

# Green Growth Versus Sustainable Development

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*Abstract:* This aim of this paper is to help explain the differences between the terms “sustainable development” and “green growth”. The concept of “sustainable development” was developed during the 80s and was based on three pillars: economy, environment and society. The concept of “green growth” is a more recent one. The two concepts have several differences. The first difference is that, from sustainable development to green growth, there is a degradation of the objectives. This is because the latter loses the social component of the former, as green growth is based only on the environment and the economy. The second difference is that green growth concerns only growth and not development, which is a broader concept. Green growth is only an economic growth based on the exploitation of the environment and can severely damage the environment. It is also one of the solutions proposed from the OECD to face the current economic crisis. For this last reason, green growth is accompanied by other economic or social measures, such as the degradation of formal education to the mere acquisition of skills, the increase of subsidies to private sector and the liberalization of international trade.

*Key-Words:* green growth, sustainable development, economic growth, environment.

## 1 Introduction

The term “green growth” is nowadays a very widely and commonly used expression. However, it is frequently mixed, and sometimes used interchangeably, with “sustainable development” or, sometimes, with an older term, “ecodevelopment”. This interchangeable use of the two terms creates confusion, not only for the non-specialists but also in the scientific community, about the precise definition and meaning of each term. Looking on the Google search machine under the keywords “green growth”, more than 6,410,000 internet sites appear. The case is clear: too much information makes the information obsolete. The first site on the Google list, [www.greengrowth.org](http://www.greengrowth.org), provides the motto: “Green growth: Environmentally sustainable economic growth for the well-being of all.”

This motto seems to be a definition of “green growth”. Trying to verify if this is the general admitted definition of “green growth” another, narrower, search using the keywords “definition of green growth”, is performed. This search results in 13,000 hits. First on this list is the document of the OECD with the title “Environmental Cooperation in the context of green growth: Quo vadis, Eastern Europe, Caucasus, and Central Asia?”. This document provides a definition of green growth that occupies almost half a page; however, the precise definition is still lacking.

The aim of this paper is to identify the precise definition and meaning of the term “green growth”, and to investigate potential differences between the two terms: “green growth” and “sustainable development”. To achieve this, it is important to identify under which context the concept of “sustainable development” has been transformed to that of “green growth”. Most of the examples that will be used to this direction are taken from the Greek experience, because Greece is currently the country that faces the most important financial problems in the European Union.

## 2 Historical review of the relationship among human beings and the environment

The examination of the historical evolution of the relationship among human beings and physical environment is a necessary step in order to understand the emergence of the terms “sustainable development” and “green growth”. We divide that evolution into three distinct environmental periods.

### 2.1 First environmental period: Absolute (or almost) ignorance of the environment

At the beginning of the history of mankind environment was a hostile place where the new species should survive. Over the millennia, the

human being manages not only to survive, but also to dominate on the environment. Although sometimes the environment is being respected (e.g. the avoidance of hunting young animals); this is mainly done in order to allow humans to survive more effectively. Therefore, the environment has been destroyed and largely degraded from its interaction with humans (e.g. the disappearance of the mammoth due to extensive hunt during the prehistoric years or the more recent extensive pollution, global warming and climate changes).

## 2.2 Second environmental period: The dilemma of environmental protection versus economic growth

During the last few decades, western societies moved into what we call the second environmental period. During this period, people start to understand (slowly in the beginning becoming a bit faster later on) that economic growth has often a negative impact on the environment. Several social “pressures” appear to improve the environment, and as a result, the quality of the environment starts slowly to get improved or at least its degradation is being slowly reduced. However, the protection of the environment has a cost and this cost inevitably slows down the economic growth of an economy. The dilemma is clear: protection of the environment or decline of the rate of economic growth? Western governments prefer to favor the economic growth scenario. Several official declarations of the “not-so-bad” condition of the environment appear from time to time in the news. An example of that is, in 1977, the historic phrase of the Greek Minister of the Presidency and later President of the Hellenic Republic, Konstantinos Stephanopoulos. He said: “Bring me a dead from the smog”, declaring that smog has no harmful consequences. Just a few years later, the combination of heat and smog kills more than 1500 inhabitants in Athens, but at that time Konstantinos Stephanopoulos is not so generous with his declarations.

## 2.3 Third environmental period: sustainable development

During the beginning of the 70s questions with regards to the limits of economic growth and its consequences on the environment and society start to develop (Meadows *et al.*, 1972). On 1973, the term *ecodevelopment* was coined from the United Nations Environmental Program (UNEP) (UNEP, 1973). *Ecodevelopment* is defined as (UNEP, 1973): “Conservative development based on long term optimization of biosphere resources” and “An

approach to development through rational use of natural resources by means of appropriate technology and system of production which take into account and provide for the conservation of nature”.

The question of the possibility of continuous economic growth has its answer at the end of 70s. An economic growth can be *sustainable* only if the dependence of the natural environment is being taken into consideration (Pirages, 1977). The notion of *sustainable development* is defined on the beginning of 80s (IUCN 1980). On 1983, the “Brundtland committee” provided a definition of the term *sustainable development* as follows (UNEP, 1983): “In essence, sustainable development is a process of change in which the exploitation of resources, the direction of investments, the orientation of technological development; and institutional change are all in harmony and enhance both current and future potential to meet human needs and aspirations.” The official website of European Commission (EU Internet Site) gives the definition which is widely known: “Sustainable development is the development that meets the needs of the present without compromising the ability of future generations to meet their own needs, in other words ensuring that today's growth does not jeopardize the growth possibilities of future generations. Sustainable development thus comprises three elements - economic, social and environmental - which have to be considered in equal measure at the political level.”

*Sustainable development*, therefore, has a quite clear definition. Since only a few years, a new concept, that of *green growth*, emerges. To clarify the difference between *green growth* and *sustainable development*, we need to find out the precise definition of the term *green growth*.

## 3 Towards green growth

The first scientific article to mention the term *green growth* appears in 1991 (Colby, 1991) and makes a reference on a 1989 study by J. Pezzey commissioned from the World Bank (Pezzey, 1992). Although the study of J. Pezzey is an economic analysis of the various facets of sustainability, the term *green growth* is nowhere in the text.

The first use of the term *green growth* at the level of international organizations appears in March 2005 during the 5<sup>th</sup> Ministerial Conference on Environment and Development in Asia and the Pacific of the Economic and Social Commission for Asia and the Pacific of the United Nations Economic and Social Council (ESCAP, 2005). In

the text of that conference, the term *green growth* is equivalent to the *environmentally sustainable economic growth*. Also, it is defined that (ESCAP, 2005): “The Asian and Pacific region faces the challenge of shifting from the conventional “Grow First, Clean up Later” paradigm and embracing a strategy for pursuing Green Growth...”

A few years later, in June 2009, the "Declaration of Green growth" is published from the Council of Ministers of OECD member countries (OECD, 2009). While the declaration starts with: “Economic recovery and environmentally and socially sustainable economic growth are key challenges that all countries are facing today”, continues with: “A number of well targeted policy instruments can be used to encourage green investment in order to simultaneously contribute to economic recovery in the short-term, and help to build the environmentally friendly infrastructure required for a green economy in the long-term, noting that public investment should be consistent with a long-term framework for generating sustainable growth. Green growth will be relevant going beyond the current crisis, addressing urgent challenges including the fight against climate change and environmental degradation, enhancement of energy security, and the creation of new engines for economic growth. The crisis should not be used as an excuse to postpone crucial decisions for the future of our planet.”

The Ministers declare also that they: “Strengthen our efforts to pursue green growth strategies as part of our response to the current crisis and beyond, acknowledging that “green” and “growth” can go hand-in-hand.”

## 4 The transition from sustainable development to green growth

It is evident that *sustainable development* and *green growth* are two quite different concepts. We will analyze their differences in this section.

### 4.1 Loss of the social component

Historically we have first the dilemma of environment versus economic growth. Under a double pressure of citizens for a better environment and better present and future living conditions, but also of the enterprises wailing to increase their profits, the question has changed from “environment versus growth” to “environment and growth”. Thus, the concept of *sustainable development* was born where three distinct components are put together: environment, development and society.

However, it can be observed that *green growth* does not include the social component of the three components of *sustainable development*. The term *green growth* is based only on the concepts of environment and economy. Although the last component is naturally very closely linked to society, the lack of the social component of *green growth* is evident in comparison to *sustainable development*. *Green growth* has therefore a substantial deterioration of its objectives in comparison to *sustainable development*.

### 4.2 How development became growth

There is another loss from the transition from *sustainable development* to *green growth*. The first concept includes the term *development*; the second one includes the term *growth*. We can note that in several languages the term *green growth* is translated as *green development* (in French: *development vert*, in Greek *πράσινη ανάπτυξη*). The difference between the terms *development* and *growth* is significant. Let's take for example the definition of the World Bank (Soubbotina, 2004):

- “Economic development. Qualitative change and restructuring in a country's economy in connection with technological and social progress. ...reflecting an increase in the economic productivity and average material wellbeing of a country's population.”

- “Economic growth. Quantitative change or expansion in a country's economy.”

We can observe that the term *development* is more complex than that of *growth*. The first includes complex qualitative concepts, while the second is purely quantitative. *Economic growth* cares only about how much increases the overall product, e.g. the GDP. In contrast, *economic development* takes into account other features, such as the structures of the economy, income distribution (income inequality), unemployment, infrastructure, education and training, etc.

A second element is that *growth*, which is the increase of a society's wealth, does not constitute the same (or a similar) increase for all the members of the society. If we compress the term wealth into that of GDP, we can say that global GDP has been increased largely over the last few decades. However, this does not mean that income inequalities or poverty have been reduced. For the first, we can examine just one example, that of France, one of the richest countries of the world. Official data show a net increase of national income during the last years, while inequalities and poverty also increase (Le monde 02/04/2010). This occurs to a much greater extent in the poorest countries. It

seems therefore that higher incomes will be the main beneficiaries from *green growth*, like they are from *economic growth*.

A third element is that *development* and *prosperity* are two different things. The proverb "*money does not bring happiness*" contains a certain degree of truth; however, what is largely neglected by this proverb is the misery caused by poverty. We believe that from the arguments developed above it is quite clear that the term *green growth* does not include the prosperity or welfare of a society, because obviously there is no interest in that.

Therefore, it is evident that the so-called *green growth* is only an economic growth based on the exploitation of the environment. In other words, it is a new way to create an increase of the revenues or profits of certain people, especially private organizations. The Council of Ministers of the OECD makes specific reference to the private sector in the case of technologies and processes relating to the environment (OECD, 2009).

## 5 Green growth and economic crisis

The text of the OECD report is clear in that point (OECD, 2009). The Ministers declare: "Strengthen our efforts to pursue green growth strategies as part of our response to the current crisis and beyond, acknowledging that "green" and "growth" can go hand-in-hand." The *green* is clearly a part of the response to the economic crisis and nothing else.

The same argument is being used by the Greek Ministry of Environment (Internet Site of YPEKA): "Green growth respects the environment and treats it as a growth stock." "Green growth is a new strategy to exit from the economic crisis pursuing the reconstruction of the productive base of the country, the balanced regional development, the creation of new jobs."

The newsletter of the Greek Socialist Party (PASOK), posted on March 2009, a few months before PASOK coming to government (PASOK, 2009a) has the following declaration: "[Green Growth] is the only development option left for our country if we want to be competitive and viable in an international environment with many challenges."

It is therefore clear that *green growth* is a new instrument to increase the profitability of capital and a way of exiting from the current economic crisis. At this point, it is also clear that the definition of the *greengrowth.org* does not correspond to the reality.

A question is therefore raised: Since *green growth* will protect the environment, is there an

argument against it? To answer that, let's see if *green* is always *green*.

## 6 How "green" is not always "green"

The protection of the environment can be realized by different ways: either through the change of the environmentally damaging processes to other more environmentally friendly ones, or by upgrading the polluted areas. One important issue is the production of energy. There are two reasons for that: the first one is that climate changes are due to the greenhouse effect gases (mainly carbon dioxide) which is emitted from the combustion of fossil fuels, and the second concerns the extent of energy independence of each country. For economy of space, only the energy problem will be developed here.

The so-called renewable sources of energy are being like that because they are at a certain extent renewable, in the sense that they are being produced in a short fragment of time and can be consumed immediately. For example, the photovoltaic cells produce renewable energy because they capture the solar light energy falling on them and they transform it directly to electricity. The same is valid in the case of energy produced from hydroelectric plants, windmills, geothermal energy or biomass. Or, maybe not? And apart from the issue of the renewability of the different forms of energy, other environmental effects should also be examined.

Let's look at the first issue. Are first-generation biofuels (those produced from biomass) renewable? The production of ethanol requires glucose which is present in a part of certain plants (e.g. grapes). Cultivating those plants makes us able to produce ethanol, which is mixed with gasoline and burning as a fuel in cars. The carbon dioxide produced from the combustion of ethanol is released to the atmosphere, but is captured again from the plants used again to produce ethanol. Therefore, ethanol can be characterized as a renewable source of energy. However, other issues must be taken into consideration. First of all, from the basic reaction of ethanol production from glucose, 100g of glucose are necessary to produce only 56g ethanol. Also the plant does not consist only from glucose, but also from other components not producing ethanol. Therefore, ethanol can be produced only from a small part of the plant. Subsequently, the cultivation of the plant requires ploughing, sowing, water, fertilizers, collection, transportation, etc. All those processes need energy, thus they emit carbon dioxide. Energy is also necessary for the process of production of ethanol from the plant. Another issue

is that the heating value of ethanol is lower than that of gasoline, so a greater quantity of fuel containing ethanol is required to cover the same driving distance. Overall, and depending on the plant used, the production of ethanol can be energy negative, it means that more energy is consumed for its production than the energy produced from its combustion (Patzek *et al.*, 2005). Thus, all the renewable forms of energy are not always so renewable.

The second issue is how a process is characterized as environmentally friendly. It is known that the production of electricity from wind mills affects the passages of birds, that hydroelectric power needs lakes that change the local climate, etc. Of course, we are not against those forms of renewable energy, the contrary. However, we simply insist that we must be sure that our choices are not haste and in some decades or even years we will find several problems, as in the case of ethanol. More research on the global and local consequences of those forms of energy is necessary. For example, the destruction of tropical forests to cultivate plants used for the production of biofuels is probably not the best solution. In Europe, several fertile fields are covered with photovoltaic cells because of their higher profitability in comparison to agricultural products. However, photovoltaic cells must first cover the roofs of buildings, then the arid areas and leave the fertile ones to the production of food. However, such a policy requires a central planning and it is contrary to the wind of liberalization blowing today, like the declaration of PASOK in 2009 (PASOK 2009b): “A decisive promotion of renewable energy is necessary, especially wind energy parks, with removal of various obstacles that do not allow rapid installation.”

Another issue is that energy saving is neglected at the expense of its production from renewable sources. The already announced target of 20/20/20 (20% of electricity production from renewable energy sources, 20% reduction in carbon dioxide production and 20% reduction of energy consumption by 2020), will not be met, at least for its third part (Naftemboriki 07/01/2011). This is obvious since energy saving does not offer large margins of profitability in comparison to energy production. Also, energy saving is contrary to the basic principles of capitalism, which promotes excessive consumption.

## 7 How green growth can damage the environment

The official site of the Greek Ministry of Environment declares that the environment is a “reserve of economic growth” (Internet site of YPEKA): “Green growth, that respects the environment and treats the environment as a reserve of economic growth, is the only feasible and sustainable solution for Greece.” This statement is very clear. The environment is protected only because it is treated as a source of economic growth. It is therefore clear that green growth is another means of creation of capital or profit. Moreover, the protection of the environment is ensured only when there is creation of capital or profit. It can be argued that this is not so bad, because the creation of capital or profit is a strong reason to protect the environment, even partially. However, several cases show that, in the name of green growth, the environment is not protected. On the contrary, it is severely damaged and the only result searched is to create capital or profit. To prove that statement, we will take as example the energy production. It is widely known that energy production is mainly based on the combustion of fossil fuels and, thus, is one of the main sources of greenhouse-effect gases (GHG). The production of energy using renewable energy sources instead of fossil fuels is one effective way to decrease the emissions of GHG (others are the decrease of energy consumption, the CO<sub>2</sub> capture, etc). However, the production of energy from renewable sources, to be sustainable, must be done without degrading the environment. However, the opposite happens very often, especially in the case of the countries under development.

## 8 The “Collateral damages” of green growth

Some “collateral damages” of *green growth* must also be mentioned. In the new era of liberalization, the capital needs skilled labor, new areas of profitability (for example privatizations) and, naturally, to break down the walls that have been left to its free movement. The text of the OECD Ministers (OECD 2009) is crystal clear and calls to: “Ensure close co-ordination of green growth measures with labor market and human capital formation policies. We note that these can support the development of green jobs and the skills needed for them, and ask that work on implementing the Reassessed OECD Jobs Strategy pays due attention to this objective.” Let us note here that the term *skills* is used and not the term *education*. It is clear that only *skilled* workers and not *educated* ones with strong personality are necessary for the future.

The Ministers also call to: “Encourage green investment and sustainable management of natural resources,” “and make special reference to subsidies to the private sector:” “We will consider expanding incentives for green investment, in particular in areas where pricing carbon is unlikely to be enough to foster such private sector responses.” Thus, when the private sector appears to be non-profitable, the “miracle-recipe” of public subsidies is again proposed as the possible solution.

The Ministers also: “...recognize the importance of the liberalization of trade in environmental goods and services in fostering green growth. We are resolved to ensure that measures taken to combat climate change are consistent with our international trade obligations.”

The *market forces* – this panacea to every problem – together with other economic instruments are once again invited in order to settle the issues of *green growth*. Hadjibiros (2009) is very clear: “With the use of economic instruments, such as high parking fees or tolls, the full cost of travel can be set off, including external costs” and “in spite of the high taxes, the fuel cost remains low and the European attempts to overwhelm society with external costs have not brought significant results.”

This liberalization creates naturally the corresponding reactions. Even Hadjibiros (2009), who apparently believes in the economic regulation of the environment, admits that: “The promotion of environmental protection using only market mechanisms is a utopia. The globalized market has a variety of shortcomings and, in particular, a failure to ensure, at the same time, economic growth, full employment and environmental protection” and “water requires a special treatment, even if this is contrary to the rules of the free market, because it has a special status due to its importance for humans and all living organisms, the inequality of its distribution and the dependency of the quality, i.e. the concentrations of pollutants, from the quantity of water resources.”

## 9 Conclusions

Unfortunately the environment is being put again to second place. *Sustainable development* becomes *green growth*, which is the new opportunity to increase the profitability of the capital from the exploitation of the environment and help to exit from the current financial crisis, not without severe degradation of the environment. At the same moment, green growth establishes new measures for the deepening of neo-liberalism.

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