



Volume: 2, Issue: 9, 181-190  
Sep 2015  
www.allsubjectjournal.com  
e-ISSN: 2349-4182  
p-ISSN: 2349-5979  
Impact Factor: 4.342

**Ezzat Molouk Kenawy**  
Department of Economics-  
Faculty of Commerce- Kafr  
El-Sheikh University

## The dimensions and determinants of sustainable development in developing countries with Reference to Egypt

**Ezzat Molouk Kenawy**

### Abstract

The concept of development has faced many criticisms associated with the issue of distributing income and social justice. Accordingly, the concept has been developed in the second stage to take into account giving an attention to human resources beside the capital. Then, the concept has been developed in a deeper way to include the environmental dimensions and their role in development. So, the concept of “sustainable development” has appeared in order to achieve a balance between the economic and environmental systems without depletion of natural resources and take the environmental security into account. The research problem is represented in the excessive development of human activity to take advantage of the resources of the limited nature. The research supposes that the development model, followed currently in most of the countries of the world, does not include the terms of sustainability represented in the harmony between achieving development objectives on the one hand, and protecting environment and its sustainability on the other hand. The research aims to know the dimensions, determinants, principles, indicators and the methods of measuring and financing sustainable development in developing countries in general and in Egypt in particular. It, also, aims to know the impact of some sustainable development indicators on the Egyptian economy with focusing on the environmental indicators and the extent of correlation between them and the economic factors whether at the level of the project, sector or macroeconomic. Then, suggesting polices that must be considered in order to activate sustainable development in Egypt.

**Keywords:** Sustainable Development- Developing Countries- macroeconomic-Egypt

### Introduction

Until the middle of the last century, the concept of development was seen as it is an increase in investment, and this increase leads to an increase in the average of the national income per capita. This concept has faced many criticisms associated with the issue of distributing income and social justice. Accordingly, the concept has been developed in the second stage to take into account giving an attention to human resources beside the capital. Then, the concept has been developed in a deeper way to include the environmental dimensions and their role in development. So, the concept of “sustainable development” has appeared in order to achieve a balance between the economic and environmental systems without depletion of natural resources and take the environmental security into account. For giving an attention to human development and in order to achieve sustainable development, it was necessary to maintain the natural resources for future generations through implementing the environmental standards and requirements (Mohammed Abdelbadee, 2002) <sup>[19]</sup>.

The Question is it possible to impose the same environmental standards and requirements on all the countries according to the prevailing motto: “the minimum of sound environment”? Surely the answer would be no, because of the conflicts of interest of rich and poor countries. In developing countries, the priority is for fighting poverty at the expense of environment, as some developing countries still believe that the issue of environment is a problem that has been given care by developed countries primarily due to the concentration of industrial, technical and financial means in it. This is besides the preference of developing countries to solve the general problems at the expense of environment, as they see that resisting the degradation of environment must mainly be related to the fight against poverty before environment. In contrast to the developing countries, developed countries prefer the developmental industrial model, despite its danger and its negative effects on the environment, regardless of the environmental costs of this model (Mohammed Saleh Elsheikh, 2002) <sup>[24]</sup>. Moreover, the developing countries’ call to adopt and implement a sustainable development strategy requires high costs exceed their limited financial abilities, which are fully specified for the objectives of the short-term economic growth. As well as the absence of compatibility and complementarity, among the objectives of

**Correspondence**  
**Ezzat Molouk Kenawy**  
Department of Economics-  
Faculty of Commerce- Kafr  
El-Sheikh University

both developed and developing countries, on the environmental issues and the objectives of the sustainable development.

**2- Research Problem:** the research problem is represented in the excessive development of human activity to take advantage of the resources of the limited nature. Although Egypt gives an attention to the environmental dimensions of development and committed to the concept of sustainable development, but there is still a great lack in giving an attention to human development on the one hand, and to the environmental aspect on the other hand. There are still some crises and problems associated with the basic services, the scarcity of resources and the increase in the environmental pollution year after year, which is reflected negatively on activating the concept of sustainable development and hinder the plans of the overall development.

**3- Research Hypothesis:** the research supposes that the development model, followed currently in most of the countries of the world, does not include the terms of sustainability represented in the harmony between achieving development objectives on the one hand, and protecting environment and its sustainability on the other hand.

**4- Research Objectives:** the research aims to know the dimensions, determinants, principles, indicators and the methods of measuring and financing sustainable development in developing countries in general and in Egypt in particular. It, also, aims to know the impact of some sustainable development indicators on the Egyptian economy with focusing on the environmental indicators and the extent of correlation between them and the economic factors whether at the level of the project, sector or macroeconomic. Then, suggesting policies that must be considered in order to activate sustainable development in Egypt.

**5- Research Plan:** the research is divided into seven parts represented in:

First: economics and ecology: rivalry or rapprochement.

Second: the concept and principles of sustainable development.

Third: the dimensions of sustainable development.

Fourth: the relationship between human development and sustainable development.

Fifth: the indicators and measurements of sustainable development.

Sixth: the methods of financing sustainable development.

Seventh: policies that must be considered in order to activate sustainable development in Egypt.

#### **First: Economics and Ecology: Rivalry or Rapprochement.**

Economics competes and contradicts with ecology for a long time whether from the side of liberal trend or ecological trend. But with the gradual transformation of environmental problems to fundamental problems affecting society as a whole, a rapprochement and matching have been occurred between the ideas of the two trends. The ecological trend (strong sustainability) raises questions about the deterioration of the situation of nature and environment after it was pure in the past, as this trend opposes and criticizes all the economic fields that have contributed to the environmental degradation (Romano Donato, 2004) [28].

Moreover, the supporters of strong sustainability (centered on environment) see that earth is a depleting and non-renewable

resource, and there is no environmental future unless there is radical amendment through rethinking towards nature, economic progress and development. This requires emphasizing the biological sustainability as a first condition for any development, rather than focusing on the humanitarian impact on development strategies (Mohammed Abdelbadee, 2002) [19].

This trend represents some non-governmental organizations that are conserving nature such as (World Conservation Movement, Earth First). One of the main thoughts of this trend is the hypothesis or system of (GAIA), which says that nature is the master of man and that nature have precedence over man. According to this hypothesis, the system is capable of self-regulation, it has the ability to guarantee reproducing itself and it can exterminate man if he threatened its life (.). This is besides the ideas of the trend nicknamed (Deep Ecology) or the rights of non-human beings that emphasize the priority of nature over man, as this trend refuses any interference or participation from man in the laws managing natural systems (Zimmerman, M., 1987) [35].

Furthermore, with regard to the ideas of liberal trend (weak sustainability), it prefers the economic priority over nature and environment, as it gives "the economy" priority to meet the needs and improve the humanitarian activities with denying any value of natural resources as unlimited resources. With the scarcity of natural resources due to the interference of human activity, the quality of environment has been turned from a rare material to a valuable one, and the economic priority has included the environmental and natural dimensions necessarily. From this stand point, economic sciences has faced a fundamental problem which is the absence of a market for environment, as there are not prices for material market and environmental services. According to the economic theory, price interprets the scarcity of materials (the more the price of material, the greater the case of scarcity).

The supporters of weak sustainability see that there is a need to expand the scope of resources stock through developing renewable resources, finding alternatives to non-renewable resources, using the current materials in an optimal way and searching for technological solutions to the problems of resources depletion and pollution through rationalizing the use of resources, using the best means of evaluating projects and estimating the environmental and economic effects and the damages resulted from them that may affect the environment (Salem Tawfiq Elnajafy, Iyad Bashir Elgalaby, 2009) [29].

Some scientists have tried during the 20th century to develop theories to explain the economic value of materials and the environmental services and re-correct markets. In addition, with the emergence of the ideas of the neoclassical economic theory, nature has been subjected to economic laws. These economic ideas have been spread in the international economic communities, and they still have a significant impact on some states and organizations having liberal orientation such as the Organization for Economic Cooperation and Development, the International Monetary Fund, World Bank etc (Lorenz Yaheya Saleh, 2013) [16].

These ideas have been represented in the theories of (Arthur Pigou), (Ronald Coase). The proposal of (Arthur Pigou) has represented in how to correct the influences that occur outside the market as a result of producing and consuming some environmental materials through applying some economic instruments such as fees and aids. These fees represent compensations paid by those who cause contaminated wastes harmful to environment in order to address pollution, as the

optimal amount of fees paid by every person pollutes the air is determined and directed towards reinvesting them to control air pollution.

Also, in the sixties, Ronald Coase has criticized the optimal amounts of fees determined by Arthur Pigou. He has suggested a less strict and less intrusive solution through giving freedom to the laws and mechanisms of competition. In addition, he sees that the environmental materials (air, water, etc) are not owned by anyone (property rights law). If property rights are clear, it is an economic benefit to force those who cause pollution and the victims of pollution to negotiate constantly in order to reach to an automatic convention about the maximum of pollution level accepted from the two parties. For example, if institution (a) pollutes water at the expense of institution (b) and the institution (a) have the ownership to use the river water, the institution (b) have to pay a price to the institution (a) in exchange for that the institution (a) accepts to curb the flow of water in the river. It is an economic benefit for the institution (b) to pay the price as long as the amount paid does not exceed the cost of damage to the river as a result of pollution. On the other hand, it is an economic benefit for the institution (a) to accept the price paid by the institution (b) as long as the amounts from which the institution (a) benefits exceed the cost of the procedures it spends to fight river pollution.

With the beginning of the seventies, the international attention for the subject of environment has been increased, as new intellectual trends and theories have emerged. They tried to integrate the economic aspect into the content of environment. One of the most important theories is the theory of stable and steady state, as the supporters of this theory see that the slow economic growth, until it stops, is the primary means for the fixation and stability of human activities permanently (Meadows, D. *et al*, 1972) <sup>[18]</sup>. This trend has met a wide popular in 1970 at a time when the Club of Rome published a report entitled “stop growth” which conflicts with the liberal theories especially in the developed countries. Moreover, the option of stable and steady state causes damages to developing countries when stopping the economic growth is imposed on them although their responsibilities in the environmental crisis are small and limited.

This is besides the theory of the total economic value whose supporters prefer to put a value for the environmental elements and transactions through a comprehensive account in order to estimate the environmental damages and the ecological cost by using the methods of financial evaluation, with taking into account what is observed in nature. Calculation methods are maligned on this approach. In addition, the method of declared values is often resorted to by consenting through payment or conversely through contributing to preserve the environment or determine a readiness to bear the damages resulting from the environmental pollution (Harry, Jonathan M, 2006) <sup>[13]</sup>.

## **Second: the Concept and Principles of Sustainable Development**

The concept of sustainable development is the most important development and the most prominent addition in the modern developmental thinking during the recent decades. The concept of sustainable development has been developed at different stages, as the International Union of Conservation of Nature has issued a report about “conservation of nature across the world in 1950”, which has had a significant positive impact in the rapprochement between economy and environment. Another report had been issued in 1980 about

“the Global Strategy for the Conservation of Nature” which has based on removing the contradiction between the conservation of nature and economic development. From this standpoint, the concept of sustainable development has been established on the basis of the existence of close relationship between economy and environment. Hence the importance of the report of the Club of Rome (enough of growth) in 1970 has been increased by the hypothesis of the environmental borders of economic growth. Moreover, the wide controversy has been increased between the supporters of growth to zero degree and the trend of the call for growth whatever the price was.

In Stockholm Conference in 1972, during the United Nations’ seminar on the Human Environment, it was proposed to put a model of development respects the environment, gives special attention to natural resources and makes the economic development appropriate for the social justice and environmental caution. In 1980, the concept of the appropriate development of environment has faced a stiff resistance from liberals in the developed countries. However, the report “Our Future for All” known as the report of (Gro Harlem Brundtland), which was prepared by the International Committee for Environment and Development, has spread and established the concept of sustainable development internationally (WCED, 1987) <sup>[34]</sup>. The report defines sustainable development as “a development responds to the needs of current generations without exposing the ability of posterity to risk in responding to their needs too. This is besides the necessity to accomplish the right in development, as the developmental and environmental needs, of present and future generations, will be achieved equally (Pallmearts, M., 1992) <sup>[27]</sup>.

One of the most important recommendations of the report of (Brundtland) is the need for rational international governance in order to build a new approach to development. It also recommends maintaining the balance between the economic growth and environmental system in a way allows natural resources to support long term growth. Also, the report focuses on a number of strategic sectoral axes relating to the international economy, population, human resources, production and food security, energy, transport, global warming, climatic changes, the new industrial challenges, etc. Also, the second seminar of the United Nations on environment and development (Earth Summit in 1992) held in Rio de Janeiro has reached to the concept of sustainable development as an objective must be reached. Sustainable development is the development that achieves a balance between environmental, economic and social systems and contributes to maximize growth in each system of these three systems, without any negative effect from development, in any system, on the other systems (Agenda 21, 1992) <sup>[3]</sup>. In order to make development be sustainable development, environmental pressures should not be ignored and they should not lead to the destruction and depletion of natural resources.

Moreover, the emergence of international environmental law within the branches of international law represents a real shift in activating environment protection at the level of the world through increasing the international treaties of environment protection, whether bilateral treaties or multilateral treaties (Tarek Abdelkarim Salama, 2010) <sup>[31]</sup>.

### **1- Principles of Sustainable development**

Sustainable development is based on a set of principles in order to achieve its strategy that aims at achieving a

development and welfare for current generations without compromising the ability of posterity, and meet their needs. The most important principles of them are represented in (Douglas Mosheat, 2000) <sup>[10]</sup>:

**-The precautionary principle:** as states must take the measures necessary to obviate the degradation of environment due to the activities that are expected to be performed. Also, they must predict the effects that will be resulted from these activities in the future (Mohammed Safy Yousef, 2011) <sup>[23]</sup>.

**-The principle of participation:** through the participation of all the authorities related to development in taking collective decisions, especially in the field of planning, developing and implementing policies and following up development plans.

**-The principle of integration:** this principle relates to the matters relating to the integration of environment and development at the level of politics, planning and management and the legal and regulatory framework relevant and having the efficient use of economic instruments and the hooves of market, establishing a new accounting system includes those environmental considerations and assessing the environmental effects on the project, before executing it, through cost-benefit analysis.

**-The polluter pays principle:** this principle is considered one of the most important principals achieving sustainable development significantly. Also, it is effective because of its association with the economic aspect of polluting activities. It aims at deterring the institutions causing pollution through making them bear the social costs of pollution until they can adapt the effects of their activities with sustainable development.

### **Third: the Dimensions of Sustainable Development**

The dimensions of sustainable development are several. They are not based on the environment aspect only, but also they include economic, social, political, cultural and technological aspects. It should be noted that these dimensions are interrelated, interdependent and integrated, and one shall not deal with them separately. The most important of these dimensions are as follows (Dary Nasser Elajemy, 2009) <sup>[9]</sup>:

**-The environmental dimension:** through an ecosystem guarantees to avoid the increasing the depletion of renewable and non-renewable resources. This includes protecting biodiversity, soil productivity and the other natural ecosystems.

**-The economic dimension:** it is the system that can produce goods and services constantly, maintain a certain level of economic equilibrium between public output and public debt, stop squandering the natural resources, achieve an equality in distributing resources, reduce inequality in income level, reduce military spending and prevent the social imbalances resulting from economic policies. This means that the economic dimension of sustainable development shows the current and future implications of economy on environment.

**-The social dimension:** it is the system that makes growth be as a means of social cohesion and the process of social development. The system will be sustainable socially in the case of achieving justice in distribution, fixing population growth and providing social services such as health,

education, equality in social type, political accountability, popular participation, freedom of choice, democracy and the optimal use of human resources (Ammar Amary, 2011) <sup>[5]</sup>.

**-The political dimension:** sustainable development represents a project for peace as a base for dialogue between the countries of north and south, and reconciliation between different development models. This is besides respecting human rights and calling for people's participation in the various stages of political choices and at all regional levels. In addition, applying democratic governance that allows equality in distributing resources among different generations.

**-The cultural dimension:** this dimension has been integrated in 2005 after the ratification of the international convention on cultural diversity. It aims at preserving values, social customs and traditions, institutions and diverse cultures.

**-Technological dimension:** it is called the administrative and technical dimension. It interests in the switch to clean and eco-friendly technology. Also, it interests in using the least amount of energy and resources, producing a minimum of gases and pollutants and using certain criteria lead to the reduction of waste flow (Grubb, M, 1998) <sup>[12]</sup>.

### **Fourth: the Relationship between Human Development and Sustainable Development**

Giving an attention to the environment is the basis of economic development, as the depletion of natural environmental resources, which is considered the essential foundation for any agricultural or industrial activity, would have harmful effects on economy and development in general. So, there should be a balance between the economic system and the ecosystem without depletion of natural resources on the one hand and taking the environmental security into account on the other hand, especially that the environmental courses are long compared to economic courses. Thus, environmental and economic dimensions must be taken into account in parallel through changing planning means, institutional procedures and objectives at all levels. In addition, poverty and low income level are some of the basic problems that hinder the use of resources properly and lead to the increase of pressure on environment. So, these problems have to be addressed first in order to achieve the objectives of sustainable development. In order to achieve this, the matter requires introducing changes to the methods of distributing benefits and costs and the methods of national accounts, as environmental resources would be emerged in the process of comprehensive development (Mohammed Saleh Elsheikh, 2002) <sup>[24]</sup>.

It is worth mentioning that there is conviction that sustainable development cannot be achieved without human development. This matter requires finding a balance between the sizes of population on the one hand and the available resources on the other hand. Thus, a progress and high rates of growth must be achieved in order to maintain the stability of population growth rate, because the increase in the rates of population growth will lead to heavy pressure on natural resources and will not provide the minimum of social and health services, and hence a negative impact would occur on the chances of future generations in development (Othman Mohamed Ghoneim, Magda Ahmed Abozet, 2009) <sup>[26]</sup>.

Despite the importance of human dimension in sustainable development, there is still a clear deficiency in the adoption of developing countries, including Egypt, to direct development

polices in them towards this concept. This may be due to the focus of economists on the problem of resources scarcity more than the environmental considerations on the one hand and the absence of specific prices for environmental services on the other hand. It is worth mentioning that the new system of national accounts in 1993 has included the concept of interim accounts of environment. These accounts have been addressed as accounts separate from the basic accounts of the system through three different approaches include the accounts of natural resources materially, the accounts of them monetary, and finally the accounts of these resources as a general welfare (Ammar Amary, 2011) <sup>[15]</sup>.

In a nutshell, the concept of sustainable development relates directly to human development through the theory of the basic needs and the specific relationship between population and environment. This matter requires increasing the investment in human resources in order to improve the standard of living and increase the ability to work and compete with the outside world. Moreover, overpopulation may lead to a pressure and depletion of the natural resources, and increase the burdens upon society in key areas (food security- health- education- housing- employment), especially if they are not developed or given an attention at the same proportion and standard of the available natural resources (International Labour Office, 2010) <sup>[14]</sup>.

As for food security and its association with environment and sustainable development, the agricultural policies affecting production and the sources of workers income in agriculture, and preserving resources have to be taken into account. Overpopulation in Egypt on the one hand and the high propensity for consumption on the other hand have contributed in widening food gap because of the great difference between production and consumption (Mahmoud Elashram, 2010) <sup>[17]</sup>. This is besides the changes in land uses and the area of arable lands, which is decreased significantly because of the urban sprawl on it and the erosion of a large part of it. These things had a negative effect on meeting the needs of the Egyptian society of food and trending towards importing from abroad. The decrease of agricultural production has contributed significantly in widening the agricultural gap due to the decrease in productivity and cultivated area, the climatic factors, the migration of agricultural workers to abroad and not using the modern methods of production. The result was that the increase in agricultural production did not keep up with overpopulation in an absolute way (Ezzat Kenawy, 2002) <sup>[11]</sup>.

In addition, there is another problem represented in the scarcity of water resources, as the per capita in Egypt is less than the global average by about seven times. This is due to the increased demand for water because of the increase in population on the one hand and the change in consumption patterns on the other hand. This matter requires the rationalization in water use, especially the waste and squandering of misuse that requires an effective policy to curb this. The most important things of this effective policy are water pricing and updating the legislations that include deterrent and effective sanctions (Mohammed Saber, 2012) <sup>[22]</sup>.

With regard to housing policy, in 2006 World Health Organization had developed a benchmark for the appropriate area of housing a family consists of 3-5 persons by about 750 square feet, with taking into account the difference in the degree of overpopulation between rural and urban areas. The data indicate that there is housing deficit in Egypt. That deficit may be due to the intervention of the private sector, which

seeks to profit regardless of finding a clear solution to housing crisis, as it confines its attention on building in favor of those who belong to high income level without giving attention to low-income people. This matter has resulted in rising prices significantly in the housing sector and not meeting the needs of low-income people in housing (Mohammed Mahmoud Alimam, 2009) <sup>[21]</sup>.

As for employment policy and job creation, the majority of economic sectors in Egypt are still unable to accommodate more labor force. This is besides the low labor productivity in the agricultural sector that represents about 35% of the total labor force, as the contribution of the agricultural sector in the gross domestic product does not exceed except about 13% in 2014. In addition, the contribution of women role in the economic activity outside the home has declined, as their contribution is still not more than 12%. Also, the prevalence of the phenomenon of child labor, especially in rural areas, that represents about 6% of the total labor force. In the light of this, there must be a work on creating more jobs and limit the current and expected rising in unemployment rates in the light of the probable population increase. In the case of not taking the appropriate procedures to reduce unemployment, the result would be negative on the economic, political and social stability (Abdelrahman Alhity, 2010) <sup>[2]</sup>. It is worth mentioning that the real reasons behind the increase of the phenomenon of unemployment in Egypt may be due to the economic reform policy adopted by Egypt since the beginning of the nineties of the last century and how to address this phenomenon in the framework of this policy. This is beside the continuation of the support policy for goods and the basic services (health- education- housing- water- energy- and others). The elements of spending significantly on the basic services still represent the main obstacle to the process of sustainable development. In addition, the accommodation of irregular sector to a great proportion of labor force because of the inability of regular sector to accommodate the increasing labor as a result of the underinvestment in the agricultural and industrial fields, as the proportion of the accommodation of irregular sector to labor in Egypt has reached to about 45% in 2013. Moreover, with the country trend to privatization and to sell the public sector institutions to the private sector, it is expected that the role of irregular sector in accommodating the increasing labor will be increased in the future. This matter represents a main obstacle in the way of achieving sustainable development (Mohammed Mahmoud Alimam, 2009) <sup>[21]</sup>.

Among the most important environmental issues that have a great impact on sustainable development in Egypt: population pressure, urban congestion, the deterioration of the specific natural resource base especially agricultural lands, desertification, the misuse of limited water resources and the lack of planning for the sites of the industries causing environmental pollution. In addition, River Nile pollution, cutting down trees, burning forests, earthmoving, building on agricultural lands, ground water salinity and the deterioration of their quality as a result of the increasing their uses and drilling large numbers of wells randomly, as their water are extracted through pumping at high rates, the matter that results in decreasing their levels in a significant way. This matter requires finding solutions to these problems through taking into account the environmental dimensions when establishing the industrial, agricultural and craft projects that have a clear impact on the efficiency of these projects. Thus, the public and private sectors have to do more effective role through paying the costs of the environmental damages

caused by establishing these projects in order to protect and preserve the environment. In addition to other economic means such as imposing taxes, fees, trade restrictions, tariffs and the other means necessary to preserve and protect the environment from pollution (Mohammed Saber, 2012) <sup>[22]</sup>.

As for what relates to the environmental effects to extract metals, Egypt is considered one of the countries rich in mineral wealth of petroleum, gas, diverse metals and others that are considered some of the resources causing pollution to environment as a result of extracting large amounts of them randomly. This leads to wasting a great part of them, and air and environment pollution result from this, as a result of gas emissions and their impact on the atmosphere. This is besides the existence of some industries in Egypt such as Iron and Steel Factory in Helwan and cement and chemical plants, which are considered one of the main causes of environmental pollution in Egypt because of the effects, resulted from the solid and liquid wastes of these factories. Furthermore, the volume of hazardous solid wastes in Egypt has reached to about 70 thousand tons, as they are disposed with industrial wastes without any treatment at all. Also, the consumption of chemical fertilizers has been increased in Egypt more than seven times during the period 1970- 2014.

From this standpoint and because of increasing the severity of the negative environmental impacts on the one hand and increasing the awareness of the importance and seriousness of these environmental effects, Egypt has started to take several measures and legislations on protecting the environment, as law No. (48) Of 1982 has been issued in order to protect the Nile River and watercourses from pollution, but this law was not applied in an effective way. This is beside other measures on the hazardous wastes and how to reduce them. Also, Egypt has determined other controls for the allowed degree of concentration of the wastes of fertilizers and pesticides in drinking water and irrigation water. In addition, restricting the import of pesticides and reducing the used amounts of them in order to avoid the negative impacts of fertilizers on surface and groundwater. This is besides developing a ministry and agencies for the affairs of environment, and finally involving Egypt in the system of mutual cooperation at the regional and international levels and signing several international treaties and conventions in order to face the negative environmental impacts or reduce them. Egypt has participated in the United Nations Conference, about environment and development, held in Brazil in 1991, besides signing Basel convention and the final statement of monitoring the movement of hazardous wastes across the borders in 1989 (Kamal Rozeak, 2012) <sup>[15]</sup>.

#### **Fifth: the Indicators and Measures of Sustainable Development**

The Commission on Sustainable Development of the Department of the Social and Economic Affairs of the United Nations has agreed on a work program, on the indicators of sustainable development, involves the social, economic, environmental and institutional aspects of sustainable development. The aim of the work program of that commission was to reach to indicators of sustainable development commensurate with the national level and characterized by the enough flexibility so that they can be measured and used in other countries of different developmental levels. It also aimed at putting these indicators under the command of decision-makers at the national level. The commission has reached to develop a list of 131 indicators for sustainable development, as countries can choose from them what commensurate and be compatible

with their national priorities. Among the most important of these indicators are the following (UN, Economic & Social Affairs, 2007 and UNDP, 2009) <sup>[32, 33]</sup>:

**1-The Indicator of the United Nations Development Program (UNDP):** it aims at formulating a composite index explains some of the humanitarian aspects of development. It is a multi-dimensional indicator or a Human Development Indicator (IDH). This indicator includes the hope of life, the educational and health level, infrastructure and per capita income in a country. In this indicator, the economic growth is a means and not a goal. Also, this indicator focuses on the idea of human evolution and on the necessity of protecting and renewing the environment for the future of the subsequent generations (Mohammed Adnan Wadee, 2010) <sup>[20]</sup>.

**2-The Indicator of the Organization of Cooperation and Economic Development (OCDE):** this indicator forms the conceptual framework of the development of the indexes of environment. It is an approach followed by other international and governmental organizations and it has been adapted by the commission of sustainable development in order to develop the indicators of sustainable development. In addition, it is called pressure model- state- reply or a matrix of sustainable development elements (Othman Mohamed Ghoneim, Magda Ahmed Abozet, 2004 and Ammar Amary, 2011) <sup>[5, 25]</sup>.

**3- Pressure Indicator:** describes the pressures exerted by the economic and human activities on environment through the inclusion of the social, economic and institutional structures, which are the most representative of the dimensions of sustainability.

**4- Status Indicator:** describes the status of sustainable development, such as the quality of air, water, etc. (Bossel, Hartmut, 1999) <sup>[8]</sup>.

**5- The Indicator:** of Reply or Response shows how human group react in establishing sustainable development through the costs of renewing and protecting the environment, as an example (Abdallah Jamaan Elghamdy, 2007) <sup>[1]</sup>.

Among the most important considerations, that have to be taken into account when preparing the indicators of sustainable development, are that these indicators have to be clear and achievable, the methods used in preparing any indicator have to be clear, the indicators have to be employed accurately and to be acceptable socially and scientifically and that they can be reproduced, measured and predicted easily.

In terms of measuring sustainable development, there are some people see that the idea of sustainable development depends on two indicators. The first indicator is an environmental one and it is called the ecological imprint. The second indicator is a social one and it is called the indicator of sustainable development. The ecological imprint allows measuring the area exploited for development. However, the indicator of social development includes poverty, unemployment, the quality of life, education, population growth, security and social insurance. Social development cannot be achieved without handling those problems. Despite the growing interest to achieve sustainability, the reality of the situation in developing countries does not allow achieving sustainable development due to the aggravation of poverty, illiteracy, unemployment, the high mortality rate and others. Therefore, achieving sustainable development depends on

addressing social issues. The most important of these social issues are employment and unemployment (Baka, Elsharif, Abdelrahman Alayeb, 2008) <sup>[7]</sup>.

#### **Sixth: the Means of Financing Sustainable Development:**

This requires implementing the proposals of the seminar of Earth Summit in 1992 in (Rio de Janeiro) on protecting the global environment, improving the economic, political and social abilities and respecting the state of law and human rights high costs, especially in developing countries. In order to achieve these objectives in developing countries, the other actors in the field of cooperation for development have to participate with all kinds of support and quantity and quality aids. External debt cancellation for developing countries is an essential condition to achieve sustainable development in these countries. With regard to the financial aids provided by developed countries to developing countries in order to implement the programs of sustainable development, it is discovered that these financial aids did not exceed about 0.7% of their annual domestic production which means that they are between 50 to 60 billion dollars. This sum is very limited compared to the recommendations of Earth Summit in 1992 that determined to provide an essential financial subsidy in the short term in order to face the rise in the expenses of sustainable development by about 70 billion annually. This decline may be due to the economic conditions and crises experienced by donor countries (Agenda 21, 1992) <sup>[3]</sup>. The contribution of donor countries in the development of developing countries is subjected to bilateral economic and strategic interests; for example, some countries require providing the subsidy in kind, i.e., purchasing commodities and services from the donor country (restricted subsidy). This is besides providing the conditions of financial subsidy through restricting the developmental projects in developing countries by new green (environmental) conditions that take the standards of protecting environment into account. Although a large part of the finance of sustainable development is granted by the programs of the United Nations (United Nations Development Program, United Nations Environment Program), World Bank remains the main financier of the multilateral financial subsidy in the form of long-term loans. The Global Environment Fund addresses the issues of environment through providing developing countries with the money needed to finance the additional expenses relating to the multilateral agreements about the environment, as those aids take the form of appropriations for investment projects, technical operations and others (Sands, P, 1995) <sup>[30]</sup>.

#### **Among the most important mechanisms proposed to finance sustainable development in developing countries (Agenda 21, 1992) <sup>[3]</sup>:**

- Charging for the financial speculation movements of short-term and swapping pollution rights with financing developmental projects, etc. The revenues of this fee can be directed in the favor of environment aids at a rate of 1.0%, i.e., about 166 billion dollars annually, which is twice the annual amount necessary to eradicate poverty in developing countries according to the figures provided by the United Nations Development Program. This is besides another suggestion to attract additional financial resources such as imposing financial fees of 1% on airline tickets. These suggestions have been declined due to the difficulty of applying them universally, as the implementation of those mechanisms requires an international coordination that cannot be achieved in reality (Asadi, Ali, *et al*, 2008) <sup>[6]</sup>.

- **The proposal by Brazil:** it is represented in establishing a fund from the money of the infractions paid by the developed countries that do not respect their obligations to reduce gas emissions. The resources of this fund will be used in financing the sustainable projects in developing countries, especially in the field of energy.

- **Clean development mechanism:** as developed countries can abandon the share of their rights in pollution in exchange for investment in non-polluting technology in favor of developing countries that do not have the means of obtaining them.

- **The proposal of debt conversion:** the continuation of development in a large number of developing countries depends on getting rid of debt burden. Thus, an international movement aims at alleviating debts has been established, as the member states in Paris Club (creditors) have cancelled a part of the debts of low-income developing countries.

- **Debt in exchange for protecting nature:** other solutions relating to debt convention have been proposed in order to alleviate debt burden in developing countries through the mechanism of (debt in exchange for protecting nature). Also, banks have established a secondary market to sell the debts whose repayment at a price lower than their original value is doubted. So, a non-governmental organization from developed countries can buy these alleviated debts and then waive them in favor of a non-governmental organization in the borrower country. Then, this organization sells the alleviated debts in the local currency to the Central Bank in the borrower country, so that the Central Bank can alleviate the external debts of the country. But the impact of this mechanism remains very weak on the one hand, and this mechanism cannot liquidate all the Third World debt on the other hand. Thus, excessive borrowing represents an essential obstacle when activating sustainable development in the developing countries.

#### **Seventh: the Policies that Have to be taken into Account in order to Activate Sustainable Development in Egypt:**

It is clear from the above that the concept of sustainable development is an attempt of compatibility between the economic and environmental systems in order to achieve a sustainable development without a depletion of the natural resources to meet the requirements of the current generations and maintaining the requirements of future generations. This matter requires integrating the environmental considerations into the economic planning and considering the environmental impacts of the project as an essential part of its feasibility study. This is besides the expense of the environmental costs within the costs of production of the project and its prices. One of the most important policies proposed to reduce the negative environmental effects and the misuse of resources is the necessity to lift the subsidy on some input or production resources and increase the fees on those who cause the environmental pollution. This is besides lifting the subsidy on energy, education, housing, health, water and electricity. This policy needs to provide the appropriate funding sources, which requires determining the priorities and alternatives in order to evaluate the costs and benefits relating to these policies (Ammar Amary, 2011) <sup>[5]</sup>.

Moreover, in order to activate and apply the concept of sustainable development, there are policies that have to be

taken into consideration whether at the macro-economic level, the sector level or at the project level.

With regard to the policies that have to be taken into account at the macro-economic level, they relate to the national accounts system, as this system does not reflect the environmental effects on the national economy so that it can evaluate the effects of the depletion of natural resources on the environment, which requires the necessity of developing certain indicators and criteria reflect these environmental impacts. Thus, the system of national accounts have to include the destruction resulted from the loss of natural resources, as the revenue resulted from the sale of petroleum cannot be considered as a net income because this represents a sale of a part of the capital assets of the society. Furthermore, the income growth or the gross national income that is happened by causing damage to the environment leads to the loss of welfare resulted from this growth with the passage of time. In a nutshell, the national accounts system is still away from the inclusion of capital consumption in order to obtain the net domestic product edited environmentally through estimating the depletion of natural resources and its deduction from the net domestic product. This is besides estimating the monetary value of the pollution air and water and the depletion of soil and groundwater. This matter can be developed in the future for searching for estimates for the impact of the environmental pollution on health and productivity, and for estimating the monetary value of these costs. Some studies refer to that the traditional measures of economic growth which are represented in the growth rates of the gross domestic and national product, have led to the absence of the reality of the actual economic growth and to the obstruction of sustainable development due to not discounting the costs of natural resources depletion, which reach to 50% of the total growth rate in the domestic product.

The net domestic product that is edited environmentally can be obtained through the following equation (Agyeman, Julian & Others, 2002) <sup>[4]</sup>:

The net domestic product that is edited environmentally = the gross domestic product – (the consumption expenditure of fighting pollution + the environmental costs resulted from personal consumption + the environmental effects on health + the environmental effects on productivity).

The sustainable net gross domestic product = the sustainable gross domestic product – the consumption of natural and industrial capital (the estimated value of the depletion of non-renewable natural resources and the costs of the deterioration of renewable environmental resources).

It is worth mentioning that, despite all the efforts exerted by the United Nations Environment Program in cooperation with the World Bank to integrate the environmental considerations into the national accounts clearly as they can be reflected on sustainable development, these efforts did not reach to positive results in this regard. It has been reached to establishing real and tangible accounts that parallels the environmental national accounts in the form of subaccounts systems.

With regard to the policies that have to be taken into account at the sectoral level in order to reduce the negative environmental effects, these policies have been represented in the necessity of following the pricing policies for water, energy, electricity and others. It is known that the base in pricing the rare materials such as water is that the price must be equal to the cost of providing an additional unit of water. But due to the support introduced by some developing countries, including Egypt, on several commodities and

services such as water, the price has been declined significantly and became less than the cost of providing an additional unit of water, which led to the misuse of these resources although they are rare (Agyeman, Julian & Others, 2002) <sup>[4]</sup>. Thus, it is necessary that the prices of such commodities (water and others) have to be raised to the appropriate level that allows preserving them in the future. In addition, working on developing indicators and criteria determine the degree of rapprochement to the limits of the depletion of these resources is a must. For example, the need to the indicator of the competitive price of water, as those who consume a lot will pay, for a cubic meter of water, more than what is paid by those who consume a little in order to rationalize the use of resources as well as applying justice in distribution. Some people see that this pricing policy of water leads to consumption reduction and preserves what is available from water. In addition, the price reflects the marginal costs and therefore the rise in the price after a certain limit will lead to resort to other alternatives such as desalination of sea water. The majority of subsidized prices, in production process, are considered as prices harmful to the environment, which requires imposing additional fees to resist the environmental effects such as imposing a pollution tax equal to the environmental damage resulted from car exhausts and their harmful effects on health through raising the prices of fuel (Asadi, Ali, *et al*, 2008) <sup>[6]</sup>.

It is worth noting that imposing such fees on the productive sectors that cause environment pollution and lifting the subsidy on some commodities such as water, energy and others may lead to significant negative effects whether in security, policy, social or environmental terms. One of the most important of these effects is moving tax burden forward towards consumers directly. Thus the prices of commodities and services would rise on the one hand, and the economic activity in the industry on which the environmental tax is imposed to the degree of deflation will be declined on the other hand. This is besides the increase in unemployment and the lack of job creation on the third hand, which are essential elements in achieving sustainable development. So, setting the priorities to determine the relative weight of all the alternatives and choosing the best among them is a must, as environmental or social gains sometimes override the economic efficiency when costs are increased, which is a very difficult matter for decision-makers. The policy of pricing the natural resources (energy) is not new, as Pigou has addressed it at the beginning of the last century when he pointed out that those who cause pollution shall pay a price for doing that, as environment is not considered a commodity for free for those who use it whether through exploiting its resources or polluting it. In addition, soil is used in agriculture and it is considered a store and a bank of water at the same time, i.e., a portfolio for the capital and thus maintaining and preserving it is a must (Baka, Elsharif, Abdelrahman Alayeb, 2008) <sup>[7]</sup>. On the contrary, economic efficiency can be increased at the expense of the environmental pollution; for example, considering the expense of the environmental pollution resulted from a collision of a ship loaded with petroleum as it is an increase in the gross domestic product by the end of the year due to the creation of more job opportunities in order to clean up pollution. This is besides capital spending on repairing the ship and thus this increase in the gross domestic product is not real compared to the damage of marine environment resulted from this pollution, and all these things are at the expense of sustainable development.

Finally, with regard to the policies that have to be taken into account at the project level in order to reduce the negative environmental effects through integrating the environmental considerations within the feasibility studies of the project and estimating and evaluating the environmental effects from the technological, financial, economic and social perspectives and their importance for the decision of implementing the project in order to guarantee the environmental integrity of the project and not affecting the environment negatively during the period of project's existence. Economists often use the approach of analyzing the relationship between the cost and benefit in order to know if the project is worthy of development or not. In order to integrate the environmental factor into sustainable development, determining the value of the environmental benefits and costs is a must in order to help decision-makers to plan well for sustainable development (Abdallah Jamaan Elghamdy, 2007) <sup>[1]</sup>.

From the above, it is clear that all the countries of the world need a sustainable and balanced development through adopting the principle of prevention is better than cure. This means that sustainability is not an environmental issue only, but it deals with the changes and problems in the agricultural, environmental, economic and social fields as a whole. This matter requires reformulating the current activities and working on integrating them into the existing environment in order to create a sustainable development, but they have to be culturally acceptable, economically possible, environmentally appropriate, politically applicable and socially just. This can be achieved through taking into account the following considerations: the necessity of consuming the resources efficiently and in a fair way, taking the best prices into account, not consuming the renewable resources in a way faster than their ability to renew and depending on the renewable clean energy such as solar energy and others, and the necessity of getting rid of toxic pesticides and the chemical fertilizers that is harmful to the environment, encouraging and supporting the processes of waste recycling and finally adopting the polluter pays principle through enacting deterrent legislations at the local and international levels. Despite the spread and the acceptance of the concept of sustainable development at the global level, there is a clear and continuous contradiction between achieving the growth and development and the environment resulted from the development model, which reforms the main obstacle and the real change that threatens the future of sustainable development. This matter requires a radical change at the level of the prevailing developmental model.

## References

1. Abdallah Jamaan Elghamdy (2007): Sustainable development between the right to using natural resources and the responsibility for the protection of the environment, Kuwait University.
2. Abdelrahman Alhity (2010): Sustainable development in the Arab region, the current status and future challenges, Humanities magazine, No. 38.
3. Agenda 21 (1992): approved by the UNCED at Rio de Janeiro. UN Doc A/CONF. 151/26 (Vols. 1-11). reprinted in Earth Summit '92, United Nations Conference on Environment and Development Rio De Janeiro, Quarrie J. (ed), The Regency Press Corporation, London.
4. Agyeman, Julian & Others (2002): Exploring the Nexus: Bringing Together Sustainability Environmental Justice and Equity, Space & Polity, Vol. 6, No. 1.
5. Ammar Amary (2011): The problem of sustainable development and its dimensions, International Scientific Conference, sustainable development and efficient using of available resources, Faculty of Economic Sciences, Farhat Abbas University, Algeria.
6. Asadi, Ali, *et al* (2008): Poverty Alleviation and Sustainable Development: The Role of Social Capital, Journal of Social Sciences 4 (3).
7. Baka, Elsharif, Abdelrahman Alayeb (2008): work and unemployment as indicators for measuring sustainable development, economic and administrative Research magazine, Faculty of Economic Sciences, University of Baskra, Algeria, No. 4, December
8. Bossel, Hartmut (1999): Indicators for Sustainable Development: Theory, Method, Application, A Report to the Balaton Group, International Institute For Sustainable Development, Manitoba Canada.
9. Dary Nasser Elajemy (2009): Environmental dimensions of sustainable development, Arab Planning Institute, Kuwait.
10. Douglas Mosheat (2000): The principles of sustainable development, the first edition, International House cultural, Cairo.
11. Ezzat Kenawy (2002): Arab food security, the tenth Conference of Agricultural Economists, Egyptian Society of Agricultural Economics, Cairo.
12. Grubb, M (1998): International Emissions Trading Under the Kyoto Protocol: Core Issues in Implementation. RECIEL 2.
13. Harry, Jonathan M (2006): Environmental and Natural Resource Economics: A Contemporary Approach Second Edition.
14. International Labour Office (2010): The promotion of sustainable development to achieve sustainable livelihoods, Geneva, November
15. Kamal Rozeak (2012): Sustainable development in the Arab world through good governance and democracy, Journal of Human Sciences, the third year, No. 37.
16. Lorenz Yaheya Saleh (2013): Sustainable human development in light of economic globalization in developing countries, Ph.D., Faculty of Management and Economics, University of Baghdad, Iraq.
17. Mahmoud Elashram (2010): Sustainable development and food, Arab Unity Studies Center, Beirut, Lebanon.
18. Meadows, D. *et al* (1972): The Limits to Growth: A Report to the Club of Rome's Project on the Predicament of Mankind. New York.
19. Mohammed Abdelbadee (2002): Economics of Environmental Protection, Elameen House, Egypt.
20. Mohammed Adnan Wadee (2010): Economic and Social indicators for sustainable development, Arab Scientific Publishers, Beirut, Lebanon.
21. Mohammed Mahmoud Alimam (2009): Population, Resources, Environment and Development, the Arab encyclopedia of knowledge for sustainable development, the first edition, Beirut.
22. Mohammed Saber (2012): Agriculture cleaner systems for sustainable development, Arab Scientific Publishers, Beirut, Lebanon.
23. Mohammed Safy Yousef (2011): The precautionary principle to the occurrence of environmental damage: A Study in the framework of international law, Arab Dar Elnahda Publishing House, Cairo.
24. Mohammed Saleh Elsheikh (2002): The economic and financial effects of the pollution of the environment and

- means of protection of them, the first edition, Eleshah Press, Alexandria.
25. Othman Mohamed Ghoneim, Magda Ahmed Abozet (2004): Sustainable development, its philosophy, methods of planning and measurement tools, Safaa House for Publishing and Distribution, Amman.
  26. Othman Mohamed Ghoneim, Magda Ahmed Abozet (2009): Sustainable development, the first edition, Safaa House for Publishing and Distribution, Amman.
  27. Pallmearts, M. (1992): "International Environmental Law from Stockholm to Rio: Back to the Future?" *Reciel* Vol. 1, No. 3.
  28. Romano Donato (2004): Environmental Economics and Sustainable Development, Safaa House for Publishing and Distribution, Amman.
  29. Salem Tawfiq Elnajafy, Iyad Bashir Elgalaby (2009): Environment and Sustainable Development, *Elrafdeen Development magazine*, number 73, Iraq.
  30. Sands, P (1995): International Law in the Field of Sustainable Development: Emerging Legal Principles, in Lang, W. (ed.) Sustainable Development and International Law. London/ Dordrecht/Boston: Graham & Trotman/ Martinus Nijhoff.
  31. Tarek Abdelkarim Salama (2010): International protection of the environment from global warming, the first edition, Beirut.
  32. UN, Economic & Social Affairs (2007): Indicators of Sustainable Development: Guidelines and Methodologies, 3rd, NEE YORK.
  33. United Nations Development Programme (UNDP), Human Development Report, 2009, New York: Oxford University Press.
  34. WCED (1987) (World Commission on Environment and Development), Our Common Future, Oxford: Oxford University Press.
  35. Zimmerman, M. (1987): Deep Ecology and Environmental Ethics. *Environmental Ethics*. 9.