



RESEARCH ARTICLE

SUSTAINABILITY, A GLOBAL APPROACH

***Carlos Evelio Lopez Ceballos and Marisol Sanchez Valencia**

UCEVA-Unidad Central del Valle del Cauca-Tuluá, Valle del Cauca-Colombia

ARTICLE INFO

Article History:

Received 28th May, 2017
Received in revised form
08th June, 2017
Accepted 23rd July, 2017
Published online 31st August, 2017

Key words:

Sustainability, Eco-development, Human
scale development, Sustainable
development, UN.

Copyright©2017, Carlos Evelio Lopez Ceballos and Marisol Sanchez Valencia. This is an open access article distributed under the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

Citation: Carlos Evelio Lopez Ceballos and Marisol Sanchez Valencia, 2017. "Sustainability, a global approach", *International Journal of Current Research*, 9, (08), 56772-56777.

ABSTRACT

The following article analyzes the term renewability or Sustainability through a documentary research of its antecedents. Therefore, it exposes the different conceptions of the term, under the viewpoint of several theorists, as well as the developments obtained by the UN (Organization of the United Nations), in its different assemblies and forums; which demonstrated that sustainability presents a framework of antecedents with proper characteristics of the context, in the different elements which make up the concept of sustainable development.

INTRODUCTION

At present, there is concern about how natural resources are being used and the balance they must have for their own conservation. It is necessary to note that human beings have considerably abused these resources, a situation that generates an imbalance in the atmosphere or environment, turning into a state that would trigger adverse situations for the survival and welfare of the human being in all its spheres, such as economic, social, environmental, and political, just to name a few (International Union for Conservation, 1980).

MATERIALS AND METHODS

According to Lerma (2009). The type of research used for the development of this article is documentary since it is through secondary sources how the content this same is constructed, generating as a result the analysis of the term renewability or Sustainability. Documentary analysis is a form of technical research, a set of intellectual operations that seek to describe and represent documents; Is the one that allows to obtain meaningful information to reach the objectives of the investigation, the documents contain materialized information that does not always appear in paper but takes life in any object or figure that represents or contains a social or personal meaning. Likewise, the researcher should focus on acquiring

the highest number of documents related to the subject under investigation and that allow to relate it to other data collected during the process.

Renewability or sustainability

The care of natural resources in the last decades has had a significant boom, to the point that countries, entrepreneurs and people nowadays aim to everything related to the environment, its care, maintenance and sustainability in time, concepts of different authors are taken with regard to sustainability, renewability, environmental education, endogenous development, among others, all of them directly related to the care of the environment and its interrelation with people, companies or organizations and the economy. Based on the statement by M Strong UNEP¹(1973) defines eco-development, as the compass for entrepreneurs around the world to design business strategies for the economic development in their countries, making clear the socio-environmental rationality, fundamentals in every region, without neglecting the economic factor. Then UNEP² 1976 organization created for environmental education, by the UN, in its first meeting organized by UNESCO and UNEP, endorses the letter from Belgrade 1975, which defined clear objectives, goals and processes, highlighting the environmental and social impact, stating that economic growth must be

*Corresponding author: Carlos Evelio Lopez Ceballos
UCEVA-Unidad Central del Valle del Cauca-Tuluá, Valle del Cauca-Colombia.

¹ United Nations Environment program UNEP.

² United Nations Educational, Scientific and Cultural Organization UNESCO.

responsible with regard to the environment and society, as well as everything that converges in it. Following UNESCO principles 1977, reports the first Intergovernmental Conference on Environmental Education Tbilisi³ held in Georgia (USSR)⁴, where innovative concepts on environment and development were clearly defined and that still today, references to its depth are made, that is why it is named as the theoretical corpus of environmental education. In addition, Freeman and Evan (1990) conceptualize sustainability from the stakeholder perspective, where they benefit or not from the sustainability practices performed by companies, which will have advantages that favor their employees, suppliers, shareholders, customers, the state, and thereby reduce the risk in the decision-making of investors, improving the company image, and the care of the environment. Taking the above into account, naturalists such as Matre (1990) in his approach to education towards sustainability, points out that this has not fulfilled the mission, such as the fulfillment of expectations for change defined in Tbilisi, since there is a rupture between the discourse and the practice of environmental education, in different countries or regions, on account of the problems are seen from an environmental biophysical perspective neglecting the human aspects of each scenario.

However, J Riechmann⁵ (1995), based on the judgment issued by economist Carlos Solchaga, of sustained growth rather than normative, is directly related to the attitude not only of individuals but of entrepreneurs and countries, which has to be real and demonstrated, especially by rich countries, against the true environmental impact, since the constant and regular economic growth in time, leaving aside the ecology, will have irreversible impact on the environment. According to the above, the UN's Brundtland, IUCN report⁶ (1980), states that sustainable development is the responsible production of all countries, regardless of wealth, committed to the care and development environment, so that Both the needs of the population and entrepreneurs of today, do not impact the future of the new generations. Now, for WCED⁷ (1998), based on the report of the World Commission on Environment and Development, sustainability, is addressing organizations develop their products or services, along with the environment, in such a way that everyone benefits in the moment, as to the future, being responsible with the care of the environment and its maintenance.

According to Naredo, (1998), ecological sustainability is directly related to global social development, without neglecting ecological needs, only that, there is where corporate social responsibility has its true meaning, not only with Social and economic aspects, but with the environmental one, since sustainable development, aims at the growth of the three elements on a par. For Guimaraes, (1998). The concept of sustainability due to its complexity and amplitude makes it necessary for its greater understanding to observe it from its dimensions, which form a whole in relation to the environment, made up by the ecological, social, and economic, additional to the geographical and cultural.

The ecological or environmental sustainability: Rodriguez Isabel & Govea, (2006). This dimension is aimed at development to be compatible with the support and maintenance of ecological processes, natural resources and biological diversity, focused on energy and food security while trying to understand the requirements of populations to meet up production taking into account the demographic growth. Social sustainability: Jimenez (1998) looks for an equitable and efficient development of economical nature in present and future generations. The economy-environment paradigm is one of the most complex in the process of sustainability. The foregoing based on the fact that economic science has not been able to explain ecological criticism as a result of the economy focusing on the valuation of the global wealth of nations, their natural resources and the prices of raw materials, but it has flaws in that process. Economic sustainability: For Durán, G., (1997). Based on the complexity of the issue, a question arises: Is it possible to have environmental sustainability with the market economy? To answer this question, the author assumes holding a debate where it is required to admit as a sustainable economic model from an environmental point of view to the one that fits the biogeochemical cycles of matter, and allows it to remain in time. There are a number of agreements that when establishing certain environmental goals as a way to influence the forms, products and by-products of economic activities, where the ISO 14000 norm can be found.

Geographical sustainability: Lara Duran D. & A., (2002). It is directed to the assessment of the territorial dimension of the different environments. However the application of this concept at present is deficient. According to the "Report on Global Resources - 1992" prepared by UNDP, sustainable development is focused as a process that requires a global simultaneous progress in various dimensions: economic, human, environmental and technological. The above implies that geographic sustainability is considered as something exclusively territorial, giving different interpretations depending on the territory where it is made.

Cultural sustainability: Daly (1993). This corresponds to the strengthening of the schemes or patterns of equity resulting from the society - nature relationship, as well as the crises that may arise in this relationship. The society and the evolution that it has presented towards sustainable consumption and production styles leads to profound changes in the models of civilization that today dominate the cultural standards and that constitute the cultural patterns in the relation society - nature.

"The proper understanding of the crisis is therefore the recognition that it refers to the depletion of an environmentally predatory development, socially perverse, politically unjust, culturally alienated and ethically repulsive style of development. What is at stake is the overcoming of the paradigms of modernity that have been defining the orientation of the development process." Considering the above, it could be thought that the modernity that reigns today could be the "Modernity of Sustainability", scenario in which the human being returns to a healthy interaction with nature.

Political Sustainability: Duran D. & Lara A. (2002). This dimension is related to the processes of building citizenship and democratization and it seeks the guarantee of making people participate in the benefits generated by sustainability. Thus, the above could be synthesized at the micro level in the processes of democratization of society,

³ Tbilisi, the largest city in Georgia.

⁴ USSR, Union of Soviet Socialist Republics.

⁵ Chapter I of the economy to the ecology, Jorge Riechman, José Manuel Naredo and others, Trotta Madrid 1995.

⁶ International Union for Conservation of Nature.

⁷ CMMAD, World Commission on Environment and Development, Beatriz Macedo, defines the concept of sustainability.

aimed at strengthening the capacity of community and social organizations and at the macro level in the processes of democratization of the State, becoming challenges of political nature, in the construction of alliances between different social groups, towards an enduring sustainability.

Educational sustainability: Daly, (1993), it is responsible for helping to understand the existing relationships between natural and social systems to generate a clear understanding of the socio-cultural factors present in environmental problems. This concept is dynamic in nature because it depends on the conditions of the environment in which it is developed, as well as on the perception prevailing in the context or in the subjects that constitute it. On the other hand, Axel Dourojeanni ECLAC⁸ (1999) reports that the balance between sustainability factors, for the improvement of human development, there must be implicit in every human being the concept, demonstrating it with its own behavior, and inherently its own sustainability, which must be the result of decisions, actions or applications in the processes from generation to generation, which are changeable in time, and as a product of the application of such attitudes and skills, the sustainable development is achieved in a Territory, and therefore in a region or country. For Berkes, Fikret, Colding, Johan & Folke, Carl, (2001). They emphasize that, in order to achieve development, as such, it must be strengthened in the identity of populations and communities in order to achieve the eradication of poverty and the demographic balance. Furthermore, it is not a secret that environmental problems directly affect the development of societies, whether developed or underdeveloped.

However, Sauvé (1999) states that environmental education is a fundamental dimension in education, given that it is global, that links it to peace, human rights, culture, among others, intertwined with an ethical framework, such as responsibility, solidarity, and care, where all these elements are part of the educational society for sustainable development in the future. In fact Stern, (2000) defines the importance of identifying and defining the environmental behavior, since it is possible to distinguish between the behavior oriented to the impact, that are those that influence in the environment significantly and those oriented to intentions, that are the ones that make reference to the human decision making, its importance lies where it reveals issues relevant to the nature and determinants of its pro-environmental beliefs, which are essential variables in environmental care. Based on the above (Iwata, 2001, Moore, Murphy and Watson, 1994, Schultz, Oskamp and Mainieri, 1995, Steel, 1996, Lynne and Rola, 1988) investigated the relationships between ecological behavior and people's attitude to the environment or ecological conduct, which are considered as beliefs about the environment and its resources, where it is considered that having an attitude of conservation to the environment, does not ensure responsible ecological behavior, hence the importance of environmental education which is reflected in ethical and environmental values. Likewise, Vilches and Gil (2003). conceptualize on the ecological paradigm, which is the protection of the environment, with little business development, only that, this must be visualized, as the harmonization with the elements that make up the sustainability (social, economic and environmental), growth must be perceived, as the business conscience, to care for the environment, impacting it as little as

possible, with sustainability practices, it is how the economic growth of an institution and its environment must be reflected.

It is worth noting that (Rodríguez, 2004, González, 2003, Oskamp, 2000; Vozmediano, San Juan), report on the importance of human behavior in the sustainable development of a territory, organization, since norms and business policies are of no use if people do not have a proper pro-environmental attitude, which are the ones that predispose human beings to the care or preservation of the healthy environment towards natural resources. In addition, AlinaAleaGarcía, José Alberto JaulaBotet (2005), preach that the theoretical perspective of environmental education is based on the conscience of the human being to care for, protect and maintain a healthy environment in its territory, which will be reflected in its region and country, leading with this to the environmental development, that feels responsible for its use and maintenance, to have a sense of belonging by natural resources. Given the above Krick (2005) shares the importance of the classification of the interest groups depending on their relationship with them, which can be by responsibility, influence, closeness, dependence, representation, that used effectively with one or more elements mentioned, will determine the optimal interest group for the organization, based on sustainable development criteria, which will be shown through programs, activities and policies towards people and their territory. It should also be said, based on Antonio HelizaldeHevia (2006), that sustainable development, is encapsulated in the needs of people and their territory, based on their beliefs, being the ones that will determine the world we inhabit, given that a need unfolds others and so on, they continue to be chained, in such a way that the economic system does identify those needs and begins to cover them, becoming a vicious circle that moves fast, leading human development to an infinite and permanent growth of things. Also Novo (2006) points out that sustainability is not only the relationship with human beings and their development, but with the environment and all its relationships and interrelations, it is to say their limits of different ecosystems, the exploited resources, their reproduction, care and maintenance, among others, in such a way as to create environmental awareness through the use and rationality of natural resources through environmental education, both in people as well as governors.

Similarly, the Global Reporting Initiative (GRI, 2006; GRI, 2007) classifies the interest groups, taking into account the relationship with the organization, since the people or interest groups can be affected directly and indirectly, which will depend on the policies and laws that govern each company, country, region, trade agreement or pact between nations. Also, NereaMorán Alonso, Marian SimónRojo, (2010) determine that development on a human scale is directed at meeting the fundamental basic needs of people, as the main axis to cover nature, without leaving aside the technology that helps to improve processes at the global level, which will be reflected at the locally, not only in the social, but creating awareness of the articulation of human beings with the environment. For (Duran, 2010). The term renewability or sustainability, is aligned to the culture with nature, where it should be treated as a new economy that science and technology must be reoriented to thereby build a new concept of politics, in order to contribute to a new concept of politics being Sustainable ethics the main axis, in which values, beliefs, feelings and knowledge are renewed, becoming the north of new worlds of life and care of the planet.

⁸Economic Commission for Latin America and the Caribbean ECLAC.

Gil Lafuente, Anna M.; Paula, Luciano B. (2011) explain the importance of doing the process of properly identifying the stakeholders, not doing it efficiently, affects companies, their surroundings and country, since they influence social, environmental and economic aspects of a population or territory, and consequently the good will of the organizations that interact with them. Also WORLD BUSINESS COUNCIL, (2015) notes that almost all the scientific community and a growing number of social, business and political groups in the most diverse countries are convinced that climate change caused by human activities is one of the greatest environmental challenges that could interpose in the sustainable development during the present century. Simultaneously ASOCIACION AMBIENTE Y SOCIEDAD (Environment and society association) (2016) says that at present the conservation of the environment and its proper use for industrial, commercial, etc. activities is a matter of vital importance because depending on the use that is given to these environmental resources it will be decided for the quality of life that is desired for future generations, which depends on how accurate decisions taken consciously are, so the quality of life will be. So far, the conceptualization of the care of the environment, from the perspective of different researchers and theorists, only that the UN (Organization of the United Nations), consistent with all environmental problems, coupled with the lack of awareness in the making of Decisions of employers and countries regarding the care of the environment, begins with proposals, which were turned in agreements and conferences, as set forth below.

sanctions on companies and countries due topollution, among others. All that, for the sole purpose of holding pollution back as well as the irrational use of natural resources. Afterwards (IUCN, UNEP and WWF, 1980) describes "In order that development can be sustained, besides economic factors, those of social and ecological nature must be taken into account, it should also be taken into account the basis of living and nonliving resources as well as the advantages and disadvantages of other types of action in the short- and long-term" this focus based on the environmental aspect, emerges through the International Union for Conservation of Nature (IUCN), the United Nations Environment Program (UNEP) and the World Wide Fund for Wildlife (WWF), as the so-called Global Strategy for Conservation. There is where the term sustainable development appears for the first time, where they introduced an intellectual framework containing objectives for all member countries in order to take care of the environment.

On the other hand, the United Nations, 1998, based on the Kyoto Protocol establishes criteria for the assessment or measurement of carbon dioxide emissions by companies in a territory, country or region, which are equivalent to the greenhouse gases listed in the articles of the protocol, which should not exceed the amounts allocated to them, this legal instrument compulsory on all countries in the world. The Montreal Protocol (United Nations, 1998), created to reduce the production and release of ozone-depleting substances,

Tabla 1. Pactos Mundiales de Sostenibilidad

Conference / agreement	Purpose	Características	Outcome
1972 United Nations Conference on the Human Environment - Stockholm-	Need for criteria, common principles and guides	Human well-being and enjoyment of fundamental rights, especially life	Report with 25 principles and 109 recommendations
1980 "1st Global Strategy for the Conservation of Nature and Natural Resources"	Economic Development and enjoyment of natural wealth vs. its limitation, for future generations.	Unlimited capacity of people to build and create Global Independence	Intellectual Framework, with a strategy that contains objectives and priorities at the national and international level
1985 Convention on the protection of the ozone layer	Avoid the harmful impact of ozone layer modification on human health and the environment.	Encourage research and cooperation, legislative and administrative measures	Legal instrument governed by international law compulsory for States Parties.
1987 World Commission on Environment and Development of the United Nations	Sustainable development and the promotion of a sustainable future for the planet and present and future generations	Common vision, political commitment, green economy, poverty development, institutional framework sustainable development and action and follow-up.	Report with 17 sustainable development goals
1992 United Nations Conference on Environment and Development (Earth Summit meeting) - Rio de Janeiro, Brazil.	Development of a global development model capable of drawing common parameters between countries	Adoption of new measures and targets for the implementation of Agenda 21	Program 21 International Convention on Biological Diversity (CBD) and the International Convention on Climate Change, and Forest Care
1997 Rio + 5: United Nations General Assembly	Measuring the evolution of production and consumption patterns in the countries	Water crisis, the Commission called for a global assessment of all freshwater resources	Need to create indicators of objective measurement, transfer of rational ecological technology

Lopez, Ceballos Carlos Evelio, 2017.

The table described above shows how the commitment of the countries affiliated to the UN with respect to sustainable development has evolved to the year 1997, where the characteristics, purpose and achievement of each of the meetings are observed.

UN (1973), in its Human Development Report, attentive to the world problematic of the environment, in its conference in Stockholm in 1972, that took place in New York, designed 25 principles which are directed to the respect of the fundamental rights of the people, Protection of natural resources, creation of environmental awareness, economic and social development, end of environmental pollution, environmental policies in all countries, environmental education, such as

establishes emission limits for refrigerants such as HCFCs (Hydrochlorofluorocarbons) which cause the deterioration of the ozone layer and increase of the greenhouse effect. The WBCSD / WRI (Greenhouse Gas Protocol) methodology for the quantification of greenhouse gas emissions, is currently the most widely used in the world, NTC 14064-1 quantification and reporting of emissions and GHG removals in organizations, and the national emissions reporting program are based on this methodology, therefore the company would be aligned with these regulations.

In 1983, the United Nations (UN) commissioned a commission of experts to prepare a report that contemplates a global agenda for change, articulating development and environmental issues.

Tabla 2. Compromisos de Desarrollo Sostenible

Year	Conference / agreement	Purpose	Characteristics	Product
2002	Rio + 10 World Summit meeting on Sustainable Development (2 nd Earth Summit meeting) - Johannesburg	Measurement of progress in environmental management and sustainable development objectives	Relevant element relevance to human dignity in all its scenarios	Resolutions aimed at the care of the environment and strengthening of the UN committee
2012	Rio + 20 United Nations Conference on Sustainable Development - Rio de Janeiro, Brazil	Evaluation of Progress achieved so far and the gaps still persisting in the implementation of the outcomes of the major development summit meetings	A green economy in the context of sustainable development and poverty eradication	Definition of the common vision "The future we want", reaffirmation of the principles of Rio, green economy and institutional framework
2015	Agenda for development after 2015	Strengthening the peace of the world, under the concept of freedom and access to justice	Stimulate humanity and the planet; In people, the planet, prosperity, peace and alliances	Agenda 2030 sustainable development with 17 objectives and 169 goals, socially, economically and environmentally.

Lopez, Carlos Evelio Ceballos 2017.

This report presented by the United Nations World Commission on Environment and Development in 1987, entitled "Our Common Future", known worldwide as the Brundtland Report, is where the most well-known and widespread definition of Sustainable Development is reflected. United Nations, 1987 defines sustainable development as "*one who seeks to meet the needs of the present without compromising the ability of future generations to meet their own needs*" and incorporates two key concepts: the concept of "*needs*", in particular the essential needs of the poorest, for which the highest priority must be given; and the idea of "*limitations*" imposed by the state of technology and social organization on the environment ability to meet present and future needs. For Guimares Roberto (1992), during the summit meeting the topics of environment and sustainable development were discussed. As a result of the Rio Summit meeting, the following documents were generated: Agenda 21, the Declaration of Forest Principles, the United Nations Framework Convention on Climate Change, the United Nations Convention on Biological Diversity and the Rio Declaration on Environment and Development. UN 1997, the information department for sustainable development, states that at the Earth summit meeting conference, three agreements were approved, the 21 program that promotes sustainable development at the global level, Rio's declaration on the environment and Sustainable development that are principles that define the rights of civilians and obligations of states and the statement that has a direct relationship with the care of the world's forests.

The following table summarizes the commitments in the different forums led by the UN, with the firm intention of delimiting the absence of ethics, values and principles for the care of the environment, included in the period 2012-2016, as well as the commitment to the institutional strengthening and therefore of all the countries for the achievement of the protection of the environment.

UN, 2002, the representatives of the member countries pledged to build a more humane and equitable society, where they determined that to achieve this should respect human dignity, the above attending the call of children where they state that the future belongs to them, and they want one that is free of inequalities and poverty, where current environmental degradation and unsustainable development in the countries are controlled.

UN, 2012 determined that eradicating poverty is the main objective to be solved by the country members, since if it is not

mitigated, there would be no sustainable development, with so many economic and social inequalities in the territories, to achieve this, policies in countries to improve the basic living standards and promote social and equitable development must be created, such as the inclusion of persons.

UN 2015 in the septuagenarian Assembly of the United Nations, the commitment to refrain from actions that threaten the integrity or territorial policy, which threaten the independence of any state, and the dignity and respect for human rights, that go against the policies and principles instituted in the United Nations was reiterated. Given the above UN, 2015 on its agenda for sustainable development 2030 confirms the inescapable and binding compromise of all country members in developing policies, guidelines, programs, all considered relevant to develop the action plan prepared by the UN in favor of people, the planet and prosperity, without leaving aside the strengthening of world peace, recognizing that it has to eradicate poverty in all its forms and dimensions, essential requirement for sustainable development.

Conclusions

1. To achieve the goals of sustainable development in the territories poverty must be eradicated, and to strengthen respect for human dignity, and consequently the leverage of other objectives is made.
2. Sustainability is related to maintenance of the substantive aspects of the environment and populations from seven different perspectives, which can be called dimensions.
3. The concept of environment care has evolved from eco development to sustainable development, up to human scale development as well as its variables of artificial and natural elements to economic, social and environmental without neglecting any of them.
4. Although sustainability comprises seven points of view or dimensions that define one to each other, it is important to understand that they are all interrelated, in this way sustainability comprises a set of relations, important for the sustainability of human beings and their environment.
5. It is important to note that sustainability processes although must from companies or institutions, whether these private or public like are placed in a regulatory legal framework, participation or involvement of the population or civil society is essential to because sustainability is a process of all for everyone.

6. Sustainability or sustainable development of a country or territory depends on fundamental aspects in people, such as education, awareness, sense of belonging, values, principles, since it is here where care and maintenance of the environment is born.

REFERENCIAS

- ASOCIACIÓN AMBIENTE Y SOCIEDAD. (2016). Obtenido de <http://www.ambienteysociedad.org.co/es/inicio/>.
- Berkes, Fikret, Colding, Johan, & Folke, Carl, 2001. "Navigating Social-Ecological Systems: Building Resilience for Complexity and Change", Cambridge University Press.
- Brundtlan. 2006. *Desarrollo Sostenible*. Obtenido de <https://desarrollosostenible.wordpress.com/2006/09/27/informe-brundtland/>
- Bybee, R. 1991. Planet Earth in crisis: how should science educators respond. *The American Biology Teacher*, 146-153.
- Daly, H. E. 1993. "Por unos principios operativos del desarrollo sostenible" del desarrollo sostenible: posibilidades de aplicación a la agricultura" *Agricultura y desarrollo sostenible, Ministerio de Agricultura, Pesca y Alimentación*. Madrid: en Cadenas, A. (ed.).
- Dinero. 2014. OCDE espera más sostenibilidad en Colombia. *Dinero*. Obtenido de <http://www.dinero.com/economia/articulo/sostenibilidad-colombia/194676>
- Duran D. & Lara A. 2002. *Convivir en la Tierra. Fundación Educambiente*. Buenos Aires.: Convivir en la Tierra. Fundación Educambiente. Lugar Editorial.
- Duran, D. 3 de marzo de 2010. *Eco Portal. Net*. Obtenido de http://www.ecoportel.net/Temas-Especiales/Desarrollo-Sustentable/las_dimensiones_de_la_sustentabilidad
- Durán, G. 1997. *Aproximación a la contabilidad ambiental: Una propuesta conceptual y metodológica, Tesis doctoral*. Madrid: Universidad Autónoma de Madrid.
- Guimaraes, R. 1998. *La ética de la sustentabilidad y la formulación de políticas de desarrollo. Ambiente & Sociedad*. Campinas, Brasil.
- Jiménez, L. 1998. "Tras la fórmula de la sostenibilidad", en *Ecosistemas, núms. 24/25*
- Macedo, B. 2005. El concepto de sostenibilidad. *Oficina Regional de Educación, para América Latina y el Caribe UNESCO Santiago*, 59.
- Ministerio de Ambiente y Desarrollo Sostenible. 2015. *strategia Colombiana de Desarrollo Bajo en Carbono (ECDBC)*. Obtenido de http://www.minambiente.gov.co/documentos/DocumentosInstitucional/asuntos_internacionales/060312_ecdbc_cambio_climatico.pdf
- Muñoz, A. 2004. *Principios conceptuales para un sistema de gestión de la sostenibilidad. Avances de Tecnología y Producción*. Bogotá: Universidad Sostenible. Facultad de Administración de Empresas. Universidad Externado de Colombia.
- Naciones Unidas. 1998. *Protocolo de Kyoto*. Obtenido de <http://unfccc.int/resource/docs/convkp/kpspan.pdf>
- PNUD. 2015. Objetivos de desarrollo sostenible en Colombia. *Programa de las Naciones Unidas para el Desarrollo en Colombia*. Obtenido de <http://www.co.undp.org/content/colombia/es/home/post-2015.html>
- Prodensa. 2012. *El Desafío Ambiental de Alpina*. Obtenido de <http://podensa.org/noticias/el-desafio-ambiental/>
- Rodríguez B. M. 1994. *EL DESARROLLO SOSTENIBLE: ¿UTOPIA O REALIDAD PARA COLOMBIA?* Bogotá. Obtenido de <http://www.manuelrodriguezbecerra.org/bajar/poliambiental/i.pdf>
- Rodríguez Isabel, I., & Govea, H. 2006. El discurso del desarrollo sustentable en América Latina. *Revista Venezolana de Economía y Ciencias Sociales.*, vol.12, no.2.
- Semana. 2017. ¿DESARROLLO SOSTENIBLE EN COLOMBIA? *Semana*. Obtenido de <http://www.semana.com/opinion/expertos/articulo/desarrollo-sostenible-en-colombia/323963>
- Unión Internacional para la Conservación. 1980. *Strategia Mundial para la Conservación: La Conservación de los recursos vivos para el logro de un desarrollo sostenido. E Gland. UICN. Programa de las Naciones Unidas para el Medio Ambiente y el Fondo Mundial*.
- WORLD BUSINESS COUNCIL, F. 2015. *Protocolo de Gases Efecto Invernadero. Estándar Corporativo de Contabilidad y Reporte*. México.
