Sustainable development and its concrete implications: from an ancient wisdom to a modern fashion

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Abstract: - The author of this paper aims to investigate the significance of sustainable development from ancient times to present days with the goal to unveil its practical implications. The current research reveals the transformation of sustainability concept from an old wisdom that correlated the human behaviour with the capacity of natural systems to cope with this behaviour, to a concept not precisely defined, that risks to become nothing but a mere modern fashion. From Hans Carl von Carlowitz to Gro Harlem Brundtland and recent intellectual debates, declarations and commitments, the paper discloses that good intended practices might be easily transformed into real Trojan horses carrying illicit interests, if practical safeguards are not considered. The paper critically analyses the manner in which the triplet of economic, social and environmental aspects evolved from a real concern about the human welfare in the past, to a flexible meaning in the present, where sustainable development remodels accordingly to particular interests.

Key-Words: - sustainable development, welfare, sustainable business, climate change

1 Introduction

Sustainable development was used for the first time as a term by Brundtland Commission in 1987, being defined as that development that satisfies the needs of the present generation without compromising the future generations' ability to cope with their own needs [1]. This is a very well known definition, and the attraction for a rather vague and ambiguous definition comes probably from its concise and easily understandable meaning. However, sustainable development is a complex issue and its definition must also contain indications about its concrete scalability and manner of reporting, therefore the concept itself lacks practical implications and is rather confusing. Many systems of measurement were proposed, like Global Reporting Initiative [2], Life-cycle Assessment [3], Ecological Footprint [4], but they rather create a cacophony of standards and measurements. Maybe, by the existence of so many types of measurements, a business may take the advantage of choosing the right one for it, and, like in the story of Lewis Caroll, sustainability becomes flexible and depends on the beholder, being mouldable in accordance with particular interests.

Like in the work of Beckerman [5], we may more applied ask ourselves today if the sustainable development is really a useful concept or merely a fashion and a way of making new types of profits.

Therefore, this paper proposes a rejuvenation of sustainable development principles, where practical safeguards and Government deep involvement into the sustainability must be considered with priority.

2 Significance of sustainable development

2.1. Brief history of sustainability concept

The significance of sustainable development is yet very old and has been recognized since ancient times. From von Carlowitz, Mill and Malthus to Brundtland there is a documented history of concern about environment, resources and future generations [6]. Hans Carl von Carlowitz wrote in 1713 about the sustainable use of forestry, being concerned about "*conservation and cultivations of forests for a continuous and sustained use (term in original: nachhaltende)*" [7]. He is the one whom also defined this sustained use as being based on the triplet of economic, ecologic and social aspects. He was the first to recognize a link between the human behaviour (the exploitation rate of forestry) and

the capacity of the natural resource to cope with that behaviour (the growing rate of trees).

Thomas Malthus was concerned also about the link between the human behaviour, represented as the population growing rate, and the capacity to produce food, represented as production rate of food products [8]. Malthus was very pessimistic about the future and foreseen a time when the world population cannot be feed with the available resources. John Stuard Mill followed and in 1848 wrote about a life in a world with scarce resources [9] and the need to prefer a stationary state and not a progressive state that is based on resources consumption and is oriented towards economic growth.

Barbu Stefanescu Delavrancea (1909), a Romanian drama writer, attributed to Stefan cel Mare, a sovereign of Moldova from XV century, the statement according to which the country does not belong to past generations but to "*the children of our children*" [10]. In 1935, Grigore Antipa, a famous Romanian scientist, analyzed the relationship between human behaviour and nature and put the bases of a new science, bioeconomics [11]. Concerns about the justice in allotment of resources between generations were expressed also after the 2nd World War by John Rawls [12] and Brian Barry [13].

However, many aspects correlated with environment emerged mainly after the first oil shock of 1970s, when the awareness of fossil fuels extinction and their impact on the environment were for the first time seriously acknowledged. Donatella Meadows published, under the auspices of The Club of Rome, *The limits to Growth* in 1972 in which the growth tendencies in world population, industrialization, pollution, food production, consumption of fossil fuels were analyzed and concluded that the earth will reach its limits within the next 100 years (about 2070), if the human behaviour continue unchanged. In such a way "*global equilibrium could be designed so that the basic material needs of each person on earth are satisfied and each person has an equal opportunity to realize his individual human potential*" [14].

Important milestones of sustainable development followed this real awakening and in 1972 the Stockholm Conference on the Human Environment put on spotlight the environmental damage and was followed by the introduction of environment departments, agencies and programs around the world. The Club of Rome released its second study in 1974, that warns about risks of catastrophes [15] in certain regions of the world and that the regional crises have the tendency to globalize as all the regions are interlinked. The authors underlined that the human activities have a dramatic effect on environment and radically expressed this as "*the world has cancer and this cancer is the human being*". In such a way it becomes clear that the solution to resource scarcity and environmental problems must take into account global strategies and actions to address global problems.

Another major environmental event was held in Rio de Janeiro in 1992, when United Nations Conference on Environment and Development issued the Rio Declaration and adopted Agenda 21. The international treaty on United Nations Framework Convention on Climate Change (UNFCC) was opened for signature at the same event, establishing the need to limit average global temperature increases, based on the reduction of the green-house gases (GHG) emissions. The Business Council for Sustainable Development was created in 1990 to represent the voice of the business to 1992 Earth Summit in Rio de Janeiro and evolved to World Business Council for Sustainable Development (WBCSD) in 1995, presided by Bjorn Stigson. The main contribution was the concept of eco-efficiency as an engine of sustainable development and creating the awareness of sustainability among businesses [16]. In 1997, the Kyoto protocol was signed by numerous states, committing industrialized nations to cut their GHG emissions by a minim 5% over the period 2008-2012, compared with 1990 levels [17]. In 2002, the Johannesburg World Summit on sustainable development (Rio+10) adopted measures to alleviate poverty and address the environmental problems. In June 2012, the (Rio+20) United Nations Conference on Sustainable Development took place in Rio de Janeiro and was mainly focused on the political commitment to sustainability, development of green economy, and the development of the institutional framework for sustainability [18].

2.2. Climate change and sustainable development

The concerns about the climate and its importance dates from Ancient Greece, when Aristotle stated that the climate change are dependent on the character of a nation. Other scholars associated climate with the health state of a nation, like Hippocrates, and also with the rise and fall of great cultures as Jean Baptiste

Dubos [19]. David Hume associated the advance of European culture with climate change [20].

Svante Arrhenius, the father of modern climatology, estimated that the temperature increases are likely to be caused by rising CO_2 concentrations [21] and therefore are to be attributed to human activities, and his predictions were remarkably similar with recent computer based simulations. At the same time, many old and new theories associate global warning with other phenomena, like the effects of cosmic rays on clouds, variations of solar radiation, changes in the Earth's orbit, changes in atmospheric and oceanic circulation, changes in continent-ocean distribution, elevation of land masses, volcanic dust in the atmosphere, polar migration and continental drift. Moreover, there are also theories that associate the increase of CO_2 concentration with climate cooling and the return to another ice age [22].

If a certified and universally agreed model on climate change is lacking today, this does not imply that climate change is not happening and that we cannot try to build the proper mechanisms to avoid it. Probably the climate change is a combination of natural factors (we cannot control) and anthropogenic GHG (we can control). The humankind may be considered an agent of global change, paraphrasing Callendar, by the toxic emissions released into the atmosphere, soil and water with dramatic consequences on the human and ecosystems health. The controversial climate change represents a massive environmental challenge and a real threat to sustainable development [23], causing global warming or global cooling.

Climate change is generally associated with the emissions of green house gases (GHG) and the increasing of mean global temperature, known as the global warming. However, the effects of climate change are far more complex, as they might be associated with a plethora of consequences, like rising sea-levels and floods in many locations, violent storms and hurricanes, heat waves and extensive droughts. All these, associated with irresponsible behaviour of Governments, like in Romania's case of deforestations for a change in land use, lead to catastrophic cascading impacts on population [23]. Therefore, the monitoring of climate change vectors and protecting biodiversity are very important for the sound development of the future, considering that the climate change manifestations affect the more vulnerable population and nations with lax regulations whom posses neither resources nor capacity to adapt to the changing climate.

Despite the debates over the causality relationship between human activity and climate change, the recent findings put in evidence that climate is changing mainly due to anthropogenic GHG [24]. Numerous summits, conferences, workshops were held worldwide over the last decades and were focused on the climate change and its proper management. The considered solutions to climate change involved three separate responses: sustainable development (a right balance of economic, social and environmental facets) [1], adaptation (an "*adjustment in natural and human systems in response to actual or expected climate stimuli*") [25] and mitigation (developing policies to reduce GHG emissions). Nevertheless, there are some initiative like SAM (Sustainable development, Adaptation and Mitigation) [26], which tried to group all the three components together in a symbiotic approach that seems a better answer to climate change. The emissions trading launched at the Kyoto Conference [27] was introduced as an important policy instrument for addressing climate change. The climate change challenges are diverse, but there are opportunities to stabilize the average world temperature increases [28], if more effort from the political side is shown and right and moral measures are enforced.

3. Concise analysis of the sustainable business

Sustainable development and sustainability are terms in fashion today, but unfortunately they were excessively used and the rhetoric is obvious. The sustainability has been part of the statements of many firms, but this was not accompanied by the declaration of their energy consumption, waste generation and generally the effects on environment of the whole supply-chain. The majority of the companies' reports, when they exist, most of them in agreement with the international stipulations [2], present only superficial data about the sustainability of their activities [29] and this may lead to an unsustainable future disguised in the form of concern about sustainable development.

Sustainable business and green orientations are wise marketing differentiators and a way to exploit concerned consumers [30]. A large number of companies would take the sustainability road if the Governments are willing to intervene by supporting costs, granting preferential tax treatments and

incentives. Renewable energy (RE), a source of green low-carbon growth, might prove to be the just another way of profiting from large subsidies granted to the development of such types of sources. For instance, one company that took the benefit of the supporting of renewable energy for a more sustainable world decided to stop production and close their solar facilities [31] as a response to the Germany's rethought of the renewable energy subsidies system [32]. Furthermore, by trying to solve the climate change issues by the aggressive development of RE, other problems may emerge, like water depletion as many RE are water intensive and characterized by the consumption of large amounts of water [33]. Therefore, specific safeguards should be considered for each type of RE source in terms of consumption of natural resources, as water and agricultural land and forests arisen from changes in land use.

A large on-line retailing American company, whose business evolution reflects the needs and desires of contemporary people, evolved to electronic readers and cloud data storage, but this has not been accompanied by normal reporting on electric energy consumption and climate change [34].

In Romania business sustainability must be preceded by a general sustainable development considering that a large number of persons do not have access to utilities, roads and decent life conditions (see table 1). Moreover, many persons are living on a day-to-day basis, so only speaking about sustainable development and doing nothing practical in a country characterised by poverty, shadow economy and corruption [35] seems inconsiderate.

Table 1. Selected indicators of sustainability in 2011.

Indicator	Romania/ place in the EU-27*	Mean EU-27
Population with access to wastewater collection and treatment (% of total population)	58.16 / 27	88.73
Paved roads by capita (km/capita)	4,709 / 27	11,789
Electricity access rate (% of total population)	90 / 27	97
Governance effectiveness	2.35 / 27	3.72
Corruption perceived index	3.70 / 26 **	6.49

* the 27th place means the last one.
** the 27th place belongs to Bulgaria, with 3.63.
Source: calculated by the author from [35].

In terms of business sustainability in Romania, from the first 100 companies, listed according to their turnover, only 34 reported some aspects referring to sustainable development, but not in an integrated manner [36]. Unfortunately, this is also true at global level, the contemporary world being poorer in terms of individual wealth, natural resources and morality than in the past. Inequality is continuously widening [37], while the justice has become a commodity to be traded, therefore important practical safeguards are to be considered for sustainability and a rejuvenation of the meaning of sustainable development should be considered.

4 Rejuvenation of the sustainability concept

From XVIII century, successive waves of technological discoveries made possible the increase of living standards all over the world in a very alert rhythm. The gains in energy technologies, medicine, education, sanitation led to a spectacular increase of population, especially starting with the XX century. From 1.5 billion in 1900 to 3.5 billion in 1970, scoring a 133% increase over a period of 70 years. In 2012 the world population registered about 7 billion, scoring a doubling in size in only 42 years [38]. It is obvious that a numerous population consumes many resources and therefore new consumption behaviour should be considered, both for individuals and companies, if we want the life on earth as we know it. This is the proper time to end the consumerism, waste and the supporting of policies only for the profit of some. In a world of 1.5 billion the capacity of regeneration of the environment seemed infinite in comparison with the human consumption dimension. In a world of 7 billion we learned the hard way that the world is finite and the regeneration capacity of natural systems is overcome by economic growth at all cost.

Passing through the years, the concerns about a more sustainable world evolved from concrete remedial factors that linked the human behaviour with the capacity of the natural resource to cope with that behaviour, to verbal solutions that are not taken seriously by companies, as proved by the previous section, or to reducing unsustainability (see table 2). Achievement of prudent and moral sustainable development is the key, comprising safe and rational tackling of all economic, social and environmental factors [39], with well-defined goals.

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Table 2. Brief history of sustainability concerns.

Year	Sustainability Concern	Remedial Measures
1713 (von Carlowitz)	Forestry	Conservation
1798 (Malthus)	Population growth – food capacity	Population reduction (through war, famine, etc)
1848 (Mill)	Population – economic growth	Stationary state
1972 (Meadows)	Scarcity of resources	Zero growth
1987 (Brundtland)	Economic & Social & Environmental	Verbal, rhetoric
1995 (Stigson)	Economic & Social & Environmental	Eco-efficiency
2013 (author's proposal)*	*Safety & Rationality*	*Prudent & moral development*

* this entry was not intended to be presumptuous.

Today's society is on the verge of changing and its values will be mainly moulded by financial potency. The humans will be soon a society of "checkmark persons" concerned only to check some activities instead of deeply tackling contemporary needs and find out pertinent remedial solutions. In such a way, we will check participation at another Conference that has as topic sustainable development, another report, another declaration, another commitment and must haves. After all these checkmarks we will be left with time and money spends on other expensive events that lack practical vision.

Therefore, the principles of sustainable development should be considered rights of the present and future generations instead of needs and a prerequisite for global welfare. The economic, social and environmental facets of the sustainable development should be approached at the same time by every nation in an ethical, moral and equity based manner by safely and responsibly tackling the real desires and rights of all people, and not just a few wealthy ones. Consequently, sustainable development principles should be safely, responsibly and morally tackled by politicians and legislators that must rule and write laws with the aim to transform the business world into a more responsible and a really sustainable one, for the wellbeing of the people and not for the companies or their own moneyed interests. In such a way, by properly safeguarding sustainable development, it will become the gonfalon of the fight against inequality, unstable economic system and will impose the moral principles in their right places. As a result, sustainable development principles must be safely and rationally transformed into practical and compulsory scalable obligations for businesses with the aim to progress towards human welfare.

5 Conclusion

In the name of sustainability many unsustainable practices were enforced, ranging from the unsustainable use of RE, to products that incorporate sustainable concern only as a marketing differentiator. The inertia of policymakers, intended or not, can easily transform itself into real Trojan horses carrying illicit interests.

An optimist liberal, David Ricardo, considered that the human creativity and the scientific progress will be the main keys that will postpone the effects of economic growth on ecosystems, in contradiction with the view of his predecessors like Mill and Malthus. Nevertheless, the actual world is very far from the effervescent yet small world of Ricardo, in terms of population, and people is poorer than before, the inequality accentuated all over the world in all domains, from access to resources to education. Moreover, the environment is constantly being damaged and the present economic crisis is far from its desired end and, maybe, the postponing mentioned by Ricardo may come to an end. These are the reasons why safe & rational intelligent solutions are to be thought, applied and enforced, and the findings of this paper may contain the keys that open the gate to a world in which the priorities to be in agreement with a global human welfare and morality.

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