

# Environmental auditing within Environmental Law. The principles of Environmental Law that inform environmental audit, the role of the SAI in the environmental area



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## ABSTRACT

The origins of environmental auditing within Environmental Law are described in three words: accounting, auditing and law, in view of the relevance of environmental oversight for the companies and industries, when examining its concept and elements based on the doctrine like its normative regulation.

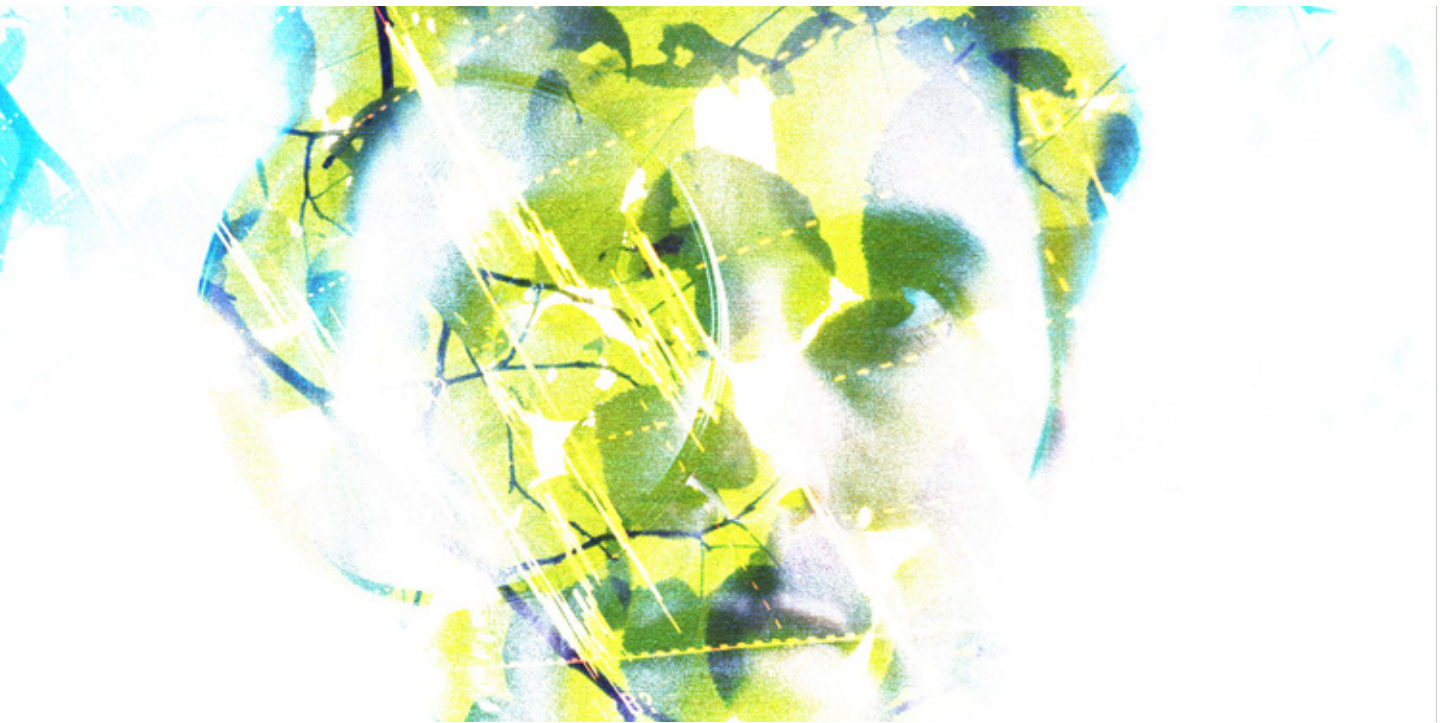
Its importance for industrial development, the added values that it contributes to forms of management, such as business ethics, the certification of its management systems, the accounting environmental certification and the environmental certification as an environment-friendly company. This typology of auditing by the Supreme Audit Institution that performs it is linked to the principles that inform it in Environmental Law and to the principles of the audit activity, as a goal to attain a sustainable development.

The methods used in the research were the following: historical-logical, analysis and synthesis, theoretic-legal, exegetic-legal, comparative law, and inductive-deductive

**Key words:** Environmental auditing, environment-friendly company, sustainable development

## 1. HISTORY OF ENVIRONMENTAL AUDITING IN ENVIRONMENTAL LAW

The global concern with environmental protection gained importance and magnitude in recent



years, converted into a topic of interest to the majority of the business community, in face of the negative consequences generated by industrial pollution that produces environmental damage. This protection manifests itself in three dimensions, economic, social and environmental<sup>1</sup>. In this scenario, well-balanced industrial development is essential to generate resources, jobs and to promote environmental education, as the basis of social well-being and quality of life to achieve sustainable development<sup>2</sup>.

Thus, technological development cannot harm the environment and, in this sense, the law becomes a means to promote environmentally friendly development. Every time the numerous risks generated by technological development are announced, together with the extraordinary scientific and technologic progress that has enabled a high standard of living in the developed societies today, there are numerous risks produced by technological development itself. Above this, despite this progress, scientific uncertainty about its effects on the environment and human health is still present. In different countries, legal structures originated from administrative law to environmental law, recognized as environmental administrative law by authors as SANZ LARRUGA, BETANCORT RODRIGUEZ and MORA RUIZ have allowed the design of guidelines and limits to the progressive phenomenon of industrial pollution<sup>3</sup>.

The regulation of the legal institution of environmental auditing as a tool of environmental man-

agement<sup>4</sup> can be seen within this analyzed doctrine. It is the industrial sector, as a producer of environmental damage contrary to sustainable development, the one who has enabled the develop environmental policies, which by implementing the GHS and the use of clean technologies allow reduction of pollution within the permissible limits. Hence, the concern of businesspersons about environmental issues declared at the universal environmental conclaves, as an element to reduce pollution caused by industries. This author considers that most of the responses given so far by the state leaders have not been adequate since there is no consensus to adopt agreements to mitigate environmental pollution that affects the natural balance of the planet.

That is why analyses in this matter should assess the effects of pollution on humankind, and ecological systems and implement GHS. It would be also convenient, this author thinks, to distinguish natural and industrial pollution from the beginning of mankind, accelerated as of the industrial revolution, as the generator of serious ecological problems -ecological crisis- and improper ecological prudence, to achieve sustainable development<sup>5</sup>.

From this viewpoint, the analyses carried out by this author based on the accounting doctrine and on the *ius* environmentalist doctrine in Latin America and the European Union, acknowledge environmental audit as the management tool capable of adequately assessing and establishing the foundations of envi-

ronmental policies in the enterprises, It also enables analyses of environmental risks generated by activities and assessment of their impact, integrated with other tools.

Since it is practiced in a voluntary and mandatory way in the legal system that governs it, its execution merges with the main objective of the company, the obtaining of benefits, and the observance of environmental protection. This contributes to development that is compatible with environmental conservation, with a balance between both<sup>6</sup>.

Scientific literature shows us the work of PACCIOLI, published in 1494, with the theory of the "double-entry". This evidences that from the year 254 a. n. e. accounts are inspected and checked, a factor that allowed the parallel evolution of the audit activity as a result of the practice of accounting, as science and tool of specialists formed with industrial development. Further details and documents confirm to this author that, in the late 13th century and early 14th century, the operations of public officials who were in charge the State funds were audited. In 1799, there were already accredited firms of public accountants in countries like Scotland, United States of America and England. These were the first countries in which public accounting linked to the practice of government audit gained relevance<sup>7</sup>.



Other studies carried out based on the accounting sciences indicate that the audit practice was born in Great Britain during the first half of the 19th century and spread to other countries of Anglo-Saxon business culture. This was a way of making accounting information reliable and increasing transparency in the stock market in face of economic development and the expansion of economic relations due to the requirement of its states of accounts, linked to the trading activity, to revive confidence and competition in these relationships<sup>8</sup>.

In the 20th century, legal regulations were included in the audit, by the will of the public administration; thus strengthening the three terms accounting, auditing and law with regulations aimed at the protection of financial actives against possible transgressions. Thus, auditors reviewed the status of accounts of enterprises to provide reliability to budget execution. This author appreciates the transcendence of environmental legal asset protection, reflected in direct or indirect accounting, because of its influence on the development of research and the evolution of the auditing activity, as a goal towards sustainable development, by allowing assessment of the balance between progress and the environment through environmental oversight carried out by the SAI<sup>9</sup>.

This is why INTOSAI, from its emergence in 1953 as the public institution responsible for overseeing the regularity of the accounts and financial public management, constituted as a non-governmental organization with a special status in the United Nations Social and Economic Council; in all the geographical regions of the planet, is recognized in the legal systems such as courts of Auditors and General Comptrollers being among the most representative ones<sup>10</sup>.

The abovementioned situation leads this author to analyze the connection between environmental problems and the practice of auditing, appreciated with the origins of the *ius* environmentalism, as part of the international agenda. That is how environmental conferences from the one in Stockholm to the one in Rio de Janeiro, that have debated the planet's environmental problems and measures for their mitigation, made significant contributions in the development of the legal institution as part of the management tools, recognizing from accounting doctrine to its transit to the legal one. The scientific literature examined written by authors such as MARTÍN MATEO and CAFERRATA, reveals that the environmen-

tal audit originated in the decade of the 70s of the last century in the United States of America.

It is also highlighted that in the decade of the 80's of the last century, it spread to the European Union as a result of the interests of the U.S. subsidiaries located in that continent. In the Netherlands, the year 1984 is marked and Holland is pointed out as the first to join the practice of this type of oversight. Its legal requirements have been marked in its normative regulation within their internal rights<sup>11</sup>.

Because of the commitment backed by the BRUNDTLAND Commission in 1987, where the proposal was formulated ("...a sustainable development that meets the needs of present generations without compromising the possibility of future generations to meet theirs"...) <sup>12</sup>.

However, from all the above statements, one can consider that SAIs in the year 1995 of the last century recognize it as a tool of environmental management, although other accounting studies consider their genesis linked to accounting and social auditing, related to the implementation of CSR in the management forms<sup>13</sup>.

The emergence of environmental audit as a management tool for SAIs, linked to the principles and legal norms of environmental law, regulated by the States in special legal rules aiming at their uniformity, in issues such as environmental responsibility, quantification of environmental damage and corporate social-environmental-responsibility are elements that, in this author's view, have allowed evolution over time. This, in relation to the country that applies them and to the industrial technological development of the country because of its relevance in the political, social and economic level. The addition of the new technological items, linked to world trade, makes environmental audits more complex, comprehensive and dynamic on the part of the subjects that implement it. Therefore, techniques, methods and objectives of the audit as an oversight activity have been increasing, in order to be meet the new demands of the market of goods and services, where environment friendly companies<sup>14</sup> appear as a viable solution to achieve balance between progress and environmental protection. The company thus classified, acquires intrinsic added value within the business ethics, this will allow them to incorporate it as a requirement to achieve the binomial culture and social responsibility<sup>15</sup>, position supported by FERNÁNDEZ DE GATTA SÁNCHEZ, DIEZ, MUÑOZ-MARTIN and VEGA CENTENO.

Similarly, the practice of this type of audit is seen as an oversight activity and, at the same time, as a technical management tool. , It is widely used by the SAIs. All this evolution in audit, materialized in correspondence to the geographic areas where it is applied, relates to the level of technological development of each enterprise and industry. This author agrees with this position, considering the link appreciated from the social and the technical sciences, because of their crosscutting and interdisciplinary nature. These audits, promoted by various agents ranging from governments to international organizations, related to this type of environmental oversight and which directly or indirectly have been triggered as of the publication of ISO 14000, 19011 voluntary standards and the EMAS<sup>16</sup>.

With regard to what was pointed out so far, the modern expression of environmental audit, linked to its history and evolution analyzed by this author is considered the evaluation tool of the environmental management system. It is the key mechanism for obtaining information on the effectiveness of management of the companies, it identifies the problems associated with work related to safety and work environment, in order to determine the new environmental challenges, it proposes at the same time measures of prevention and mitigation, complemented with environmental accounting review, elements with which the author agrees.

It is clear that the 21<sup>st</sup> century environmental problems could not be analyzed or understood without taking into account the global perspective that explains its roots because of multiple factors such as the effects of the ecological world crisis. Among them: the rising temperatures, the hole in the ozone layer, desertification, the accumulation of radioactive waste, the spread of diseases as cancer and malaria, the insalubrity of freshwater, food insecurity, urban pollution and depletion of renewable and non-renewable resources. These issues are considered by this author, linked directly or indirectly with the legal institution investigated because they are related to environmental problems occurring today and this environmental oversight activity is not being applied in their majority of the SAIs<sup>17</sup>.

The SAI, as an international controller of this environmental oversight activity, establishes guidelines to identify it: ... such as the technical management tool for the systematic, documented, periodic and objective evaluation of the effectiveness of the audited organization; for the management and envi-

ronmental teams in order to protect the environment with better control of environmental practices and their assessment. To accomplish the environmental policies and the legal regulations established by the company, as of the institutionalization of its environmental protection...<sup>18</sup>

ISO 14001 and 19011 standards define it as: "...a systematic, independent, and documented process for obtaining audit evidence and evaluating it objectively to determine the extent to which audit criteria are fulfilled..."<sup>19</sup> Regarding that, this author acknowledges similar names supported by authors, based on the *ius* environmentalist doctrine, such as: eco-audit, environmental review, environmental control, environmental assessment and environmental monitoring. All of them have the same meaning and purpose: to know the levels of contamination of a company when using clean technologies, to obtain environmental certification, concepts which this author agrees with, by pursuing the same aim<sup>20</sup>.

In this area, all the doctrinal criteria, concepts and legal regulations consulted by this author, characterize this type of audit as: ...generalized by encompassing the EMS, of environmental review, punctual, of compliance, of claims, of risks, of acquisition, of safety and health, of compliance with the law and resources. These criteria take into account the scenario to be audited where it is going to be practiced, classified as: interior environment and external environment.

Its goal, to assess the environmental impact of business management on the environment and to propose corrective actions to mitigate the negative effects identified. It is concluded with the delivery of the environmental certification of non-polluting – environment-friendly to the company or industry -.<sup>21</sup> In this regard, it will allow businessmen to obtain benefits in terms of competition in the trade, with added value by getting the environmental label, after applying environmental conduct codes with the good environmental practices as environment-friendly companies, by gaining a proper business ethics, position defended by authors such as MARTÍN MATEO, LORENZETTI and LOZANO CUTANDA.<sup>22</sup>

As a tool of business management, in the countries of the European Union, Latin America and the Caribbean, it has been determined that the environmental audit is capable of evaluating and laying the foundation for an environmental policy aimed at businessmen in the forms of State and non-State management. Its purpose is to analyze environmental risks that could arise

when performing its activity and to assess environmental impacts. Among other characteristics analyzed, it is agreed that this type of audit is compulsory according to how it is regulated by the legislation, with the implementation of ISO 14000, 19011 and the EMAS, as well as agreements and conventions of the SAIs who develop this assessment at global level. At the same time, there are those requested on a voluntary basis, the most required one being majority the non-State management in other geographical environments.

In its execution, it combines the main objective of the company: to obtain economic benefits attached to environmental protection in order to tax economic development in a way that is compatible with environmental conservation, thereby achieving a balance between both (the SAI, the American Accounting Association and the UNEP).<sup>23</sup> In this regard,, the link between this environmental oversight activity and the economic and environmental accounting concepts established by the UNEP<sup>24</sup> is analyzed. This is needed so that an audit team may perform it through an audit program, which enables evaluation of the financial budget for environmental protection and its certification. That is why in the legal systems its tutelage is established in environment organic laws, in oversight laws and special environmental audit laws in relation to the Ibero-American countries contrasted in this research. It is linked in its practice to other environmental management tools already established, such as corporate social responsibility, environmental responsibility and other economic and technological instruments that are applied in its execution, with the reengineering of processes, making it more complex and complete.

## 2. THE PRINCIPLES OF ENVIRONMENTAL LAW THAT INFORM ENVIRONMENTAL AUDIT

As an environmental management tool, this author agrees with the view that links it to the principles of environmental law whenever, with the passing of time, other elements are incorporated to this type of audit, making its application and practice by the audit team that runs it more complex. With regard to this statement, the set of legal principles that are related to environmental audit are:

The public auditing function continues being a preventive action -being systematically used by the company. It facilitates compliance with environmental

legislation and the elimination or reduction of damage. It is compatible with the principle of prevention every time it operates with the known or the actual risk.

With the precautionary principle, the implementation of ISO 26000, allows businesspersons to execute actions to conform an environment-friendly company, in face of possible occurrence of future or uncertain damages, operating on the risk of development, as a goal towards sustainable development facing possible risks to the company or industry, when new technologies are introduced.

The link with the principle of cooperation is important -any time the SAIs cooperate with each other in the implementation of environmental audits and other types of audits, as is the case of cooperated management audits, performed to oversee the use of water, water basins and rivers.

Another link that stands out is with the principle that determines that polluters pay. This contribution is made by environmental taxation by companies and industries, aimed at repairing the environmental damage that occurred.

With the principle of environmental responsibility, -obedience to environmental legislation as part of the policies drawn up by the public administration-, with the due observance by the audited subjects, which is required in its three angles.

It is also linked with the principle of citizen participation every time it urges citizens to comply with environmental regulations aimed at environmental protection, as a public good for generations today and in the future.

Other principles are those of intergenerational equity and environmental sustainability, where the three dimensions (social, economic and environmental) are combined through a formula that allows having a suitable environment for future generations.

With the principle of irreversibility and progressivity. In view of the importance that the protection of the environment has, enriching the legal principles enshrined in environmental summits, which enables the audited organization to recognize its status regarding actions to protect the environment and the principle of progressivity, which is translated as the evolution maintained on environmental protection by the audited organization.

All these principles play a role of interpretation, application of the rules, integration. They cover legislative gaps and, at the same time, they serve to renew the legislation, accredited as the basis for environmen-

tal law, pointed out by authors such as CAFERRATA, LORENZETTI, BELLOTTI and MARTÍN MATEO<sup>25</sup>.

Since the SAI has its tutelage, its practice is linked to other management tools and environmental corporate social responsibility. It has been evolving with the application of other instruments that have been incorporated to it since the last century, such as regulations and tools among which the financial environmental insurance coverage, the application of tax incentives, environmental taxation, the clean technologies and the objective responsibility in relation to the principles of environmental law and auditing function stand out.<sup>26</sup>

From the legal plane, this author analyses the criteria of legal experts dedicated to the study of this branch of the law, such as LOZANO CUTANDA, FERNANDEZ DE GATTA SÁNCHEZ and SANZ LARRUGA,<sup>27</sup>. They all agree that environmental law as a new creation law in doctrinal and policy matters, is dynamic and variable, related to other branches of law and other fields of knowledge because of its cross-cutting nature,. This author adopts this point of view because it is present in the practice of the auditing activity<sup>28</sup>.



In this regard, other authors from the legal sciences field in Latin America and the Caribbean<sup>29</sup>, such as BOTASSI and DE BESA ANTUNES, consider that this branch of environmental law has come to resolve the issue of contamination by demanding environmental responsibility. It was regulated in laws such as environmental crime, environmental responsibility, forest protection, environmental pollution and environmental auditing, related to environmental damage and its accounting quantification; with tax incentives, environmental taxation and financial coverage by the environmental insurance. They recognize their bond with other branches of legal sciences and other sciences such as ecology, accounting, sociology, psychology, history and economy.

In this type of oversight, the ones that have advantages in its application are those, which are founded on the environmental law principles of precaution and prevention, with proper self-control in the audited organization. This allows them to promote proper environmental internal management within the forms of management, to address strategically the productive activity aiming at more efficient and competitive forms. It also allows them to implement the EMS, the use of non-polluting clean technologies, the use of environmental accounting to control the use of the budget, obedience to the law. All of this together allows them to access financial coverage with the environmental insurance with an environment company responsible for actions that present risks to the environment and thus mend the damage caused. Its limitations are identified with technological obsolescence, the high costs of clean technologies, industrial heterogeneity and the fact that this action of environmental oversight is not compulsory to non-State management forms.

The following are considered negative causes to companies that pollute the environment, the costs of the audit contract, and high values of clean technologies, which will not allow employers to get the environmental certification incompatible with sustainable development for not being appropriately aware of environmental issues and how to promote positive actions to solve and mitigate them. The rationale for carrying out this activity of environment oversight, in this author's opinion, will lie on the importance of being the activity being practiced by the businesspersons in their companies, having adequate systematic internal control, in response to environmental issues as part of the environmental policy. One should also

consider corporate responsibility in environmental matters in order to provide appropriate responses to the conventions and agreements established by the SAI on accounting, auditing and environmental auditing, introduced in the internal rights. This is, linked to environmental agreements of the commercial blocks UNASUR, MERCOSUR, ALBA-TCP, CELAC, EU and environmental treaties such as the Agenda 21, the Montreal Protocol -ozone layer- and the Convention on biological diversity. Its effects, to achieve environment-friendly companies. This author believes that businessmen will have to implement strategies to reduce levels of pollution, save energy, use clean technologies, save raw materials, recycle, apply business reengineering techniques and form strategic alliances; where environmental auditing plays a privileged role, not used by most of these.

### 3. THE ROLE OF THE SAIS IN ENVIRONMENTAL OVERSIGHT

This type of audit is performed depending on the conditions that frame it, the specific objectives that motivate it and the level of development that the business organization to be audited possess. It shares a common goal: to deliver documented and validated information about different aspects of the environmental situation of the audited entity by identifying the associated risks and impacts, the examination and assessment of existing practices to improve environmental performance. It allows verification of obedience to legislation and environmental standards of relevance.<sup>30</sup>

Energy and natural resources reforms carried out in Latin America and the Caribbean in sectors of economy, health, citizenship and environment contribute to the implementation of sustainable policies. They will allow the auditor to know the degree of economy, efficiency and effectiveness as well as the quality and impact on planning, the control and the use of natural resources, the level of environmental conservation and protection, as fundamental characteristics in the whole process of planning and practicing environmental control, allowing financial coverage by the environmental insurance, in the words of authors such as VIGURI PEREA, CABEZA ARES and LORENZETTI.<sup>31</sup>

In this public sector, other types of audits are practiced such as financial audit, management audit and compliance audit, carried out by the SAI. They address in their programs issues related to environmental protection, natural resources and sustainable

development, related to the public control that public administration executes.

The multidimensionality of environmental audit, being integrated as a systemic process, procedure, management tool and administrative activity, allows a combination of efforts of professionals in the role of auditors, lawyers, engineers, or scientists. In all this legal scenario, it is confirmed that to achieve environment-friendly companies, it will be necessary to accomplish the policies, principles and regulations that from environmental law and other disciplines, knowledge and science relate to the practice of environmental auditing; essentially regulated by the INTOSAI, in regional and internal systems combined with public policies on environmental matters.

In this regard, scientific papers on law by FERNÁNDEZ DE GATTA SÁNCHEZ, SANZ RUBIALS, LOZANO CUTANDA and MARTÍN MATEO address how this type of audit has been treated within the legal systems of Latin America, recognized as a tool of environmental management.<sup>32</sup> The treatment in macro environmental laws and in environmental public audit laws, agree to regulate it among the modes of action of the public administration, as an oversight activity, limitation, management or police, providing public service and development, strict liability is required through prosecutor's offices specialized in environmental issues.

Due to the very effects of this legal instrument, it is considered that support is given by promoting the development of environmental economy through more competitive industries in more demanding environmental markets, such as designed in the European Union, when applying the EMAS standards to the industry, identified by authors like BETANCORT RODRÍGUEZ, FERNÁNDEZ DE GATTA SÁNCHEZ and MORA RUIZ.<sup>33</sup> However, it means that the essence of all these administrative activities analyzed converges to permanent environmental oversight and environmental. However, they cannot be separated from the economic dynamics and the formula I+D+C. This due to sustainable development, which is contextualized in the international market of goods and services, where audit institutions represented at the global and regional level by INTOSAI through environmental oversight play a significant role in achieving the balance between progress and environmental protection for future generations.

The normative regulation coincides. The same part of the protection of the environmental legal right

in the constitutional text regulates the internal rights in general laws of environmental management, of comptroller and special laws governing exclusively the practice of environmental auditing; all contribute to achieve sustainable development, by acknowledgment in the *ius* administrative and the *ius* environmentalist doctrine and norms. They show the situation of participatory democracy, from the new constitutionalism of the region of Latin America and the Caribbean, with exponents in the constitutional texts of countries like Ecuador, Venezuela and Bolivia, who deal with the environmental issue more rigorously in their articulations.

In the European Union, the 7<sup>th</sup> assessment of the development of environmental law carried out by Martín Mateo, Fernández de Gatta Sánchez and Nogueira López, includes in its results the practice of this type of audit.<sup>34</sup> They agree that protection of the environmental legal right materializes itself based on the constitutional text, in environmental framework laws, public auditing laws, and environmental codes. As a whole, they provide a stable core at the normative level, they provide strength and support for further development of environmental public policies, and incorporate the concepts of economics and environmental accounting, evaluated with the environmental audit by the EUROSAL.

The main current and future challenges for environmental audit are pointed out in the report from the 14<sup>th</sup> International Congress of the INTOSAI.<sup>35</sup> The current challenges are creating an environmental database at every level - local, regional and international - every time there are new environmental problems and political affairs; sustainability as a central dimension, which is difficult to deal with by subjects; environmental problems and their reduction evolve with time; it is a challenge to materially link environmental issues and State finances; the cost-benefit analysis of the long-term benefits of the environmental commitments - crucial element and difficult for businessmen to cater to; environmental issues - multinational and interdisciplinary; field work requires skills and specific knowledge to carry out environmental audit.

Thus, in the future, environmental audit will address more complex, global environmental issues, to the extent that the effects of climate change become more evident. Therefore, it will be necessary to increase the number of environmental auditors and train them. It will also be necessary to plan audits and choose the topics and approaches with a



wide range of options. There will be the need to raise awareness among the public and politicians regarding environmental audit and its relevance that allows this type of audit to adapt itself to fluctuations in the environmental policy decisions of the public administration. There will be a need to determine to what extent the environmental issues are treated and their level of relevance. This will allow maintaining the integrity and professionalism in the fight against the politicization of environmental problems that currently affect the planet and that have not been given a proper solution for the most polluting nations in this 21<sup>st</sup> century.

In this regard, the era of globalization and green economy and taking into account the future role environmental audit will have as value-added in the field of environmental protection; it will be appropriate to resort to the definitions agreed on at the meetings from Stockholm to Rio de Janeiro, related to sustainable development and climate change. Green economy, globalization, energy reform - fuels and electricity-, mitigation and adaptability to climate change, plans, programs and projects of public works, represent the actions of mankind in the built environment; its execution must be sustainable, certifiable, verifiable, recognized with the implementation of environmental audit as key evaluation. The most important thing is that the social sector (the academy, the government and the society) cares, monitors, and protects the legal framework - local and international - with environment-friendly companies, enabling the use of the formula I+D+I, by saying that green sells.

#### 4. CONCLUSIONS

Environmental audit emerged due to corporate pollution and its confrontation by the State. Its genesis was social audit. Subsequently, it consolidated itself as an oversight action carried out by Supreme Audit Institutions and Mercantile Societies. It acquired a legal structure as of its recognition in international conventions and agreements and is introduced into the internal rights by constitutional texts, comptroller and environmental laws. These provide strength and support for the development of environmental policies as a tool of environmental management. Environmental audit can be voluntary or mandatory and it can manifest itself as a police activity, a public service or a promotion activity according to its execution and consequences.

Environmental audit has a multidimensional, comprehensive and transdisciplinary character. Its purpose is the evaluation of the environmental management of the company and the certification of clean productions. In order to perform them, the audited entities have to implement environmental accounting and the treatment of the wastewater from the production of the company. It is a process composed by phases (preparation-execution-conclusion) whose fundamental procedure is regulated in the ISO and the EMAS standards.

The fundamental inadequacies detected regarding the legal regulation of environmental audit in Cuba, focus on the lack of scientific legal treatment. There is no program for this type of audit. Environmental accounting is not applied and there is incoherence by the norm that regulates State audit, lack of recognition in the Environment Act and in the regulations of corporate law, technological obsolescence, industrial heterogeneity and deficiencies in the regulation of environmental responsibility.

Regarding its execution, environmental audit is related to the principles of environmental law. This allows it to be informed in its execution as a process and procedure, to assess the environmental management of the audited subjects in the State and non-State management forms.

#### REFERENCES

ANTUNEZ SANCHEZ, Alcides Francisco, *"La praxis de la auditoría como función pública, dirigida a la protección del bien público ambiental para la empresa ecológica"* en, Revista electrónica Actualidad Jurídica Ambiental, España, 2014, <http://www.actualidadjuridicaambiental.com>

ANTUNEZ SANCHEZ, Alcides Francisco, *"Disquisiciones teóricas, doctrinales y exegéticas sobre la praxis de la auditoría como función pública, dirigida a la protección del bien público ambiental para la empresa ecológica"* en, Revista Dos Tribunais Thomsonreuters, número 951, Brasil, 2015, <http://www.thomsonreuters.com>

ARROYO JIMÉNEZ, Luis, *Libre empresa y títulos habilitantes*, Centro de Estudios Políticos y Constitucionales, Madrid, España, 2004.

AUDIVERTII ARAU, Ramón, *Régimen jurídico de la etiqueta ecológica*, Editorial Cedecs, España, 1997.

BELLOTTI, María, *El principio de precaución ambiental*, Editorial Lerner S.R.L., Argentina, 2006.

BELLORIO CLABOT, Dino, "El nuevo paradigma ambiental y jurídico" en, *Revista Iberoamericana de Derecho Ambiental y Recursos Naturales*, España, 2013.

CAFERRATA, Néstor Alfredo, "Teoría de los principios del Derecho Ambiental" en, *Revista Abeledo Perrot S.A.*, Argentina, 2009.

DEMALDÉ, Cristina, *El principio de precaución en el daño ambiental*, Universidad Nacional Autónoma de México, México D.F., 2011.

DRNAS DE CLÉMENT, Zlata, "Elementos esenciales del principio de precaución ambiental" en, *Anuario del CIJS*, Argentina, 2007.

JAQUENOD DE ZÖGÖN, Silvia, *El Derecho Ambiental y sus principios rectores*, Editorial Dikinson, España, 1991.

LORENZETTI, Ricardo, *Teoría del Derecho Ambiental*, 1era edición, Editorial Porrúa, México, 2008.

LOZANO CUTANDA, Blanca, *Manual de Derecho Ambiental Administrativo*, 3era edición, Editorial Dykinson, España, 2003.

MARTÍN MATEO, Ramón, *Tratado de Derecho Ambiental*, volumen I, 1ra edición, Editorial Trivium S.A., España, 1991.

MARTÍN MATEO, Ramón, "La ecoauditoría" en, *Boletín de Estudios Económicos*, número 150, España, 1993.

MORA RUIZ, Manuela, "Tendencias del Derecho Administrativo. El Derecho Administrativo Ambiental: transformaciones en el Derecho Administrativo general" en, *Revista Derecho y Conocimiento*, España, 2012.

SANZ LARRUGA, Francisco, *El concepto de responsabilidad compartida y el principio de subsidiariedad en el Derecho Ambiental*, Editorial Instituto de Estudios de la Administración Local, España, 2009.

## NOTES

1 LORENZETTI, Ricardo, *Teoría del Derecho Ambiental*, responsabilidad de la Administración y el ciudadano en la

protección ambiental con la auditoría, 1era edición, Editorial Porrúa S.A., México D.F., 2008, pp.1-37.

2 RODRÍGUEZ CÓRDOVA, Roberto, "Manual de gestión ambiental de las empresas" en, *Revista Economía Agrícola*, Nicaragua, 2008, pp.1-177.

3 SANZ LARRUGA, Francisco, *Sostenibilidad ambiental y Derecho Administrativo: ¿nuevo remedio ante la crisis económica o una exigencia constitucional? A propósito de la nueva Ley de Economía Sostenible*, VI Congreso de la Asociación de profesores de Derecho Administrativo, Palma de Mallorca, España, 2011.

4 LOZANO CUTANDA, Blanca, *Manual de Derecho Administrativo Ambiental*, antecedentes del *Ius ambientus*, reconocido en el *Ius commune*; ante los problemas de salubridad ambiental y los agentes contaminadores industriales, permitió crear normas de control ambiental y dictar límites a las actividades insalubres, 3era edición, Editorial Dykinson, España, 2003, pp.2934.

5 MENDEZ GUTIERREZ DEL VALLE, Ricardo, "Teoría de las revoluciones industriales", tres son revoluciones, la primera en la industria metalúrgica y textil, la segunda con el motor de explosión-explosivos químicos, la industria del automóvil, la industria siderúrgica y la producción de aparatos eléctricos, la tercera con la biotecnología, la microelectrónica y la informática -1800-2007- en, *Revista del Ministerio de Fomento*, España, 2009, pp.7-29.

6 PNUMA-ONU, *Plataforma para una industria ecológica a nivel mundial*, políticas y prácticas, eficiencia en el uso de recursos naturales, energéticos y las energías renovables, facilidades financieras en la industria amigable con el ambiente, la transferencia de tecnologías y el fomento de industrias no contaminadoras, Estados Unidos de América, 2012, pp.17-45.

7 ELSTEIN, Steven, "El alcance global como órgano público de las EFS", enfoque local de los gobiernos en la protección ambiental en 192 países, por Contralorías, Tribunales de Cuentas, Oficinas de auditoría y Oficinas de gobierno contables para controlar los recursos públicos, mutando desde finales del siglo XX al control ambiental en, *Revista de Auditoría Gubernamental*, INTOSAI-ECOSOC-ONU, Estados Unidos de América, 2012, p.15.

8 BASURTO GONZÁLEZ, Daniel, "Responsabilidad social y ambiental en las empresas", gestión de calidad, medio ambiente, prevención de los riesgos laborales, competitividad

- empresarial y certificación ambiental en, Revista Política y Gestión Empresarial, México D.F., 2012, pp.33-39.
- 9 PNUMA-SEMARNAT, Economía ambiental: lecciones de América Latina, México D.F., 2010, pp.7-303.
  - 10 LÓPEZ HERNÁNDEZ, Antonio, "Normas profesionales de la INTOSAI: directrices de auditoría" en, Revista Auditoría Pública, número 61, Granada, España, 2013, pp.6-19
  - 11 MURAD ROBLES, Pedro, La auditoría ambiental voluntaria, concepto, antecedentes, fundamentación jurídica y evaluación, ejecutada a solicitud del empresariado de manera voluntaria, Editorial Porrúa, México D.F., 2009, pp.263-303.
  - 12 HARLEM BURLAND, Gro, recibió el encargo de presentar el informe nuestro futuro común por las Naciones Unidas, ONU, Estados Unidos de América, 1984, pp.1-33.
  - 13 PAEZ SANDUBETE, José, Contabilidad, auditoría y medio ambiente, II Reunión sobre contabilidad, auditoría social y medio ambiente, Valencia, España, 1999.
  - 14 Norma ISO 26000:2010. Guía sobre responsabilidad social, provee a la empresa, al gobierno y la sociedad de herramientas en tres dimensiones del desarrollo sostenible: económica, ambiental y social, Suiza, pp.1-8, <http://www.iso.org>.
  - 15 FERNÁNDEZ DE GATTA, Dionisio, "La responsabilidad social corporativa en materia ambiental. Estado de la cuestión", instrumento de protección ambiental voluntario en la Unión Europea en, Boletín Económico, número 2824, España, 2011, pp.-18.
  - 16 Norma ISO 14001:1998, Sistemas de gestión ambiental. Especificación y directrices para su uso, patrones de calidad voluntarios, certifican a la empresa el sector comercial, industrial y tecnológico, Suiza, 1998.
  - 17 ARNER GUERRE, Ángel, Responsabilización voluntaria de la industria en la protección medio ambiental, implementa el sistema de gestión para mitigar la contaminación en, Libro Verde, Editorial Lex S.A., España, 2013, pp.123-342.
  - 18 ANTÚNEZ SÁNCHEZ, Alcides Francisco, "La auditoría ecológica, un instrumento en la gestión ambiental", herramienta evaluadora de la contaminación empresarial en, Revista electrónica de Derecho Ambiental Medio Ambiente&Derecho, número 21, España, 2011, <http://huespedes.cica.es/gimadus>.
  - 19 Normas ISO 19011, La auditoría ambiental y los sistemas de gestión, Suiza, 1998.
  - 20 BELMONTE MARTIN, Ismael, "La ecoauditoría: instrumento para la defensa del medio ambiente" en, Revista electrónica de la Facultad de Ciencias Jurídicas y Sociales de Elche, España, 2010.
  - 21 VIÑA VIZCAÍNO, Gustavo, "Bases conceptuales de la auditoría ambiental como un instrumento en la prevención de la contaminación", contabilidad ambiental en, Revista de Contabilidad, Colombia, 2003, pp.47-67.
  - 22 MARTÍN MATEO, Ramón, El etiquetado ecológico, nuevo instrumento para la tutela ambiental, Editorial Trivium, España, 1994, pp.19-57; LOZANO CUTANDA, Blanca, "La nueva etiqueta ecológica de la Unión Europea" en, Revista de Gestión Ambiental, número 7, España, 2001, p.5.
  - 23 INZUNZA, Georgina, Hacia la empresa ecológica. Afrontamos el próximo gran reto del siglo XXI, La industria ecológica y el desarrollo sostenible, Editorial PEMEX, México D.F., 2009, pp.17-46.
  - 24 NAESS, Arne, "Los movimientos de la ecología superficial y la ecología profunda: un resumen", caracteriza los síntomas y las causas culturales de la crisis ambiental, crítica los supuestos metafísicos, sistemas políticos, estilos de vida y valores éticos de la sociedad industrial en, Revista Ambiente y Desarrollo, Chile, 2007, pp.98-101.
  - 25 CAFERRATA, Néstor Alfredo, Principios del Derecho Ambiental, elementos claves en el control ambiental a través de la auditoría, Editorial Abeledo Perrot S.A., Argentina, 2010, pp.7-69.
  - 26 PÁEZ SANDUBETE, José María, "La auditoría medio ambiental en la Unión Europea, una perspectiva contable", desde las ciencias contables, señalan sus beneficios, limitantes y consecuencias negativas en, Revista Contable, España, 2008, p.9.
  - 27 LOZANO CUTANDA, Blanca, "Actualidad del Derecho Ambiental comunitario", la auditoría ambiental, nexos con el Derecho Ambiental en, Revista de Derecho Administrativo Económico, número 20, Brasil, 2009, pp.1-20.
  - 28 OJEDA MESTRE, Ramón, "El nuevo Derecho Ambiental", caro, complejo, moderno, cientificista, multidisciplinario, de expertos, preventivo y correctivo, indexado al desarrollo

económico, trasversal en, Revista de la Universidad de Cuauhtémoc, número 8, México D.F., 2012, pp.1-20.

- 29 TAS, Joycemara, "Auditoría externa ambiental como instrumento en la defensa del medio ambiente", desde las ciencias jurídicas son reconocidos los aportes para la protección ambiental en, Revista de Jure, número 20, Brasil, 2013, pp.293-309.
- 30 PADIN, María, "La auditoría ambiental y las normas ISO 14000", responsabilidad ambiental empresarial en, Revista Foro de Contabilidad Ambiental y Social, número 5, Argentina, 2011, p.37.
- 31 VIGURI PEREA Alberto, "La responsabilidad en materia medio ambiental", seguro ambiental y auditoría ambiental en, Revista Española de Seguros, número 5, España, 2010, p.53.
- 32 CARMONA LARA, María, "Derecho Ambiental", posiciones jurídicas permiten conocer el método aplicado a la auditoría ambiental, tutelada en los ordenamientos jurídicos desde el Derecho Administrativo hacia el Derecho Administrativo Ambiental en, Revista de Derecho UNAM, México D.F., p.12.
- 33 FERNÁNDEZ DE GATTA SÁNCHEZ, Dionisio, "El séptimo programa ambiental de la Unión Europea", 2013-2020, la observancia de las herramientas de gestión y el cumplimiento de las políticas ambientales de la Unión por su repercusión global en, Revista Aragonesa de Administración Pública, número 41-42, España, 2013, pp.71-121.
- 34 FERNÁNDEZ DE GATTA SÁNCHEZ, Dionisio, consenso desde posiciones jurídicas en la Unión Europea para aplicar las herramientas de gestión y en especial la auditoría ambiental para construir empresas amigables con el ambiente en, Documento TOL 1.436.850, España, 2010, pp.1-58.
- 35 INTOSAI-ONU, "Los retos presentes y futuros de la auditoría ambiental en el mundo" en, Revista Internacional de Auditoría Gubernamental, Viena, Austria, 2012, pp.22-23; LUSTOSA DA COSTA, Carlos, "Las auditorías coordinadas y sus contribuciones para los Estados Federales: la experiencia de la auditoría en la Amazonia" en, Revista OLACEFS, número 15, Brasil, 2014, pp.43-46.