

## **The History of Sustainable Management – A Literature Review**

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### **Abstract**

Sustainable development has become part of our contemporary life. The concept has been incorporated in many UN declarations during the last years. But we use to forget the birth and the evolution of the sustainable management theory and practice.

This paper aims to analyze the meanings of the sustainable management process and its limitations, making also a quick review of the evolution of this phenomenon.

**Keywords:** sustainable development, sustainable management, responsibility, eco-economics, economic development, environment, ecosystem, present generation, future generation, limits of growth.

### **Introduction**

Sustainable development isn't a new concept, but a recently way to express a very old ethics which involve human relationships with the environment and the responsibility of the present generation to future generation. Sustainable development has been defined in many ways. Sustainable development is designed by some authors as maintaining

the opportunities and living conditions for the next generation, especially the renewable natural resources, at least at the level of the ones existing nowadays for current generations and to reduce the environmental factors affected by pollution. (Avram, 2004)

Other authors considered sustainability as a manner to represent the economic efficiency in the management of services provided, based on the natural resources endowment. (Kennedy and Thirlwall, 1972)

The most frequently quoted definition of sustainable development is coming from *Our Common Future*, also known as the Brundtland Report (1987): "Sustainable development is the development that meets the needs of the present without compromising the ability of the 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 an overriding priority should be given;

- the idea of **limitations** imposed by the state of technology and social organization on the environment's ability to meet the present and future needs."

All the definitions require that human beings must see the world as a system that connects simultaneously, space and time.

When we think at the whole world as a system over space, we must understand that air pollution from North America affects the air quality all over the world, and that fertilizers/pesticides used in Asia could destroy the ecosystem of the animals' living in the Seas and Oceans.

When we think at the world as a system over time, we start to realize that the decisions taking by our grandparents about how to farm the land continue to affect agricultural practice today. At the same time, the economic policies we endorse today will have an impact on urban poverty when our children will be adults.

The quality of life is a system, too. It's good to be physically healthy, but how is it if we are poor and don't have access to education? It's good to have a secure income, but what happens if the air in our part of the world is unclean? (International Institute for Sustainable Development, <https://www.iisd.org/sd/>, accessed at 30 January 2015)

The concept of sustainable development is rooted in this sort of systems thinking, a way which helps us to understand ourselves and our world.

The growing concerns for sustainable development are related nowadays to a complex of problems facing humanity. These are:

- poverty in the middle of abundance;
- the uncontrolled expansion of urbanization;
- the degradation of the environment;
- the insecurity of employment;
- removing the traditional values of different cultures;
- inflation, unemployment, monetary, economic and social

crisis.

The problems we face are complex and serious. Sustainable development means a better quality of life for everyone, now and for generations to come. It offers a vision of progress that integrates immediate and longer-term objectives, local and global action, and regards social, economic and environmental issues as inseparable and interdependent components of the human progress.

(<http://ec.europa.eu/environment/eussd/>, accessed at 30 January 2015)

### **The evolution of the “Sustainable Development” concept and practice**

During the late nineteenth and early twentieth century, the industrial revolution swept across the United States and Western Europe. Those countries that had undergone industrialization and developed a strong manufacturing base were considered “developed countries”. While industrialization contributed to significant economic gains for developed countries, pollution associated with industrialization, such as carbon dioxide and mercury emissions, caused severe negative consequences for the world’s air, soil and water quality.

Based on the growing concerns of the impacts of pollution, various environmental movements formed and began to gain strength in many industrialized countries during the 1960s and 1970s. National governments began to elevate environmental issues on their agendas. There was also a wide recognition of the international nature of pollution, which led to a desire to address issues of the environment and development at an international platform. The United Nations spearheaded this effort and Sweden agreed to host the first international conference on the environment in Stockholm (1972).

The concept “sustainable development” was born in 1972 as an answer to the new coming environmental problems and as a reaction to the natural resources crisis, especially the energy crisis.

The United Nations Conference on the Human Environment in Stockholm has considered the need for a common outlook and for common principles to inspire and guide the peoples of the world in the preservation and enhancement of human environment. The Stockholm Declaration on the Human Environment is the moment when it was recognized that human activities contribute to the environment damage, in that way threatening the future of the planet. (Schulz-Walden, 2013).

The Stockholm Conference was widely attended, with one hundred thirteen countries represented. The U. N. Environment Programme (UNEP) was founded at the Stockholm Conference; two important documents resulted from that meeting: the Stockholm Declaration on the Human Environment and the Stockholm Action Plan. The Stockholm Declaration on the Human Environment helped shape principles of sustainable development that would be further elaborated at the World Commission on Environment and Development, attempting to strike a balance between environmental protection and development.

A few years later (1983) started the activity of the World Commission on Environment and Development (WCED) which reexamines the issues and problems of global environment and development to the year 2000 and beyond, in order to formulate realistic proposals for resolving these issues. The WCED was created to address growing concern about the accelerating deterioration of the human environment and natural resources and the consequences of that deterioration for the economic and social development.

The Commission established eight priority areas at its first meeting:

- Perspectives on Population, Environment and Sustainable Development;
- Energy: Environment and Development;
- Industry: Environment and Development;
- Food Security, Agriculture, Forestry, Environment and Development;
- Human Settlements: Environment and Development;

- International Economic Relations: Environment and Development;
- Decision Support Systems for Environmental Management;
- International Cooperation (from the World Commission on Environment and Development's Inaugural Meeting and Work plan, available at: <http://www.un-documents.net/ocf-a2.htm#V>, accessed at 28 January 2015).

The culminating report of the Commission that would shape the future of environment and development policy worldwide was entitled *Our Common Future* (as we stipulated earlier). Although the report has been criticized, it was also considered a landmark event that raised the principle of “sustainable development” to a center issue in the international environment. The report outlined the concept of sustainable development that involved both: “meeting the needs of the present without compromising the ability of future generations to meet their own needs” and “meeting the basic needs of all and extending to all the opportunity to fulfill their aspirations for a better life.”

Among other findings, the report illustrated the troubling implications of population growth and resource use and its links to poverty. The Commission has underlined the threat posed by disappearing species and threatened ecosystems and provided recommendations for the international community to cooperate for species protection. With respect to energy, the Commission stated that the energy policies of the developed countries could not be repeated in the developing world without threatening the entire planet. The Commission acknowledged the needs of developing countries, as articulated earlier by the G-77, to have “common but differentiated responsibilities” recognized. While the whole world would have to shift its energy track, the report showed that developing countries should be given “primary” energy usage, while the developed world should severely curb energy use. It recognized the critical role of energy efficiency and renewable energy sources in achieving a more sustainable path.

Addressing industry, the paper noted the importance of technology transfer from developed to developing countries, and stressed the need for more effective control of trade in hazardous chemicals. The Commission addressed the trend of urbanization and provided recommendations for governments to cope with increasing urban populations. Finally, it focused on improved international

cooperation and institutional reforms. Sustainable development requires meeting the basic needs of all and extending to all the opportunity to satisfy their aspirations for a better life.

In 1985 was discovered the hole in the ozone layer above the Antarctic and then, in the same year, in Vienna took place the Convention for the Protection of the Ozone Layer, often called a framework convention, because it served as a framework for the efforts to protect the globe's ozone layer. The Vienna Convention was adopted in 1985 and entered into force on 22 September 1988. The Vienna Convention did not require countries to take concrete actions to control ozone depleting substances.

([http://ozone.unep.org/new\\_site/en/vienna\\_convention.php](http://ozone.unep.org/new_site/en/vienna_convention.php), accessed at 28 January 2015)

The idea of sustainable development grew from numerous environmental movements in earlier decades. In 1992, at the United Nations Conference on Environment and Development (“UNCED” or “The Earth Summit”), the concept of sustainable development was the organizing principle for much of the negotiations process and its outcomes. Summits such as the Earth Summit in Rio, Brazil, were major international meetings to bring sustainable development to the mainstream. The countries adopted here Agenda 21 - a blueprint to rethink economic growth, advance social equity and ensure environmental protection. Agenda 21 was a plan of action and a recommendation that all countries should produce national sustainable development strategies. At the same time, the Convention on Biological Diversity (CBD) was born. 192 countries and the EU were Parties to that convention.

In the 1992-2002 periods, there has been little change in poverty levels, inequality or sustainable development, as the World Development Movement notes.

The Human Development Report (1996) was principally addressed to what countries can do for themselves. It made important recommendation and synthesizes four essential components of the sustainable development paradigm:

- **productivity:** the population must improve their productivity and have to participate entirely at the revenues generation process, economic growth being a subsystem of the human development models;
- **equity:** population must have equal access to options;

- **durability:** the access to options must be assured not only for the present generations, but also for the future ones.

- **participation:** people must participate entirely at the decisions and processes which may change their lives.

All the countries must strive to improve the nature and quality of their economic growth. In many countries, the immediate needs also include increase in economic growth. Certainly, policies must be tailored to national circumstances. The global community may also help the countries to implement their own strategies of sustainable human development.

([http://hdr.undp.org/sites/default/files/reports/257/hdr\\_1996\\_en\\_complete\\_nostats.pdf](http://hdr.undp.org/sites/default/files/reports/257/hdr_1996_en_complete_nostats.pdf), accessed at 28 January 2015)

Sustainable development became an objective of the European Union in 1997, when it was included in the Maastricht Treaty.

The Kyoto Protocol is an international agreement linked to the United Nations Framework Convention on Climate Change, which commits its Parties by setting internationally binding emission reduction targets. The Kyoto Protocol was adopted in Kyoto, Japan, on 11 December 1997 and entered into force on 16 February 2005. Recognizing that developed countries are principally responsible for the current high levels of CO<sub>2</sub> emissions in the atmosphere as a result of more than 150 years of industrial activity, the Protocol places a heavier burden on developed nations under the principle of "common but differentiated responsibilities."

([http://unfccc.int/kyoto\\_protocol/items/2830.php](http://unfccc.int/kyoto_protocol/items/2830.php), accessed at 10 February 2015)

In 2001, at the Summit in Gothenburg focused upon EU enlargement, sustainable development, economic growth and structural reform issues, was adopted the Sustainable Development Strategy for the EU, whom has been added an external dimension at the Barcelona Summit, in 2002. (<http://www.globalissues.org/issue/367/sustainable-development>, accessed at 30 January 2015)

In 2012 took place the UN Conference on Sustainable Development, with aims to get bold agreements to address things like poverty, sustainable development, decent jobs etc.

In the international literature occurred, in the recent years, numerous works regarding the global issues facing the human civilization in the early XXI century. The most famous works are written by Lester Brown, environmental analyst, founder of the

Worldwatch Institute and founder/president of the Earth Policy Institute, a nonprofit research organization. Brown is the author or co-author of over 50 books on global environmental issues and his works have been translated into more than forty languages. One of his most recent books is “Full Planet, Empty Plates: The New Geopolitics of Food Scarcity”, which was released in September 2012.

Among other ideas, the author underlines that the crisis which faces nowadays the international relationships between the countries and the world economy presents great hazards and seems to worsen (a testimony are the terrorist attacks of 11 September 2001). It is considered that the gap which separates the rich from the poor countries is an essential element of these crises and often is so huge that it seems people use to live in different worlds. Another source that gives rise to the current global crisis is the huge fuel, energy and raw material consumption, with their tendency to collapse.

Because of the unlimited economic development, we assist at the process called “demographic explosion” and at an unbalanced geographical distribution of the population in relationship with the available resources of the planet; that’s why are needed efforts to eliminate poverty, to lift the level of culture, to develop the ability of human collectivities in improving the efficient use of the available resources.

In terms of species and ecosystems, it is necessary to maintain the genetic diversity and to propose rainforest protection programs.

The industry development must be done by promoting more effective and less polluting new technologies, underlining the need for an increased control on toxic chemicals used in both – industry and agriculture, as well as on discharges of hazardous waste for the environment.

Regarding human settlements, it is necessary to ensure a balanced development between the urban and rural environment, the control of urban development and the avoidance of overcrowding, supporting the efforts to eliminate underdevelopment.

Every generation uses up some part of the earths original endowment of non-renewable resources. There is no alternative. Maybe eventually if our economy is based entirely on renewable. What should each generation give back in change of depleted resources if it wishes to abide by the ethic of sustainability? It should add to the social capital in



other forms, enough to maintain the aggregate social capital intact. In other words, it should replace the used-up resources with other assets of equal value. (Solow, 1993)

### **Sustainable Development in the context of Economic Development**

The huge development registered at the moment of entering the world in the “industrial era” with more than 200 years ago, started from the image of the unlimited size of our planet and from its ability to insure indefinitely non-renewable mineral resources, unlimited living conditions and welfare for a continuously expanding population, and also the ability of the planet to take over again and again (forever) the pollutant’s arising from the industrial and no industrial activities.

The imminent exhaustion of mineral resources such as oil, copper ores or of precious metals, deforestation of huge areas of the forests, the disappearance of hundreds of animal and plant species, the acid rain, the ozone layer depletion and the climate changes are just a few elements which determines a number of scientists to draw more frequent alarm signals about the poor state of the actual natural environment. That’s the reason why rapid changes are necessary regarding our attitude towards the environment and the development issue.

The top ten industrial countries of the world, with 10% of the world’s population, but with economies oriented exaggerated on consumption uses more than 60% of the Earth resources, producing 75% from the solid waste of the world. Even if in 1970, the world’s rich countries agreed to give 0.7% of their gross national income as official international development aid annually, and, since that time, billions have certainly been given each year, rarely have the rich nations actually met their promised target. That means, more exactly, the environmentalists (and the population) can not agree with this kind of development. The planet has a lack of resources for all its inhabitants. In this respect, an illustrative example was given by J. Chirac at the Barcelona Summit (2002), showing that it is completely unfair that the first three richest families from all around the world holds each fortunes over 50 billion dollars, while the first 150 families have their income equal with those of the poorest half of the worlds population.

Increasingly, the industrial society, through the wrong priority of consumption at any price, exploited indiscriminately the non-renewable

resources. She destroyed huge surfaces of fertile soils. In many places, it put in danger life through air, water and soil pollution.

This situation can not last. A balanced society must have other priorities, to provide an adequate standard of living for all its members, under the conditions of decreasing resource consumption, keeping a high quality of the environment and also, keeping the conditions of maintaining life for the future generations.

The main element of sustainable development is the interaction between population, economic progress and the potential of natural resources. It should be designed such an economic environment which one, through its inputs and outputs, is in dynamic compatibility with the natural environment, and also with the needs of the future generations.

The overall objective of sustainable development is to find the optimal interaction and compatibility of four systems: economic, human, environmental and technological, in a dynamic and flexible process. In other words, for the system to be operational it is necessary to apply this support and viability in all the subsystems forming the four dimensions of sustainability, starting with energy, agriculture, industry, to investments, human settlements and biodiversity.

Sustainability as a world system refers to the careful use of resources – and this does not just refer to mineral and renewable resources, but to all, local, regional and global ecosystems, and, in times of global warming, to Planet Earth itself. The Limits to Growth did not just give birth to the discipline of sustainability research, but also ushered a new era of world domestic policy. A “sustainable development” towards reconciling economy and ecology became part of the United Nations agenda. Specific UN programmes such as the Framework Convention on Climate Change and Agenda 21 (both of 1992), the Kyoto Protocol (1997) or the Millennium Development Goals (2000) formulate requirements for achieving sustainable development.

The minimum requirements to achieve a sustainable development include:

- resizing the economic growth, emphasizing the qualitative aspect of production;
- eliminating poverty in terms of satisfying the essential human needs: job, food, energy, water, home, health, assuring an acceptable level of population growth;

-conservation and enhancement of natural resources, maintaining ecosystems; the supervision of the impact of economic growth on the environment;

- technological reorientation and the control of its risks;  
- increasing the governments involvement in the making decision process regarding environment and, finally, regarding the whole economy.

The multiple aspects of sustainable development, starting with economic growth and employment, as far as the gender equality, environment protection and individual freedom, must be treated in an integrating vision, with focus upon the enlarging of the manifestation possibilities of the people's choice.

The essential components of a sustainable development strategy are:

- stabilizing the population, ensuring a decent living for all the people;  
- maintaining the natural fertility of soils;  
- protecting the biological systems of the planet;  
- reducing the dependence of the global economy on oil and fossil fuels;  
- the development of the alternative renewable energy;  
- the recycling of materials, diminishing the consume of mineral resources and of pollution.

All these efforts have led to a new concept and a new science: ecological economics.

### **Ecological economics and ecological management**

The human race is entirely dependent on the ecosystems that feed it, regulate the environment, recycle the wastes and provide all the peoples need to survive and thrive. Over the past 100 years, humans have changed ecosystems more rapidly and extensively than in any comparable period in the history. There have been net gains in human well-being and economic development, but these gains have been achieved at growing cost in the form of environmental degradation, loss of biodiversity and depletion of natural capital.

Many options exist to reverse ecosystem degradation, but an understanding of the ecological systems and science is just a starting point. Understanding how the science interacts with policies, institutions and practices, is vital to achieve real change.

**Ecological economics** (called also eco-economics) refers to both, a transdisciplinary and interdisciplinary field of academic research, that aims to address the interdependence and co-evolution of human economies and natural ecosystems, over time and space. It is different from environmental economics, which is the mainstream economic analysis of the environment, by its treatment of the economy as a subsystem of the ecosystem and its emphasis upon preserving natural capital. One survey of German economists found that ecological and environmental economics are different schools of economic thought, with ecological economists emphasizing strong sustainability and rejecting the proposition that natural capital can be substituted by human-made capital (Daly and Farley, 2010).

Ecological economics was founded as a modern movement in the works of various European and American academics. The related field of green economics is, in general, a more politically applied form of the subject

According to the economist Malte Faber (2008), ecological economics is defined by its focus on nature, justice and time. Issues of intergenerational equity, irreversibility of environmental change, uncertainty of long-term outcomes and sustainable development guide ecological economic analysis and valuation. Ecological economists have questioned fundamental mainstream economic approaches such as cost-benefit analysis and the separability of economic values from scientific research, contending that economics is unavoidably normative rather than positive (empirical). Positional analysis, which attempts to incorporate time and justice issues, is proposed as an alternative. Ecological economics shares many of its perspectives with feminist economics, including the focus on sustainability, nature, justice and care values.

The new concept “eco-economics” starts from a set of principles of sustainable development, like: living within environmental limits; achieving a sustainable economy; promoting good governance; using sound science responsibly; ensuring a strong, healthy and just society.

The targets for all the governments must be a significantly reduce of waste, water usage and carbon emissions, together with making our environment more sustainable. To reach these targets is possible only if we can maintain the equilibrium of our nature. Natural or environmental equilibrium means to assure that:

- the rate of fertility loss of the soil does not exceed the rate at which new soil is formed;
- deforestation should not exceed the rate of reforestation;
- the fishing capacity do not exceed the regenerative capacity of fish stocks;
- the reduce of habitats should not reach below the required limit necessary to preserve the animal and vegetables species, preserving biodiversity on the planet;
- carbon dioxide emissions should not exceed the natural ability of the Planet to retain carbon;
- the elimination of wastage of raw materials, fuels and energy, are done by using clean technologies.

It is an urgent objective to develop new forms of clean energy, like: wind and solar energy, use of hydrogen, fission and fusion energy, high temperature geothermal energy, biomass etc. The interest for alternative energy gets the attention of the specialists in international environment problems. They are concerning in assuring the energetic resources, because of the price of oil barrel which is doubled in the last decade. The frequent problems faced by climatic changes - influenced by pollution - but also the opportunities offered by the alternative energies are new economic and social development directions. That reality changes this field into a domain able to bring local, regional and international benefits, if it will be real extended.

To attract the whole society into the eco-economics field depends on the ability and capacity of the individuals involved to adopt and implement programs, strategies and plans based on conceptual models which are characteristics for ecology and sustainability. Such a model is those which cover the use of energetic resources, within this context. (Ardelean and Maior, 2000)

Because the transition to such an economy means to change thinking and ways to operate upon the environment, to maintain the human impact in the stability field of ecological systems, results the necessity to guide the peoples into the direction of the future changes. It is necessary to change the attitudes and practices of each individual, which means not only an efficient use of the resources, but also the changing of economic mechanisms in each country and over the world, with the purpose of implementing the global transition into the direction of a real sustainable development model.

To reach a dynamic and continuous equilibrium between the available resources and the human needs - social and ecological - by using a policy able to stimulate de human creativity in finding solution to the dangerous problems which concern our society: pollution, overpopulation, starvation, the need for houses, the exhaustion of some raw materials and energy resources and so on, in the last years, because of the increasing of the consume, a new concept has been often used: "ecological management". (Dobre, 1999)

Ecology is defined as the relationship between organisms and their environment. In terms of human beings, ecology also entails the interaction between human groups and their social and physical environments. Seeing that humans are organisms, even though they are not given considerable attention in general ecology and biodiversity dialogue, ecological management should incorporate programmes which focus on the wellbeing of humans, other animals and their environment, along with their inter-linked relationships. (<http://cnirdregional.org/cnird/cnird-projects/sustainable-ecological-management/>, accessed on 10 February, 2015)

When the term "ecological" is used, it often describes a body or process which is beneficial to the environment, or results in minimum damage to the environment. Ecological management can be defined as the act of incorporating personnel to effectively and efficiently achieve desired objectives pertaining to the relationship between organisms and the natural environment, in a manner that is beneficial or causes minimum damage to the environment.

Environmental management and sustainability is a multidisciplinary field which focuses on finding solutions to the world's most pressing environmental problems. (Held, 2004)

If the term "sustainable" is incorporated into "ecological management", that is: "sustainable ecological management"; it can be defined as effectively managing ecological systems in a manner which allows resilience and maximum benefit to organisms with little to no damage inflicted on these ecosystems. In light of this, programmes in this portfolio will incorporate all the above principles for the development and benefit of organisms (including humans) and the environment.

Sustainable environmental management proposes solutions to overcome the current environment crisis, through:

- monitoring key pollutants and pollution factors;
- implementing measures to prevent pollution, environmental degradation, evaluating the costs of prevention and organizing the performance of these activities;
- evaluating the environmental damages which results from the economic activities;
- estimating the costs needed for the rehabilitation of the degraded areas, as well as those for environmental protection;
- promoting clean and green industries/technologies whose use has to be done in harmony with the nature, by the principle of sustainable development;
- formulating effective decisions regarding environmental management and natural resources, the harmonization of the environmental with the economic requirements.

The final objectives of environmental management must be:

1. To maximize the potential of humans to generate sustainable income with minimal cost to their natural environment, with emphasis placed on persons in rural communities;
2. To foster a positive mutual understanding between humans and the surrounding ecosystems, effectively managing and conserving these ecosystems;
3. To promote awareness and implement programmes as it relates to sustainable land management, to ensure the strategic use of the available land resources without compromising the health of the ecosystems;
4. To ensure youth development in sustainable ecological management, that means to assure a greater appreciation of the environment by the young generation.

### **Limits of sustainable development**

The concept of sustainable development has emerged and become a globally necessity in terms of the systematic degradation of the natural conditions, as a result of the demographic explosion and economic development in the last two centuries.

It is over 20 years since Agenda 21 was adopted in Rio de Janeiro and a huge number of countries have now espoused this code to use sustainable development as a mean of avoiding an ecological catastrophe.

“Living within environmental limits” is one of the five principles of sustainable development. But the practical meaning of this principle and our methods to achieve it has not yet been articulated clearly. It is easy to talk about environmental limits, and many of us accept that such limits must exist. But how do we recognize them? What can we do to prevent those limits being expanding?

With all our desire to change the current status quo, we must understand that of this road of sustainable development there are limits imposed by (Csorba, 2014):

- the technological level we have reached till nowadays, pollution accompanying effectively and totally the business practice;
- the strict calculation of the economic efficiency, while we continue to use classical technologies, which are cheaper than the sustainable one;
- there are people who do still not have decent minimum living conditions and who need to be helped to achieve that decent minimum. That means additional resource consumption, possible new natural imbalances, pollution etc.

It doesn't exist “totally clean technology”, but only less polluting technologies, which mean to continue pollution in all its forms, affecting all the environmental factors.

It is impossible to give up totally the use of fertilizers and pesticides taking into account the growing demand for food for a population which increases every year. It is not possible to give up the fast and secure transport by land, water and air, which requires fuel generating pollution.

The limits of sustainable development are coming also from the international un-honored support of the developed countries in the direction of the developing states in areas such as providing the population with drinking water supply, the development of agricultural production, ensuring the minimum need of electricity, and so on.

However than, the radioactive waste that we have stored on the ocean floor and in drilled areas in the earth's crust are problems which must be solved by the future generation, expecting from them concern, money, time, work in our account.

In 1972, a team of scientists at the Massachusetts Institute of Technology, Donella H. Meadows, Dennis L. Meadows, Jorgen Randers and William W. Behrens III produced the World3 model to simulate the relations between world population, industrialization,



pollution, food production and resource depletion. The book “Limits to Growth” provided computer generated models of what might happen to the world, to our society, invaded by natural disasters and economic crisis; this are just two of the many situations that require us to build a more resilient society.

He insists that what we need to do is to adjust our lifestyles with the reduction of resources. Therefore, the word resilience has apparently become the next buzzword, replacing sustainable government, at least for some parts of the world.

Meadows define resilience as: “the ability to absorb a shock and quickly regain the ability to perform essential functions”. While sustainable development assumes that order exists and the current system works, resilience assumes the existence of chaos where the current system does not work. There is no one universally accepted way of defining the word “resilience” but in the simplest way of defining it, a “resilient society” would be a society that can survive a crisis and function again, maybe not as it was before the crisis, but enough to sustain the life of the society.

Resilience is worth promoting, so that the next generation has a better chance to survive because, as argued by Meadows, a resilient system will eventually be sustainable. It is now up to the society to act, and we do not need to wait for the rest of the world to take the lead.

As Meadows states: “There are global problems like climate change that require global actions, and there are universal problems that can be dealt with locally.” Identifying and acting on the universal problems that we can deal with locally would be a good starting point. We can’t forget that our society already possesses a self-supporting mechanism, which if developed further will enable us to go on after crisis or chaos. “If this practice can be applied to the bigger picture of development and resource management and is adapted to the government’s development policy, we might have a chance to take a short breath before continuing to worry about the future of our children”, said the author.

The author maintains the term “sustainable development”, with the assumption that it is no longer available the tendency that the rich countries can continue to live as they are, while the poor countries strive to catch up with minimum risks for the future. This is a perfect example of how a developing country is striving to reach the level of developed countries, a feature of sustainable development.

(<http://www.thejakartapost.com/news/2012/12/07/limits-growth-sustainable-development-or-resilience.html#sthash.WwIHUug8.dpuf>)

### **Conclusion**

Sustainability is achievable only on a global scale and cannot be regionalized or isolated. That demonstrates the need to move to a new way of thinking, to show the humanity its real place in the natural environment and to highlights the importance of the global environmental stability.

Because of that reason, a huge change in the sustainable development paradigm is needed. The strategic nucleus of these must be the conservation of ecosystems, especially forests, and the partial reconstruction of destroyed ecosystems, as well as an understanding of the humanity's real place in the natural environment. The understanding of this issue, coming from the population and the "environmentally" target groups may be demonstrated through:

- A positive behavior change, evidenced through increased support and participation of/at environmental activities;
- The implementation of projects which serve to protect surrounding ecosystems within their respective communities;
- To sustain the implementation of Eco-friendly small businesses.

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