

SUSTAINABLE DEVELOPMENT AND CIRCULAR ECONOMY: A STUDY ABOUT THE CORPORATE SOCIAL RESPONSIBILITY IN CUBA AND BRAZIL¹

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ABSTRACT

The article reviews the legal principle of sustainable development and its evolution toward circular economy, concomitant with the implementation of corporate social responsibility. The research methods used in the study were: historical-logical, analysis-synthesis, induction-deduction, bibliographic review, and legal comparison. The challenge posed by the States' sustainable development in the XXI century shall allow promoting environmental preventive techniques to ensure the human right to a

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healthy environment, among the third-dimensional rights. These rights are being currently developed with a new paradigm of “circular economy”, since environmental pollution has been growing, especially in the urban sector. A theoretical review of sustainable development is carried out from its genesis, its links with environmental sociology and its normative recognition in the constitutional text, as a paradigm of Public Administration to reduce environmental pollution generated by electronic waste in Cuba and Brazil.

Keywords: Brazil; circular economy; Cuba; sustainable development; urban mining.

DESENVOLVIMENTO SUSTENTÁVEL & ECONOMIA CIRCULAR: UM ESTUDO SOBRE A RESPONSABILIDADE SOCIAL EMPRESARIAL EM CUBA E NO BRASIL

RESUMO

Este artigo analisa o princípio jurídico do desenvolvimento sustentável e sua evolução para a economia circular, concomitante com a implementação da responsabilidade social empresarial. Os métodos de pesquisa utilizados no estudo foram: histórico-lógico, análise-síntese, indução-dedução, revisão de literatura e comparação jurídica. O desafio imposto pela conquista do desenvolvimento sustentável para os Estados no século XXI, permitirá fomentar técnicas ambientais preventivas, para garantir o direito humano a um ambiente saudável, entre os direitos da terceira dimensão, hoje em evolução com um novo paradigma de “economia circular”, uma vez que a poluição ambiental vem crescendo, especialmente no setor urbano. Uma revisão teórica do desenvolvimento sustentável desde sua gênese, sua relação com a sociologia ambiental e seu reconhecimento normativo no texto constitucional, como paradigma da Administração Pública, tem sido realizada, para a redução da poluição ambiental gerada pelos resíduos eletrônicos em Cuba e no Brasil.

Palavras-chave: Brasil; Cuba; desenvolvimento sustentável; economia circular; mineração urbana.

INTRODUCTION

Environmental issues are characterized by a cross-sectoral view of reality, in which various visions and interests converge, such as scientific and professional valuation, hence their cross-sectoral and multi-sectoral nature. At the end of the 1970s, the issues related to environmental protection by the industrialized countries were identified as pollution generated by the destruction of habitats and endangered species. These elements contributed to weaken the dominant paradigm of the 20th century, with the classification of environment as a public good.

In the new century, the current trend is for environmental issues to become part of the corporate strategy of management subjects. Entrepreneurs implement a corporate strategy considering environmental aspects beyond the traditional components, considering management tools – environmental auditing and inspection. Economic instruments such as environmental accounting, environmental tax, environmental insurance, and charging for environmental services, among others, have emerged as part of the environmental certification in the scope of environmental management.

With the advancement of paradigms in the 21st century, companies are reformulating their approach to environment, due to the pressure exerted by the many segments of society with which they relate in their environment, to mitigate pollution through the use of clean technologies. One of these paradigms is that studied in the paper, “the circular economy”, due to its relation with sustainable development in the establishment of environmentally responsible companies through the implementation of social responsibility (CSR).

This paper intends to answer the following question: what are the advantages of circular economy?

The general objective of this research is to review the relationship between circular economy, environmental protection, and corporate social responsibility, as well as to present the many aspects of the legal systems of Brazil and Cuba, integrating the contents. As specific objectives, this study will review the legal paradigm of sustainable development, and the contributions of sociology to solve the environmental issue will be studied.

To this end, the following research methods were used in the study: historical-logical, analysis-synthesis, induction-deduction, literature review, and legal comparison.

1 THE LEGAL PARADIGM OF SUSTAINABLE DEVELOPMENT IN THE SCOPE OF ENVIRONMENTAL PROTECTION

Considering the need to achieve sustainable development as a global legal paradigm in the 20th century, the 1984 “Our Common Future” Report put it as the mega principle of International Environmental Law. In order to contextualize this legal paradigm, adequate public policies should be established and designed to put it into practice in all nations of the planet.

As a result, the environment in the 21st century is considered to be at the center of the world community’s attention. The starting point for analysis is the main international agreements of the International Covenant on Civil and Political Rights (1966), and the International Covenant on Economic, Social and Cultural Rights (1966). These legal texts proclaim in their article 1 the right of peoples to self-determination and, by virtue of that right, “freely determine their political status, and freely provide for their economic, social and cultural development” (UNITED NATIONS, 1966). In order to develop its objectives (article 1.2) “all peoples may freely dispose of their wealth and natural resources, without prejudice to any obligations arising out of international economic cooperation” (UNITED NATIONS, 1966).

Scholars have said that rights that emerged since the second half of the 20th century and into the 21st century are basically related to the advent of declarations generically referring to justice, peace, and solidarity. Therefore, when one contributes by separating garbage to help recycling, or when one disposes batteries in appropriate containers, one is not only thinking individually. They are also thinking on the welfare of future generations, hence the philosophy of urban mining to mitigate environmental pollution in urban areas.

These international legal instruments, considering their horizontal effectiveness as human rights guidelines, mandate all subjects of rights to comply with, enforce and respect international Human Rights Laws. This is something that has not yet been adequately fulfilled by all states. There is a social abyss between developed countries and those that have not yet achieved it, given the inadequate environmental culture.

The context analyzed herein shows the existence of attempts to provide Sociology-based answers linked to the environmental issue since the 1960s, facing the problem of scientific and political fields in social

sciences, so as to study the relationship between human being and nature as its field of action. This is increased with environmental pollution.

Therefore, what happened in the city of Stockholm in 1972 was related with the international scenario where discussions on environmental problems and the roots of pollution were held. It thus shows how environmental problems were perceived as a result of development processes, and Maurice Strong's idea of "ecodevelopment" came into being, being further promoted in the years 1980 to 1982.

In 1972, the Convention Concerning the Protection of the World Cultural and Natural Heritage was passed. Although it did not have an adequate influence on environmental education, it brought about the need to systematize environmental legislation to protect cultural heritage in the society-culture-nature relationship. As a distinctive feature, they coincided with the Stockholm Conference on development and environment, the publication of the Club of Rome report on the limits of growth. Events in the legal system, which were distinguished by the difficulty in using oil, and the early expressions that occurred in the environmental and anti-nuclear movements.

The authors of the articles point out that in the European region, environmental problems and the social crisis were linked to the phenomenon of environmental pollution. This is something quite different from what happened in the United States, where pollution gave rise to the manifestation of social movements considering the polluting aptitude of the industrial management subjects, among other environmental aspects approached on the article.

In 1974, the Charter of Economic Rights and Duties of States, in its article 2, established that any State "has and freely exercises full and permanent sovereignty, including possession, use and disposal of all of its wealth, natural resources, and economic activities" (UNITED NATIONS, 1974).

At this point, the study appraises how the statesman Ruz unveiled his futuristic vision in his speech to the world:

The humanity of the future faces great challenges in all areas. A humanity that reproduces rapidly, a humanity that cares about the depletion of its natural resources, a humanity that needs to master technology and not only technology, but also the problems that technology may come to create in the future, such as environmental pollution (RUZ, 1974, p. 1).

The authors of the article believe that the thinking of the statesman and attorney makes him one of the first world leaders to report on the future changes of nature and its influence on natural phenomena. This influence can be observed through the adverse results of events such as climate change, desertification, drought, floods, natural disasters by floods, fires, disappearance of species, and danger of disappearance of humanity due to the consequences of negative anomalies caused by humans actions on nature. These are pointed out at the Rio Summit in 1992, when Ruz summarized in his speech the deeper causes of the problem “[...] the need for a better exchange of wealth, and the use of technology for human development rather than for the luxury and waste of consumer societies [...]” (RUZ, 1992, p. 1, free translation).

Later, in 1998, UNESCO, as part of the United Nations System, in its conference on Higher Education, declared the importance of the University assuming its role in the information and knowledge age. Based on this approach, the term “sustainable development” was coined. This is a term that would revolutionize the world from the standpoint of international law in terms of legal and political protection of the environment, and lays the foundations for the socioeconomic system.

The scientific literature shows how the proposal that sustainable development seeks to ensure an appropriate balance between economic development and environmental protection to meet the needs of future generations may be appreciated.

While it is true that DE ZSÖGÖN in his studies on the mega principle – sustainable development – considers:

[...] the private sector (large and small companies) has a duty to support the establishment of equitable and sustainable societies (Principle 24), and that private companies have an obligation to render accounts, regulations, with transparency and stability (Principle 26) (DE ZSÖGÖN, 2015, p. 1).

In the context, the core of sustainable development scientific literature lies in the consideration of three basic pillars – society, economy and environment. In the legal sense, the basic idea of sustainable development is the connection between the well-being of the current generation and that of the generation to come. These elements have not been properly considered by the value systems; nature has entered a senseless race for consumerism as a way of life and development, disregarding the relevance

of the “principle of environmental responsibility”.

On this matter, the paper reviews what Ulrich Beck considered regarding post-modernism, specified by him in the field of the so-called “Risk Society”. A concept that distinguishes a phase of development of modern society in which social, political, economic and individual risks increasingly escape from the institutions of control and protection of industrial society (BECK, 1998, p. 13).

Besides being a scientific concept, it is clear in the literature reviewed that sustainable development is an ideological and political proposal. However, its ambiguity is considered extensive. Admitting that something is wrong with the current social model, that development needs to be reformed or adjusted because its continuity is threatened, implies a reaffirmation of this model, in the double sense that it does not visualize alternatives to development, and considers desirable to make it long-lasting. In this way, it is acceptable for critics, environmentalists, and evolutionists to see the long-standing conflict between economics and ecology in the form of different readings or interpretations as a shared concept. Added for the writers’ consideration about environmental, economic, social and food problems caused by the effects of the Covid-19 pandemic.

The challenge, in the opinion of the article’s authors, is if states consider necessary to develop a society in face of the adverse challenges that arise to achieve sustainable development as a corporate strategy for entrepreneurs, on the basis that it is a human right “that which meets the essential needs of the current generation without compromising the ability of future generations to meet their essential needs” (BRUNDTLAND, 1987). The Johannesburg Declaration on Sustainable Development (2002), in the light of International Law, expressly accepts “the reality that global society has the means and resources to respond to the challenges” (UNITED NATIONS, 2002). The aim is to overcome the alleged dichotomy between environmental protection and economic development, by harmonizing both processes. In this regard, De Zsögön expresses her position as follows:

[...] Contemporary human beings undertake the devastation of nature, unaware that, to a greater or lesser degree, they are part of the mass; by changing it, they denaturalize, alter and betray their very essence as a social being (DE ZSÖGÖN, 2004, p. 1).

The author states that it is a mix of techniques, rules and legal instruments aimed at protecting all the elements that make up the natural and human environment, through a series of legal norms that, due to their

interdisciplinary nature, do not admit separate regimes, and mutually establish and influence the scope of all legal and scientific *branches* recognized by the academia.

Fraga emphasized, based on his stance about the matter:

The world of preferences is a complex one. In environmental law, changes occur at such speed that they can only give the observer a snapshot of what is happening. As a Law linked to planetary reality, it is influenced by social, economic, technological, and cultural facts. We could speak of internal and external trends (globalization and integration into supranational spheres, such as the European Union of Environmental Law, which is already causing the real emergence of a true environmental *ius commune* (Seerden); structural trends of environmental law itself (constitutionalization, codification, globalization, deregulation, etc.); technical trends (legal techniques, administrative organization), etc. It should be noted that trends in environmental law are particularly complex [...] (FRAGA, 2007, p. 1, free translation).

When analyzing the problem of environmental pollution, Fraga considered that “[...] Environmental Law is the preservation and development of the environment, and the obligation of the human being to implement and develop a model of sustainable development, which allows them to coexist with nature [...]” (FRAGA, 2009, p.1, free translation).

It is evident to the writers that accepting the sustainable development paradigm implies the reorganization of each basic production process to increase eco-efficiency, reduce fossil energy consumption, and avoid pollution. The theme has a scientific dimension that allows the development of analytical tools to achieve knowledge of environmental impact with ideas that consider innovation, and the application of science by management subjects, which clearly requires money to be invested. On the other hand, the normative dimension should stimulate the efficient use of natural resources through environmental protection instruments in the legal system targeted at management subjects, with proper implementation of environmental management.

Scientific literature has pointed out that the legal principle of sustainable development is a process of changes in the exploitation of natural resources, which is why, as aforementioned, technological development shall be designed in harmony with the environment, contextualized in guidelines through environmental management with lower pollution load. These are the challenges that humanity is facing to achieve this mega legal principle.

These systematized elements may be seen in a new context with the

concept of Environmentally Responsible Company, High-Tech Company and Industry 4.0, in which the use of Information and Communication Technologies (ICT) is enfolded. This is what has been defined as the industry’ “green reconversion”. It will clearly involve technological change and modernization, which will help reduce pollution where “green sells”.

When analyzing what is defined as pollution, the scientific literature states: presence or incorporation into the environment of toxic substances or elements that are harmful to humans or ecosystems (living beings), since there are different types of pollution. Today, pollution continues to be an issue of concern in the world because we live in a collapse of diseases caused by the water we drink, and by breathing contaminated air.

In order to achieve the principle of sustainable development in the 21st century, the Spanish-American doctrine reading points out that it is at the baseline of the category of “market instruments of a cooperative nature”. These should be compatible with environmental protection and economic growth, hence the articulation with the Environmental Administrative Law designed in Europe.

The prevailing economic model on the planet, named “brown economy”, led to the depletion of natural resources, degradation and loss of ecosystems, giving rise to an alternative economic model named “green economy” and, within this, the “circular economy”, pointed out by the UNEP (2011) in its report called “green economy”. A striking element for these developments discussed in the article.

De Zsögön, from his insightful analysis, tells us that residue is:

[...] Generic denomination for any kind of residual product, leftovers, waste or garbage coming from industry, trade, countryside or households; any substances or objects that the holder disposes of or has the intention or obligation to dispose of [...] (DE ZSÖGÖN, 2001, p. 27).

The author herself refers to the fact that the residues issue in urban areas is due to “[...] several causes that are worsened year after year. On the one hand, the population explosion, and the population’s concentration in large cities, and on the other hand, the use of fast-expired goods, manufacture of non-biodegradable packaging that leads to uncontrolled and unlimited use of natural resources and energy [...]” (DE ZSÖGÖN, 2004, p. 77, free translation).

Another mandatory reference is Cafferata (2013, p. 4), who points out:

[...] Pollution, with its harmful projection on people's lives and health, generates a repairable deterioration of their potential with an unequivocal reduction of their future horizon or opportunities, with a succession of achievements and tasks partially or totally forbidden, of hopes and expectations truncated or achievable in different, more costly and careful ways.

It should be noted that Rio+20 (2012), regarding the paradigm of sustainable development, advanced the theme of “green economy” in the context of sustainable development and poverty eradication, as an institutional framework for sustainable development in the public policies of states. Its evolution is appraised for being the transition to the “circular economy” in the 21st century in the business-society-nature relationship, considering the stated issues with environmental protection, the unfavorable economic situation, social problems, and food deficit.

It leads the authors of this article to emphasize it in this analysis, understanding that “green economy” integrates environmental and social variables into the mode of production, which is not contrary to free market or growth within the economic instruments implemented to advocate for consumer rights such as: environmental seal, environmental accounting, and environmental auditing by management subjects, among others.

From a legal point of view, the concept of “green economy” is clearly not a substitute for “sustainable development”, but may be a way to achieve this last. As a set of modes of production, it rewards maximization of production, taking into account variables ignored in the business project, aiming to conserve natural resources and eradicate poverty (MARTÍNEZ; PORCELLI, 2017, p. 129, free translation).

These elements justify the nexus of Environmental Law and the principles that inform it, namely “precaution, prevention, responsibility, legality and extended producer responsibility”, which require producers to accept responsibility in the stages of the life cycle of a product, until the final management of its useful life through legal bodies that regulate it grounded in the Public Law, systematized by Loperena Rota (1998, p. 87), Alienza García (2001, p. 43), Mateo (2003, p. 11), Cutanda (2006, p. 985), Ojeda Mestre (2012, p. 7), Prieur *et al.* (2012, p. 39) and Peña Chacón (2013, p. 16).

The bibliography studied to draft the article allowed to consolidate it as a general principle of Environmental Administrative Law, with the updating of “legal techniques of environmental protection” based on the implementation of a shared environmental management, as Ruiz (2012, p.

293) and other European authors indicate in their analyses.

De Gatta (2004, p. 65), considers:

[...] The progressive degradation of the environment has led companies and industries to start using new environmental protection instruments, of a voluntary nature and with new corporate ethics. The Corporate Social Responsibility (CSR) comes into being as the process through which corporates decide to contribute toward achieving a better society, and a clean environment. This line of action has contributed to the emergence of other instruments to integrate business ethics.

Another different reading of Environmental Law takes place in the Latin American context, starting with the supreme legal texts of nations such as Bolivia and Ecuador in the first decade of the 21st century, following their express and tacit legal recognition as a reference in the Latin American region, in addition to the European Environmental Law, as nature as a subject of rights in Legal Pluralism.

The recognition of legal pluralism as the coexistence of different legal orders in a geopolitical space, in the late 19th century and the first half of the 20th century, was a reaction to positivism that reduced law within the modern project. However, it was not until the 1960s that it became an argument of discussion in the Anthropology and Sociology of Law.

In this sense, the studies by Cafferata (2013), Bellorio Clabot and Peña Moreno (2013) and Rinaldi (2013) on the situation of Environmental Law in Latin America, coincide in the report delivered to UNEP:

[...] the Constitutions, structure or general laws, make up the rigid and stable core of the environmental institutions of the countries in the region that were sampled, in order to recognize whether they are productive with the emergence of environmental economics and accounting in the pursuit of sustainable development linked to the practice of environmental auditing [...].

Sánchez and Ocampo state in their studies that in order to develop and apply environmental legal pluralism, one should start from its origin, so that effective environmental rights can be generated for all citizens, and the diverse world views are respected from the “sumak kwasay” from the human right to the environment, to build legal bodies in the environmental legal system with the dimension of the original peoples of the “Pacha Mama”, will be a novelty in development in the 21st century, based on the “New Latin American constitutionalism” (SÁNCHEZ; OCAMPO, 2018, p. 1).

In the context, it can be seen that the legal value of the international human rights instruments analyzed recognizes the rights of collectivities,

starting with the right to self-determination of peoples, established in the international sphere in the International Covenant on Civil and Political Rights, in Convention 169 of the International Labour Organization, and in the United Nations Declaration on Indigenous Peoples in the context of the Latin America, based on their cultures.

It is stated, from a legal point of view, that since the 1992 Earth Summit above, several international legal instruments have been generated, such as the Rio Declaration on Environment and Development, which established a legal framework and effective regulation. Later, the Convention on Biological Diversity came into force in 1993, and the United Nations Convention on Climate Change in 1992. This last continued to evolve over time until the Climate Summit held in Paris in 2015, and the one in Poland in 2018, being considered by authors Sánchez and Viltres (2012, p. 1) and Rey Santos (2016, p. 7).

In the same line of analysis, Ruz pointed to the world in his public lecture “[...] a transcendental biological species is at risk of disappearing due to the rapid and increasing depletion of its natural living conditions: human as a social being [...]” (RUZ, 1992, p. 1, free translation).

It is shown, then, that the concern of the Latin American Law with the environmental issue recognizes its origins in the depletion of natural resources by the social constitutionalism. It is promoted as a consequence of the development of the “international environmental law”, and increases with the advent of the “new Latin American constitutionalism” and the development of an “environmental constitutionalism” that broadly recognizes the human right to an adequate and sustainable environment, as indicated in the 2030 Millennium Development Goals .

In order to address the subject, the authors reviewed the subject based on two criteria. The first one was on how the subject is developed, and the second from the general to the particular. The specialized legal literature on Constitutional Law and Environmental Administrative Law was reviewed. In this context, “urban mining”, “circular economy”, “environmental legal training” through multidisciplinary and transdisciplinary teams. The review, therefore, is made based on the contributions of Environmental Sociology.

2 CONTRIBUTIONS OF ENVIRONMENTAL SOCIOLOGY LINKED TO THE ENVIRONMENTAL ISSUE

Sociology, conceived as the science charged with studying social structures and systems, and how they interact with the individual and social groups. By its definition, it seems to be exclusive of nature since the evolution of nature, through its numerous bio-geochemical cycles does not depend on human activities. Therefore, it is a social process, studies the production and reproduction of the social and of society, and tends to consider the environment as synonym with nature, and nature as part of the environment where people perform their activities.

When analyzing the contributions by Sociology, from its Marxist imprint, it is considered to be the mediation between human beings and nature. This view allowed its development, taking into account the conditioning factors imposed by nature. The Marxist contribution to environmental issues is relevant. The authors of the article value the fact that, by including the field of political ecology with essays aimed at Environmental Sociology studies, they make their results more comprehensive, transcending them to the present day.

In this sense, we point out Marx's position when noting that:

[...] We know only one science, the science of the history of nature and the history of humanity. Both sides cannot, however, be separated; as long as humans exist, the history of nature and the history of humanity will condition each other [...] my relation to my environment and my consciousness [...] (MARX, 1932, p. 12).

In this sense, the contribution of Engels, who warned in the last century that:

Human beings do not master nature as a conqueror masters a foreign people, that is to say as someone alien to nature [...]. We are part of it with our body, our blood, our brain, and we find ourselves in the midst of it. All our mastery over nature – and the advantage which we thereby gain over other creatures – consists in our ability to come to know its laws and to know how to apply them correctly (ENGELS, 1982, p. 60).

Environmental Sociology, as a social science, has to face the need to rethink the interaction between social action and the processes of nature, in terms of the limits they impose on the possibilities it offers. An example of this is how nuclear energy contributed at the time to consolidating the economic power of the former Soviet Union, but the accident at Chernobyl in the last century was also a negative factor. This also happened in Japan

with another accident linked to the use of nuclear energy. In the authors' opinion, because they did not adequately consider the principles of environmental legislation and did not conduct a proper environmental impact assessment.

It is worth noting that environmental sociology is faced with the task of seeking a synthesis between systemic or structural components – including the natural environment – and human agency. Consequently, the task or goal of Environmental Sociology would be limited to the study of the processes of constructing scientific information and public dissemination of simplified versions of it that lead, first, to the description of the artificial intensification of greenhouse effect as a social and political problem, and the selection of certain aspects of it as priority or most significant, as happens with environmental pollution, where the new paradigm of “circular economy” is particularized.

The direct or indirect source of Environmental Sociology are scientific and technological advances, international political confrontations, the threat of nuclear war, the increase in ecological degradation, the development of emerging social movements, and the theoretical crisis of sociology. Its genesis appears in the 1970s in the United States of America.

In Cuba, a mandatory point of reference is the study and analysis of the work by José Martí who, based on his analysis, conceptualized:

What is nature? The wild pine, the old oak, the troubled sea, the rivers that go to the sea as to eternity, we human beings go: nature is the ray of light that penetrates the clouds and becomes a rainbow; the human spirit that approaches and rises with the clouds of the soul and becomes blissful. Nature is all there is, in all forms, spirits and bodies; flows of slaves in its channels; roots of slaves on the earth; feet, slaves like roots; souls, less slaves than feet. The mysterious intimate world, the wonderful external world, everything that is deformed or luminous or dark, close or earthly, everything that is regular, everything measures, except the sky and the soul of the human being, is Nature (MARTÍ, 1963, p. 364, free translation).

It shows to the writers that one of the goals of environmental sociology is to facilitate the social reappropriation of nature in the human-nature relationship, not in terms of the exploitation to which it may be subjected, but in terms of the appraisal of its productive ecological potential. The issue considered from traditional knowledge, when talking about the principle of self-management of agrarian societies, and the primary productivity of natural ecosystems of native peoples. It is the change of vision other than that of Environmental Law in Europe, as is Environmental Law in

Latin America with a new worldview, not accepted by all.

This study analyzes how Leff, in different works of his, explains the interrelationship between the study of environmental complexity, biotechnology, ethnological sciences, sociodemographic, ecology (political, productive, social), economics (ecological, environmental policy), education, history and environmental pedagogy, ethics (intercultural, for sustainability, for life), psychoanalysis, and sociology of knowledge (LEFF, 2000, p.9, free translation). This is a question that the authors consider valid, hence the transdisciplinary nature of Environmental Law with the integration of content and knowledge, which is relevant to environmental legal training.

Environmental issue should be approached from interdisciplinary perspectives involving contributions from social sciences. It is relevant to refer to the importance of sociology to explain the causes and effects that human actions have on nature, and the ways in which this affects ways of being in the world, for example, the legal-accounting element “circular economy”.

Related to the previous statements, the great challenge to be applied is to conceive a society without residues, where public policies of the States have not been able to mitigate environmental pollution. Humans act as producers and consumers, not as decomposers of matter. There is a theoretical gap on waste, and the incorporation of a sociological perspective on this issue. Hence the “circular economy” to achieve the solution desired by States to mitigate environmental pollution in the controversial relationship between humans and nature.

3 THE CIRCULAR ECONOMY: A NEW LEGAL ACCOUNTING PARADIGM IN ENVIRONMENTAL PROTECTION

The circular economy, as a business model based on recycling, implements the reuse and reduction of use of natural resources. The recycling of waste from electrical and electronic equipment, or as it is called “urban mining”, has a positive impact that allows the recovery of increasingly scarce metals or materials. Obtaining them is important for the development of the States that implement them, contributing to the mitigation of pollution.

It is important to consider that technological innovation, the application of science, and the culture of consumerism in the 21st century mean that people increasingly want to replace electrical and electronic devices

with better performing ones, thus increasing e-waste in urban areas every year. The goal is to ensure that e-waste does not end up in a landfill or incinerator, but has a final processing through circular economy in order to mitigate environmental pollution, or is transferred or sold to landfills in third-world countries without technological processing.

Global internationalization and liberalization have generated political, economic, cultural, and social challenges for states. It brought an explosion of innovation, supported by computer and telematics technology in the 4th Industrial Revolution. They contributed to the creation of new products, new public services, new business models, new needs, challenges that dispute the shape and competitive keys of the industry of the future “industry 4.0” under construction, and evolution under the commercial slogan “green sells”.

In this regard, considering the multidimensional nature of what has been studied in the article, the subject is relevant as part of the public policies of the States to achieve sustainable development among the Millennium Development Goals for 2030, since environmental pollution is one of the global issues, especially in urban settings.

It is important to keep in mind that the circular economy model is moving towards a new paradigm, which involves the manufacture of products that, since their origin and design, allow business to be conducted in response to the society’s economic growth, environmental sustainability, and risk reduction in face of the uncertainty regarding the prices of raw materials and energy resources. Linked at the discretion of the article’s authors to the recognition of Corporate Social Responsibility, and its implementation by States through its legal recognition in their legal system.

As a legal fact, the global unease about environmental deterioration has led to the creation of regulatory frameworks at national, regional, and international levels that promote circularity in face of the environmental impacts of planned obsolescence. Scientific literature points out that progress should be made toward a rational, eco-efficient, and inclusive green economy. This challenge has not yet been adequately addressed.

As the subject of the article for the authors, the new legislations are moving towards a paradigm shift: from the linear “extract-manufacture-dispose” economy, to the circular “remanufacture-recycle” economy. Observed by management to be implemented in their businesses, reinforced by the use of Information and Communication Technologies with the fifth generation (5G) on the web 2.0.

4 CORPORATE SOCIAL RESPONSIBILITY: NEXUS WITH GREEN ECONOMY FOR THE MITIGATION OF ENVIRONMENTAL POLLUTION BY STATES

In the 21st century, Corporate Social Responsibility (CSR) has emerged to cope with global economic, social, environmental and food unsustainability. It led to the consideration of new dimensions, extensions, and introduction of the typical notions of Administrative Law. The administrative function and the public interest help companies to contribute to sustainable development in favor of a balance between economic growth, social welfare, and the proper use of natural resources. In the opinion of the article's authors, this balance is of great value for the operation of companies, and should be observed in business competition.

The CSR, a term implemented since the mid-twentieth century, according to Carroll (1999), has been promoted since the publication of the book "Social Responsibilities of the Businessman" by Bowen (1953). It is considered to be the beginning of the concept of CSR. There is no doubt that with his book, Bowen (1953), in addition to analyzing the company-society relationship, offered the first definition of CSR, understood as the obligations and decisions that businesspersons must assume in relation to the company policy in order to follow desirable lines of action in terms of society's goals and values, and its respect for the environment. The authors of the article are affiliated with this issue as it is the most relevant in the bibliography studied, nowadays beforehand with the company-university relationship.

In 2011, it was assessed the European Commission's understanding of CSR as:

[...] processes of integrating social, environmental and ethical concerns, respect for human rights and consumer concerns into its business operations and core strategy in order to: 1) maximize the creation of shared value for its owners/shareholders and other stakeholders and society at large; 2) identify, prevent and mitigate potential adverse consequences (COMISIÓN EUROPEA, 2011, p. 07, free translation).

The situation pointed out in social auditing for its link to CSR and the subject matter addressed, and the research conducted up to that historical moment, was limited. They only meant that it is a useful tool to balance the power that companies have in society, which implies the legitimization and strengthening of the corporate image in relation to consumers, and its competitive position in the market. It implied a change in the concept of

CSR, considered as an individual action of “businesspersons” as part of company policy, as a working tool aimed at evaluating aspects related to monitoring, measuring, and evaluating the performance of corporate work.

Therefore, the CSR is valued as part of the business strategy, in which philanthropic, ethical, legal, economic and environmental responsibility is established by the subjects of administration. In the opinion of the article’s authors, these elements shall allow entrepreneurs to consider it in order to achieve proper environmental management with a strategic vision in the organizational culture, through the implementation of the technical standards ISO 14 000, 19 000 and 26 000, in compliance with the United Nations Global Compact Management Model (2010).

In this sense, in 2011 the Guiding Principles on Business and Human Rights: putting into practice the UN framework to protect, respect and remedy, determines “the responsibility of business to respect human rights”, as a social expectation towards companies. Also regarding the object of the study, in 2013 the 2030 Development Agenda and its 17 Sustainable Development Goals were approved, with a view to Strategic Management.

The objective addressed in the development of this article is to demonstrate the impact of Strategic Management on CSR, in which the following examples are proposed: creation of the Ecologically Responsible Company; implementation of clean technologies; use of environmental management systems; environmental label and environmental certification within the “market and trade instruments”. This last would contribute to achieving a better quality of life and welfare of citizens through the proper protection of the Public Administration, by performing environmental auditing (SÁNCHEZ; SÁNCHEZ, 2019, p.1-23, free translation).

In this regard, Sánchez says that the increasing environmental degradation has led companies to start using new environmental protection instruments, either voluntary or not, with a new business ethic (SÁNCHEZ, 2004, p.1-22).

According to Parejo’s criteria, we currently live in an era of political, institutional and private concern about the environmental status. The social valuation of the environmental issue has changed in the last decades of the 20th century and the first years of the 21st century, to positions of greater awareness about the environment quality, considering the possible sixth extinction that is approaching, where the inappropriate conduct of humanity is to be blamed (ALFONSO, 2015, free translation).

Therefore, it is stated that technological development cannot be

harmful to the environment, and this is the role of law as a social science, as the way to favor environmentally friendly development. Simultaneously to the extraordinary scientific and technological progress that exists today, this fact has allowed a high-standard lifestyle in developed societies, in which we are now aware of the various risks that arise from technological development itself. Despite this progress, there is still scientific uncertainty as to their effects on the environment and human health, which can be mitigated if the precautionary principle is properly applied.

Another focus is provided by SÁNCHEZ, who points out that in the legal relationship that appears between auditor and auditee, with the implementation of environmental auditing. Among the environmental auditing's objective elements, environmental certification is recognized as the ecological label for goods and services. Hence the role of environmental auditing as an essential axis, and the recognition of all of its aspects, notably the legal one, as it is more comprehensive than the duty of inspection among the market instruments involved in the commercial activity, so that environmentally-friendly production processes are recognized according to the application of CSR, in order to help mitigate environmental pollution with clean productions.

5 THE RECOGNITION OF SUSTAINABLE DEVELOPMENT AND THE CIRCULAR ECONOMY IN THE LEGAL SYSTEMS OF CUBA AND BRAZIL

In the Cuban legal system: in 2019, the approval of the new constitutional text provides in article 11: the State exercises sovereignty and jurisdiction, paragraph b) over the environment and natural resources of the country. Article 16, on Cuba's international relations, states in paragraph f) to promote the protection and conservation of the environment, and the fight against climate change, which threatens the survival of the human species, based on the recognition of common but differentiated responsibilities; the establishment of a fair and equitable international economic order, and the eradication of irrational patterns of production and consumption (CUBA, 2019). Article 23 states:

The following are socialist property of all the people: the lands that do not belong to individuals or to cooperatives integrated by them, the subsoil, mineral deposits, mines, forests, waters, beaches, communication routes, and living and non-living natural resources within the exclusive economic zone of the Republic (CUBA, 2019).

Article 75, states:

Everyone has the right to enjoy a healthy and balanced environment. The state protects the country's environment and natural resources. It recognizes its close link with the sustainable development of the economy and society, in order to make human life more rational and ensure the survival, well-being and security of present and future generations (CUBA, 2019).

In addition, Article 90 states:

The exercise of the rights and freedoms provided for in this Constitution entails responsibilities. The duties of Cuban citizens, in addition to those established in this Constitution and in the laws, are the following [...] protect natural resources, flora and fauna and ensure the conservation of a healthy environment (CUBA, 2019).

Cuba, in its legal system, acknowledges the legal principle of sustainable development since the 1976 Constitution, ratified in the 2019 Constitution, and complies with the international law treaties to which it is a party, as Pisani (1996), Legra (1999) and Fernández and Santos (2005) consider in their studies.

According to the provisions of the supreme text, the development of legal bodies in the legal system is established in Law n. 76 of 1994 and Law n. 118 of 2014 that deal with the mining activity. It is argued that Law no. 81 of 1997 does not contain in its articles any pronouncement on circular economy or urban mining activity. Therefore, it should be updated in this regard.

The legal processing of ordinary solid waste, and its legal principles are based on Law No. 81 of 1997. There are other legal and technical norms that rule residues in a complementary way, evidencing the principles of prevention, precaution, responsibility, and legality. These are elements that point out to the fact that the arrival of the 21st century has characterized the symbol of the global reconfiguration of human culture by means of a wave of unprecedented innovations of which Cuba is no stranger, promoted by Díaz Canel since he assumed the Presidency, encouraging the application of innovation and science in the state business sector, since it is the majority within the forms of management.

The increased pollution in cities, bound to the increased use of electronic devices in large numbers, has reached the end of its useful life. The population is unaware of urban mining, reverse logistics and circular economy. To this end, the Ministry of Science, Technology and Environment (*Ministério da Ciência, Tecnologia e Meio Ambiente, CITMA*), has passed:

the Cuban Environmental Strategy updated every 5 years; the Plan to Fight Environmental Pollution; the State Plan against Climate Change (*Tarefa Vida*), and the pending Plan for Sustainable Development, which draws up guidelines for its contextualization, like the 2019 “*Tarefa Vida*”.

However, one can see how a company has been created within the public administration to collect and recycle raw materials. Individuals and cooperatives participate in this collection activity by collecting metallic and non-metallic residues (aluminum, iron, copper, bronze, among others) in cities, under prices set by the Ministry of Finance and Prices. However, the legal system misses a “Recycling Law”.

These elements allow us to conclude that the challenge in environmental management for economic players in Cuba should be focused on compliance with the principle of legality under the technical standards ISO 9001, 14001, 26000. The legal system, however, still needs the enactment of the Law of Companies and the Law of Competencies, which consider circular economy through initiatives that manage a sustainable economy that improves the use of resources for a fair, social, collaborative and sustainable economy. This economy rules out the current linear system of use and throw away, in attention to the economic, political, technological and sociocultural dimensions in the implementation of the new economic and social model. Here sociocultural management plays a role in achieving local development in every municipality in the country, through environmental legal training.

It leads to rethinking once again the words of the statesman Ruz in his speech at the Rio Summit, which stated:

It should be pointed out that consumer societies are responsible for the terrible destruction of the environment. They came into being from the former colonial metropolises and imperial policies, which caused the backwardness and poverty that afflict most of humanity today (RUZ, 1992, p. 1).

Later, Ruz resorted again to his futuristic analysis, and expressed “Sustainable growth is inadmissible without a fairer distribution among countries”. “There cannot be sustainable growth for one part of the world, and underdevelopment for the rest” (RUZ, 1992, p. 1). Although the authors consider these as valid issues, fulfilling them remains a great challenge, wealth remains poorly distributed.

In this context, the Cuban society is in the process of updating its economic and social model of development, which is decisive for

sustainability and prosperity, for education and value formation, health, science, technology and innovation, culture, media, science, defense and national security, rational use and protection of natural resources, in line with the goals and targets of the 2030 Agenda toward achieving sustainable development.

In terms of public control, the Comptroller General has the legal mission, as public policy, to perform audits in the strategic sectors of the country, such as the environmental audit of watersheds and the audit of renewable energy, and the pending audit of the business sector (SÁNCHEZ, 2017, p.1-24).

Thus, the role played by the academy in its liability for environmental legal education should not be neglected. The present time requires educate to innovate and innovate to educate, with the leading role of new models, in which humans act responsibly in environmental protection, with the necessary skills. This shall contribute to achieving harmony and balance for industrial development, technological advances in the human-nature relationship (SÁNCHEZ; LÓPEZ, 2019, p. 1-25).

That is why the authors of this article value Leff's statement in the epigraph:

[...] the need to internalize an emerging environmental knowledge in a set of disciplines of natural and social sciences, in order to build knowledge capable of capturing the multicausality and interdependence relations of natural and social processes that determine socio-environmental changes, to build knowledge and social rationality oriented towards the goals of sustainable, equitable and lasting development [...] (LEFF, 1998, p. 1, free translation).

In the Brazilian legal system: To address circular economy, it is important to highlight, first of all, some considerations about the insertion of the concept of sustainable development in the Brazilian legal system.

Since it began to be used and developed internationally, although Brazil has participated in events that discussed the topic, even before 1988 when the Constitution of the Federative Republic of Brazil (CR/88) came into force, it does not directly address sustainable development, although it represents two dimensions through articles 1, 3, 179, VI, 225, 182 and 183, 184 to 191 and 215 to 216-A, as expressed by Gomes and Santos:

[...] The environmental pillar is also observed in art. 170, which informs that the Brazilian economic order is founded on social justice, and that it possesses the attribute of free initiative, and in its subsection VI it deals with the defense of the environment in the context of economic development. In addition, there is a provision

of its own, namely, art. 225. The urban spatial dimension is perceived in arts. 182 and 183 that deal with urban policy in Brazil. The rural side, in turn, is established in articles 184 to 191, notably regarding the policy on land allotment. The Brazilian constitutional text is an expression of the legal-political dimension which ensures several rights. The ethical-cultural dimension, in turn, is established in the dignity of the human being, which is fundamental in the Brazilian Republic and is supported by articles 215 to 216-A of the CR/1988 that value and establish mechanisms to protect the Brazilian culture (GOMES; SANTOS, 2016, p. 22., free translation)⁵.

However, unlike how the RC/88 approaches the issue, there are now laws that expressly use the term “sustainable development” in their normative text, such as Law n. 9.985 of 2000, which deals with the Conservation of the Unit and sustainability in the use of natural resources; Budgetary Law n. 10.933/2004, which provides for sustainability in rural areas; Law n. 11.284 of 2006, which deals with public forests; Law n. 11.959 of 2009, which establishes the National Policy for Sustainable Development of Agriculture and Fishing, among other laws that deal with the term in its various dimensions.

This fact shows that, as Gomes and Santos state, there is indeed a multidimensionality of sustainable development in the Brazilian legal system, although there is no express provision for it in the Constitution. This multidimensionality is due to the various laws, such as those mentioned above, and public policies⁶ that deal with the subject (GOMES; SANTOS, 2016, p. 29).

There is no doubt that sustainable development is extremely important for the world population. In order to effectively achieve this, it is necessary to adopt measures that preserve the environment. Therefore, the circular economy may be cited as a suitable means to do so.

The circular economy model was created to break the linear economy model, which consists of extracting raw materials and transforming them into a final product that will be consumed and then discarded. The circular

⁵ Free translation of: “O pilar ambiental é observado, ainda, no art. 170, o qual informa que a ordem econômica brasileira é fundada na justiça social e que possui o atributo da livre iniciativa, e em seu inciso VI, trata da defesa do meio ambiente no contexto do desenvolvimento econômico. Além disso, há um dispositivo próprio, a saber, o art. 225. A dimensão espacial urbana é percebida nos arts. 182 e 183, que tratam da política urbana no Brasil. Já a parte rural é estabelecida nos arts. 184 a 191, especialmente no que tange a política de alocação de terras. O texto constitucional brasileiro é uma expressão da dimensão jurídico-política, na qual se garantem diversos direitos. Já a dimensão ético-cultural está estabelecida na dignidade da pessoa humana, fundamento da República Brasileira, e encontra amparo nos arts. 215 a 216-A da CR/1988, que valorizam e criam mecanismos para a proteção da cultura brasileira” (GOMES; SANTOS, 2016, p. 22).

⁶ For more details on the relationship between public policies and the sustainable development goals in its multiple dimensions, please refer to: GOMES; FERREIRA, 2018, p. 155-178.

economy emerged, as previously discussed in this article, with the aim of implementing a production model in society that is no longer based on the simple disposal of used products, but on the recycling and reuse of products. This reduces the need to use new natural resources for the production of new products, and reduces environmental pollution due to irregular disposal. In this way, the goal is not to use natural resources excessively and unconsciously, but to create new methods for the production of materials that can make recycling and reuse more efficient, and are closely related to the green economy⁷. As Feitosa *et al.* state (2019, p. 116, free translation⁸), “[...] Circular Economy gathers the technological and commercial pace of the world in a sustainable model, proposes to minimize waste, if not eliminate it, by using materials that allow for full recovery”.

The aforementioned model is still being progressively developed in Brazil. In fact, the term is not widely used in people’s daily lives, nor in the management of industries and companies that play an important role in the development of circular economy, as they can create strategic plans aimed at a recycling and reuse policy.

In Brazil, in terms of public policy, Law No. 12.305/2010 was approved, creating the National Solid Waste Policy (*Política Nacional de Resíduos Sólidos*, PNRS), which provides for the effective management of solid waste at the national, municipal, and state levels. Assunção states that:

[...] it is constituted as a set of principles, objectives, instruments, guidelines, goals and actions for the development of waste and residues management in an integrated manner. This integration aims at cooperation among federal, state and municipal governments, the private sector and civil society. Among the principles that underpin the PNRS are: the systemic vision in solid waste management that considers the social, cultural, economic, technological, and public health variables; sustainable development, eco-efficiency, and recognition of residue as reusable or recyclable, and also shared responsibility (ASSUNÇÃO, 2019, p. 227, free translation⁹).

⁷ To better understand green economy, please refer to: RODRIGUES; LUMERTZ, 2014, p. 107-134.

⁸ Free translation of: “[...] a Economia Circular une o ritmo tecnológico e comercial do mundo em um modelo sustentável, propõe-se a minimizar os resíduos, senão eliminá-los, utilizando-se de materiais que permitam uma recuperação total” (FEITOSA *et al.*, 2019, p. 116).

⁹ Free translation of: “[...] se constitui como um conjunto de princípios, objetivos, instrumentos, diretrizes, metas e ações para o desenvolvimento da gestão e do gerenciamento de resíduos de forma integrada. Essa integração visa a cooperação entre os governos federal, estaduais e municipais, o setor privado e a sociedade civil. Entre os princípios que fundamentam a PNRS estão: a visão sistêmica na gestão de resíduos sólidos que considere as variáveis social, cultural, econômica, tecnológica e de saúde pública; o desenvolvimento sustentável, a ecoeficiência e o reconhecimento do resíduo como reutilizável ou reciclável e, ainda, a responsabilidade compartilhada” (ASSUNÇÃO, 2019, p. 227).

The law, however, requires that all solid residues generators contribute positively to the development of circular economy in Brazil, and to the sustainability of the Brazilian society as a whole. For this reason, the law institutes the adoption by industries of reverse logistics policies.

Reverse logistics is an “instrument of economic and social development characterized by a set of actions, procedures and means to enable the collection and return of solid residues to the business sector, for reuse in its cycle or in other production cycles, or other final destination environmentally appropriate” (BRASIL, 2010, free translation¹⁰). Thus, it can be inferred that there is a given environmental responsibility of industries, through the imposition of a management based on reverse logistics, present in the PNRS.

It should be noted that reverse logistics imposes to industries the need to create a mechanism to allow their consumers to dispose of their products in a correct and conscious manner, or even to return them to the industry for reuse or recycling. The material thus returns to the initial stage of production and business. Carneira calls these stages “reverse distribution cycles”:

In general, reverse distribution channels are classified into two categories: (i) post-consumption and (ii) after-sales. The first classification is characterized by the different ways in which post-consumer products or their constituent materials are processed and marketed [...] The second category allows after-sale products to re-enter the business cycle. These industrialized goods are returned for various reasons, of which we could mention expiration date, stocks at their maximum level, consignment goods, among other qualitative issues. Thus, they may be directed to other substructures such as secondary markets, recycling, scrapping, etc. Practical cases of the respective categories are best visualized in the following examples: company auctions (reuse reverse channel); e-commerce (after-market reverse channel); disposable packaging (post-consumer reverse channel); retail stores (after-market reverse channel) (CARNEIRO, 2018, p. 222-223, free translation¹¹).

10 Free translation of: “[...] *instrumento de desenvolvimento econômico e social caracterizado por um conjunto de ações, procedimentos e meios destinados a viabilizar a coleta e a restituição dos resíduos sólidos ao setor empresarial, para reaproveitamento, em seu ciclo ou em outros ciclos produtivos, ou outra destinação final ambientalmente adequada*” (BRASIL, 2010)

11 Free translation of: “*De modo geral, os canais de distribuição reversos são classificados em duas categorias: (i) pós-consumo e (ii) pós-venda. A primeira classificação se caracteriza pelas diferentes formas de processamento e de comercialização dos produtos de pós-consumo ou de seus materiais constituintes [...] A segunda categoria permite o reingresso dos produtos de pós-venda ao ciclo de negócios. Esses bens, industrializados, são devolvidos por diversos motivos, dos quais podemos citar prazo de validade, estoques em seu nível máximo, mercadorias em consignação, entre outros quesitos qualitativos. Assim, eles podem ser direcionados às outras subestruturais, tais como mercados secundários, à reciclagem, desmanche, etc. Casos práticos das respectivas categorias são melhor visualizados nos seguintes exemplos: leilões de empresas (canal reverso de reuso); e-commerce (canal reverso de pós-venda); embalagens descartáveis (canal reverso de pós consumo); lojas de*

Thus, there is no doubt about the importance of the PNRS adopting reverse logistics, and its contribution to the implementation of the circular economy. The private sector presents initiatives aimed at using circular economy, as mentioned by Sales *et al.*:

[...] as an example, the company Natura has been developing over the decades a system of manufacturing products only with recyclable materials, and it has recently reached 100% of its production coming from these elements. Innovating through Circular Economy, the Brazilian company Ambev acted with intelligence and environmental responsibility by promoting the opportunity to reuse its by-products by selling them to reuse companies. The result: more residues reprocessed and less waste. The company's attitude generated profits of R\$115 million in just one year, and the achievement of 99% of residues in reuse (SALES *et al.*, 2019, p. 06, free translation¹²).

The 2030 Agenda was also a very important document for the implementation of circular economy in Brazil. It was established at the United Nations headquarters, with the participation and approval of Brazil, and established 17 Goals, all related to global sustainable development. The ultimate goal is to fight poverty and inequality, injustice, and mitigate climate change. Goal 12 does not explicitly provide for circular economy through an established goal imposing the adoption of recycling and reuse by 2030. This is what is expected.

In view of the above, it is possible to conclude that the circular economy has been increasingly discussed and raised in Brazil. Implementation is not an easy or quick task, as it involves awareness among government agencies, the population in general, and the industrial sectors, so that the model discussed in this article can be efficiently achieved. Therefore, it is necessary to collaborate together and strengthen the environmental agenda and sustainable development at all levels, so that the subject is worked on in a more serious and conscious way.

As the international mandate promoted by UNESCO, environmental legal education has left Law Schools and started to penetrate the professional field through the action of science and technology on environment.

varejo (canal reverso de pós-venda)" (CARNEIRO, 2018, p. 222-223).

12 Free translation of: "[...] como exemplo, a empresa Natura vem desenvolvendo ao longo das décadas um sistema de produção de produtos apenas com materiais recicláveis, onde recentemente alcançou 100% de sua produção oriunda desses elementos. Inovando através da Economia Circular a empresa brasileira Ambev atuou com inteligência e responsabilidade ambiental promovendo a oportunidade de reaproveitamento de seus subprodutos através da venda dos mesmos para empresas reutilizá-los. Resultado: mais resíduos reprocessados e menos desperdício. A atitude da empresa levou ao lucro de R\$115 milhões em apenas um ano e o alcance de 99% de resíduos em reuso" (SALES *et al.*, 2019, p. 06).

The interdisciplinary approach is still a goal to be properly achieved in the educational system, and not to be seen in a fragmented way, in the pursuit of sustainable development as a public policy, in which Environmental Sociology plays a significant role. It remains a challenge for States, which will in fact enhance the environmental legal culture and thus allow acquiring an “environmental culture”, by being subject to rights and obligations in environmental protection to promote the implementation of circular economy.

CONCLUSIONS

The Johannesburg 2002 Declaration on Sustainable Development expressly accepts “*the reality that global society has the means and resources to respond to the challenges*” presented herein to overcome the dichotomy between environmental protection and economic development, harmonizing both processes. Then, as a follow-up, the 2012 Rio+20 Summit on the *sustainable development* paradigm advanced the achievement of a “*green economy*” in the context of sustainable development and poverty eradication, and the institutional framework for the legal principle of sustainable development.

The first decades of the 21st century have been characterized by the global reconfiguration of human culture, marked by an unprecedented wave of technological innovation. The increase of environmental pollution in cities, bound to the increased use of electronic devices in significant numbers once they reach the end of their useful life, in which the population is unaware of terms such as urban mining, reverse logistics, circular economy, due to their socio-environmental impact that endangers human health.

The circular economy model moves towards a new paradigm, implies a new way of making products from their origin, their design, and allows doing business in response to the economic growth of society, environmental sustainability and risk reduction due to the volatility and uncertainty of prices of raw materials and energy resources, as part of the environmental public policy of the States with the relevance of the use of environmental label.

In their responsibility for environmental legal education as a constitutional mandate, universities in the 21st century are required to educate to innovate and innovate to educate as protagonists of change to achieve

sustainable development within the scope of the goals set for 2030. One that can be radiated at a greater speed, and to larger spaces with the use of Information and Communication Technologies in web 2.0 with the fifth generation (5G), to achieve sustainable development.

Cuba, in its legal system, has not yet issued a legal norm ruling recycling and, within it, the implementation of circular economy by the subjects of administration. However, within its public policies there is a company within the Ministry of Industry whose goal is the collection and processing of some raw materials. The company deals with the recycling of products and residues, and does not yet conceive of the processing of electronic equipment to mitigate environmental pollution.

The Brazilian legal system has already recognized circular economy through reverse logistics instituted in the PNRS, Law no. 12,305/2010, and through green taxation. The PNRS gave rise to regional and local public policies that try to address reverse logistics. This, however, is not something simple. There are practical problems with industry agreements that tend to have low compliance targets for companies and, even then, are not enforced very often. Thus, corporate social and environmental responsibility has not yet become effective in Brazil, remaining as an utopia. The paradigm in Brazil should be changed for a more incisive action by governments at all levels, besides increasing the awareness of the population and the business sector. It is also necessary to think of other ways and other instruments to approach Green Economy, putting sustainable development and the global environmental agenda at the forefront.

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