforth, it was possible to support the Community measures, on a clear legal basis defining the objectives and principles of action of the European Community in the field of environment. It was also foreseeable that the requirements with regard to the protection of the environment will be components of other Community policies.

1992, The Maastricht Treaty

Formally known as the Treaty on European Union, represented a new step forward. To begin with, it was possible to introduce the principle of "sustainable and environment-friendly development " at the mission of the European Community, as well as the principle of protecting in the article setting out the foundations of the field of the environment (Article 174, ex Article 130P of the Treaty establishing the European Community). Also, the Treaty, upgraded the environmental sector at the level of "policy".

2001, European Strategy for Sustainable Development

This Strategy, was adopted by the EU, at the European Council Meeting in Gothenburg. One of the main objectives of this strategy was to reduce the impacts of climate change, security and food quality, eliminating health risks and environmental risks associated with chemicals, improve the sustainable management of natural resources, reduction of biodiversity damage and reduce the adverse effects of transport.

2005, Initiation of the review process of the Strategy

This process was considered urgent because:

- The trends which are contrary to sustainable development are aggravated. (e.g. increasing pressure on natural resources, biodiversity and climate).
- The contribution of the European economy in global sustainable development was limited, and,

Source: "Green and Sustainable development, EU and Greece", pg.8-9

- The enlargement of the Union has created the need for defining national sustainable development strategies in most new Member States.

2006, Revised Strategy for Sustainable Development

The European Commission through a process of public dialogue completed the Revised Strategy for Sustainable Development, which was approved by the European Council. The objectives of the Revised Strategy are:

- *Environmental Protection:* Safeguarding the earth's capacity to support life in all its diversity, the prevention and reduction of environmental pollution and promote sustainable production and consumption patterns.
- *Social equity and cohesion:* Promotion of a democratic, safe and fair society based on social inclusion and cohesion, respect the fundamental rights and cultural diversity, ensure gender equality and to combat all forms of discrimination.
- *Economic prosperity:* Promote a prosperous, innovative, rich in knowledge competitive and eco-efficient economy, which provides high living standards, full employment and quality employment throughout the European Union.
- *Taking up of international responsibilities:* Encourage the implementation of democratic institutions based on peace – at an international level - , security and freedom, defense of the stability of these institutions and actively promote sustainable development throughout the world.

The main challenges to achieve the objectives above are:

- The climate change mitigation, the costs and the negative effects on society and the environment and the generation clean Energy.
- Ensuring the sustainable transport system that they meet the economic, social and environmental needs.
- The promotion of sustainable consumption and production.
- Improvement of the conservation and management of natural resources in order to avoid over-exploitation.
- The promotion of good public health and improvement of protection against the dangers which threaten it.
- The creation of a society in which to facilitate their social integration, taking into consideration the solidarity between and within generations and to secure and improve the quality of life.
- Promoting sustainable development throughout the world to the internal and external policies of the European Union, consistent with global sustainable development and its international commitments.

Source: "Green and Sustainable development, EU and Greece", pg.9

● 4.1. 6th Social Action Programme for the Environment 2003-2012

During the decade of 2003-2012, the 6th Social Action Programme for the Environment provides the framework for EU environmental policy. Core philosophy of the program is that environmental protection does not conflict with the economy, but instead that strict environmental standards create incentives that increase the economy's competitiveness and entrepreneurship. Maintaining the good quality of the environment is on the other hand essential for maintaining a standard of living and quality of life. Society, industry and the administration must therefore work together to achieve the decoupling of environmental pressures from economic growth. The Programme's priorities is climate change, nature and biodiversity, environment and health, natural resources and waste.

In the long run we expect that will allow better scientific foundation of individual policies. Pursuit of thematic strategies is to achieve synergy among themselves and with the Lisbon strategy for sustainable development. However, it is early to assess the thematic strategies, since only four of the seven (air pollution, marine environment, waste and recycling, sustainable use of natural resources) had been submitted by the end of 2005.

Source: "Green and Sustainable development, EU and Greece", pg.10-11

■ 5. GREECE AND SUSTAINABLE DEVELOPMENT Institutional Framework - Action Plan

The Constitution of Greece 2001, in article 24 paragraph 1 states: “protecting the natural and cultural environment is an obligation of the state and the individual's right. For its preservation the State is bound to adopt special preventive or repressive measures under the principle of sustainability”.

- Government Activity Plan

Under the government's action plan, “green growth is the only viable and sustainable solution for the place because it serves humankind and its actual needs, respects the environment and treat it as development reserve and not as anti-development problem”.

It is a prospect that would not only enhance the systems and enterprises, but will also lead to tackle unemployment and gradual exit from the strong economic crisis. More specifically, the "green" development will improve the competitive position of Greece, will attract substantial foreign investment and improve quality of life for all. Will generate new business opportunities. It will create a new and powerful productive fabric that will open field for young scientists who are suffocating in a closed economic structure.

The action plans for green growth broken down into three main strands are the following:

- Climate and Energy.** Aim is to reduce greenhouse gas emissions by 65% until 2050 with intermediate binding targets progress, as we must go directly to a model based on renewable energy, energy saving and management of energy demand.
- Changes in production and consumption systems.** Safe and quality agricultural products, enlargement and improvement of the services provided to tourism. Also, "Green Business," a new opportunity in a dynamic perspective, which can create many quality jobs.
- Economy of natural resources and "green" infrastructure of the country.** Water is a national issue and the state should manage the demand for water and not to enhance the offer. We need to mention waste management as one of the key social and environmental problems. "Green infrastructure" initiating for combined transport, strengthening of public transport for clean, environmentally friendly transport and reducing emissions.

Specifically, changes and structural movements are provided with new measures and strategies in key sectors of the Greek economy, particularly in rural areas and the tourism sector. Changes in the transport, communication, marine environment and maritime are following, as well as land use planning and the built environment. For the effective implementation of all the above, we need to stress the need for state intervention in politics, economic tools and in particular radical changes in the institutional framework and legislation for the transition to green growth model and tackle the environmental problems.

Source: “Green and Sustainable development, EU and Greece”, pg. 12-13

● 5.1. Economic and Development policy

Economic affluence is a necessary, yet not sufficient condition, for social development and well-being. Besides economics, there are two other essential dimensions, the social and environmental, none of which is reflected in the methodologies and metrics used by macroeconomic accounting frameworks, at both the national and international levels.

Given that the environment is not reflected on macroeconomics indicators, natural capital remains to a large extent the “invisible” base of the economy. Taxation policies also lack essential environmental parameters, primarily the “polluter pays” principle, as they also lack the strategic principle of shifting the tax burden from labor and capital, towards pollution and excessive resource use.

All related necessary reforms, therefore, pertain to the following issues:

- macroeconomic indicators
- taxation and fiscal policy
- policy & legal frameworks for investments and,
- the new programmatic period for the Cohesion Policy 2014-2020

◆ 5.1.1. Macroeconomic Indicators

The basic GDP indicator and its annual rate of change is a deficient indicator, as it accounts only for the quantitative level and growth-rate of the economy, without including any methodological adjustment for environmental externalities and the exploitation of natural resources through the economic process. Hence, the environment is being treated as an invisible externality, as a cost not reflected on the national account. Moreover, GDP does not provide any information regarding the degree of equity with which resources and economic output are distributed, nor does it account for the per capita environmental footprint.

Conventional economic indicators, therefore, are deficient and parochial with regards to the magnitude of current social and environmental challenges, imposed by current and past economic systems and practices.

Crafting new indicators within a living economy framework is neither a theoretical exercise, nor a vague, long-term visionary goal. The European Union and other international bodies have processed and monitor specific indicators related to the green transformation of economies. The European Commission's “iGrowGreen” methodological framework deserves special mention, since it offers of the only systematic model of quantitative and qualitative assessment. It combines numerous indicators in order to examine linkages between environmental policies, economic performance and the the degree of shifting towards a greener, more competitive economy, at both European and national levels.

The following indicators could be initially used, as a measure of “ecological-economic transformation” in the case of Greece:

- Environmental taxes in proportion of total taxes and to total social expenditures.
- Absorption of EU funds and respective environmental investments.
- Revenue from carbon taxes and breadth of the specific tax-base (sectors, number of businesses).
- Turnover of the waste management and processing sector as % to GDP.
- Breaching of environmental legislation – volume and type of environmental violations and respective fines.

Source: <http://www.wwf.gr/images/pdfs/Living-Economy-Vision-in-Greece-EN.pdf> pg19

- Per capita consumption of raw materials and total raw materials consumption with respect to GDP.
- Per capita volume of solid waste disposal.
- Total and per capita pumping of surface and ground water per economic sector (primary production, industry, etc.).
- Expanse of organic farming, compared to total expanse of conventional crops.
- Investment in biodiversity protection programmes.
- Greenhouse gasses and energy consumption per unit of GDP.
- Percentage of green jobs with respect to the total number of jobs and respective rate of change.

In order to redefine and recalibrate macroeconomic indicators, first the economic value of natural capital needs to be evaluated, along with the cost of the economy's environmental externalities. This should take place as a broader, collective effort launched by governments, the private sector and international regimes (UN, IMF, The World Bank, etc.), in order for international principles and mutually compatible methodologies to be developed and implemented. These principles will jointly account for the essential triple-bottom-line “environment-society-economy”.

The basic indicator that needs to be primarily redefined is the Gross Domestic Product (GDP), both total and per capita, in order to account for natural capital depletion and resource use, as well as environmental degradation. In this manner a holistic account of economic sustainability will be possible, beyond the current myopic principle of “economic growth” accounts provided in strictly monetary terms.

What is needed, therefore, is an actual paradigm shift of the way humanity and national governments in particular measure wellbeing, through the adoption of a more comprehensive methodology that will incorporate all factors affecting directly and indirectly social development and environmental robustness.

◆ 5.1.2. Tax reform

Tax and fiscal reforms are essential steps on the way to decoupling economic activity from environmental overshoot. The goal of a broader tax reform with a clear environmental orientation should not only be fiscally consolidated, but also ecologically healthy and socially equitable. In principle, a sound green tax reform combines increased taxation of energy consumption, natural-resource depletion and environmental degradation with a corresponding tax-relief of labor and capital, the latter being essential in order to restart the economy and boost employment. As defined by the EU strategy “Europe 2020”, “government revenue is equally important and emphasis must be given to the qualitative aspects of the revenue/tax system. In case taxation needs to be increased, this must be coupled – to the largest feasible extend – by a parallel effort to make taxation schemes more “labour-friendly”. For example, increases in labour taxes, as happened during the past with a negative impact on jobs, must be avoided. Member-states must shift tax burdens from labour and increase environmental taxes, as part of a broader 'green' taxation system.”

A sustainable tax system must be:

- Fair and proportional.
- Transparent and clear, in order not to allow for multiple, often contradicting interpretations, or incoherent implementation.

Source: <http://www.wwf.gr/images/pdfs/Living-Economy-Vision-in-Greece-EN.pdf> pg19-20

- Stable and not constantly revised.
- Based on clear, scientific data on the economic value of the natural capital and the cost of externalities, in order to avoid the occurrence of “invisible” environmental costs.
- Labour friendly, in order to enhance employment and shift burden on natural-resource use and environmental depletion.
- Orientated towards generating societal benefits.
- Encouraging towards responsible, sustainable entrepreneurship.
- Simple with respect to revenue-collecting processes and supported by strong monitoring mechanisms that prevent and timely detect tax evasion.

Under the principle that taxes constitute the price, citizens are called to pay in order to live in a civilized society, the ultimate goal should be the attainment of a just, law-abiding, civic society, funded through taxes. Therefore, a comprehensive tax reform must become part of a broader effort that will boost a productive, competitive and environmentally sustainable economy and promote societal equity and fair distribution of the economic output.

It is imperative to emphasize that the imposition of environmental taxes must not increase the overall tax burden, especially in countries like Greece that are going through severe economic contraction. In that case, increasing the overall level of taxation would be unreasonable and practically would cause even more dire consequences to an already overstretched economy.

One of the essential elements of an effective environmental taxation policy is the degree to which it brings about environmental and social compensation. Each environmental tax should reflect the environmental cost of the respective taxed activity, instead of being another conventional tool for increasing government revenues. It is also imperative that environmental taxes should be returned to the environment, via green investment, clean-up projects, etc., as well as to society via specific social policies and that will be founded on meritocratic criteria.

Within a fair and proportional tax system, the implementation of a Financial Transaction Tax (FTT) much needed, even more so when taking into account that the cost of the on-going economic crisis should be dispersed across economic agents. The financial sector cannot be excluded from that principle, given that it has received considerable support from tax payers.

The volume of financial transactions is vast and therefore the design of an FTT should take place with great caution, in order to ensure revenues from highly speculative transactions and at the same time transform this revenue to environmental and social expenditures. The “polluter pays” principle can be put at work here, since loan and investment portfolios of the finance sector usually inflict material environmental impacts.

It is noteworthy that on February 2013, a consultation process was initiated in order to launch a common FTT for 11 member-states of the EU, Greece being one of them, within the framework of “enhanced cooperation” as per article 20 of the EU Convention. Almost all member-states appear to be willing to use inflows from the FTT as part of general government revenues, with the exclusion of France, which has publicly committed to distribute 10% of revenues in international aid and climate-change related projects.

◆ *5.1.3. Investment Policy*

Through numerous investment and/or development acts, Greece has been enhancing – throughout the years – any type of entrepreneurship, even on non-existent, deficient and generally

Source: <http://www.wwf.gr/images/pdfs/Living-Economy-Vision-in-Greece-EN.pdf-pg.20>

doubtful criteria of economic viability, competitiveness and innovation, weak monitoring controls and practically without any solid environmental aspect integrated in the implementation process.

As stated by the Ministry of Development and Competitiveness, “in summarizing the main characteristics of private investment and development policies in general, up to date, we could say that these have been characterized by 'unclear' rules, absence of expenditure controls, devaluation of public funds, clientelist regulations in favor of specific sectors, managerial deficiencies, unrealistic and infeasible targets, and limited benefits for citizens and business, labour, as well as for social convergence and cohesion.”⁴

Government support of green entrepreneurship should be incorporated within a broader development policy of structural reforms, and must be founded on the following principles:

1. Strategic goals

- Balanced growth, with targeted support and implementation of business plans per administrative region, in parity with each region's comparative advantages and natural capital.
- Employment increase, with emphasis on “green” jobs.
- Increase of the economy's competitiveness.
- Boosting of innovation in sectors of high-quality output, high added-value and low ecological footprint.
- Decoupling of the productive economy from government subsidies and funding.

2. Defining priority sectors

Investment laws being a key tool of boosting investment must focus on sectors that are commercially extrovert and of low environmental impact. Those sectors and respective strategic guidelines are depicted in later chapters (Industry, Tourism and Energy). It must be emphasized that the enhancement of those sectors at the regional level, like for instance thematic tourism in regions with respective comparative advantages, should become a strategic priority on the development agenda.

A rational and fairly convincing approach of a living economy framework must be necessarily based on specific, restrictive environmental criteria forming an integral part of the public funding process. The establishment of environmental prerequisites might prohibit government expenditures on specific high-impact sectors. This shift can be compensated by the enhancement and growth of greener sectors with high environmental, social and economic value.

◆ 5.1.4. New programmatic period of the Common Support Framework 2014-2020

In practice, EU funds during the period 1994-2006 and the National Strategic Reference Framework (NSRF) 2007-2013 were used as funding tools for environmentally and economically unsustainable growth trajectories.

Specifically, the NSRF 2007-2013 was characterized by:

- Chaotic bureaucracy and delays in the approval of mature projects.
- Deficient functioning and operation of monitoring committees that evolved into “decorative” entities responsible for providing information to stakeholders on programme implementation.

Source: <http://www.wwf.gr/images/pdfs/Living-Economy-Vision-in-Greece-EN.pdf>:pg.20

4.: Ministry of Regional Development and Competitiveness (April 2011). “New investment law: a response to the crisis –development in practice”

- Extremely low absorption of funds directed to environmental protection.
- Negligible positive impact on the already dismal implementation of environmental legislation, especially regarding critical environmental legislation, like the habitats directive (92/43 EEC), and the framework directives for water (2000/60/EK) and waste.
- No positive impact on the knowledge gaps and the need for decision making tools and methodologies for effective administration and management, such as the forest maps, biodiversity and ecosystem registers, as well the mapping of urban and rural boundaries.

The new programmatic period (2014-2020) coincides with a very critical period for Greece and it is thus imperative to set a sound basis for the prudent and efficient use of EU funding in order to attain long-term, sustainable growth. If Greece persists in the sole aim of absorbing funds, and planning does not become an integral part of a national reform policy, the country will have missed another unique opportunity to recover sustainably.

Greece must actively participate in the effort to implement the Strategic Framework “Europe 2020”. Hence, it is necessary not to devote funds for isolated, fragmented environmental interventions, but within an integrated framework that will set the foundations for a living economy.

● 5.2. Illegal land uses and buildings: an environmental and economic crime

The largest and most widespread environmental wound, which also discourages healthy entrepreneurial activity, is illegal building and poor land use development. The silent public acceptance of the attitude “let’s build a small house in the woods”, has transformed an obvious lawlessness into an established social right. As a result, the legislator has for decades provocatively disregarded the problem and practically ignores the law. This in turn seriously undermines the conservation status of Greece’s natural capital and reduces the country’s appeal to serious investments.

In a joint statement of 2007, WWF Greece, the National Technical University of Athens, the Hellenic Federation of Industry, the Technical Chamber of Greece and the Central Union of Municipalities affirmed that:

“A consequence of the absence of central spatial planning is the fragmented siting of infrastructures and activities. Hence, development policies do not take into account the carrying capacity of space and the adequacy of natural resources. In parallel, all efforts by the State for strategic planning at the level of sectoral policies are practically canceled, since the resulting conflicts ultimately set aside the very objectives of planning.”⁵

The flood of recent legislative measures for the “settling” of hundreds of thousands of illegal constructions and land uses in every part of Greece, even within protected areas, does not simply undermine the environmental and spatial acquis. It also puts into question the real aims of the legislator – “elected representative of the People” (art. 1 of the Constitution), since these new legal measures deprive the State of valuable income from the financial penalties provided by the previously existing Forestry and Urban Law. The right of administrative authorities to impose and collect these legally sanctioned financial penalties is now canceled, in view of the short-term “quick and dirty” financial gains anticipated by the much reduced new rates.⁶

Major problems in the Greek spatial and environmental planning system are:

- the scattered in the legal corpus tailor-made legal provisions which allows certain investments, at the expense of others, with politically immoral conditions,
- the unclear and complex terms of land use and nature conservation and the legal uncertainty of the legislation introducing special conservation measures,
- the absence of knowledge resources (land use mapping, databases, internet applications), which are essential in understanding the rules and laws for development and nature conservation.

A fundamental condition for the development of a living and sustainable economy is that the spatial and nature conservation policies are science based and clearly defined. From the level of spatial planning all the way down to the organization of the nature conservation and protected areas system, healthy economic activity demands the legal certainty and development opportunities offered by the clear rules of an integrated and transparent land planning and natural capital management system.

Source: <http://www.wwf.gr/images/pdfs/Living-Economy-Vision-in-Greece-EN.pdf>:pg.23

5.: WWF Greece et al (2005) Spatial planning for a balanced and sustainable development of the country.

6.: WWF Greece. (2011). Illegal buildings in Attica’s forests – A recording of the decision for the removal of illegal buildings. Phase A: Data from the Forest Service of East Attica, Athens: Kalevra, N., Kordopatis, P., Marangou, P. and Nantsou, T.

Basic priorities for the achievement of ecologically, economically and socially sound spatial and environmental planning are the following:

- Legally valid, consistent and widely comprehensible land planning and protected area decrees.
- Strengthening of the National Protected Areas System and the respective management authorities with clear responsibilities for wardening and habitat management, which is vital for sustainable development at the local level.
- Revision of the spatial plans, aiming at the cohesive, legally certain, socially equitable and at a clear allocation of economic activities and robust environmental and natural-resource conservation.
- Integration in land and urban planning of the ecological footprint as a concept, together with policies and measures for its management and monitoring.

Source: <http://www.wwf.gr/images/pdfs/Living-Economy-Vision-in-Greece-EN.pdf>:pg.23-24

● 5.3. Society

In a country, such as Greece, with a characteristic lack of social responsibility and participation in politics and the commons, insufficient level of self-organization and civil society networking and manifest social absence from all levels of entrepreneurship, social awareness and participation needs to be viewed as a vital priority for all.

A starting point of hope is the dynamic and creative social awareness that has slowly but steadily been emerging through the crisis. Despite the fact that for the time being social self-organization activities are negligible in economic size, the creation of informal collective initiatives or formally constituted groups of solidarity and social economy provides a positive vitality to Greek society, which has often been characterized as politically passive and selectively reactionary. This is indicative of an increasing social trend for positive alternatives to the recipe of austerity and social poverty that is promoted as an alternate solution to the crisis.

Equally important is the increasing environmental awareness and mobilization of citizens groups, primarily regarding investments in particular areas. The increasing level of knowledge-based intervention by those groups is noteworthy and also indicative of the social penetration of environmental knowledge.

◆ 5.3.1. Civil Society

During periods of crisis, the role of the organized civil society is vital in safeguarding common goods and rights. Particularly the role of non-governmental organizations (NGOs) is that of environmental guardian, in their capacity as:

- active fellow policy makers, through permanent and official consultation structures and procedures, on the basis of up to date ecological knowledge and opinion on the challenges of development,
- transparency and social accountability watchdogs in all public and private sector functions, also demanding the immediate and efficient crackdown on corruption,
- guardian of the environmental acquis and its proper implementation,
- “translator” of important scientific developments into knowledge for all and basis for collective action and political change,
- generator of new ideas,
- advocate for social concerns and trends,
- market makers, on the demand side,
- entrepreneur, through social enterprises focusing on social welfare and public utility activities (such as energy, quality local products, social services).

During the past three decades, Greece has seen the development of important work by tens of environmental groups that have greatly contributed to the provision of robust, science based knowledge on crucial issues, such as biodiversity conservation and climate change. They have also fought important battles in “hot” fields of environmental policy, effective conservation of valuable natural treasures and sustainable response to environmental crises.

Source: <http://www.wwf.gr/images/pdfs/Living-Economy-Vision-in-Greece-EN.pdf>:pg.24-25

◆ 5.3.2. Social Economy

The development of solidary economic networks and enterprises deserves special attention. A rich multitude of new social schemes have in recent years sprouted in Greece: social enterprises, barter and free schemes, social gardens, to name only a few. Many such initiatives had developed years before the crisis, but remained isolated models for replication.

The value of social economy is not restricted to providing a response to the economic crisis or substituting a state that steadily retracts from the social milieu, but rather as a response to an economic model that promotes entrepreneurial activity as strictly profit making, often through ambiguous and ecologically unsustainable practices. Social economy offers services and goods of vital significance and excellent quality at good prices, or even at no monetary price, but with the added value towards society.

As long as prosperity is inadequately measured, in terms of consumption capacity the investments in public goods and the conservation of natural capital will never rank high on the political agenda. The creation of networks that allow public participation in the sustainable use of natural resources, the exchange of labour or the development of recreation outlets, strengthens cooperation and synergies in achieving the common good and a healthy natural capital. Initiatives like the protection and management of public spaces and the creation of urban recreation parks, food and agricultural material banks or clothing recycling networks:

- highlight the daily connection of natural capital with the quality of life and urban livelihoods,
- promote a non-monetary sense of fulfillment and independence from the addiction to overconsumption,
- set the foundations for a participatory and connected society,
- offer incentives for green and economically advantageous choices,
- contribute significantly to footprint reduction of our wasteful livelihoods.

Necessary institutional and political reforms to stimulate social economy are the following:

- Extension of the institutionally regulated definition of social economy, so as to cover fields of entrepreneurial activity which are now monopolized by the private sector, such as energy and waste management and often result in costly services.
- Introduction of an institutional formula for the establishment of barter schemes as voluntary and non-profit.
- Immediate reinstatement of the tax incentives for social enterprises.
- Immediate re-establishment and commencement of operation of the Social Economy Fund, which was abolished in early 2013, before it even commenced its operation. Its aim should be to provide start-up funding to social enterprises, on the basis of clear and equitable rules of sustainable and transparent operation and public accountability.
- Redirection of European Central Bank resources towards the support of social enterprises in all of its priority areas: SMEs, regional development, climate action, urban and natural environment, innovation, trans-European networks, transport, energy.

Bearing in mind the hardship facing the state in fulfilling its social welfare role, the importance of social economy and social schemes is now even greater. Yet the available institutional tools have been either inactive or abolished. In a political system that does not favour a strong social economy, the call for a framework of incentives needs to become a key social demand.

Source: <http://www.wwf.gr/images/pdfs/Living-Economy-Vision-in-Greece-EN.pdf>:pg.24-25

● 5.4. Sustainable Development by sector Data and Recommendations

◆ 5.4.1. Primary Sector

Primary production (agriculture, livestock farming, forestry and fisheries) accounts for 13% of Greece's labour force and produces 3.3-4% of the national Gross Value Added (GVA) annually, a percentage much larger than the EU-15 average.⁷ Agriculture constitutes the most significant activity, since it contributes with 62% to the sector's GVA and 80% of its labour force.⁸ It also plays a vital role in the conservation and management status of the country's natural environment and the development of its tourism product.

Main concern is the weak link between the relatively more developed sectors, i.e. agriculture, livestock and fisheries (including aquaculture), with the conservation and management of natural resources. Although the benefits provided by the natural capital remain largely untapped, the impact of production on the environment, primarily in areas of intensive production, remains high. From a macroscopic viewpoint, the current state of primary production creates a number of serious issues, which need to be addressed in the context of an integrated and sustainable reform policy.

Over-intensive farming, unsustainable practices and the uncontrolled use of chemicals have led to extensive degradation of natural resources, to the extent that the very sustainability of production itself is undermined:

- Over-intensive agriculture and livestock breeding are the main human induced factors of soil degradation and exposure of large productive lands to the threat of desertification.
- The excessive use of agrochemicals has led to serious pollution in many areas, such as Axios and Messapia.
- Irrational input of agrochemicals seriously undermines product quality.

It would be very useful to mention some specific recommendations for a more sustainable primary sector. These are:

- *Knowledge:* Completion of the necessary knowledge and decision making tools (forest maps, cadastre, oil cultivation register, marine and terrestrial habitats, high nature value farming areas etc), which are necessary for the planning and organization of primary production.
- *Plan:* Integrated planning based on inter-sectoral development plans should focus on:
 - Sustainable spatial planning of activities, in order to defuse the pressures on local resources, ease the conflicts with local communities and achieve the right combination of productive activities with natural capital conservation and management needs.
 - The competitive advantages, through the best use of local breeds and varieties and marketing their special gastronomic and environmental characteristics, standardization and certification of local products and promotion of small-scale production.

7: European Commission. (2013, March). "Agricultural Policy Perspectives. Member States factsheets. March 2013. Greece." Brussels

8: McKinsey & Company, Athens Office. (March 2011). Greece 10 Years Ahead: defining Greece's new growth model and strategy

Source: <http://www.wwf.gr/images/pdfs/Living-Economy-Vision-in-Greece-EN.pdf>:pg.29-30

- *Management*: Management of inputs, residues and waste, with the aim of improving product quality, reducing costs and tapping new sources of profit.
- *Support*: Reform of the subsidies system, in order to support processes and areas that add clear competitive advantages or environmental benefits and discourage the opportunistic involvement with production. Despite the fact that the structure of subsidies is to a large extent given through “historic data”, the CAP and rural development measures offer opportunities for sustainable diversification of the support policies.
- *Certification*: Product labeling and productive method certification strengthens competitive advantages and needs to be encouraged.
- *Connection*: The connection between activities and sectors requires robust political planning, in order to achieve economies of scale and increase the economic and ecological sustainability of holdings, ease the pressures on natural resources and strengthen the marketability of final products.
- *Vocational Training*: Although the primary sector plays an undoubtedly crucial role in national economy, the human capital employed is rather weak and requires support.

◆ 5.4.2. Secondary Sector

Global industry is characterized by a high environmental footprint of its operational processes: energy intensity, atmospheric emissions and large amounts of waste, often toxic.

In Greece, the secondary sector is dominated by small and medium sized enterprises (SMEs) and is characterized by:

- Scattered spatial distribution, primarily in extra-urban areas, where “atypical” concentrations are often formed. These off-plan industrial areas lack basic amenities and organized networks and infrastructures, which results in an incalculable environmental footprint. This dispersed and unplanned industrial development model does not allow for the necessary synergistic approaches in the management of byproducts and waste, thus also increasing both the operational costs and the impacts on the environment. It is indicative that from a total of 200,000 industrial enterprises, only about 2,500 operate within the 48 existing industrial areas.
- Lack of sectoral interfaces, which would result in economies of scale and resource efficiency.
- High land prices in spatially planned industrial parks, as opposed to the remarkably low prices in off- plan lands, which renders unattractive the establishment of enterprises in industrial parks.
- Emphasis on low-cost and low added value products, which results in non-competitive levels of quality and innovation.
- Lack of applied research and development mechanisms, hence operational and production innovation, which is also due to the considerable dissociation of the Greek educational system from the needs of a modern, real economy.
- Legal uncertainty, which reasonably creates an unfavourable climate for investments. This uncertainty results primarily from the constant changes in the legal framework, the increasing complexity and lack of legal clarity, bureaucracy, the unstable and labyrinthical tax system, along with the extensive corruption that prevents the blossoming of healthy entrepreneurial activity.

The declining trend of industrial activity during the past decades leaves no doubt that the crisis needs to be addressed as Greece’s opportunity to craft a vision and a national policy for sustainable industrial activity, along the following principles:

- **Autonomy:** Reduced dependence from raw materials and fossil fuels through the recycling, reuse and efficient use of resources and intermediate materials.
- **Innovation:** Promotion of applied research on innovation and production of high quality and competitive products.
- **Certainty:** Management of the institutional and legal risks caused by environmental violations subject to serious sanctions.
- **Cleanliness:** Reduced emissions overall environmental footprint.
- **Efficiency:** Efficient use of natural resources.
- **Stability:** Increased resilience of the real economy against unpredictable fluctuations in the prices of raw materials.

Source: <http://www.wwf.gr/images/pdfs/Living-Economy-Vision-in-Greece-EN.pdf>; pg. 40-41

✓ ***Environmentally sustainable industrial sector***

Green or sustainable industry includes all the productive activities that substitute fossil fuels with renewable energy sources, promote energy efficiency (eco-building materials hybrid automobiles, clean transport infrastructures), resource efficient productive processes (organic farming, clean technologies, recycling and sustainable management of waste), natural resource conservation and greening of public urban spaces.

The most important reforms recommended, for a sustainable industrial sector, are the following:

- **Good Siting:** In the case of Greece, it is a long overdue imperative to abolish the right for off-plan siting of new industrial plants. Taking into account that the current urban planning includes 450 established areas of industrial uses and 48 organized business parks, which however are largely underexploited, all the conditions are in place for the abolition of the anachronistic provisions for off-plan industrial siting.
- **Incentives:** With the aim of relocating the operational industrial units into organized industrial sites and the orientation of businesses towards sustainable practices, the main tools are the national investments law and the relevant provisions of the new programming period 2015-2020. Supporting the attractiveness of organized industrial areas, with emphasis on the completion of all necessary infrastructures, is top priority.
- **Inspections:** The intensification of inspections on all operating industrial plants is an absolute priority, particularly within informal and off-plan industrial areas. Especially as it is clear that many plants lack the necessary environmental management infrastructures, the need for increased inspections aiming at improving the level of environmental conformity and restoration is vital.
- **Good Practices:** Taking into account that the current administrative systems focus on law conformity measures, it is important to proceed with the enrichment of the desired strong and efficient inspection system with a framework for preventive conformity and improvement of the environmental performance of businesses. This framework needs to include means of coherent and authoritative information on best available practices, reward and publication tools for good performance, as well as law conformity codes.

Source: <http://www.wwf.gr/images/pdfs/Living-Economy-Vision-in-Greece-EN.pdf>:pg:40-42

◆ 5.4.3. Tourism

Tourism, being a particularly dynamic economic sector, contributes 15% to the global GDP and accounts for 5% and 7% of employment. Notwithstanding the economic crisis, the UN's World Tourism Organization foresees a global average increase in international tourism arrivals of 4% until 2020. In the European Union, the natural environment is the main reason for choosing a tourism destination.

In Greece, tourism is the most dynamic and extrovert economic sector and contributes an annual 16% to the national GDP. During the past four decades, the growth of the tourism sector has skyrocketed, reaching 14.918.177 foreign tourist arrivals in 2002 from 462.857 in 1961, which is almost 30 times up. According to the WTO, in 2007 Greece welcomed 18.754.593 tourists, ranking 15th globally and in 2013 there was an increase of almost 18,5%. For 2014, numbers are predicted to be even higher.

The basic characteristics of Greek tourism are the following:

- ✓ Mass tourism organized by tour operators.
- ✓ “Three S” tourism: sea, sun, sand.
- ✓ Intense seasonality and concentration along the coastal zone.
- ✓ Large, but incalculable ecological footprint.
- ✓ Problematic cost/quality relation.

A more detailed analysis of the problems undermining the sustainability of Greek tourism also highlights the significant opportunities arising from a green shift:

- **The 3S model:** Excessive dependence on mass tourism, which focuses on the seasonally and locally restricted abundance of sea, sun and sand. This model however is reaching its limits, both in terms of carrying capacity of available destinations and in terms of quality.
- **Tourism monoculture in coastal and island areas:** The intensely seasonal tourism model has significant impacts on employment and social cohesion, especially in areas lacking other economic activities.
- **Excessive supply of accommodation:** Accommodation capacity in Greece reaches 182 million overnight stays, whereas the actual overnight stays in the “good” year of 2007 reached 64 million. In other words, the capacity surplus is about 184%. Greece is characterized by oversupply conditions, since it ranks 4th in available beds in relation to its population.
- **Oligopolistic structure of tourist demand:** Despite the recent trend for independent transport of tourists to selected destinations, the largest share of visitor transport is controlled by a limited number of tour operators. This fact, in combination with the small size of the enterprises results in weak negotiation capacity, which in turn causes immense pressures on prices and tourism policies. One noteworthy example is the demand of major tour operators from small and medium sized accommodation enterprises to include swimming pools, in destinations that suffer from freshwater scarcity. This type of tourism is characterized by intense seasonality and concentration in specific destinations, which are accessible by charter flights.

Source: <http://www.wtf.gr/images/pdfs/Living-Economy-Vision-in-Greece-EN.pdf>:pg.44-45

- **Low penetration of innovations and networking in tourism small % medium enterprises:** Greece ranks 63rd in the number of internet users in the tourism sector. In practice, this means that Greece does not address directly the new generation of tourists and travelers, which generally prefer quality services and unique tourism experience.
- **Significant environmental footprint:** The environmental pressures caused by tourism can be categorized as:
 - a) Permanent which are caused by infrastructure. These constructions change land uses, ‘urbanizing’ natural areas and degrading important landscapes, and
 - b) Seasonal, which occur during the operation of tourism enterprises. These impacts include primarily energy and water consumption, waste generation and noise. The most pressing impacts are exerted on coastal destinations, but inland areas have also been subjected to considerable degradation.

The major environmental problems are caused by the unplanned sprouting of tourism infrastructures in extra-urban areas. Illegal land development and constructions account for a large share of the available tourism infrastructures and occur primarily in areas of exceptional ecological significance, even within the boundaries of national parks. The degradation of important landscapes, such as the area around the Palace of Knossos in Crete, marine pollution, water resource depletion in coastal and island areas and the increased generation of waste that is not sustainably and safely managed, are serious stresses that require an urgent and sustainable response. Exceeding the carrying capacity of popular tourism destinations is an easily discernible problem that undermines the very product of tourism activity.

Greek tourism should achieve the highest possible economic benefit in combination with the highest possible level of natural capital conservation and sustainable management. So, for a sustainable touristic sector, there are some specific recommendations:

- Constitute a dynamic part of Greek economy, without degrading its natural and cultural heritage.
- Comply with sustainability guidelines, such as the ones stipulated by the Global Sustainable Tourism Council.
- Promote measures for ecological footprint minimization.
- Contribute actively to the conservation of the natural and human environment.
- Strengthen the local economy and society.
- Employ best available and innovative practices in sustainable tourism (including methods for planning and visitor management within the limits of local carrying capacity).
- Develop within a framework of parallel rural development policies and a multi-thematic strategic vision for each region. This is vital in order to avoid tourism monoculture which renders the destinations vulnerable to demand seasonality and fluctuations.
- Enrich its products through a national and local support strategy for thematic and low footprint tourism such as sailing, agri and recreation tourism.
- Receive support through a financial support regime for investments that fulfill environmental sustainability and aesthetic criteria, promote the cultural and natural heritage, guarantee the personal involvement of the investor in the enterprise, take place in traditional or abandoned villages and / or attain environmental management certifications.

Source: <http://www.wwf.gr/images/pdfs/Living-Economy-Vision-in-Greece-EN.pdf>:pg.44-45

◆ 5.4.4. Energy Sector

The energy sector covers both the production and the consumption of electric and thermal power. In this context, the necessary intervention focuses on the greening of sectors with the biggest carbon footprint and significant cost-effective transformation potential.

Greece's electricity mix is dominated by lignite, which holds a share of almost 50%, accounting for 41% of national greenhouse gas emissions produced by the Public Power Corporation.⁹ The lignite model is characterized by intensive resource use (a total of 60 million tons of lignite are extracted annually, whereas annual water demand reaches hundreds of cubic meters, only for the Western Macedonia energy center). An additional problem is the over-concentration of power capacity in only two areas of the country, in tandem with the old age of thermoelectric stations.

On the other end of the equation, final energy consumption increased by 2.4% between 1990- 2007, the transport and building sectors ranking first. The recent reduction is primarily due to the economic crisis and not a result of effective implementation of energy efficiency measures.¹⁰ Other factors contributing to the Greek energy model are the old distribution network, the inefficient interconnections and the delays in constructing the necessary infrastructures.

The weaknesses of the Greek energy system are reflected in the emissions of CO₂ from the buildings sector, which are almost double than the EU average (105 kgCO₂/m² whereas the EU average is 54 kgCO₂ /m²).¹¹ The consequences of inaction, in combination with the economic recession, were painfully evident in the inability of a large part of the population to cover basic needs for heating. Energy poverty was particularly obvious in urban centers, especially during the winter of 2012, when the shift of households to low cost fuel wood and other materials that were burnt in open fireplaces and stoves resulted in intense smog episodes.

The policy framework for a sustainable Greek energy sector have already been set, within the context of the EU's energy and climate change law and policies. Specifically, the objectives of Greece's national energy policy state that until 2020 the share of renewables in final energy consumption will reach 20%, compared to 1990. National objectives have also been set for energy efficiency (9% savings by 2016 and 15% until 2020).

Owing to a combination of factors, the growth of clean energy has been associated with a series of adverse circumstances, such as the increase in energy cost, the decline in the competitiveness of industry, and job loss. Whereas it is true that Greece, together with all other EU member states, is called in times of crisis to respond to the demanding transition to a low emissions economy, the real costs of this phase are much lower than many people believe and depend on the timely implementation of the necessary measures.

Clean energy has often been blamed for the rising costs of electricity. It is therefore important to state that in the past decade, a period of low share of renewables in the energy mix and zero economic burden from emissions trading for the Public Power Corporation (PPC), household energy bills increased by 73%. According to the statements of the PPC during that period, the reason was the increase in the prices of liquid fuels and natural gas, the introduction of special taxes on natural gas, heavy fuel oil, diesel, as well as on electricity consumption, the increasing cost of social utility services and energy imports. It is therefore clear that Greek consumers have for decades been paying the cost of the country's dependence on fossil fuels, which, needless to state,

Source: <http://www.wwf.gr/images/pdfs/Living-Economy-Vision-in-Greece-EN.pdf>:pg.50-51

9: http://www.ecofys.com/files/files/report_wwf_low_carbon_vision_greece_2050.pdf

10: http://ec.europa.eu/energy/efficiency/end-use_en.htm

11: http://www.bpie.eu/documents/BPIE/LR_%20CbC_study.pdf

continues to burden household bill. At the same time the real costs the consumers are called to pay are many: health problems, soil and water resource contamination, relocation of settlements from mine fields and the cost of concessions of lignite resources.

Clean energy does not only provide environmental benefits. It can also attract important investments and boost job creation. One example is the solar power sector, which currently employs more than 20,000 professionals. Clean energy does not only provide environmental benefits. It can also attract important investments and boost job creation. One example is the solar power sector, which currently employs more than 20,000 professionals. In a 2010 report produced jointly with the Athens University of Economics and Business, WWF Greece estimated that the creation of 215,000 new jobs is possible by 2020 in the field of energy efficiency, whereas another 30,000 new jobs can be created in the renewable energy sector.¹² The European Commission appears to be on the same page, estimating a 5 million jobs across the EU on these same sectors by 2020.¹³ The European Trade Union Confederation also published important estimates, which state the potential for 2.6 million jobs by 2030, only in the building sector.¹⁴

The priorities for action, towards a low carbon energy system, are:

- **Renewable Energy Sources:** Increased share of renewables in the national energy mix and maintenance of fossil fuel units in cold stand-by status. Covering the total demand for electricity with clean energy will contribute to the country's energy security and autonomy, as well as to the decentralization of energy generation. Emphasis also needs to be placed on all relevant technologies, particularly those able to cover base loads, and to the development of community based schemes.
- **Energy Efficiency:** Reduction of energy demand and increase in energy efficiency, which will also result in reduced implementation costs for all other clean energy priorities. Emphasis needs to be placed on those sectors with significant improvement or social benefit potential such as transport and buildings. The achievement of these measures presupposes the recognition of the added value offered to many economic sectors, such as the reduced operational cost for the industry and the increased value of energy efficient buildings. At a later stage, it will be necessary to shift focus towards the efficient utilization of other resources too (water, raw materials, etc).
- **Electrification:** Expansion of the use of electricity to other final energy uses, such as transport and micro-cogeneration. The parallel implementation of energy efficiency measures will definitely limit the impacts expected from the increased demand during peak hours.
- **Storage:** Development of energy storage means in buildings, vehicles, heating systems, but also on a larger scale.
- **Management:** Flexibility and demand management will need to be developed, in order to transfer the demand according to renewable energy resources availability and to reduce peak loads. Through the appropriate price formation, it is possible to influence consumption patterns both for industrial and household users. The successful employment of such mechanisms will require good knowledge of consumer profiles, which can be acquired through the widespread use of smart meters.

Source: <http://www.wwf.gr/images/pdfs/Living-Economy-Vision-in-Greece-EN.pdf>:pg.51,52,53

12: WWF Greece & Athens University of Economics and Business . (2010). Green measures in Greece: benefit / cost analysis of implementing specific actions to promote renewable and energy saving. Available at: http://www.wwf.gr/index.php?option=com_content&view=article&id=702%3A2010-07-07-10-19-43&Itemid=90

13: <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=COM:2012:0173:FIN:EL:PDF>

14: European Trade Union Confederation (ETUC). "Climate change, the new industrial policies and ways out of the crisis". Available at: http://www.europarl.europa.eu/meetdocs/2009_2014/documents/empl/dv/empl_etuc_study/_empl_etuc_study_en.pdf

- **Infrastructures:** The achievement of the needed targets for clean energy presupposes the network modernization, which would be required, anyway, to a lesser or greater extent.¹⁵ At this point, it is necessary to stress the need for the state to retain its fundamental role as central manager and inspector of the energy system and grids, in order to safeguard the unhindered promotion of the necessary infrastructures and the coherent and synergistic approach to the development of networks.



Source: <http://www.wwf.gr/images/pdfs/Living-Economy-Vision-in-Greece-EN.pdf> pg.53

15: European Commission. (2013), Green paper: A 2030 framework for climate and energy policies, Brussels, March 2030

◆ 5.4.5. Finance Sector

The finance sector plays a crucial role in the overall economic functioning, since it constitutes the circulatory system of modern economies and largely determines the volume of household and corporate savings, along with their redirection regarding credit extension and investment expenditures.

In the aftermath of the economic crisis triggered by the financial meltdown during 2007 and 2008 in the US and the subsequent European sovereign debt crisis, the Greek finance sector is called to recover and operate in conditions of dire economic contraction and despite the fact that the global economy marginally rebounded in 2012. In the same time, the Greek finance sector needs to meet all challenges imposed by a globalised, highly competitive financial environment, within which barriers to financial capital transaction have been by-and-large removed. Since the finance sector largely determines the volume and qualitative traits of private investment, its role in boosting environmental investment and therefore leveraging a shift to a ‘greener’ economy, can only be decisive.

A high-level examination of the financial sector’s problematic dimension, suggests that the current business model is largely detached from the environmental and social base of the economies, while its returns are decoupled from the well-being of large social groups and environmental protection. This is corroborated by the constantly growing inequality gap and the on-going environmental crisis globally. A financial sector that is part of this dismal equation, cannot be viable in the long-run.

Regarding the environmental sustainability of modern banking and finance, the problem can be summed up as follows:

- Low participation of environmental projects in investment portfolios, mainly of commercial and investment banks (e.g. renewable energy and waste management projects, etc).
- Low volumes of environmental lending to households and businesses (loans for energy conservation in buildings, green start-ups, etc). Like investment portfolios, lending portfolios do not correspond to the lot of environmental challenges of our times. As for recessionary Greece, the problem is not only limited to the lack of environmental lending but is much broader: the Greek banking sector lacks liquidity and thus requires constant and sufficient recapitalising, in order to restore balance sheets and reestablish lending channels towards the real economy.
- Lack of environmental criteria within lending processes: this pertains to both green and conventional activities. Environmental criteria for the approval of a business loan (e.g. ISO 14001 certification or preparation of a sustainability report) are necessary in order for the finance sector to become an essential environmental catalyst for change of the whole economy.
- Deficient and inadequate accounting and monitoring of the environmental impact of bank portfolios. Despite the fact that environmental sustainability has entered the agenda of Greek banks, respective practices are still at a minimal level.
- Quick, short-run profits, which imply the over exploitation of natural resources and environmental degradation, are more luring for financial institutions, than the long-term sustainable investments that encompass nature conservation and sustainable use of resources, while at the same time account for the social dimension of the production process,

and equitable distribution of the economic output. This clear obstacle towards sustainable financing is enhanced by a well-entrenched network of vested interests, in both the private and public sectors, which distort market functioning via monopolistic and oligopolistic structures. This scheme works against the interests of consumers and does not promote the shifting of the economic model to a sustainable trajectory, precisely for the aforementioned purpose of reaping short-run profits. The finance sector, like all other economic agents, need to overcome this myopic business model and emphasize on future profits, as much as on current ones.

- The aforesaid dichotomy between sustainable and polluting investments is clearly demonstrated in the investment strategy of German banking group KfW, which maintains a significant portfolio of investments on energy conservation and renewable energy projects, largely within German borders.¹⁶ Outside German, the KfW Group insists in investing on conventional projects, such as coal fired power plants. For example, the KfW Group, despite its many promising alternative energy-producing models, is planning to invest 200€ million for the construction of “Ptolemaida 5”, the aforesaid coal-based plant.¹⁷ This project accounts neither for the issue of climate change, nor for the local community, which lives in an area already largely burdened by energy producing activities that go back in time.

Tackling environmental externalities entails a set of approaches and measures on behalf of institutional investors. Indicatively:

- Evaluation of the environmental dimension and degree of dependence between investment schemes and natural capital.
- Creation of shared platforms of consultation, cooperation and synergies in order to enable negotiations of material issues related to public investments.
- Cooperation with the government sector and all regulatory authorities to promote policies that will enable the internalization of the environmental cost of investment and establish a clear framework of sustainable investments.
- Demand the creation of an effective monitoring and disclosure mechanism, related to how investors perceive and treat the environmental risks of their portfolios.
- Encourage rating agencies and other entities conducting financial analysis, to include parameters of environmental cost in their methodological toolkits.
- Provide active support to the research related to the linkages among corporate externalities, ecosystem goods and services, corporate financial risk and returns on investment.

In the case of Greece, it would be of exceptional interest to explore the potential of designing a joint investment mechanism-fund, potentially co-financed by public, European and private funds. Its mission would be to accumulate investment capital and channel it to environmental R&D and innovation, as well as to the implementation of small and large-scale projects that will link environmental conservation with sound business practices. Emphasis should be given on sectors of the economy in which Greece displays a clear competitive advantage in terms of potential and/or current practice.

Source: <http://www.wwf.gr/images/pdfs/Living-Economy-Vision-in-Greece-EN.pdf>:pg.55

16: Carrington, Damian. “How a Green Investment Bank really works”. The Guardian 24 May 2012 <http://www.guardian.co.uk/environment/damian-carrington-blog/2012/may/24/green-investment-bank-energy-efficiency>

17: Petz, Kathrin. “Coal financing – what the KfW prefers to keep under wraps” Urgewald, August 2012

Finally, the enhancement of the monitoring and regulatory role of the Bank of Greece and the European Central Bank, in order to disseminate directions for sustainable finance, is also a necessary precondition for the support of a living economy. In addition, public subsidies to polluting activities need to be phased out, in parallel with the provision of incentives for environment- friendly practices within focal sectors of the Greek economy (energy, primary sector, tourism). Furthermore, new sectors must be enhanced, which will introduce business models related to environmental protection and the sustainable distribution of the economic output. As a conclusion, the potential role of the banks in fundamentally changing a parochial, counter-productive economic model is not just complementary, but catalyzing.



Source: <http://www.wwf.gr/images/pdfs/Living-Economy-Vision-in-Greece-EN.pdf>:pg.56

■ 6. Prerequisites of Green growth

The concept of green growth is characterized by some necessary and interrelated requirements, which are:

Reduce of the environmental pollution.

Main goal is to achieve economic growth without deterioration of environmental problems. Reducing the burden (decoupling) is achieved when the development is no longer dependent on energy inputs and raw materials. This is promoted by introducing an obligation for users to make reasonable use of resources as well as the innovations which are leading to cleaner production technologies.

Saving

An objective is to change the profligate lifestyle, with restraint of excessive consumption of resources. This requires awareness and civic education, to develop environmental consciousness and behave more rationally. Very effective savings can be achieved by technological improvements and innovations in agriculture, buildings, transport, products etc..

Exploitation of technology

Technology can be converted from a significant part of the problem in decisive factor for solution. Nowadays, an immediate tackle with the global environmental problems is necessary since, the use of improved and more efficient technologies can lead to lower inputs of materials and energy and less outflow of pollutants.

Generate employment

The use of economic instruments has many possibilities to achieve the simultaneous environmental and social objectives, while environmental protection activities create employment.

Interventionism

The integrated environmental policy with legislative, administrative, scientific (or technological), economic and ideological dimension, requires public intervention by the state or state institutions but also by civil society. Some environmental problems require organized management of the area by the state. Economic tools are an important way of intervention to promote green growth as well as employment.

Source: "Green and Sustainable development, EU and Greece", pg.7

● 6.1. Green Entrepreneurship in Greece

In the context of strong international and European Interest for environmental protection and pursuit of compromise in the concept of competitiveness and environmental awareness, several initiatives have begun to make their appearance in Greece. Although to date, green technologies have not taken the attention they deserve in our country, especially in the field of renewable energy -for which Greece has an abundance of resources (sunlight, wind, etc.)-, there is potential to attract investment and development of strong performance in areas such as biofuels and biomass.

It is true that the Greek Enterprises whose principal activity is the production of green technology or take seriously into account the environmental dimension are few and mainly of small and medium size. Therefore, the creation of a favorable environment for strengthening the sector is required, both by providing financial incentives and by the planning of targeted actions for the development of green products and technologies. Green business can be exercised also in Greece in ways that cover all sectors of the economy, production and marketing of certified organic agricultural products and livestock in local traditional vocational activities on recycling services in sustainable energy production.

Until 2020 it is estimated that investment in "green" power generation will increase to 17% from 4% that it is today. The corresponding figure for the world market in 2007 amounted to 9.4%, according to data from the Association of Photovoltaic Companies. The global investment in alternative energy production units (wind, photovoltaic, biofuels) amounted in 2007 to 84.5 billion dollars, while for the same year the turnover in renewable energy sources in Greece was 450 million euros.

Regarding employment in renewable energy, Greece is already employing about 5,000 people, mostly in the areas of solar thermal, photovoltaic and wind. The installation of 2500 photovoltaic (several of which will be produced domestically) in the coming years is expected to create 8750 more jobs for ten years.

■ 7. CONCLUSION

It is obvious that during the last century, economic growth and prosperity was not intertwined with environment and its protection. People all over the world used to take nature and natural resources for granted. There were no special and strict policies in order to protect environment and future generation prosperity. The only priority was the economic growth – although it was only for few people – with any cost.

The outcome is that our cities have been crowded of people, our natural resources are about to reach their limits, our coasts and seas are full of waste, social disparity is a basic problem of the last decades, and economic growth is in crisis.

So, we can clearly understand that sustainable development is the only way in order to achieve economic prosperity, environmental protection, social equality and energy and natural resources saving – all these simultaneously. What we have to stress is that economic prosperity can and must be interconnected with environment. The maintenance and protection of natural and cultural landscapes as well as of special ecologic areas, are not an obstacle for growth but, in the contrary highlights the qualitative dimensions of this. Nevertheless, the word “sustainable” on its own, means the continuous and perpetual enjoyment of public goods by the people, but in order for this to be perpetual, as mentioned above, a prerequisite is that each one of us protects and respects all these assets.

Sustainable development, as mentioned also in the chapters before, incorporates social economic as well as environmental objections. But these three sectors should undoubtedly be in great balance between them. In order for this to be achieved, major changes are necessary, not only at state level but also at business and individual level.

Our world generally, is in crisis and our environment is in great danger. We need to mention, however, that the last few decades there has been some progress, globally and domestically, at the level of reforms and specific policies. But the key concept, is that only if we finally convince ourselves that by protecting our planet earth we will achieve great things; only then we will be able to say that we have made a major step for sustainable development. And this is becoming more and more crucial, as the problems we have to face the last few years are getting more complex.

Greece is a country with so much natural and cultural wealth. Of course we can exploit our heritage in order to achieve economic goals. But only with respect to this, and without forgetting how “fragile” this heritage is. If we protect this, we will be compensated economically and we will also be able to admire what we are going to leave for the next generations, our own kids. What we have to remember is that we all are responsible for our nature and our planet. International and domestic bodies are very important but can do nothing by their own. Our future is in our hands.

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