## Environmental auditing, the evaluation process an analysis of its standards

## Auditoría medioambiental, el proceso de evaluación un análisis de sus normas

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#### **Abstract**

The analysis of the provisions of the Voluntary Environmental Compliance Process or the National Environmental Audit Program that companies may execute for their performance, as provided in the General Law of Ecological Equilibrium and Environmental Protection, its Regulations on environmental auditing, as well as other provisions and measures of the authorities and various recommendations to protect the environment. It begins with the Magna Carta, empowering the legislator to create laws to monitor resources and the federal, state and municipal governments in the scope of their competencies, to protect the environment, preserve and restore the ecological balance; with a legal, systematic and documentary analysis, this descriptive research examines the legal, regulatory, auditing, technical and accounting requirements to execute the evaluation procedure of actions for continuous improvement. The guarantee that the State must provide for the human right to enjoy the benefits of a healthy environment, its sustainability and the national development of the country with economic growth, independence, political, social and cultural democracy, and to conserve the natural environment with responsibility and social commitment, recommending the implementation of good and best practices in business management, must belong to everyone, it is mandatory.

Voluntary environmental compliance process, National environmental audit program, International standards on auditing and international financial reporting standards

#### Resumen

El análisis a las disposiciones del Proceso de Cumplimiento Ambiental Voluntario o del Programa Nacional de Auditoría Ambiental que pueden ejecutar las empresas para su desempeño, previsto en la Ley General del Equilibrio Ecológico y la Protección al Ambiente, su Reglamento en materia de auditoría ambiental, así como otras disposiciones y medidas de las autoridades y recomendaciones diversas para cuidar el medio ambiente. Se inicia con la Carta Magna, facultando al legislador a crear leyes para vigilar los recursos y a los gobiernos federal, estatal y municipal en el ámbito de sus competencias, para proteger al ambiente, preservar y restaurar el equilibrio ecológico; con un análisis jurídico, sistemático y documental esta investigación de tipo descriptivo examina los requisitos legales, los normativos, de auditoría, técnicos, y de contabilidad para ejecutar el procedimiento evaluador de acciones para la mejora continua. La garantía que el Estado debe brindar del derecho humano para gozar de los beneficios de un ambiente sano, su sostenibilidad y el desarrollo nacional del país con crecimiento económico, independencia, democracia política, social y cultural, y conservar el medio natural con responsabilidad y compromiso social, recomendando implementar buenas y mejores prácticas en la gestión empresarial, debe ser de todos, es obligatorio.

Proceso de cumplimiento ambiental voluntario, Programa Nacional de auditoría ambiental, Normas Internacionales de Auditoría y Normas Internacionales de Información Financiera

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#### Introduction

Accounting provides and contributes with its accounting processes of control, evaluation to environmental management and information to its users, also through the application of Environmental Auditing is aimed, among other objectives to: obtain the recognition and disclosure of the negative environmental effects on the economic entities and the environment of the company and its stakeholders; the separate identification of costs and revenues allocated to specific environmental control plans and programs.

The adoption of actions to create initiatives to avoid and mitigate negative environmental effects; to develop ways to measure and report the results of these plans and programs to fulfill internal and external purposes; to establish new financial and non-financial accounting, information and control systems to take advantage of the environmental benefits of decisions, focusing on environmental protection measures and evaluating the natural capital resources involved in the production process.

The exercise and systematic application of environmental auditing has the fundamental objective of providing reliable information on the quantitative and qualitative results of the administration of financial, human and material resources and support services assigned for environmental control; the information is required for preventive and corrective decision making in the environmental control route to make its actions known to society and in general to all its stakeholders.

As a hypothesis, it is considered that when the businessman is committed to a responsible management of his organization, he obtains better results than when there are countless rules at his disposal that he does not know or does not comply with. The big problem is that there is no generalized disposition to efficiently control the use of resources and waste generated on a daily basis.

in order to frame Similarly, management of accountants and auditors, accounting and auditing as disciplines in favour of efficiency in the management of resources and environmental care, there are legal standards and international agreements, firstly, institutional ones in second place, among them the Mexican Official Standards (MOS), the International Financial Reporting Standards (IFRS) and the International Standards on Auditing (ISA), for their order of application, and finally those referring to best practices that ensure environmental preservation. In addition, from the actions of the responsibility that fall on the different interested parties (stakeholders) must be reported with transparency considering the rules that the International Accounting Standards (IAS) now applicable IFRS, ISA and MOS establish, and the requirements that they meet, or fail to meet according to the Voluntary Environmental Compliance Process (VECP), the National Environmental Audit Program (NEAP) or also the Environmental Leadership Program for Competitiveness.

#### **Legal Framework**

In the context of Mexico, environmental policy has a history of barely three decades, despite the fact that Article 27 of the 1917 Constitution laid the foundations for its development by conditioning the use of natural resources to the nation's interest. The environmental audit, among other ordinances, is found in article 25, paragraph seven of the Political Constitution of the United Mexican States (PCUMS), which regulates the care of the environment by regulating the use of productive resources by the social and private sectors.

Article 73, section XXIX-G, PCUMS, empowers the legislator to issue laws that establish the concurrence of the federal, state and municipal governments, within the scope of their respective competencies, in matters of environmental protection and preservation and restoration of the ecological balance.

The central axis of environmental regulation is the right to a healthy environment established in article 4 of the PCUMS, which according to Rodríguez (2008),<sup>1</sup> "implies the sustainable, moderate use, with a focus on protection and conservation, of all the constituent elements of the habitat of mankind, including the flora and fauna and the collateral conditions for its realization.

The international legal instruments, which were taken into account as the American Convention on Human Rights (ACHR), and the International Covenant on Economic, Social and Cultural Rights (ICESCR), A (XXI), of December 16, 1966, with entry into force on January 3, 1976, according to Article 27),<sup>2</sup> as well as the Additional Protocol to the American Convention on Human Rights in the Area of Economic, Social, and Cultural Rights.<sup>3</sup> Without disregarding the following international treaties applicable to environmental matters, such as the Convention on Biological Diversity (1992), the Stockholm Declaration or the United Nations Conference on the Environment (1972): Convention on Biological Diversity (1992), Stockholm Declaration or the United Nations Conference on the Environment (1972).

In 1988, the General Law of Ecological Balance and Environmental Protection (GLEBEP) was enacted, which, together with the regulations on Environmental Impact, Hazardous Waste, Prevention and Control of Air Pollution, Prevention and Control of General Pollution by Motor Vehicles circulating in Mexico City and the municipalities of its metropolitan area, and against pollution caused by noise emissions, introduced new elements on control, safety and social participation.

Rio Declaration on Environment and Development (1992), Agenda 21: Action Program for Sustainable Development. Rio Declaration on Environment and Development. Declaration of Principles. Final text of the Agreement signed by governments at the United Nations Conference on Environment and Development, June 1992, in Rio de Janeiro, Brazil.

The main objective of the National Environmental Auditing Program (NEAP) is for organizations that join it to protect the achieve environmental environment to certification. The GLEBEP (arts. 38 and 38 BIS) establishes the voluntary process ofenvironmental self-regulation, in which the producer, company or organization decides to undergo the audit, which basically consists of carrying out a methodological review of its operations with respect to pollution and the risk it generates, analyses full compliance with environmental regulations, international parameters and applicable good operating and engineering practices, to identify preventive and corrective measures needed to protect the environment. In the GLEBEP in charge of the Ministry of Environment and Natural Resources (SEMARNAT for its acronym in Spanish) and the Federal Attorney General's Office for Environmental Protection (PROFEPA for its acronym in Spanish), the authority designated to enforce the constitutional prerogatives to care for and preserve the environment in harmony with the international treaties subscribed and with the resolutions of the magistrates, established to safeguard through the supervision of the PROFEPA, what is regulated by articles 160 to 175 of the mentioned law that describe the procedure of the environmental audit to the entities of the productive, private and social sectors of the country.

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Growth, 2021

<sup>&</sup>lt;sup>1</sup> Environmental Defense Guide. Building the strategy for litigating cases before the Inter-American human rights system. January 2008. Interamerican Association for Environmental Defense, page 48. Retrieved at: https://www.corteidh.or.cr/tablas/24756.pdf

<sup>&</sup>lt;sup>2</sup> The ICESCR was approved by the Chamber of Senators of the Congress of the Union by decree dated December 18, 1980, published in the Official Gazette of the Federation (DOF) dated January 9, 1981. The Mexican State joined by means of an instrument of accession dated March 2, 1981, signed by the President of the United Mexican States (EUM), deposited with the General Secretariat of the United Nations on March 23, 1981. The ICESCR was promulgated and published, for its due observance, by decree of the President of the EUM, dated March 30, 1981, published in the DOF dated May 12, 1981.

<sup>&</sup>lt;sup>3</sup> Protocol of San Salvador. Signed by Mexico on November 17, 1988, approved by the Senate on November 12, 1995 and published in the DOF on September 1, 1998.

This is mainly directed to activities that with the environment, such interact companies of any size and branch, both public and private; educational centers; municipalities; environmental management units; hotels and hospitals. Article 36 of the General Law of **Ecological** Balance and Environmental Protection states that the Mexican Official Standards on environmental matters will be issued by SEMARNAT to guarantee the sustainability of economic activities and the sustainable use of natural resources.

Article 37 bis of the GLEBEP also establishes that such standards are mandatory in Mexico, such as the MOS: for water (18); for measuring concentrations (8); on fixed source emissions (15); on mobile source emissions (12); on waste (20); on flora and fauna protection (20); on soil (10); on noise pollution (4); on environmental impact (14); on methodology (2); on sludge and biosolids (20) and in preparation with other secretariats (7). A total of 150 MOS.

The PROFEPA, until 2012, has worked in the following three areas: regulation (legal, administrative. scientific and technical), evaluation (environmental impact, risk and execution damage identification) and (Coordinating Auditor and industrial sector). And it marks for the development of the environmental audit, the following stages:

- Audit plan.
- Field visit.
- Report delivery.
- Post-audit.
- Certification.

MOS MXS MOS

Technical regulation issued by the competent agencies, which establishes rules, specifications, attributes, guidelines, characteristics or prescriptions applicable to a product, process, facility, system, activity, service or method of production or operation, as well as those related to terminology, symbology, packaging, marking or labeling and refer to their compliance or application based on Article 46, Federal Metrology and Standardization Law. MXS

It is prepared by a national standardization body, or by the Ministry of Economy (SE) under the terms of Article 51-A of the LFMN, which provides for common and repeated use rules, specifications, attributes, test methods, guidelines, characteristics or prescriptions applicable to a product, process, facility, system, activity, service or method of production or operation, and those relating to terminology, symbology, packaging, marking or labeling The following are mandatory are voluntary and can be national, regional or If the causes for issuance no longer exist, the competent agencies, at their own initiative or at the request of the National Standards Commission, the SE or the members of the National Standards Consultative Committee may modify or cancel the NOM without following the procedure for its transportation and review avery few years, Their review and updating will follow the same procedure as for their preparation, and they must be

room without nonwing the procedure for its preparation and review every five years.

Comparison of MOS VS MXS, its concept and characteristics Source: Article3 fractions X and XI FLMN, adapted from IDC online.

And, if applicable, the corresponding endorsement (Art. 10 RLGEPAAA for its acronym in Spanish).

The Federal Environmental Liability Law that regulates environmental liability, arises from damages caused to the environment, as well as the repair and compensation of such damages when it is enforceable through federal processes provided by constitutional, alternative dispute resolution mechanisms, administrative procedures and those corresponding to the commission of crimes against the environment and environmental management (Congress of the Union, 2013).

In terms of numbers, in the case of environmental care in Mexico. while degradation (due to soil, air or water pollution) increased fourfold; environmental protection expenses (those that mitigate the negative effects of ecological degradation) barely represented, in 2017, 13% of the total costs accounted for; for every peso added to the product by economic growth, at best, two pesos are generated by environmental costs -and this considering only those that have been able to be expressed in monetary terms.

## Institutional regulatory framework (MOS and MXS)

The MOS that can be considered to carry out the environmental audit to the entities that decide to do it voluntarily, or with a visit order to verify the environmental legal dispositions spread through the Official Gazette of the Federation; and it also enunciates some MXS, both with legal basis in art. 3 sections X and XI of the Federal Law on Metrology and Normalization (FLMN), it defines and establishes characteristics;<sup>4</sup> the rules to be applied are, among others, the following:

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	· MOS		
Mexican Official Standard	"NOM-015-CONAGUA-		
"NOM-003-CONAGUA-	2007", Artificial infiltration		
1996", Requirements during	of water into aquifers -		
the construction of water	Characteristics and specifications of works and		
extraction wells to prevent contamination of aquifers	water		
"NOM-143-SEMARNAT-	"NOM-011-CONAGUA-		
2003", Establishing the	2000", Conservation of water		
environmental specifications	resources- Establishing the		
for the management of	specifications and method		
congenital water associated	for determining the average		
with hydrocarbons	annual availability of		
	national waters		
Flora and I	Fauna MOS		
"NOM-131-SEMARNAT-	"NOM-022-SEMARNAT-		
2010", Establishes	2003", Establishing the		
guidelines and specifications	specifications for the		
for the development of whale	preservation, conservation,		
watching activities, related to	sustainable use and		
their protection and	restoration of coastal		
conservation	wetlands in mangrove area		
"NOM-126-SEMARNAT-	"NOM-059-SEMARNAT-		
2000", Establishing the	2010", Environmental		
specifications for the performance of scientific	protection-Mexican native species of wild flora and		
collection activities of	fauna-Categories of risk and		
biological material of species	specifications for their		
of wild flora and fauna and	inclusion, exclusion or		
other biological resources in	change-List of species at		
the national territory	risk.		
Environmental Imp	oact MOS and MXS		
"NOM-120-SEMARNAT-	"NOM-002-SAG-		
2020", which establishes the	BIO/SEMARNAT-2017",		
environmental protection	which establishes the		
specifications for direct	characteristics and		
mining exploration activities	requirements to be contained		
in agricultural, livestock or	in the evaluation studies of		
wasteland areas and in areas	the possible risks that the		
with dry and temperate climates where xerophytic			
	experimental release of		
	genetically modified		
scrub, tropical deciduous	genetically modified organisms could cause to the		
scrub, tropical deciduous forest, coniferous or oak	genetically modified organisms could cause to the environment and biological		
scrub, tropical deciduous	genetically modified organisms could cause to the environment and biological diversity, as well as to		
scrub, tropical deciduous forest, coniferous or oak	genetically modified organisms could cause to the environment and biological		
scrub, tropical deciduous forest, coniferous or oak	genetically modified organisms could cause to the environment and biological diversity, as well as to animal, plant and aquaculture health		
scrub, tropical deciduous forest, coniferous or oak forests develop	genetically modified organisms could cause to the environment and biological diversity, as well as to animal, plant and aquaculture		
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MXS on Waste				
"NMX-AA-041-SCFI-	"NMX-R-019-SCFI-2011".			
2006". Solid wastes -	Harmonized system for			
determination of	classification and			
flammability - test method	communication of hazards of			
	chemicals.			

Table 1 MOS and MXS for performing environmental audits

Source: Own elaboration based on NOM and NMX queries.https://www.semarnat.gob.mx/gobmx/biblioteca/nom.html

The NMX are in some cases a reflection of the provisions established by the international standards of the International Standardization Organization (ISO), adapted by the Mexican Institute for Standardization and Certification (IMNC), in this particular case the 14000 series, on how to establish Environmental Management Systems (EMS) for example, ISO 14010 defines environmental auditing as a systematic and documented verification process that consists of obtaining and objectively evaluating audit evidence to determine whether the activities. incidents, conditions and EMS specified, or information on these issues, comply with the audit criteria and communicating the results of the process to the client.

It is a tool that facilitates sustained compliance with environmental legislation and the reduction of environmental risk, which should include environmental impacts and social perception of risk; and as a tool that paves and makes feasible the way towards quality schemes, excellence and continuous improvement of the environmental performance of the productive or service organizations in question. Hence the Regulation (RLGEPAAA) that in its art. 3 section IV, in Mexico the environmental audit is defined as the:

measurement method.

examination Methodological of company's processes with respect to pollution and environmental risk, compliance with applicable regulations, international parameters and good operating and engineering practices, including Self-Regulation processes determine its Environmental Performance based on the requirements established in the Terms of Reference, and if applicable, the preventive and corrective measures necessary to protect the environment; while section V deals with Self-Regulation: Voluntary process through which, respecting the legislation and regulations in force that apply to it, the company establishes a set of activities and adopts complementary or stricter standards, through which Environmental Performance is improved and greater achievements are obtained in terms of environmental protection, whose evaluation may be carried out through the Environmental Audit (Presidency of the Republic, 2014).

The certification of companies, and not only comply with the laws; through ISO 14000 standards, for example. or the EMAS Regulation, for the case of the European Community, bring benefits, reduction in costs, the prestige that society recognizes, the commitment of all personnel involved in the organization, and above all a continuous improvement. Consumers are looking for companies to comply with the requirement of environmental certification, and these, in turn, strive to prevent pollution and purchase from suppliers that comply with ISO environmental criteria. (Muñoz, 2020)

ISO	Environmental management systems.
14001	Requirements with guidance for use.
ISO	Guidelines for the use of ISO 14001.
14002	
ISO	Environmental management systems.
14004	
ISO	Environmental management systems. Guidelines
14006	for the incorporation of ecodesign
ISO	Guide for audits of quality or environmental
14011	management systems
ISO	Requirements to be met by an environmental
14012	auditor
ISO	Ecolabels and Environmental Declarations -
14020	General Principles
ISO	Ecological labels and environmental
14021	declarations and Self-declarations - General
	Principles (Type II ecological labeling)
ISO	Ecological labels and environmental
14024	declarations. Type I ecological labeling. General
	principles and procedures
ISO	Environmental labels and declarations. Type III
14025	environmental declarations. Principles and
	procedures.
ISO	Environmental management. Environmental
14031	performance evaluation. Guidelines

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ISO/TR	Environmental Management - Examples of
14032	Environmental Performance Assessment (ERA)
ISO	Environmental Management - Quantitative
14033	Environmental Information - Guidelines and
	Examples
ISO	Environmental management - Life cycle
14040	assessment - Reference framework
ISO	Definition of objective and scope and inventory
14041	analysis
ISO 14042	Impact assessment of the life cycle
ISO	Lifecycle Interpretation
14043	Energete interpretation
ISO	Environmental management systems. Guidelines
14044	for the incorporation of ecodesign
ISO	Environmental management - Vocabulary
14046	
ISO/TR	Environmental management - Life cycle impact
14047	assessment. Examples of application of ISO
	14042
ISO/TS	Environmental management - Vocabulary
14048	·
ISO/TR	Environmental management - Life cycle
14049	assessment. Examples of the application of ISO
	14041 to the definition of objective and scope
	and inventory analysis.
ISO	Environmental management - Vocabulary
14050	
ISO	Environmental management - Integration of
14062	environmental aspects in product design and
	development.
ISO	Environmental communication. Guidelines and
14063	examples
ISO 14064-1	Greenhouse gases. Part 1: Specification with
14004-1	guidance, at the organization level, for the quantification and reporting of greenhouse gas
	emissions and removals.
ISO	Greenhouse gases. Part 2: Specification with
14064-2	guidance, at the project level, for the
110012	quantification, monitoring and reporting of
	greenhouse gas emission reductions or
	enhancements in removals.
ISO	Greenhouse gases. Part 3: Specification with
14064-3	guidance for the validation and verification of
	greenhouse gas declarations.
ISO	Greenhouse gases. Requirements for bodies
14065	performing greenhouse gas validation and
	verification, for use in accreditation or other
	forms of recognition.
ISO	Greenhouse gas management and related
14097	activities: the framework, which includes
	principles and requirements for assessing and
	reporting climate change-related investments
	and financial activities, helps financiers to assess
	and report on their actions and see the real value
ICO/DIC	of their contribution to climate objectives.
ISO/DIS	Guidance on environmental criteria for projects,
14100	assets and activities to support the development
	of green finance.

**Table 2**. ISO 14000 family standards *Source: Own elaboration with ISO data (2021)* 

REYES-ALTAMIRANO, Rigoberto, MEDINA-CELIS, Laura Margarita, MEDINA-CELIS, Gabriela and GARAY-REYES, Ana Paola. Environmental auditing, the evaluation process an analysis of its standards. Journal-Economic Development Technological Chance and Growth. 2021

A complete environmental management supported by the different existing norms, or by the installation of new technologies, associated to the acquisition of environmental assets, producing less pollution, higher productivity and a better image of the company's products in society (Muñoz, 2020), are of transcendence and it is plausible to look for alternatives and good practices to try to reduce the excessive consumption of non-renewable resources and pollution. Mexico still needs to consider updating its commercial, accounting and tax provisions on environmental issues, as this is so far only a topic that remains in the discourse of many.

# International Accounting Standards-International Financial Reporting Standards (IAS-IFRS) and International Auditing Standards (IAS's)

The International Accounting Standard Board (IASB) in "IAS -16 Property, Plant and Equipment", establishes that environmental assets should be catalogued as those that are acquired for security or environmental reasons and, although they do not provide future economic benefits, they are necessary to obtain the rest of the assets. In Mexico, the Mexican Institute of Public Accountants (IMCP) has worked on the preparation of standards based on international standards that the Mexican Financial Reporting Standards Board (CINIF) now adapts to the national scope, of which the IMCP is a part, together with the country's accounting associations and professionals that apply harmonized standards.

Regarding environmental liabilities, IAS 16 and its equivalent in Mexico, Financial Reporting Standards "FRS C-6", include a cost component. "FRS C-18 refers to the initial estimate of the costs of dismantling or removing the item", as well as the rehabilitation of the site on which it is located, when they constitute obligations incurred by the entity as a result of using the item during a period for purposes other than the production of inventories at that time. The provision to restore environmental damage is capitalized at the carrying amount of the asset to which it relates from the time the entity is obliged to carry out the restoration, unless it must be taken to profit or loss because there is no removal of the component, property or plant. (CINIF, 2021: 1084-1085)

In accordance with IAS-16, not only the initial estimate of dismantling costs, but also the removal of the asset and reestablishment of its location are considered to be part of the initial cost of property, plant and equipment, and NIF-C6 in line item 44.2.3.1 indicates this (CINIF, 202). While in the interpretation IFRIC 1. "Changes in existing liabilities. decommissioning, restoration and similar", states that it affects changes in the valuation of any existing liabilities for decommissioning, restoration or similar that have been recognized, as part of the cost of a tangible fixed asset, with IAS-16, and as a liability, with IAS-37. (IASB, 2018)

"FRS C-9 Provisions, Contingencies and Commitments", comprises requirements on how to recognize a provision and notes the obligations associated with the retirement of components, property, plant and equipment. In addition, provisions should be recognized only for obligations arising from past events, whose existence is independent of the entity's future actions or operations, such as fines for damage to the environment or repair costs required by law, since they merit an outflow of economic resources, regardless of the future actions carried out by the entity to prevent damage. "FRS C-18 provides additional criteria for recognizing the obligations associated with the retirement of components and the effect of changes in their valuation". (CINIF, 2021: 1085)

In line with this, the interpretation "IFRIC (for its acronym in Spanish) 5 Rights for participation in funds for decommissioning, restoration and environmental rehabilitation" is also requiring insurers to have control over risks based on forecasts and estimates in the entities, hence the importance of attending to stakeholders and their valuation, presentation and disclosure requirements on which IFRS guide us.

There is a marked correlation between accounting audits and environmental audits, the first arise as an internal need of the company's management and then acquires a mandatory, periodic and objective character, performed by external and independent companies; although voluntary, for now, the European Community is encouraging its implementation with mandatory character; since, shareholders prefer to lean towards those environmentally socially and responsible companies, with which performing environmental audits to obtain certification under ISO standards can be a competitive advantage for entities wishing to attract investors. (Padin, 2017)

Environmental auditing, according to the EPA (Environmental Protection Agency) is defined as "systematic, documented, periodic and objective examination, by regulated entities, of operations and practices related to compliance with environmental requirements". The preestablished criteria are of an environmental nature and the EPA circumscribes its field of application to "regulated entities", that is, organizations whose activities may cause some form of environmental impact, subject to governmental control, it is the tool used to verify whether the system for environmental purposes is working properly.

With regard to environmental auditing, the United Nations Environment Program (UNEP) promotes environmental governance that must be ensured at the national, regional and global levels to address globally agreed environmental priorities, UNEP promotes the progressive development and implementation of environmental law as a response to the international community's environmental challenges and to strengthen and implement legal frameworks; Multilateral Environmental Agreements (MEAs) and interrelationships and synergies, respecting the legal autonomy of the agreements and the governing taken by implementing the practice of environmental audits that promote improved environmental management of member states.

The International Federation Accountants (IFAC) develops the transparent and high quality international standards used by professional accountants as an essential pillar of the global financial architecture, and among its data is that 91 percent have adopted IFRS for all or most public interest entities, 84 percent have established quality review and assurance systems, 79 percent have adopted ISAs for their statutory audits, 61 percent have fully adopted the Code of Ethics for accountants, 36 percent have partially adopted, and 55 percent have made progress in adopting International Public Sector Accounting Standards (IPSAS).

IAS's in environmental matters are those that contain the basic principles, essential technical knowledge and guidelines related to the audit of financial statements of any entity. The International Auditing Practices Committee guidelines provide of general applicability to all audits of small entities and to assist the auditor in exercising professional judgment in the application of IAS's, which are considered the quality requirements for the performance of professional auditing work, and constitute in most countries the obligatory support of the activities conducted by certified public accountants and specialists.

IAS's are adopted because their quality, legitimacy and impact are assured through active and purposeful consultation and a strong public-private partnership that emphasizes the public interest. IFAC has 173 member organizations and the 130 jurisdictions in which IFAC operates have greater collaboration in monitoring adoption trends and more communication and coordination among accounting stakeholders. Among the standards most closely related to environmental auditing are the following as listed in Table 3.

ISA 200. Overall Objectives of the Independent Auditor and the Conduct of an Audit in Accordance with ISAs

ISA 210. Agreeing the Terms of the Audit Engagement ISA 220. Quality Assurance for the Audit of Financial Statements

ISA 230. Audit Documentation B

The Auditor's Responsibility for the Audit of Financial Statements with Respect to Fraud ISA 250.

Consideration of Laws and Regulations in the Audit of Financial Statements ISA 260.

ISA 260. Communication with Those Charged with Governance of the Entity

Communicating Deficiencies in Internal Control to Those Charged with Governance and Management.

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Identifying and Assessing the Risks of Material Misstatement through Knowledge of the Entity and its Environment ISA 320.

ISA 320. Materiality in Planning and Performing an Audit

ISA 330. The Auditor's Responses to Assessed Risks

ISA 501. Audit Evidence - Specific Considerations for Certain Areas ISA 530.

ISA 530. Audit Sampling

ISA 570. Going Concern

ISA 620. Use of the Work of an Auditor's Expert

Forming the Auditor's Opinion and Issuing the

Auditor's Report on the Financial Statements ISA 706.

Emphasis of Matter and Other Matter Paragraphs in an Independent Auditor's Report ISA 706.

ISA 200. Overall Objectives of the Independent Auditor and the Conduct of an Audit in Accordance with ISAs

ISA 210. Agreeing the Terms of the Audit Engagement ISA 220. Quality Assurance for the Audit of Financial Statements

ISA 230. Audit Documentation B

The Auditor's Responsibility for the Audit of Financial Statements with Respect to Fraud ISA 250.

Consideration of Laws and Regulations in the Audit of Financial Statements ISA 260.

ISA 260. Communication with Those Charged with Governance of the Entity

Communicating Deficiencies in Internal Control to Those Charged with Governance and Management.

Identifying and Assessing the Risks of Material Misstatement through Knowledge of the Entity and its Environment ISA 320.

ISA 320. Materiality in Planning and Performing an Audit

ISA 330. The Auditor's Responses to Assessed Risks

ISA 501. Audit Evidence - Specific Considerations for Certain Areas ISA 530.

ISA 530. Audit Sampling

ISA 570. Going Concern

**Table 3** International Auditing Standards for the environment

Source: Own elaboration with data from (IMCP, 2019)

#### Environmental audits on a voluntary basis

In Mexico, the SEMARNAT with the NEAP contemplates an ordered series of activities necessary to promote the accomplishment of environmental audits, that in its program of voluntary character can adhere the productive organizations that wish it to help to guarantee the effective fulfillment of the legislation, to improve the efficiency of its production processes, its environmental performance and its competitiveness and to become the base to approach the sustainable development, among its premises to achieve it, is the added value of being a voluntary mechanism of self-regulation that leads those involved to implement a culture of social responsibility.

The regulatory scheme of the voluntary environmental audit is found in "NMX-AA-162-SCF1-2012. Environmental Auditing" perform Methodology to Audits and Diagnostics, Environmental and Verifications of Compliance with the Action Determination of the Environmental Performance Level of a Company - Evaluation of the Performance of Environmental Auditors" and "NMX-AA-163-SCFI-2012, Environmental Audit - Procedure and Requirements to prepare an Environmental Performance Report for Companies", regulating the Audit Plan and the intervention of the environmental auditor.

We also consider Article 24 of the Treaty between Mexico, the United States and Canada (T-MEC), in its points 24.4 Enforcement of environmental laws, 24.13 by which Mexico, Canada and the United States of North America have committed to promote corporate social responsibility and responsible business conduct, "through voluntary practices" of the referred responsibility as well as 24.14: Voluntary Mechanisms to Improve Environmental Performance, which are also taken into account to prepare this study.

In the same way that the NEAP, the VECP is in place at the state level, so that companies that are responsible for generating environmentally friendly alternatives, without ceasing production, can self-regulate environmental matters, with the authority providing support to those who show interest in moving forward and achieving economic benefits: reduction of operating costs by saving energy, water and by the use of process and general services waste, in addition to being able to carry in the products or services offered by the certified company, environmental benefits: to reduce the environmental impact of production processes (less emissions, less waste and better management, less environmental risks) and social benefits: options for sustainably responsible consumers, generating an exemplary model environmentally responsible of companies.

The T-MEC agreements seek to respond to the mismatch between the availability of natural resources and their use, creating a regulated economic system compatible with the objectives of international trade and environmental conservation, maximizing both to the maximum extent possible.

REYES-ALTAMIRANO, Rigoberto, MEDINA-CELIS, Laura Margarita, MEDINA-CELIS, Gabriela and GARAY-REYES, Ana Paola. Environmental auditing, the evaluation process an analysis of its standards. Journal-Economic Development Technological Chance and Growth. 2021

The coordinating auditor, in order to perform an environmental audit, must count on the multidisciplinary participation of professionals specialized in water, air, noise, soil and subsoil pollution, hazardous and non-hazardous materials and wastes, at risk, and response to environmental emergencies, natural resources and environmental legislation. The phases to be followed include the application, the process, the action plan, the verification and the certification that guarantees the relevance of actions and compliance with regulations.

The organization that voluntarily decides to undergo an environmental audit must select an accredited environmental auditor. Companies during this process must assume the costs incurred during their permanence in it, derived from the hiring of the required auditor, compliance with action plans and maintenance of environmental performance. The terms of reference for the performance of audits indicated in art. 8 of the Regulation of the General Law of Balance **Ecological** and Environmental Protection on Environmental Auditing (RLGEEPAAA) describe:

## A.- Planning (Item 5.1)

Where the working documents to be used by the audit team should be prepared.

#### B.- Execution (Item 5.2.)

Which includes a kick-off meeting to introduce the audit team to the company.

### C.- Conduct of field work (Item 5.2.2.)

Where "each specialist verifies and collects the information of the audited matters according to the proposed scope and the areas and processes of the company previously defined in the physical and operational scope".

## D.- Closing meeting (Numeral 5.2.3)

The purpose of this meeting is: to deliver by the audit team, the result of the verification.

### E.- Elaboration of the report (Item 5.2.4)

Which represents the delivery of the environmental diagnosis or verification of compliance with the action plan carried out.

On the other hand, regarding the procedure to carry out the environmental audit in voluntary matters, according to "NMX-AA-163-SCF1-2012, it contains a Normative Appendix that regulates the elaboration of an environmental performance report" in which the following issues, among others, must be included:

### A.1. Basic diagnosis

- A.2. Chapter I Company's General Information
- A.3. Chapter II Situation of the certified facility
- A.4. Chapter III Environmental management or administration system A.5.
- A.5. Chapter IV Environmental performance indicators
- A.6. Photographic and documentary annex.

With the evaluation methodology that Article 8 of the RLGEPAAA for its acronym in Spanish, in its fraction I, details the steps to be followed by "NMX-162-SCFI-2012 where the following areas, among others, are verified: Air and Noise, Water, Soil and subsoil, Waste, Energy, Natural Resources, Wildlife, Forest Resources, Environmental Risk, Environmental Management and Environmental Emergencies", likewise as indicated in fraction II of the same article and "NMX-163-SCFI-2012 which describes the performance in the audit review" (Presidency of the Republic, 2014).

The objective of these MXS is to provide companies with the precise processes for the implementation of an environmental management system, the standards stipulated by ISO-14000 do not set environmental goals for the prevention of pollution, nor are they involved in environmental performance at a global level, organization, and the effects or externalities derived from them on the environment.

SEMARNAT has the "Clean Industry" certificate, which is the first commercial instrument that may become very popular and widely accepted. PROFEPA, through its Environmental Audit Office, promotes and carries out audits to encourage companies to protect the environment in a comprehensive manner, beyond legislation, and authorizes certified companies to use the logo in their marketing programs and to consumers to purchase products manufactured by industries that follow environmentally friendly practices in their production processes.

Public recognition of compliance with national and international regulations, and good operating and engineering practices that guarantee a certain level of performance and environmental protection, is a boost to green markets or to the chaining of suppliers, representative for businessmen, but not for the population to relate certified establishments with the products offered in the market manufactured with processes that take environmental care into account, a situation that reduces the strength of the certificate for the company's decision to enter or not into the audit program, on the basis of direct commercial benefits, unlike ISO-14000.

It is important to consider that this certificate is granted only for compliance with the action plan, which may or may not include other types of performance activities or environmental information such as corporate reporting and continuous improvement programs. PROFEPA's results include the data shown in Table 4 below.

With the evaluation methodology that Article 8 of the RLGEPAAA in its fraction I, details the steps to be followed by "NMX-162-SCFI-2012" where the following areas, among others, are verified: Air and Noise, Water, Soil and subsoil, Waste, Energy, Natural Resources, Wildlife, Forest Resources, Environmental Risk, Environmental Management and Environmental Emergencies, likewise as indicated in fraction II of the same article and "NMX-163-SCFI-2012" which describes the performance in the audit review (Presidency of the Republic, 2014).

The objective of these MXS is to provide companies with the precise processes for the implementation of an environmental management system, the standards stipulated by ISO-14000 do not set environmental goals for the prevention of pollution, nor are they involved in environmental performance at a global level, they establish tools and systems focused on production processes within a company or organization, and on the effects or externalities that derive from these to the environment, Table 2 refers to the standards most used by auditors.

SEMARNAT has the "Clean Industry" certificate, it is the first commercial instrument effort that can have great strength acceptance. PROFEPA, through Environmental Audit Office, promotes and conducts audits to encourage the business decision to protect the environment comprehensively beyond the legislation and authorizes certified companies to use the logo in their programs of marketing, and instilling in consumers the habit of acquiring products manufactured by industries that observe environmental care practices in their production processes.

Public recognition of compliance with national and international regulations, and good and engineering practices operating guarantee a certain level of performance and environmental protection, is a boost to green markets or the chain of suppliers, representative for businessmen, but not for the population to relate the certified establishments with the products offered in the market manufactured with processes that take care of the environment into account, a situation that reduces the strength of the certificate for the decision-making of the company to enter the program or not audit, based on direct business benefits, contrary to ISO -14000.

It is important to consider that this certificate is awarded only for compliance with the action plan, which may or may not include other types of performance activities or environmental information such as corporate reporting and continuous improvement programs, among its results PROFEPA shows in the web data that appears in table 4 below.

Participant enterprises	3,697
Valid Certificates (two years from	1,666
notification)	
Clean Industry	790
Environmental quality	821
Tourist Environmental Quality	63
Certificates Issued in 2021	692
Certificate Applications in 2021	866

**Table 4**. Data on the companies that are part of the National Environmental Audit Program

Source: Taken from PROFEPA as of September 2021

The LGEEPA in its art. 22 deals with financial environmental incentives are credits, bonds, civil liability insurance, funds and trusts, when their objectives are aimed at the protection, preservation. restoration sustainable use of natural resources and the environment, as well as the financing of programs, projects, studies, scientific research, technological development and innovation for the preservation of the ecological balance and protection of the environment. One of the main green funds in Mexico is the Mexican Carbon Fund (FOMECAR), which supports technically and financially the development of clean development mechanisms (CDM3) projects in Mexico.

Market environmental incentives: These are the concessions, authorizations, licenses and permits that correspond to pre-established volumes of pollutant emissions in the air, water or soil, or that establish the limits of use of natural resources, or of construction in natural areas protected areas or in areas whose preservation and protection is considered relevant from an environmental point of view.

Unlike tax and financial incentives, these incentives persuade behavior to stop and artificially put green businesses on an equal footing. For example, the NOMs that establish water pollution limits oblige all companies to implement actions to avoid exceeding those limits. Thus, the stricter the regulation, the greater protection and care for the environment is guaranteed.

While fiscal and market environmental incentives are found in federal and local legislation, financial environmental incentives are implemented as public policies that depend on the federal and state public administration.

This is important for the implementation of those specific incentives. The way in which they are designed persuades to implement certain actions in favor of the environment through fiscal and financial incentives. Likewise, market incentives, by setting a limit on polluting emissions, oblige all businesses in a specific market to take certain measures.

### Other programs

The focus of the program is to develop selfmanagement capacities in companies, to review in detail their operational and administrative activities, so that they, by themselves, find alternative solutions to the excessive and unnecessary use of materials, supplies, water and energy, among others; which are translated into the generation of waste, discharges emissions that result from an inefficient operation with repercussions the on environment, such is the objective of the Environmental Leadership **Program** for Competitiveness (ELPC).

The operation of the ELPC is carried out with the participation of non-profit civil associations and institutions of higher education, scientific or technological research with the capacity to link with companies in the country, which transmit the method for the identification and evaluation of opportunities to companies, providing technical assistance and support in environmental matters. This constitutes one more option for companies to integrate with an action that always tends to continuous improvement.

### **Results**

The audits in their different modalities or names in accordance with standards or in accordance with the law or regulation, are the starting point for an evaluation of the performance of organizations that voluntarily submit to inspection not only their results or processes, but even the structure and all the internal control that is invested in it, from human resources, equipment, materials and how much is measurable.

The standards contain the minimum parameters against which the performance, effectiveness or scope of companies must be compared when they decide to exceed the established expectations and intend to continue advancing in a process that leads them to exceed their goals or to be able to meet the demands that are established in standards.

Being the accounting and financial statements that result from daily operations those that have been subject to financial or fiscal audits more frequently and supported by the NIF and ISA, they provide us with specific guidelines for the review that help so that the environment in companies is more and better managed.

Recent reports from the National Institute of Statistics and Geography, INEGI for its acronym in Spanish, (2020), indicate the total for depletion and costs environmental degradation, which are equivalent to 4.6 percent of the national Gross Domestic Product. During 2020, the Ecological Net Domestic Product 4 presented its lowest percentage with respect to the country's GDP with 75.7 percent. Emissions to the air are the item with the highest environmental cost with 611,235 million pesos followed by the costs of soil degradation, urban solid waste, depletion due to hydrocarbon extraction, the depletion of groundwater, water pollution and the costs of depletion of forest resources (INEGI, 2020).

According to statistics from the Ministry of Finance and Public Credit, from January to April 2021, spending on environmental protection, destined for infrastructure works to promote, manage and protect the environment and pollution, decreased to 201 million pesos (MDP), representing a drop compared to 2020 whose investment spending was 406 million pesos and in 2019 of 1,975 million pesos. Analysts agree that these cuts to public spending, as well as in health, arose from the uncertainty of the recovery of the economy in the midst of the COVID-19 pandemic (Saldívar, 2021).

During the Budget Erosion Table of Mexican Environmental Policy: evidence, arguments and challenges, within the activities of the International Mining Book Fair in February 2021 in Mexico City, Eduardo Vega, director of the Faculty of Economics (FE) of the National Autonomous University of Mexico, indicated that in 2008 the Ministry of the Environment and Natural Resources allocated 2 percent of public spending. By 2021, that percentage decreased to 0.7 percent. These resources have not only diminished, but most of it goes to water and on average only 25 percent of the budget goes to other environmental issues; Without considering that there is not a considerable participation of the private sector, which is why it is considered a priority to increase resources in this area (Lugo, 2021).

As part of the work of the "FIL de Minería", Veronique Deli, coordinator of Continuing Education of the FE, released information on a declining budget for the National Water Commission. Within the work of Budget Erosion Roundtable, it was mentioned that, in 2016, 1.2 percent of the federal budget was allocated to environmental protection. Mexico, like other countries that are part of the are part of the Organization for Cooperation Development, Economic and allocated 1.6 percent. Cesáreo Economist and Professor of the School of Economics at the Universidad Autónoma de Nuevo León, emphasizes the importance of addressing the recommendations made in international agreements by both citizens and all economic agents to solve these problems.

## **Conclusions**

The legal precepts indicate that they can be accompanied by a series of regulatory provisions on minimums and maximums in different areas such as those established by the MOS and MXS so that depending on the matter being reviewed can be supported with such provisions with the IAS and FRS in order to see implemented good practices for the improvement that in optimal conditions enable the auditees to observe the respect and maintenance of the healthy environment and the public interest intact for the health of the population and its due and timely information of environmental reports, action plans, financial statements and sustainability reports for all stakeholders.

To this should be added, the provisions of regional and international agreements that maintain the conditions established by the countries, applicable to people and not only to companies observing the best practices within a win-win philosophy, just auditing entities with national and state programs is not enough, the inclusion of good business management practices and observance of voluntary standards that protect natural resources and their permanence for future generations should be encouraged.

In addition to having implemented an important series of controls on the risks assumed by economic entities in their operations, transactions and events that occur from internal control systems that take forecasts and estimates in the entities that impact the environment, importance of meeting the requirements of the stakeholders and the need for the company to account for its performance in accordance with the laws and international accounting and auditing standards so that the valuation, presentation and disclosure are the basis on which it is reviewed by auditors to provide certainty of business performance to stakeholders.

The current situation requires that all individuals, companies and organizations of society work for the common good, due to the inability of government actions that fail to reduce the existing gaps and inequity that manifests the population, the unsustainable use of resources and increased pollution are a major task to be solved, we must become aware and act to provide a solution.

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