

# HUMAN CAPITAL AND EDUCATION FOR SUSTAINABLE DEVELOPMENT IN A GLOBAL WORLD

Cătălin Chiriac

“Alexandru Ioan Cuza” University of Iași

catalinchiriac03@gmail.com

**Abstract:** *The world continues to face various critical challenges such as: human-induced climate change, the rapid depletion of natural resources, the loss of biodiversity, increased poverty, the dependency of our economic systems on continuous growth in consumerism and so forth. Sustainable economic development focuses on the development of the economic infrastructure, in which the efficient management of our natural and human resources is crucially important. This paper presents on one hand the main steps made for creating, defining and applying the principles of sustainable development and on the other hand, it tries to highlight the role of education seen here as a powerful factor in modeling our most important resource: human capital.*

**Keywords:** sustainable development, human capital, education, European Union

**JEL Classification:** A13, O15, Q56

## 1. INTRODUCTION

There is a direct line between economic development and environment that causes changes to the natural environment first through the utilization of natural resources and secondly through pollution and the discharge of waste into the environment, as result of human activity. The changes (some of them irreversible) of the ecological balance equally has drawn the attention of scientists, politicians and society in general, who established the necessity to integrate all the efforts in the line of preventing and removing the consequences of environmental pollution, together with a rationalization of the resource consumption. Therefore, the concept of sustainable development emerges as a reaction to the environmental threats which bring serious hazards in regard to the human wellbeing. Because the destruction of the environment could affect our existence to its deepest roots, sustainable development is forced to handle the problem of *non-declining per capita utility* (Neumayer, 1999) through a complex approach who includes economic, social, political and ecological aspects, promoting harmonious linkages between economic development, social equity, efficient usage of the natural resources and the environmental preservation.

The term sustainable development becomes common language for economists, sociologists, environmentalists, philosophers and politicians, being thus a real presence in the academic world as well as in politics; unfortunately, since a few decades ago, the idea has been trapped in a theoretical world and its practicality being enhanced only recently.

Therefore, the concept of sustainable development tends to lie in the ‘three spheres’ (Little and Green, 2009) of environment, society and economy, and all the issues such as climate change, rapid depletion of natural resources, population growth and consequently the risk of increasing poverty, involve two or more of these spheres.

This paper will present a brief history regarding the emergence of sustainable development along with the most important moments in defining and applying the concept’s objectives and in the second part, will try to argue why education, through its ability to form human capital, is the best way of moving society to a sustainable future.

## 1. THE MALTHUSIAN NIGHTMARE

The debates regarding environmental issues and human wellbeing has marked the economic philosophy for almost two centuries, beginning with Thomas Robert Malthus, a first line representative of classic economists. In his *Essay on the Principle of Population*, he drew the attention to the fact that ‘the population, when unchecked, increases in a geometrical ratio and subsistence for man in an arithmetical ratio’ (Rogers, 2008, p. 20), and from this perspective, he pointed out that the power of population is indefinitely greater than the power of the earth to produce subsistence for man. With this assumptions, Malthus rang the ‘alarm bells’ for the first time and *cut loose* to a great debate which has concerned the minds of man for almost two hundred years, known today as the *Malthusian catastrophe* or *nightmare*. In the same way, through the voice of David Ricardo, also a classical economist appears the idea that ‘economic growth must come to an end, sooner or later, due to scarcity of natural resources’ (Stoica, 2005, p. 8).

In fact, technological advancement and industrialization of agriculture have improved farmers techniques, thereby ‘production has increased much more rapidly than population, so much so that in real terms, the price of food is much lower today than it was two hundred years ago’ (Baumol, Litan, Schramm, 2007, p. 20), proving the limits of traditional Malthusian theory. However, the debates about this theory has continued through time, with many critics wondering how it is possible that with an increase in population size up to six billion, the humankind still manages to feed itself.

The next Malthusian moment is represented by the ideas postulated by the Club of Rome. The results of the researches made by The Massachusetts Institute of Technology (MIT), published in

Meadows's 'Limits to Growth' in 1972 had such a big impact that shooked the very foundations of the optimistic views, forcing the humankind to be aware that the problems given by economic growth are inseparable from those of environmental pollution, population boom and the resource depletion (Pohoățã, 2003). According to this study, 'population and industrial capital will continue to grow exponentially, which leads to a similar growth in pollution and in demand for food and non-renewable resources' (Cole, 2007, p. 241). Meadows argues that given the limited stock of non-renewable resources and the non-declining demand for these could drive humanity to collapse into the near future. Fortunately, as the time passed, 'most if not all of the Club of Rome's predictions for the next 30 years were not borne out' (Rogers, Jalal and Boyd, 2008, p. 20).

Last but not least, Lester Brown is shown to be another important representative of the Malthusian theory. In 1974, Brown founded the World Watch Institute (the first research institute devoted to the analysis of global environmental issues) and later on, in 2001, the Earth Policy Institute, a nonprofit research organization. As Brown mentions, 'both of them are presenting facts regarding the global use of natural resources and also presenting viable alternatives for our consumption trends' (Brown, 2006, p. 17). He is one of the world's most widely published authors being one of the mainstream environmentalists, especially due to his book *Plan B: Rescuing a Planet under Stress and a Civilization in Trouble*, published in 2003, which is considered to have almost the same impact as the Club of Rome's report.

Of course, many other names could find a place in this short review of the Malthusians, but it is neither the place nor the purpose to offer an exhaustive description of them. Important for us is the way they managed to provoke society to reflect even deeper on the dangers that may occur if current consumption trends are maintained and if we do nothing to protect what we have.

## **2. AN INTERNATIONAL CONCERN FOR GLOBAL PROBLEMS AND THE EMERGECE OF SUSTAINABLE DEVELOPMENT**

Beginning with the fact that all human activities affect the ecological balance, international community has decided to handle the environmental problems by taking common actions at a global scale, driven from the fact that, on the one hand the level of pollution and the imminent depletion of the natural resources do not account for borders and on the other hand, that the gaps between industrialized countries and the undeveloped states are increasingly profound.

Therefore, in 1972, in Stockholm, Sweden took place the International Conference on the Human Environment. It was the first major conference on international environmental and development issues. The meeting agreed upon a Declaration which contained 26 principles concerning the environment and human development: an Action Plan for Human Environment with

three major components (The global environmental assessment programme – Earthwatch, Environmental management activities and International measures to support the national and international actions of assessment and management) (Damian, 2007, p. 5). Another achievement of the Stockholm Conference was the creation of the United Nations Environmental Program (UNEP) that had the mission to ‘provide the leadership and encourage partnership in carrying for the environment by inspiring, informing, and enabling nations and peoples to improve their quality of life without compromising that of future generations’ (UNEP Mission). However, the anticipated impact of the Stockholm Conference was less than expected, especially because in some countries environmental protection and the need for development represented two competing commitments, therefore they were treated separately.

In 1983, the UN General Assembly created the World Commission on Environment and Development which was later known as the Brundtland Commission, named after its Chairman, Gro Harlem Brundtland, then Prime Minister of Norway and later head of the World Health Organization. Four years later, the Commission published the Brundtland Report, entitled *Our Common Future*. The report starts from what had been achieved at Stockholm and provides the most politically significant of all definitions of *sustainable development*: ‘sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs’ (Our Common Future, 1987, p. 24). Albert Bartlett argues in an article regarding sustainable growth and population increase, published in 2006, that this definition, coupled with the statement of the need to “sustain human progress into the distant future”, is crucial for an understanding of the term sustainable development. Unfortunately, says Bartlett, ‘the definition gives no hint regarding the courses of action that could be followed to meet the needs of the present, but which, in doing so, would not limit the ability of generations, throughout the distant future, to meet their own needs’ (Bartlett, 2006, p. 21).

Despite all the critics and the controversies formed around the report, the concept of sustainable development emerged, defining an important moment in the human confrontation with poverty and environmental problems.

The Brundtland Report opened a way for the creation of the Agenda 21 and the principles of the Rio Declaration at the UN Conference on the Environment and Development (UNCED) which was held in Rio de Janeiro, Brazil, during the summer of 1992. This conference gathered 115 state leaders, marking an unprecedented event, and on this occasion it was officially recognized, at a global level, ‘the necessity of integrating economic development with environmental protection as the main objective for sustainable development’ (Damian, 2007, p. 7). The key results of the Conference were: the Rio Declaration, the Agenda 21 and the Commission on Sustainable Development. Moreover, most countries welcomed the idea and engaged in the implementation of

Agenda 21, a moment which led to the preparation of national strategies for sustainable development.

Indeed, Rio de Janeiro is seen as the turning point in the history of sustainability dealing less with theoretical approaches and concentrating more on finding the necessary actions for developing local, national and global strategies for sustainable development.

The year 1997 marks another important moment in the sustainable development objective implementation process through the Kyoto Conference on Climate Change. Leaders from 160 countries had then negotiated an agreement, known as the Kyoto Protocol, which aims to cut emissions of greenhouse gases. The United States has proposed only a stabilization of emissions, not their reduction, while the European Union insisted on a 15% cut of polluting gases. Finally, a compromise was reached and the industrialized countries have committed themselves to an overall reduction in emissions of greenhouse gases by 5.2% in 2008-2010 compared to the 1990 levels. Kyoto targets were from the beginning very ambitious, which is why the United States refused to ratify the Protocol invoking economic losses. The Protocol entered into force only on 16 February 2005 after its ratification by Russia (in November 2004), fulfilling thus the primary condition for its implementation (the ratification of by 55 countries that produce 55% of global CO<sub>2</sub> emissions).

United Nations Summit on Sustainable Development held in Johannesburg in 2002 represented a milestone in creating partnerships between the UN, governments and nongovernmental organizations, bringing together 104 heads of states from all over the world (Damian, 2007, p. 8). Some authors believe that the summit was ‘a step in the movement concept (sustainable development) in a more productive exploration of the relationship between economic development and environmental quality’ (Asefa, 2005, p. 1), reaffirming sustainable development as a central element of the international agenda, by providing a new impetus for the introduction of practical measures directed towards fighting global poverty and environmental protection.

Johannesburg Summit confirmed a trend that appeared at the Rio Conference in 1992, on the growing importance of socio-economic pillars of sustainable development, reviewed the Johannesburg Declaration.

### **3. THE ROLE OF EDUCATION IN THE DEVELOPMENT OF HUMAN CAPITAL**

Human resource is based on what we call *the Human*, who through all his actions is contributing to his development and to human society as an integrative part. During the modern history, all countries focused on the economic development in order to ensure the welfare and human security.

Education for sustainable development has enormous potential due to its capacity to train the young generation to give rise to a vision of sustainability that can offer a link between economic progress, social welfare and respect for cultural diversity. By improving the access to quality education, by reorienting existing education programs towards sustainable development, by providing public information designed to draw attention to the risks that we all assume, from the individual, community, society and ending at global scale, by promoting it at all levels of education, whether formal or informal, highlighting the principles and values on which a sustainable society is based, by promoting 'lifelong learning' and the list goes on, we can make substantive changes within the individual and social structure of the new generation, so that sacrifices made today are for the benefit of tomorrow.

Wolfgang Lutz, Professor of Social and Economic Statistics at the Vienna University and Leader of the World Population Program at the International Institute for Applied Systems Analysis (IIASA) in Laxenburg, Austria, noted in an article published in 2009 that the answer to the seductive question regarding what is the universal *root* that can causes desirable developments and has the greatest long-term effect on human wellbeing for all cultures and subgroups of the world population, is found in the mixture of education and health. To strengthen his assumption he suggests a radical refocusing of international aid: 'Empowering people through education rather than corrupting them through money' (Lutz, 2009, p. 3).

Today, the present state of society requires a new way of development which integrates the human dimension from another perspective (of complexity and diversity), in which education plays an important role.

Therefore, the present society requires a new way of development or an alternative, which can integrate the human dimension from another perspective - that of complexity and diversity. This new approach imposed by the economic, social and political at the beginning of the XXI century, cannot ignore education, the best gain for the individual and the community and cannot evade the future and its impact on economic, technological, social, political, cultural aspects of the human being.

From a temporal perspective, the role that education in general and economic education in particular can play in the process of human development, is much more shaded and derives from a different degree of involvement and exploitation of people's creative capacities, as well as from their different ways to manifest demand for present and future welfare, aiming towards a new quality of life, that can better reflect their needs and aspirations.

Knowledge has become the first component of human development in general and of the economic one, in particular. Developed countries evolve rapidly on the coordinates of the postindustrial economies which can be understood as knowledge economies. Taking into

consideration these requirements of a society based on knowledge and learning, one aims to create a new specific lifestyle of an open society. In this context, knowledge and information are the true sources of power because through their consumption, they amplify, multiply and diversify. Unlike other resources, knowledge is infinitely expandable, representing a virtually limitless resource for economic development, which has not only been recognized as such, but it has been consistently promoted by the powers of the world from whom progress can be achieved through performance, creativity and imagination.

At this point it can be assumed, beyond any doubt, that education has an important positive effect on economic growth, becoming an indispensable tool to sustainable development. No economic development is possible without good education. Especially in the case of developing countries with low human capital, a huge boost to economic sustainable growth can only be achieved through large investments in education and the adoption of new technologies which require more specialized work, or in other words more educated people.

Despite the present difficulties related to factors such as the lack of funding, lack of time, of access to data, training, mentality, of a wide interdisciplinary research, performance indicators, technical problems, etc., organized university research initiatives designed to support and facilitate implementation of sustainability are present in the whole world and in this game European Union plays a leading role through its policies meant to encourage the efforts made by member states for creating a more strategic approach in terms of sharing knowledge and best practices to foster education for sustainable development.

#### 4. CONCLUSION

The philosophy of sustainability, which will concern open minds for a long time, approaches both human and environmental condition, in its complexity and in all life aspects. Given the facts that *the Man* not only can affect the environment but also can threaten his very own existence, this perspective should offer us a starting point for some reflections regarding the running events planned worldwide from 1972 until now. Looking back at these events, we can notice a shift of the debate from environmental issues to the sustainable economy and society development and later, to on poverty and quality of life, which brings out the multidimensional aspect of the concept. The biggest challenge for sustainable development remains the uncertainty of the future and from this particular reason it becomes imperative that future events – such as those presented in this paper – must not neglect the global scale of the concept, since environmental hazard does not know borders.

Our most important resource (Human Capital) is found in abundance, and it can be trained through education. In his statement regarding the principle of education, Kant said that ‘children

ought to be educated, not for the present, but for a possibly improved condition of man in the future; that is, in a manner which is adapted to the idea of humanity and the whole destiny of man' (Kant, 1900, p. 14).

## REFERENCES

- Asefa, S. (2005) *The Concept of Sustainable Development: An Introduction*, in Asefa S. (Ed.) *The Economics of Sustainable Development*, pp. 1-18, W.E. Upjohn Institute for Employment Research, Michigan, USA.
- Barlett, A. (2006) *Reflections on Sustainability, Population Growth, and the Environment*, published in *The Future of Sustainability*, pp. 17-37, Springer, Dordrecht.
- Baumol, W., Litan, R., Schramm, C. (2007) *Good Capitalism, Bad Capitalism, and the Economics of Growth and Prosperity*. Yale University Press, New Haven & London.
- Brown, L. (2006) *Plan B 2.0: Rescuing a Planet under Stress and a Civilization in Trouble*. New York, W.W. Norton&Company.
- Cole, M. (2007) *Economic Growth and the Environment*, published in *Handbook of Sustainable Development*. Cheltenham, Edward Elgar Publishing Limited.
- Comisia comunităților europene (2009) *Integrarea dezvoltării durabile în politicile UE: raport de analiză pe anul 2009 a Strategiei de dezvoltare durabilă a Uniunii Europene*, Bruxelles, available at:  
<http://eurlex.europa.eu/LexUriServ/LexUriServ.do?uri=COM:2009:0400:FIN:RO:PDF>
- Damian, V. (2007) *Ecologie și dezvoltare durabilă*, Galați, University Press.
- Dumitru, M., Dumitru, R. (2009) *Resursa umană – Elementul central al dezvoltării durabile*. Paper presented at the International Conference on Sustainable Development and Renewable Energies, Bucharest, Romania, 27 November 2009. Available at:  
<http://ccef.ro/materiale/dder.pdf>.
- Kant, I. (1900) *On Education (Über Pädagogik)*, translation by Annette Churton. Boston, D. C. Heath & Co. Publishers.
- Little, W. A., Green A. (2009) *Successful Globalization, Education and Sustainable Development*, International journal of Educational Development vol. 29 (2009), pp: 166-174, available at:  
[www.elsevier.com/locate/ijedudev](http://www.elsevier.com/locate/ijedudev).
- Lutz, W. (2009) *Improving Education as Key to Enhancing Adaptive Capacity in Developing Countries*. Paper provided by Fondazione Eni Enrico Mattei in its series Working Papers with



number 2010.83. Available at:  
<http://www.feem.it/userfiles/attach/20106231451424NDL2010-083.pdf>.

Mihai, C., Borza, M. (Coord.) (2009) *Dimensiuni ale dezvoltării durabile în România*, Iași, Ed. Universității “Alexandru Ioan Cuza”.

Neumayer, E. (1999) *Weak versus Strong Sustainability. Exploring the Limits of Two Opposing Paradigms*. Cheltenham UK, Edward Elgar Publishing Limited.

Ozturk, I. (2001) *The role of education in economic development: a theoretical perspective*. Journal of Rural Development and Administration, Volume XXXIII, No. 1, winter 2001, pp. 39-47.

Accessed in December 2010 at:  
[http://mpra.ub.unimuenchen.de/9023/1/THE\\_ROLE\\_OF\\_EDUCATION\\_IN\\_ECONOMIC\\_DEVELOPMENT.pdf](http://mpra.ub.unimuenchen.de/9023/1/THE_ROLE_OF_EDUCATION_IN_ECONOMIC_DEVELOPMENT.pdf).

Pohoacă, I. (2003) *Filosofia economică și politica dezvoltării durabile*, Bucharest, Editura Economică.

Rogers, P., Jalal, K., Boyd, J. (2008) *An Introduction to Sustainable Development*, London, Earthscan.

Stoica M. (2005) *Investițiile și dezvoltarea durabilă*, Bucharest, Editura Universitară.

Velazquez, L., Munguia N., Sanchez M. (2005) *Deterring sustainability in higher education institutions. An appraisal of the factors which influence sustainability in higher education institutions*, International Journal of Sustainability in Higher Education 6, 4 2005, pp. 383-391 Academic Research Library, accessed in December 2010 at: [www.emeraldinsight.com/1467-6370.htm](http://www.emeraldinsight.com/1467-6370.htm).