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Integration of ISO Systems and ESG Principles in the Ecuadorian Oil Industry

Integración de los sistemas ISO y principios ESG en la industria petrolera ecuatoriana

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Abstract

International trade demands competitiveness in price and quality, along with compliance with standards on sustainability, human rights, and environmental protection. In Ecuador, oil production is a key source of income, although it generates social and environmental impacts in the Amazon, requiring state oversight to ensure responsible exploitation. In this context, the research analyzes how the integration of ISO 9001, ISO 14001, and ISO 45001 with ESG principles strengthens the sustainability and competitiveness of the Ecuadorian oil sector, improving efficiency, reducing risks, and facilitating access to international markets. The study adopts a qualitative approach through the case of Válvulas del Pacífico S.A., using documentary analysis and review of certifications under the PDCA cycle. The results show that an integrated system ensures regulatory compliance, optimizes processes, and strengthens corporate reputation, favoring its participation in national and international tenders.

Keywords: Quality, sustainability, competitiveness

Resumen

El comercio internacional exige competitividad en precio y calidad, junto con el cumplimiento de normas sobre sostenibilidad, derechos humanos y protección ambiental. En Ecuador, la actividad petrolera es una fuente clave de ingresos, aunque genera impactos sociales y ambientales en la Amazonía, lo que requiere supervisión estatal para garantizar una explotación responsable. En este contexto, la investigación analiza cómo la integración de ISO 9001, ISO 14001 e ISO 45001 con principios ESG fortalece la sostenibilidad y competitividad del sector petrolero ecuatoriano, mejorando eficiencia, reduciendo riesgos y facilitando el acceso a mercados internacionales. El estudio adopta un enfoque cualitativo mediante el caso de Válvulas del Pacífico S.A., utilizando análisis documental y revisión de certificaciones bajo el ciclo PHVA. Los resultados muestran que un sistema integrado asegura conformidad normativa, optimiza procesos y fortalece la reputación empresarial, favoreciendo su participación en licitaciones nacionales e internacionales.

Palabras clave: Calidad, sostenibilidad, competitividad

Introduction

The steel industry constitutes an essential component of national industrialization processes, providing the foundation for the development of infrastructure, machinery, and other strategic inputs. Closely related to it, manufacturing plays a decisive role in economic growth, since it drives productivity, generates productive linkages, and contributes to growth in Gross Domestic Product (GDP). Empirical evidence shows that countries with robust manufacturing structures tend to achieve higher levels of development and economic autonomy, whereas those that fail to strengthen their industrial base remain dependent on, and vulnerable to, the dynamics of international markets. Over the past few decades, globalization has accelerated flows of trade, investment, and knowledge, but it has likewise amplified social, environmental, and labor-related challenges.

Within this highly competitive environment, firms face the dual challenge of sustaining profitability while simultaneously meeting international standards of quality, sustainability, and social responsibility. The adoption of integrated management systems, such as ISO 9001, ISO 14001, and ISO 45001, has emerged as a strategic tool for strengthening organizational efficiency, improving process traceability, reducing risk, and ensuring compliance with current regulations, thereby responding to the mounting demands of the global market. The central problem addressed by this research can be stated as follows: how does the integration of quality management systems (ISO 9001, ISO 14001, and ISO 45001) with ESG (environmental, social, and governance) principles help strengthen the sustainability and competitiveness of companies in the Ecuadorian oil sector amid economic volatility, the energy transition, and increasingly stringent international compliance requirements? Companies operating in Ecuador's oil sector face the challenge of effectively aligning these management systems with ESG principles so that their production processes remain sustainable, efficient, and consistent with global standards. Such integration is essential for responding to the pressures of the international market, ensuring continuous improvement, and fostering a model of industrial development that is both responsible and competitive.

Against this backdrop, the present study examines the case of Válvulas del Pacífico S.A. (VDP), an Ecuadorian company specializing in the design and manufacture of wellheads for the oil industry. The company has succeeded in consolidating its competitive position through the implementation of a management system grounded in the principles of quality, safety, and sustainability, supported by international certifications such as ISO 9001 and accreditation from the American Petroleum Institute (API). These credentials reflect not only the technical conformity of its products and processes but also the incorporation of the PDCA (Plan–Do–Check–Act) continuous-improvement approach into its overall management. Quality certifications constitute a differentiating factor in heavily regulated sectors such as oil and gas, where they are indispensable for accessing international markets and participating in public procurement. In VDP's case, these certifications not only strengthen its reputation and credibility but also allow it to register with Ecuador's National Public Procurement Service (SERCOP), demonstrating its commitment to quality, social responsibility, and environmental sustainability. The company maintains a clearly defined organizational structure that supports efficient, integrated management, comprising three departments, General Management and Commercialization; Production, Design, and Development; and Finance, together with five strategic coordination units covering Human Resources and HSE (Health, Safety, and Environment), Logistics, Imports and Exports, Production, and Product and Service Quality. This configuration allows the company to align its processes with corporate strategic objectives, ensuring consistency among operational planning, innovation, and regulatory compliance.

The analysis of this case seeks to demonstrate how an Ecuadorian industrial firm has managed to integrate its quality management system as a key instrument for achieving long-term sustainability. It further explores the impact of this integration on operational performance, access to international markets, and contribution to the country's industrial development. Taken together, this study shows that quality and sustainability are not isolated or secondary goals, but structural conditions for the survival, competitiveness, and evolution of organizations in today's global context.

Methodology

This research was conducted under a qualitative approach, applying a case study of the Ecuadorian company Válvulas del Pacífico S.A. This method made it possible to analyze the Quality Management System within its real-world context, comprehensively examining the elements, practices, and organizational dynamics that underpin its management model and its contribution to continuous improvement. The case-study method allows researchers to examine an actual situation in which an organization operates, analyzing its current state through documentary review and critical reflection. This research strategy logically links the information gathered and more clearly explains the organization's reality on the basis of the internal information collected.

A single case can nonetheless serve as a critical test of contemporary phenomena as they unfold in real settings (K. Yin 2003). In addition, descriptive research was used to characterize in detail the object of study and its structural components, drawing on documentary and bibliographic review to theoretically ground the findings

and strengthen the validity of the analysis (Bernal, César A. 2010). The study likewise incorporated an exploratory component, reflecting the need to delve into a subject that has received little attention at the national level, with the aim of identifying, understanding, and opening new avenues for future research.

Descriptive research, for its part, seeks to characterize and describe with precision the phenomena or events under analysis, drawing on an exhaustive literature review to theoretically substantiate the findings (Hurtado de Barrera, Jacqueline 2000). The study gathered empirical material through the review of a range of bibliographic sources, drawing on international standards such as ISO 9000:2015, ISO 9001:2015, ISO 14001:2015, and ISO 45001:2018, as well as on the theoretical contributions of relevant authors such as Almeida Guzmán (2017, 2022) and Gutiérrez, Humberto (2010), among others. The exploratory component, in turn, analyzed the Quality Management System of Válvulas del Pacífico, whose results attest to the system's long-term sustainability and effectiveness. This management approach has allowed the company to maintain its certifications, including that awarded by the American Petroleum Institute (API), strengthening its reputation and standing within the oil sector.

Results and discussion

Since 1973, Ecuador has established itself as an oil-extraction economy and a mid-level producer within Latin America. The importance of hydrocarbon extraction has generated a strong technological and financial dependence on foreign actors, one that is needed to cover the fiscal gap present in the national budget. Nevertheless, oil activity has also given rise to significant environmental and social challenges, particularly in the Amazonian extraction zones (Fontaine 2006). Ecuadorian oil policy, moreover, is rooted in the broader question of how governments respond to the socio-environmental conflicts arising from extractive oil activity in ecologically fragile and culturally vulnerable areas. In this context, Ecuador, like other small, peripheral Andean countries, has limited decision-making power over the dynamics imposed by globalization, particularly those shaped by fluctuations in the international supply and demand for hydrocarbons (Ortiz, Pablo 2006).

At the same time, the global energy landscape is undergoing a transition toward green energy sources. It is essential that Latin America, and Ecuador in particular, incorporate this shift into their development agendas, given that "the transition from fossil fuels to renewable energy, with the aim of building the infrastructure needed for new industries, steering agriculture toward organic practices, and protecting vulnerable regions and communities from the effects of climate change" (Palma, J; Pincus, J 2022, 674).

The Ecuadorian State faces the dual task of harnessing its natural resources efficiently and responsibly as a driver of national development while simultaneously mitigating the social and environmental impacts stemming from that exploitation, particularly those that disproportionately affect ancestral peoples and communities (Ortiz, Pablo 2006). Within this context, one of the most effective means of reducing such impacts is the adoption and expansion of international certifications, such as ISO standards, which foster transparent processes and products and safeguard not only workers but also the environment and all actors involved along the production chain. The proper application of these standards enables organizations to develop sustainably by ensuring simultaneous compliance with both customer requirements and applicable legal regulations. It also facilitates the implementation of preventive mechanisms that minimize risk and maximize opportunity through the systematic control of inputs and outputs at every stage of the production process, all of it underpinned by a quality management system (UNE 2015b). Table 1 outlines the economic and social outlook of global risks for 2025.

Table 1
Economic and social outlook of global risks, 2025

Risk	Observations
Lack of economic opportunity or unemployment	Concerns over employment and access to opportunity persist.
Erosion of human rights and civic liberties	A growing weakening of fundamental rights and freedoms.
Inequality	The economic and social gap remains a structural problem.
Recession or economic stagnation	Concern remains at the same level as in 2024.
Inflation	Less concern than in the previous year.

Source: World Economic Forum (2025)

Among the benefits of having a robust quality infrastructure in place is the strengthening of trust in trade, which drives not only economic prosperity but also public health and social well-being. This system underpins public-policy objectives related to industrial development, competitiveness, resource sustainability, environmental protection, and health. It also brings together policies, institutions, and service providers, generating value through the application of international standards and conformity-assessment procedures aimed at meeting the needs of citizens, consumers, and businesses within a framework of sustainable, competitive development. This, in turn, allows firms to improve their competitiveness and achieve better integration into global trade and value chains (UNIDI 2014). One key issue to consider is occupational illness arising from exposure to risk factors present in the workplace: the greater the exposure, the higher the probability and severity of such conditions.

A key strategy for mitigating this risk is the implementation of preventive studies and interventions aimed at identifying and controlling it. The occupational health and safety management system set out in ISO 45001:2018 establishes a framework for managing occupational health and safety (OHS) through a preventive approach that protects workers against risks that compromise their health and physical integrity. It promotes continuous improvement and can be integrated with other ISO standards, such as ISO 9001 and ISO 14001. It replaces OHSAS 18001 and seeks to reduce occupational illness, injury, and death by fostering a culture of prevention and sound organizational practice (ISO 2018). In other words, its approach is grounded in risk management and compatibility with other international standards, such as ISO 9001 (quality), ISO 14001 (environment), and ISO 27001 (information security). It promotes the active participation of workers alongside the organization with a view to preventing accidents and protecting occupational health over both the short and long term (NQA 2018). Table 2 sets out the benefits obtained from implementing this standard.

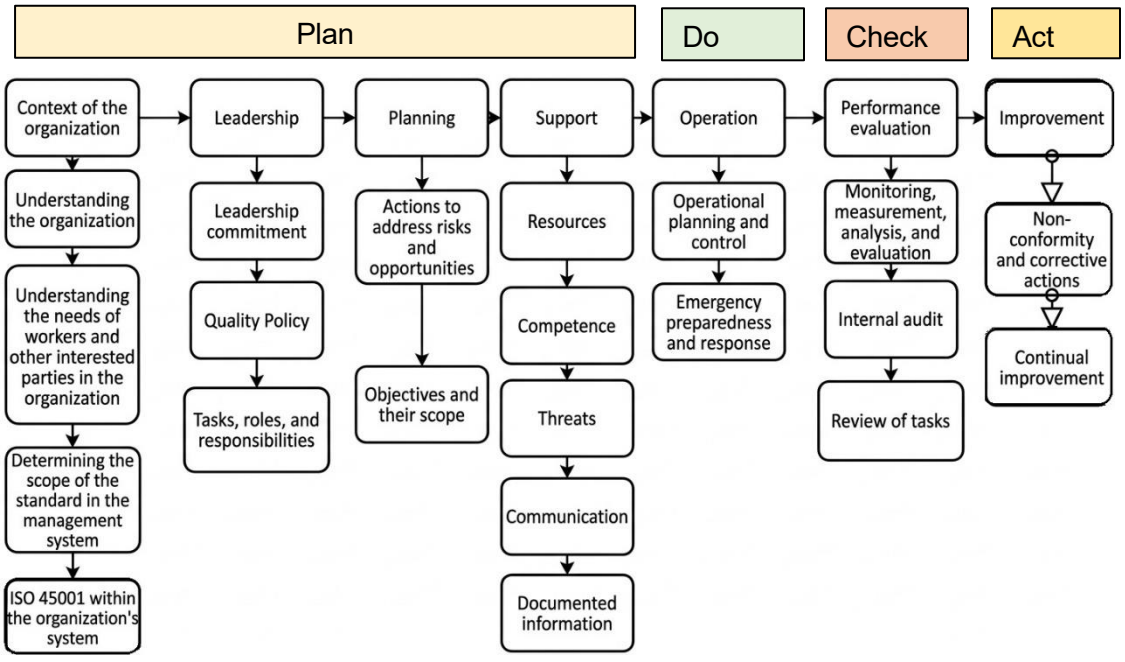
Table 2
Benefits of implementing ISO 45001:2018

Variable	Description / Benefit
Integration with other quality management systems	Aligns with ISO 45001, ISO 9001, and ISO 14001, improving resources and processes.
Commitment and participation	Protects workers, instills a culture of workplace safety, and drives productivity.
Compliance and reputation	Certification ensures compliance with legal obligations, reduces risk through the findings of internal and external audits, and strengthens the organization's commitment to continuous improvement.

Source: International Organization for Standardization, ISO 45001:2018 – Occupational Health and Safety Management Systems: Requirements with Guidance for Use (Geneva: ISO, 2018).

This standard likewise incorporates the PDCA cycle (Plan, Do, Check, Act) as a core tool for continuous improvement. Figure 1 illustrates the integration of the quality management system through a structure of interrelated clauses that facilitate its implementation and its coherence with other management systems.

Figure 1
Clauses comprising the quality management system



Source: International Organization for Standardization, ISO 45001:2018 – Occupational Health and Safety Management Systems: Requirements with Guidance for Use (Geneva: ISO, 2018).

To maximize the benefits of an occupational health and safety management system, an organization must secure managerial commitment and foster continuous improvement. Such a system should protect workers and be woven into the organizational culture. Clear communication of its objectives and the active participation of personnel strengthen safety, reduce accidents, and improve productivity (ISO 2018). In the oil sector, workers may develop respiratory and musculoskeletal disorders as a result of repetitive movements and intense physical exertion, as well as exposure to physical and chemical agents, among other factors (OIT 2010).

The international ISO 45001 standard sets out the requirements for implementing an occupational health and safety management system. Its application encourages the active participation of workers and the commitment of senior management to preventing occupational injury and illness, ensuring safe and healthy work environments. It also encourages the establishment of occupational health and safety committees and requires that the management system's policy be properly documented and made available to all interested parties, ensuring transparency and continuous improvement in organizational performance (ISO 2018a). In the case of Válvulas del Pacífico, Table 3 shows how the organization integrates environmental management with occupational health and safety.

Table 3
Integration of environmental management with occupational health and safety within the corporate regulatory framework

Environmental management	Matrices	Objectives	Company health and safety regulations approved by the Ministry of Labor
Waste identification and control	Waste control matrix	Identify and assess occupational hazards	Maintain statistical records of events that could compromise safety
Identification and evaluation of environmental aspects and impacts	Environmental aspects and impacts identification and evaluation matrix	Control occupational hazards	Inform workers of the hazards they are exposed to and the preventive measures to be adopted
Environmental monitoring	Monitoring matrix and equipment calibration matrix	Record accident and absenteeism rates and evaluate outcomes	The Occupational Health and Safety Committee is entitled to request an inspection of the workplace from the competent authority whenever it deems necessary.
Preparedness and response to hazardous and emergency situations	Hazard identification and risk assessment matrix	Provide technical guidance on fire control, storage of supplies, electrical safety, ventilation, and personal protection, among other areas	Responsibility rests with senior management and all of the organization's employees.

Source: Author's own elaboration based on the Internal Health and Safety Regulations of Válvulas del Pacífico (PACIFVALVS), Quito, Ecuador, 2025.

Table 4, in turn, sets out the methods used to measure occupational risk.

Table 4
Occupational risk factors and applicable assessment methodologies

Risk factors to be measured	Applicable methodology	Description / Acronym
Mechanical risk	Simplified risk assessment system	A general method used to identify, evaluate, and prioritize risks arising from machinery, tools, and equipment.
Physical risk		Assesses exposure to factors such as noise, vibration, temperature, lighting, or radiation.
Chemical risk		Determines exposure to hazardous chemical substances present in the workplace.
Biological risk		Analyzes potential contact with biological agents such as bacteria, viruses, or fungi.
Ergonomic risks	RULA, L.E.S.T., NIOSH	**RULA (Rapid Upper Limb Assessment):** assesses upper-limb postures.
		L.E.S.T. (Laboratory of Economics and Sociology of Work): assesses working conditions from an ergonomic standpoint.
		NIOSH (National Institute for Occupational Safety and Health): a method that measures physical load and manual lifting limits.
Psychosocial risks	ISTAS 21 and Psico 3.1 diagnostic surveys, among others.	**ISTAS 21:** a questionnaire developed by the Trade Union Institute of Labor, Environment, and Health to assess psychosocial risk factors.
		Psico 3.1: a Spanish tool for psychosocial diagnosis in the workplace.

Source: Author's own elaboration based on the Internal Health and Safety Regulations of Válvulas del Pacífico (PACIFVALVS), Quito, Ecuador, 2025.

Within this context, Válvulas del Pacífico must comply with Ecuador's Law 76 on the National Quality System, whose Article 1 states:

> This Law aims to establish the legal framework of the Ecuadorian quality system, intended to: (i) regulate the principles, policies, and entities related to conformity-assessment activities, thereby facilitating compliance with Ecuador's international commitments in this area; (ii) guarantee the fulfillment of citizens' rights relating to safety, the protection of human, animal, and plant life and health, environmental preservation, and consumer protection against deceptive practices, as well as the correction and sanctioning of such practices; and (iii) promote and encourage a culture of quality and the improvement of competitiveness within Ecuadorian society. (Asamblea Nacional del Ecuador 2007, art. 1, 2014)

Under this regulatory framework, the organization recognizes that implementing environmental, social, and governance (ESG) principles provides a framework that enables any type of industry to move toward sustainable development, promoting social equity and responsible governance. Its purpose is to reduce the impacts that organizational activities may have on the environment and society, thereby contributing to the fulfillment of the Sustainable Development Goals (SDGs) set out by the United Nations. In the oil sector, ESG adoption facilitates more efficient use of energy resources, drives the circular economy, prevents pollution, and promotes proper waste management to protect flora, fauna, and biodiversity, as well as the restoration of natural habitats.

In terms of governance, ESG strengthens the fight against corruption, ensures social accountability throughout the value chain, and protects the rights and well-being of communities and society at large (ISO 2024). This orientation is aligned with the guidelines set out in the United Nations' 2030 Agenda, particularly the Sustainable Development Goals (SDGs) linked to the extractive industry: SDG 7, which promotes access to

affordable and sustainable energy; SDG 12, aimed at responsible production and consumption of natural resources; SDG 13, which seeks to mitigate climate impact by reducing carbon emissions; SDG 6, focused on the protection and efficient management of water resources; and SDG 15, which promotes environmental conservation and ecosystem preservation (Naciones Unidas 2025).

Business activity today is likewise shaped by environmental, social, and economic challenges, and sustainability has become an essential requirement for organizations. Integrated management systems (IMS), initially centered on quality, health, safety, and the environment, have evolved to incorporate sustainability as a strategic component. This integration spans six categories (management, people, market, production, environment, and occupational health and safety) recognizing that long-term viability depends on operating sustainably, supported by standards that guide processes and ensure the fulfillment of corporate objectives (Herrera 2024).

A survey of Ecuadorian companies holding ISO certification found that most maintain quality (ISO 9001), environmental (ISO 14001), and occupational health and safety (OHSAS 45001) management systems, with 18% also implementing ISO 22000. Large companies (56%) predominated within the oil sector. All organizations reported benefits following certification, noting that the integration of management systems contributes to organizational efficiency, sustainability, and competitiveness (M. A. Almeida Guzmán et al. 2020). Válvulas del Pacífico Pacivals S.A. holds API Q1 certification, a requirement of the Quality Management System for the oil and natural gas industry that complements ISO 9001 guidelines. This certification is intended to strengthen safety, traceability, and reliability across the entire production chain, from the procurement of raw materials through delivery of the final product to the customer and after-sales service, adding value and efficiency to the supply chain as a whole.

The company also holds a license to manufacture wellhead equipment and “Christmas tree” valves under American Petroleum Institute (API) standards, ensuring compliance with the technical and safety requirements demanded by the international oil industry (Válvulas del Pacifico 2025). This license has enabled the company to export its products to Colombia and Peru, while also consolidating its position in the Ecuadorian market and strengthening its competitiveness within the oil industry. Válvulas del Pacífico retained its API Q1 and ISO 9001 certifications following an external audit that confirmed a quality management system that is planned, documented, and oriented toward continuous improvement. Its policy is aligned with corporate strategy and customer satisfaction, and is grounded in key processes, risk management, and effective communication. Senior management ensures regulatory compliance, resource allocation, and staff training.

It further ensures documentary control and traceability in line with API and ISO standards, reinforcing customer trust (Válvulas del Pacifico 2025). The research revealed Ecuador’s continued dependence on oil, together with its associated socio-environmental impacts in the Amazon and its limited energy autonomy. Against this backdrop, organizations must innovate and improve their efficiency in order to sustain their competitiveness (Puerto, Doria 2010). Companies must therefore align themselves with market demands through quality management systems that strengthen their competitiveness and sustainability. Table 5 traces the evolution of the quality movement, from inspection to strategic management and continuous improvement.

Table 5
Historical development of the quality approach (1800–1995)

Stage	Approximate period	How quality was conceived	Main focus	Responsible party	Main objective
Inspection	1800	A problem to be solved	Detect defects in the finished product	Inspection department	Identify and separate defective or substandard products
Statistical quality control	1930	A problem to be solved through data	Control processes by applying statistical methods	Production and Engineering departments	Reduce errors and variation in manufacturing processes
Quality assurance	1950	A problem to be prevented before it occurs	Prevent failures from design through sales	All departments (with limited involvement from senior management)	Plan and ensure quality at every stage of the production process (design, production, and sales)
Total quality management (TQM)	1980	A competitive advantage	Integrate quality throughout the organization	The entire company, with active leadership from senior management	Satisfy the customer and the market through continuous improvement
Process restructuring and improvement	1995	An essential condition for remaining in the market	A comprehensive focus on the customer, processes, and organizational learning	The entire organization, especially senior management	Compete globally on quality, price, and service by continuously improving process performance

Source: Adapted from Humberto Gutiérrez Pulido, Calidad total y productividad, 3rd ed. (Mexico City: McGraw-Hill Education, 2014).

Quality management has evolved from the inspection stage (1450–1920), centered on detecting defects in finished products (Taylor, Ford, Whitney), to statistical quality control in the 1930s under Shewhart and Deming. This was followed by quality assurance (1950s–1960s), championed by Juran and Ishikawa, which promoted organizational prevention. In the 1980s, quality became consolidated as a competitive advantage under executive leadership and ISO standards, and in the 1990s total quality management emerged, grounded in continuous improvement and excellence models such as the EFQM (Torres Saumeth et al. 2012). The ISO 9001:2015 quality management approach is central to preventing negative impacts and reducing risk. The standard requires organizations to plan and control their processes to ensure the conformity of products and services, taking into account both legal and customer requirements. It promotes effective communication, verifiable design processes, and integrated management based on the PDCA cycle and a risk-based approach, with the aim of improving performance and customer satisfaction through continuous improvement (UNE 2015).

Implementing ISO 9001 generates both internal and external benefits. Externally, it enhances institutional image and customer satisfaction; internally, it improves efficiency, reduces rework and nonconformities, and strengthens staff training. It likewise encourages suppliers to align with the organization's quality policy, further consolidating continuous improvement (M. Almeida Guzmán 2022). ISO 14001, for its part, provides a framework for organizations to carry out their activities in an environmentally responsible manner, promoting a balance among economic, social, and ecological needs. It sets out the requirements for an Environmental Management System (EMS) aimed at achieving sustainable outcomes over time and supporting long-term decision-making (UNE 2015a). Table 6 presents the main environmental actions promoted by this standard.

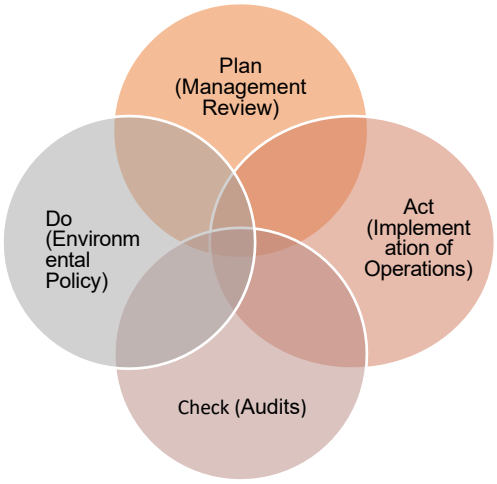
Table 6
Environmental actions

Environmental action	Purpose
Prevention and mitigation of environmental impacts	Protect the environment by avoiding or reducing the impact of organizations' operations
Regulatory compliance and process control	Ensure compliance with environmental protection standards and apply environmental criteria in the manufacture of products and delivery of services
Communication and improvement of environmental performance	Inform interested parties and encourage practices that generate economic and environmental benefits

Source: International Organization for Standardization (ISO). ISO 14001:2015 Environmental Management Systems – Requirements with Guidance for Use. Geneva: ISO, 2015.

As with ISO 9001:2015, this standard applies the PDCA approach to promote continuous improvement. Figure 2 presents the environmental management system.

Figure 2
Environmental management system



Source: International Organization for Standardization. Quality Management Systems – Requirements (ISO 9001:2015). Geneva: ISO, 2015.

ISO 14001 can be integrated with other systems and promotes continuous improvement through the control of environmental risk. It defines the requirements for an Environmental Management System (EMS) oriented toward sustainable performance and regulatory compliance. It further requires organizations to plan and control processes with regard to life-cycle considerations and emergency response through preventive actions and audits (UNE 2015a). Within this framework, the transition toward renewable energy and the adoption of international standards such as ISO are key strategies for promoting sustainable development. The findings show that implementing integrated management systems (IMS) based on ISO 9001, ISO 14001, and ISO 45001 strengthens business sustainability, efficiency, and competitiveness. Válvulas del Pacífico exemplifies sound industrial practice, having maintained its API Q1 and ISO 9001 certifications despite Ecuador's sluggish economic growth, which averaged just 1.1% annually between 2015 and 2024.

This performance can be attributed to oil-price volatility, the effects of COVID-19, fiscal difficulties, climate-related disasters, power outages, and security concerns, together with inflexible labor legislation and educational gaps that constrain development (Banco Mundial 2025). The research shows that integrating ESG (environmental, social, and governance) principles alongside the adoption of international standards not only increases value added along the production chain but also promotes a more efficient and sustainable management model within the Ecuadorian oil industry. This approach strengthens organizational operations while simultaneously enhancing the sector's capacity to address the environmental, social, and regulatory challenges that characterize it. In this respect, Válvulas del Pacífico demonstrates that sustainability and competitiveness are not competing goals but complementary pillars of responsible corporate management aligned with the SDGs.

Conclusions

The evolution of the Quality Management System (QMS) in a globalized world enables companies not only to provide quality products and services but also to narrow the gap created by new social and environmental demands. Today's approach calls for a holistic vision centered on continuous improvement, customer satisfaction, and sustainability, one to which every member of the organization must be committed. The ISO 9000 and 9001 standards foster an organizational culture focused on efficiency, the reduction of nonconformities, and improved performance at every stage of the production process. Likewise, continuous improvement and risk identification enable organizations to adapt more effectively to changes in their environment while safeguarding the quality of their products and services.

The incorporation of complementary systems such as ISO 14001 and ISO 45001 has reinforced this comprehensive approach to organizational management by integrating environmental sustainability and occupational health and safety as fundamental pillars of performance. Having a system in place that prevents occupational hazards and encourages workers' active participation helps build a strong, deeply rooted culture of workplace safety. ISO-based management systems thus provide a comprehensive framework that fosters synergy among quality, environmental sustainability, and occupational well-being. Their effective implementation not only drives productivity and competitiveness but also strengthens transparency and trust among consumers, suppliers, workers, social groups, and other stakeholders. Quality management therefore stands out as a key strategic tool for promoting continuous improvement, operational efficiency, and the sustainable development of organizations.

The Ecuadorian government faces the challenge of reducing its dependence on oil and mitigating socio-environmental impacts in the Amazon, within a context that favors the transition toward cleaner, renewable energy sources and a stronger focus on social justice. Within this scenario, the adoption of international standards such as ISO and the integration of ESG principles have become key strategies for strengthening the sector's sustainability and competitiveness. The case of Válvulas del Pacífico demonstrates that it is possible to implement responsible, efficient corporate management aligned with the Sustainable Development Goals, even under adverse economic conditions.

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