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improvement of the environmental enforcement and
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An aerial photograph of a dense, vibrant green forest. A river winds through the landscape, its path curving from the upper right towards the lower right. The forest canopy is thick and textured, with varying shades of green. The river's surface reflects the surrounding greenery and the sky above.

REDLAFICA

VISION

Contribute to the improvement of the quality of life of the citizens of Latin America with a healthy environment, through the generation of a culture of environmental compliance and the exercise of efficient and effective control by the member countries of the Network.

MISSION

Promote, develop and facilitate the implementation of best practices in environmental enforcement and compliance of the member countries through peer dialogue and collaborative commitment, in such a way that they allow the citizens of Latin America to live in a healthy environment, promoting a culture of respect and environmental compliance, thus contributing to the well-being and sustainable development of the region.

INTRODUCTION

The year 2022 has been a period in which the countries that make up the Latin American Network for Environmental Enforcement and Compliance (Redlafica) have strengthened our oversight actions with a view to ensuring the common objective that brings together all entities of the network: to protect the environment and people's health. This joint work of the region has been patented not only in the activities of environmental control and compliance, both face-to-face and remote, but also through the exchange of experiences and learning among the active organizations of the network.

In this fourth edition of Redlafica's annual magazine, we have highlighted the Triangular Cooperation Project Chile, Peru, and Germany 2022-2023, which has implemented the initiative called "Technical, technological and knowledge management strengthening for the improvement of the environmental enforcement and compliance processes of OEFA (Peru) and SMA (Chile)", and which has had the support of the German Development Cooperation, implemented by the Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) from Peru.

The initiative, which can be reviewed in more detail in the article presented by the SMA, is aimed at improving the performance of the function of control and compliance with environmental regulations in prioritized sectors in charge of the OEFA and the SMA in the

context of the restrictions for the Covid pandemic and the measures that will come post-pandemic. It is in this line of work, that during this year we have conducted a series of webinars whose focus strengthening the exchange of experiences and knowledge in matters of environmental control and compliance among the member countries of the organization.

At this same point, we invite you to review the article presented by GIZ, also focused on the triangular cooperation project, which has allowed us to conduct sessions for the exchange of technical experiences among the member countries of Redlafica, where we have addressed issues of environment supervision and control from different angles, such as mining tailings deposits, mine closure, aquaculture and fisheries, solid waste management, exotic species, the methodology for determining sanctions, among others.

Then, the experience of the National Environmental Licensing Authority (ANLA) of Colombia, who have promoted the work on citizen participation and their contribution in the transformation of conflicts in environmental licensing in the coffee country will be learned, where the scope of the implementation of the ANLA Territorial Presence Strategy will be reviewed in greater detail.

As a fourth article, we invite you to learn about the Environmental Control

and Monitoring of mining activities by the Ministry of the Environment, Water and Ecological Transition (MAE) of Ecuador, an entity that based on the Mining Law, Regulations to the Mining Law, Environmental Regulation for Mining Activities (RAAM), has allowed its National and Zonal Directorates to conduct the control, follow-up and monitoring of environmental management, to guarantee the minimum environmental impact resulting from mining activities in any of its stages, through the application of the control and monitoring mechanisms established in the environmental regulations of Ecuador.

Also, we have included in this release, the management promoted by the Ministry of the Environment and Sustainable Development (MADES) of Paraguay, an organization that bet heavily on the use of technology in environmental processes, establishing monitoring and control mechanisms through early warning and in real time systems of the Tebicuary River basin, maps of hot spots in National Parks, and monitoring of air quality, among other actions to be taken.

“Towards an effective environmental control in Peru”, is the title of the fifth article, through which Environmental Assessment and Enforcement Agency (OEFA) of Peru began in 2016 a process to improve the entity’s information management, which continued with its systematization and digitization and, also, its organizational structure and the control strategy of the OEFA was modified. This implementation has had a positive effect on the positioning of the OEFA as an entity with technical and innovative solvency.

Finally, from the Federal Attorney for Environmental Protection (PROFEPA) of Mexico they will learn about the article called: “Remediation of Soils Contaminated with Hazardous Materials or Waste”, and that through the Ministry of Environment and Natural Resources (SEMARNAT), has its National Program for the Remediation of Contaminated Sites 2021-2024, which reflects the effort of several years of analysis and classification to fulfill Mexico’s commitments in the Stockholm and Minamata International Conventions.

Finally, I want to thank the work, collaboration and participation of all those who have accompanied us in this second consecutive period of the SMA as Pro Tempore 2022 Presidency of Redlafia, and from now on, I extend the invitation for us to continue promoting the work, activities and exchange of experiences conducted by our network, whose purpose is to create synergies among all member countries in order to promote environmental compliance in the region, along with identifying improvements in our environmental control and compliance processes.

A cordial greeting,

Emanuel Ibarra Soto
President Pro Tempore Redlafia 2022
and Superintendent(s) of the
Environment (SMA) of Chile



Pudú, Chile.

REDLAFICA

México

Federal Attorney for Environmental Protection – Profepa

It is the decentralized administrative body of the Secretariat of the Environment and Natural Resources. Its main task is to increase the levels of compliance with environmental regulations in order to contribute to sustainable development and enforce environmental laws.

Guatemala

Ministry of Environment and Natural Resources – MARN

Public sector entity in charge of protecting natural systems that develop and sustain life in all its manifestations and expressions, fostering a culture of respect and harmony with nature and protecting, preserving, and rationally using natural resources in order to achieve transgenerational development.

El Salvador

Ministry of the Environment and Natural Resources – MARN

Entity in charge of recovering the Salvadoran environmental strategic environment and reducing socio-environmental risks through the promotion of a vigorous civic culture and inter-institutional coordination, to face the effects of climate change and reducing environmental degradation.

Costa Rica

National Environmental Technical Secretary – Setena

Decentralized body of the Ministry of Environment and Energy, whose main purpose is to harmonize the environmental impact of production processes, as well as analyze and resolve environmental impact assessments.

Ecuador

Ministry of the Environment of Ecuador – MAE

State body in charge of designing environmental policies and coordinating strategies, projects, and programs for the care of ecosystems and the sustainable use of natural resources. It proposes and defines the standards to achieve adequate environmental quality, with a development based on conservation and the appropriate use of biodiversity and natural resources.

Perú

Environmental Assessment and Enforcement Agency – OEFA

Entity attached to the Ministry of the Environment, in charge of promoting compliance and environmental enforcement to ensure the proper balance between private investment in economic activities and environmental protection. In addition, it is the governing body of the Notional System of Environmental Assessment and Enforcement – Sinefa.

Chile

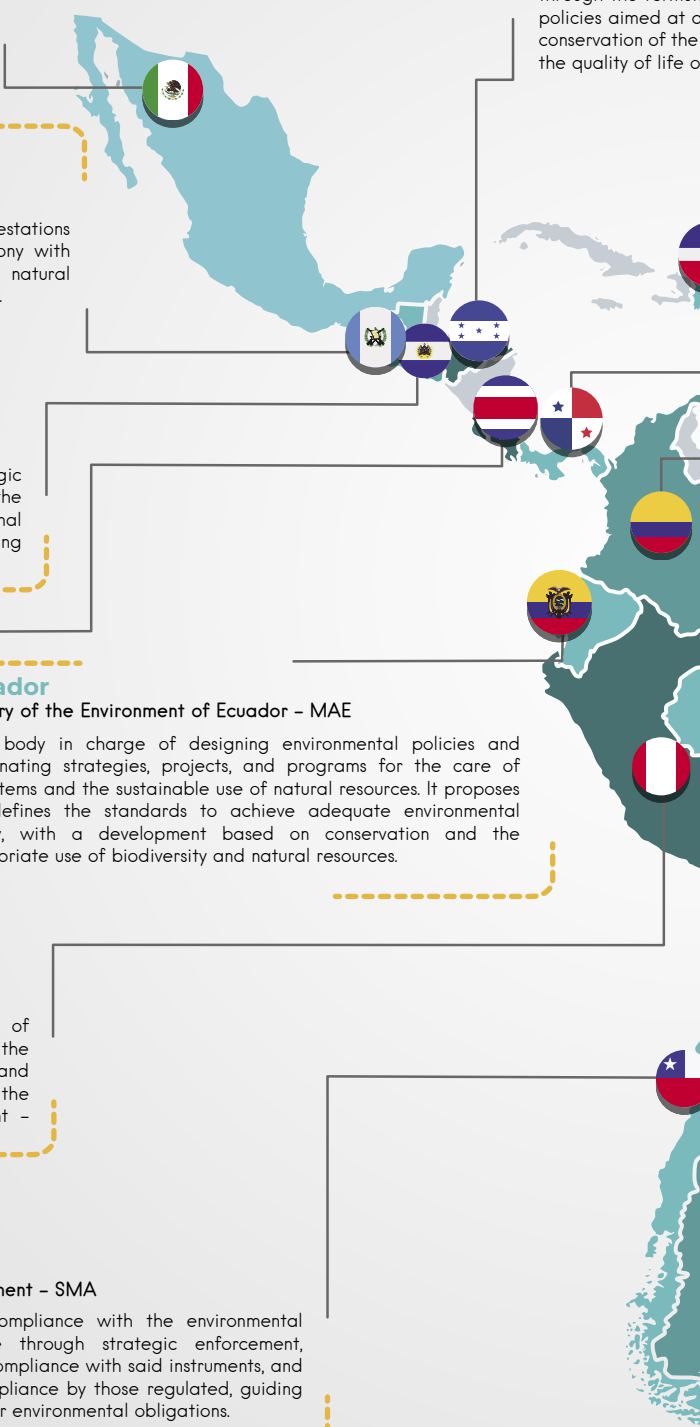
Superintendency of the Environment – SMA

Entity in charge of ensuring compliance with the environmental regulations of its competence through strategic enforcement, applying sanctions against non-compliance with said instruments, and promoting and encouraging compliance by those regulated, guiding them in the understanding of their environmental obligations.

Honduras

Secretariat of Natural Resources

Government institution through the formulation of policies aimed at the conservation of the environment and the quality of life of the population.



A MEMBERS

Natural Resources and Environment–MiAmbiente+

Entity responsible for promoting sustainable development, planning, coordination, execution, and evaluation of public policies achieving the preservation of natural resources and the environment and that contribute to the improvement of the quality of life of the inhabitants.

Dominican Republic

Ministry of Environment and Natural Resources

Entity in charge of preparing, executing, and supervising national policies on the environment and natural resources, promoting, and stimulating activities for their preservation, protection, restoration and sustainable use.

Panamá

Ministry of Environment – MiAmbiente

Entity in charge of the formulation, application and execution of an environmental policy that promotes the valuation, protection, conservation and recovery of the environment and the sustainable use of natural resources, as well as ensuring the ordering of environmental management in the public and private sectors and their integration in social and economic objectives that promote sustainable human development.

Colombia

National Authority of Environmental Licenses – ANLA

It is the authority in charge of ensuring that projects, works or activities subject to environmental licensing, permits or procedures comply with environmental regulations, in such a way that they contribute to the sustainable development of the country.

Brazil

Brazilian Institute of the Environment and Natural Resources – IBAMA

Entity with jurisdiction at the federal level in charge of protecting the environment, guaranteeing environmental quality, and ensuring sustainability in the use of natural resources through the granting of environmental licenses, control of environmental quality, authorization of the use of natural resources and environmental enforcement.

Bolivia

Ministry of the Environment and Water – MMAyA

State entity in charge of promoting equitable, reciprocal development in harmony with the environment through the integral management of water resources, access to drinking water and sanitation, irrigation for food security and the integral management of the environment and life systems.

Paraguay

Ministry of the Environment and Sustainable Development – MADES

Entity in charge of the formulation of policies and the coordination, supervision and execution of environmental actions, plans, programs, and projects framed in the National Development Plan referring to the preservation, conservation, rearrangement, and management of natural resources.

Argentina

Ministry of Environment and Sustainable Development – MAYDS

Governing body and executor of plans and actions related to environmental policy, its sustainable development, the rational use of natural resources, the fight against climate change, as well as the enforcement, inspection, and prevention of pollution.



COLOMBIA

NATIONAL ENVIRONMENTAL LICENSING AUTHORITY (ANLA)

By: Laura B. Gaitán L.
and Lorena Cantor R.

Bogotá, Colombia.

INCIDENCE OF CITIZEN PARTICIPATION AND ITS CONTRIBUTION IN **THE TRANSFORMATION OF CONFLICTS IN ENVIRONMENTAL LICENSING IN COLOMBIA**

One of the advanced institutional bets between 2018 and so far in 2022 in the National Environmental Licensing Authority (ANLA) in Colombia has been to encourage incident citizen participation in the decision-making process related to environmental licenses, permits and procedures of large-scale projects of its competence.

For this, actions have been conducted on two fronts: on the one hand, in generating institutional design conditions suitable for this purpose at the head of the Sub-directorate of Environmental Citizen Participation Mechanisms and on the other, conducting actions to promote the use of participation mechanisms with the entity's different interest groups. With this vision, it has been possible to consider citizen participation mechanisms in two ways, as a way of channeling the needs and expectations of the communities, as well as instruments that contribute to the positive transformation of conflicts in the territory.

Initially, it was based on recognizing that

incident citizen participation can materialize in the monitoring of institutional management, decision-making on licenses, permits or environmental procedures, and in the expression of public opinion regarding the decisions adopted, in fulfilling the task of promoting a balance between economic development and sustainable development.

Likewise, the ANLA Territorial Presence Strategy was implemented, through Regional Environmental Inspectors located in different parts of the country, with the mission of promoting a better understanding of the environmental licensing process and citizen participation. The strategy, in turn, allowed progress in the knowledge of the territorial context and the identification of environmental conflicts¹ (denomination that includes those corresponding to the socioeconomic environment) related to the operation of the licensed projects, works or activities.

In this framework we want to highlight the experience of the social control mechanism, through which the ANLA

¹ Environmental conflict for ANLA consists of opposition from social and/or political actors with conflicting perceptions and interests regarding the environmental feasibility and execution of projects, works or activities subject to licensing, permits or environmental procedures, it is related to tensions against the use of the territory and exploitation of natural resources, the perception of non-compliance with environmental regulations and/or opposition of various languages of valuation and logic on development visions.



Photo 1: Tour with the social control committee of the La Gacela property, where activities are conducted within the framework of the Compensation Plan for Biodiversity Loss of Autopista Conexión Pacífico 1 - Titiribí, Antioquia.

has accompanied citizen groups with the purpose of developing capacities so that they can provide qualified inputs to be considered in environmental control and monitoring by the Authority's competence.

The experience of the social control mechanism in the department of Antioquia:

Based on different meetings with territorial actors throughout the department in 2020 and 2021, in communities and local authorities, the need to resolve and process concerns regarding the progress of environmental obligations concerning the Conexión Pacífico I Highway Project, an infrastructure project road of great importance for the connectivity of productive regions in the department was identified.

For this, at the initiative of the citizens, a group was formed to conduct social con-

trol² made up of citizen delegates from the environmental tables of municipalities in the department of Antioquia, in the watershed of the region of Amagá-Sinifaná³; who, in order to limit their exercise, chose the Biodiversity Loss Compensation Plan of the aforementioned road project as the object of surveillance.

For this particular case, an alliance was made with Conciudadana, an NGO that promotes citizen participation at the departmental level. With this alliance, the NGO provided logistical conditions and knowledge of community research, and with the ANLA Regional Inspectors team, technical, regulatory, access to information and capacity building of the actors for their understanding and analysis were contributed.

Equally important, the company that owns the project was involved so that it could share its knowledge and information and provide feedback to the citizen

2 Social control is a citizen's right and duty, and promoting it contributes to the consolidation of democracy and governance in the territories. Law 1757 of 2015 Statutory Law of Citizen Participation regulates it.

3 They correspond to the municipalities of Heliconia, Santa Bárbara, Venecia, Titiribí and Amagá.

group regarding the techniques and actions implemented in its compensation plan.

The process with the technical support of the ANLA began in September 2021 and ended in July 2022. Throughout those months, more than twenty coordination meetings between actors and 21 meetings with the citizen group of social control were held. The experience began with what the social control group called “a sea of questions” and ended with a report of specific recommendations in which the progress of the compensation activities that it distrusted was positively recognized, and opportunities for improvement were presented especially in related socialization and participation actions.

Based on this experience, it is confirmed that to achieve incident and informed citizen participation processes, it is essential to generate spaces for multi-stakeholder dialogue and trust-building to enable a greater understanding of the projects and technical content in the communities and an understanding of the needs of the communities by local businesses and authorities.

For the ANLA, this exercise constitutes a successful experience, in which, based on a set of concerns on the part of the citizens, it was possible to involve municipal authorities, citizens and companies to advance actions around a purpose: to materialize collective actions, strengthen capacities and generate technically robust inputs to be considered in the environmental monitoring process conducted by ANLA.



Photo 2: Visit of the social control committee to the nursery owned by Vial del Pacífico Concessionaire within the framework of the Compensation Plan for Biodiversity Loss of Autopista Conexión Pacífico 1 - Titiribí, Antioquia.



Photo 3: Symbolic closing of the social control accompaniment pilot conducted by the committee to the Compensation Plan for Biodiversity Loss of Autopista Conexión Pacífico 1 - Medellín, Antioquia.



CHILE

ENVIRONMENTAL ENFORCEMENT AGENCY SMA

By: Luis Pérez Roasenda
Head of SMA Communications
in Chile.

Patagonia, Chile.

TRIANGULAR COOPERATION PROJECT CHILE, PERU AND GERMANY 2022-2023:

IMPLEMENTATION OF THE INITIATIVE CALLED “TECHNICAL, TECHNOLOGICAL AND KNOWLEDGE MANAGEMENT STRENGTHENING FOR THE IMPROVEMENT OF THE **ENVIRONMENTAL ENFORCEMENT AND COMPLIANCE PROCESSES OF OEFA (PERU) AND SMA (CHILE)”**

The plan is part of the continuity of the project called “Development of Technical Tools and Methodologies for the Enforcement and Compliance with Environmental Regulations”, executed during the years 2020 and 2021 by the **Environmental Enforcement Agency (SMA) of Chile and the Environmental Assessment and Enforcement Agency (OEFA) of Peru**, with the support of the German Development Cooperation, implemented by the Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) from Peru. And it is precisely, in the last stage of said project, where the need to consolidate some successfully developed processes was visualized, to adapt or improve instruments to the new reality (Covid and Post Covid), and the opportunity to promote the use of Information Technologies(IT).

Thus, through the **Regional Fund for Triangular Cooperation with Partners in Latin America and the Caribbean**, the new project called “Tech-

nical, technological and knowledge management strengthening for the improvement of the environmental enforcement and compliance processes of OEFA (Peru) and SMA (Chile)” was presented, requested by the Peruvian Agency for International Cooperation (APCI) and the Chilean Agency for International Development Cooperation (AGCID). Initiative that is being developed through four lines of action, within a period of two years and with financial support of around 900,000 euros.

The objectives of the project are aimed at improving the performance of the enforcement function and compliance with environmental regulations in prioritized sectors in charge of the OEFA and the SMA in the context of the restrictions due to the Covid pandemic and the measures that will come post-pandemic.

The first line of action has been focused on strengthening technical skills, the

expected results of which are for both the OEFA and the SMA to standardize their environmental enforcement actions for two prioritized activities or sectors (mining and aquaculture).

The second line of action is focused on the development and/or improvements of information and geospatial technologies for environmental monitoring and surveillance, and whose expected results are that both entities deepen the technological automation of their environmental enforcement actions, including remote supervision within the Covid and Post Covid context .

As a third line of action, processes will be optimized within the framework of State public innovation initiatives. Here, the expected result will be that the SMA optimizes its processes for managing environmental complaints in general, and for the protection of biodiversity in particular.

Lastly, a fourth line of action will be implemented that will promote knowledge management to increase the scope of triangular cooperation in Redlafica, where the expected results will materialize through the dissemination of successful experiences and good practices in the Network, capitalizing on the technological and training opportunities offered by the current situation.

As for the project management structure, it is made up of a **Steering Committee**, which is made up of political and

technical counterparts from each supervisory entity, who have defined the focal points, have reviewed and approved the global operational planning and agreed on the measures to improve project performance; an **Operating Committee**, who prepared the global/annual operating plan, and who must ensure the execution of the activities, defined the teams for each line of work or activity and monitor the progress of the project and report to the Steering Committee; and the **Coordination** of the initiative that is under the supervision of the GIZ Peru team.

The next steps of the project will be focused on the preparation of the Global/Annual Operational Plan, Meeting of the Steering Committee, formation of the work teams and start of activities of the Annual Operational Plan.

Redlafica Roadmap 2022

The Triangular Cooperation Project Chile, Peru and Germany 2022-2023 has also strengthened Redlafica's roadmap for this year. The network held a series of webinars focused on strengthening the exchange of experiences and knowledge in environmental enforcement and compliance among the member countries of the organization.

At the end of September, nine online workshops were held, highlighting the webinar held in July called "Citizen participation, platforms and their relationship with the Escazú agreement",

Acuerdo de Escazú: plataformas para la participación ciudadana

Viernes, 22 de julio 9:30-11:00 am hora local Washington / Chile



Photo 1: Webinar on "Citizen participation, platforms and their relationship with the Escazú agreement" held on July 22, 2022.

an activity that had the support from the Inter-American Development Bank (IDB), as part of the Regional Dialogue on Environmental Enforcement and Compliance Policies in its 2022 version.



Photo 2: Webinar on "Citizen participation, platforms and their relationship with the Escazú agreement" held on July 22, 2022.

In this regard, the Pro Tempore President of Redlafia and Superintendent of the Environment (s) of Chile, Emanuel Ibarra thought over the importance of said agreement "which has the objective of guaranteeing participation, transparency and access to environmental justice, issues that have traditionally

been seen as an obstacle to the development of projects. However, many public organizations have seen that this, rather than putting an obstacle to the economy, allows the development of projects and reduces judicialization, by having more transparency from the beginning of the processing of environmental licenses to the adequate enforcement. I invite you to think about this challenge during the day," took over the authority in the webinar.

Along with this workshop, he also highlighted the webinar held in September that focused on the "Challenges for the Enforcement of Complex Environmental and Social Systems, Regional Cases and of the Salar de Atacama, Chile", by the SMA of Chile and the IDB conducted in September. The workshop promoted a dialogue on the approach to complex environmental systems from the perspective of environmental enforcement and compliance of infrastructure projects and productive projects focused on renewable energies

and other technologies to address the climate change crisis, located in vulnerable territories mainly in Indigenous communities' territories.

Redlafica will continue promoting the workshops during 2023 with the aim of promoting technical, technological and knowledge management work to improve the environmental control and compliance of the member countries of

the network.

The axes of the strategic plan for the 2022-2025 period will also continue to be strengthened, focused on (i) Contributing to the progressive solution of common environmental problems, (ii) Promotion of environmental compliance through effective and efficient control, (iii) Articulation and sustainability of the Network.



Photo 3: Extraordinary work session with representatives of Redlafica member countries held on August 5, 2022.





ECUADOR

MINISTRY OF THE ENVIRONMENT, WATER AND ECOLOGICAL TRANSITION (MAE)

By:

Andrea Hernández Sánchez

Director of Regulations and
Environmental Control of the
Ministry of the Environment,
Water and Ecological Transition
of Ecuador.

Lago San Pablo, Ecuador.

ENVIRONMENTAL CONTROL AND MONITORING OF MINING ACTIVITIES IN ECUADOR

In Ecuador, mining has experienced significant growth in the region, being the recipient of significant flows of foreign investment, and without a doubt, a factor of progress, under an environmentally balanced sustainable development model that preserves biodiversity and the ecosystems capacity for natural regeneration through the transfer of clean technologies and good environmental practices; the Ministry of the Environment, Water and Ecological Transition proposes and defines standards for adequate environmental quality, with development based on conservation and the appropriate use of biodiversity and resources that our country has to achieve a balance between the exploitation of non-renewable natural resources and environmental sustainability.

The Ministry, as the governing body in environmental matters, regularizes small, artisanal mining projects; medium and large metallic and non-metallic mining, in the following stages: initial exploration, advanced exploration, exploitation, benefit, processing, smelting, refining and mine closure. In this sense, Ecuador has a specific legal framework (Mining Law, Regulations to the Mining Law, Environmental Regulations for Mining Activities (RAAM) and other related regula-

tory instruments), on the basis of which this Ministerial Unit through its National and Zonal Directorates conduct the control, follow-up and monitoring of environmental management, to guarantee the minimum environmental impact resulting from mining activities in any of its stages, through the application of the control and follow-up mechanisms established in the current environmental regulations.

This State Portfolio controls and monitors 145 environmental licenses, 254 environmental records granted, in the case of non-compliance with environmental regulations to protect the rights of nature pursuant to the Constitution of the Republic of Ecuador, this Unit has suspended mining activities, based on the findings identified regarding non-compliance with the measures established in the environmental management plan, non-compliance with the obligations of the environmental administrative authorization and non-compliance with current environmental regulations, within the main identified findings are:

- Inadequate management (generation, storage, transportation and final disposal) of hazardous waste.
- Mining fronts made in an anti-technical manner or, if applicable, abandoned.
- Direct drainage to water bodies without prior wastewater treatment.
- Diversion of riverbeds of water bodies, without the respective authorization.
- Identification of the use of mercury in the different mining activities.
- Handling of explosives without the corresponding authorization.
- Poor management of tailings with direct disposal to physical and biotic components.
- Poor management of tailings without prior technical design.
- Conduct any type of mining activity without the environmental administrative authorization.

At the same time, it is important to mention that it does not only result on a suspension as such. But rather in the execution of timely and effective corrective actions of the identified findings through the application of an action plan which is analyzed, reviewed and, if applicable, approved by the competent Environmental Authority, whose follow-up is carried out until full implementation of corrective measures.

On the other hand, if necessary and according to the seriousness of the findings identified in the territory and through the review of the different con-

trol mechanisms presented. This Ministry requests as a first instance to the Zonal Directorates nationwide that the corresponding administrative process be initiated, which, according to the analysis conducted by the competent entities, may conclude in a respective sanction, in order to compensate the impacts generated by mining activities which the vast majority are not regularized, that is, they do not have the corresponding environmental permit.

In addition, in cases where signs of damage to water resources or environmental contamination of any component (water, air, soil) are identified, the mining licensees are immediately provided with the application of water quality monitors (before and after of the concession), presentation of action plans for the execution of corrective and preventive measures to determine responsibilities.

Finally, this Ministerial Unit, committed to the development of responsible and sustainable mining in balance with the environment, will continue to conduct constant control and monitoring of mining projects/concessions nationwide to guarantee the protection of the environment, so that there is greater intervention in the territory and environmental management in the mining sector is improved.



Photo 1: Technical report, inappropriate management of tailings, 2022.



Photo 2: Technical report, inappropriate management of dump, 2022.



MÉXICO

FEDERAL ATTORNEY FOR ENVIRONMENTAL PROTECTION (PROFEPA)

By: Gonzalo Rafel Coello
Industrial Inspection Deputy Counsel
of PROFEPA

Pirámide del sol en Teotihuacan,
México.

REMEDIATION OF SOILS CONTAMINATED WITH HAZARDOUS MATERIALS OR WASTE

Mexico, like many other countries, has soils contaminated with hazardous materials and waste; hydrocarbons, heavy metals, pesticides, polychlorinated biphenyls, and other materials that, due to their impact on the environment and the health of the population, represent a national strategy for their care.

Contaminated soils represent for the public, private, and academic sectors, and for society itself, the opportunity to coordinate efforts to conduct studies and investigations that allow identifying the damage caused and the risk of not addressing it, the technologies to conduct its remediation, and in its case its confinement.

Mexico, through the Ministry of the Environment and Natural Resources (SEMARNAT), has its National Program for the Remediation of Contaminated Sites 2021-2024 1, reflecting the effort of several years of analysis and classification to fulfill Mexico's commitments in the International Agreements from Stockholm and Minamata.

It has three priority objectives:

1. Strengthen the National Inventory

of Contaminated Sites (INSC) so that it is a tool that contributes to decision-making by the authorities in dealing with contaminated sites and to guarantee the population's right to access information.

On the other hand, sites suspected of being contaminated, in rural and urban areas, private or public property, will be studied to confirm or rule out contamination and thus define remediation priorities.

2. Promote remediation actions in contaminated sites to contribute to the well-being of the population, using the different technologies for their remediation / neutralization, as well as identifying what are the impediments to their remediation.

Those responsible for the contamination are urged to continue and conclude the remediation, since many times the process is not concluded due to lack of follow-up and costs.

Improvements are being made to the procedures of the paperwork related to this issue, together with orientation campaigns for the procedures and

treatment methodologies.

The programs of inspection visits to contaminated sites and the verification until the conclusion of the remediation are strengthened.

Additionally, through the process of commuting economic sanctions, attention to contaminated sites is promoted.

3. Strengthen the regulatory framework for the remediation of contaminated sites; in the first instance with the analysis of the instruments that already exist, such as the Official Mexican Norms and Standards in the matter of hydrocarbons and metals, contemplating their updating if necessary and, in the second instance, structuring a normative proposal in the matter of remediation of soil contaminated with organic contaminants, which can help ensure that the population and the environment are not exposed to these substances.

The contamination of sites in Mexico has been caused by various anthropogenic activities:

- Mining activities. They generate large amounts of tailings and slag, many of which were improperly disposed of before environmental regulation began in Mexico. The leaching of these residues contaminates the soil and potentially the water.
- Hydrocarbon sector activities. Pollution by hydrocarbons and other types of potentially toxic substances that have damaged soil and bodies of water.
- Agricultural activities. Agrochemicals in agricultural activities and inadequate practices have impacted not only the soils of the areas where they are applied, but can also affect rivers, lagoons, and even coastal areas.
- Industrial activities, multiple materials and substances used in production processes to obtain consumer goods generate sources of contamination due to improper handling of hazardous materials and all types of waste.
- Service facilities. Gasoline service stations, vehicle repair shops, railway stations and facilities, bus terminals and airports, among others, have generated soil and groundwater contamination derived from leaks in containers of hazardous materials; continuous spills of lubricants; organic solvents, or other types of substances, as well as due



Photo1: Soil contaminated with Hydrocarbon.

to inadequate practices in their handling.

- Use of wastewater in irrigation of agricultural fields. It causes soils and crops to become contaminated with chemical residues from industrial and municipal discharges.
- Irregular waste deposit (open air). Inadequate disposal of urban solid waste that may be mixed with hazardous waste and whose leaching contaminates the soil.



Photo 2: Soil contaminated with Mercury.

According to the INSC that SEMARNAT, as of December 2018 in Mexico there were 913 contaminated sites, of which 756 are in rural areas and 157 in urban areas, it should be noted that to date those contaminated sites could affect Indigenous communities in the country.

The foregoing will allow that in the year 2040 it will be possible to observe in the INSC, more dependable, detailed, and precise information to know the trend of contamination nationwide, and identify which contaminants are the most recurrent in the contaminated sites, how they are distributed, and how much soil and water are affected.

And in parallel, work on the analysis and improvement of the technologies used for the treatment and remediation of contaminated soils, incorporating technological and scientific development to make them more effective in terms of time and results, in addition to reducing the costs of remediation.

Among the main contaminants in soil that have significant impacts on environmental health are heavy metals (lead, arsenic, mercury, cadmium, chromium, among others); persistent organic compounds (aldrin, chlordane, dichloro diphenyl trichloroethane, dieldrin, hexachlorobenzene, polychlorinated biphenyls, polychlorinated dioxins, and furans, among others); and pesticides, whose behavior and affectation depend on the type of soil that is contaminating.



Photo 3: Soil contaminated with Chromium.

Talking about treatment technologies in contaminated soils implies analyzing their unitary processes or series, which modify the composition of a hazardous or polluting material, through chemical, physical or biological processes, to reduce toxicity, mobility, and amount of contaminated material.

The use of a remediation technology depends on the specific factors of the site and the physicochemical properties of the contaminant, its availability, amount, and concentration, and if it is going to be conducted in situ or ex situ, in the different soils.

To explore into them, we can have another opportunity to describe and exemplify them.

Case of success: Tekchem

SEMARNAT, through the National Program for the Remediation of Contaminated Sites, conducts the remediation management of more than 100 contaminated sites nationwide, among them, it continues with the work in the Former Ferretimex Industrial Unit (Tekchem) in Salamanca, Guanajuato, site contaminated with pesticides and mercury, due to the inadequate handling of these materials for more than 60 years of operation.



Photo 4 and 5: Images: www.elsoldesalamanca.com.mx



PARAGUAY

MINISTRY
OF THE
ENVIRONMENT
AND SUSTAINABLE
DEVELOPMENT
(MADES)

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ENVIRONMENTAL ENFORCEMENT: KEY TO SUSTAIN ACTIONS TO MITIGATE THE IMPACTS OF DROUGHT

Given the imminent reality of drought in the region, the impossibility of controlling its occurrence, and the need to minimize or mitigate impacts through strategies, the Ministry of the Environment and Sustainable Development of the Republic of Paraguay (MADES) made a strong commitment in the use of technology in environmental processes, establishing monitoring and control mechanisms through early warning systems, such as the real-time situation of the Tebicuary River basin, maps of heat sources in National Parks, and monitoring of air quality. Likewise, inter-institutional work capacities have been strengthened in the Pilcomayo river basin, a channel of special behavior, of waters shared with Bolivia, Argentina, and Paraguay. This article aims to present the actions conducted in terms of watershed management, focused on environmental enforcement based on the use of technologies.

Within the framework of the aforementioned, the MADES official website has real-time data on the current situation of the Tebicuary River¹, located in the Eastern Region of the country, in

whose upper, middle and lower basins agricultural exploitation activities are conducted, mainly rice cultivation, which due to its own production conditions requires a large amount of water, therefore, this channel could suffer the consequences in case of extreme use, considering this, regulations are established and provisions are made for the rationalization of the use of water for irrigation, staggered pumping or the cessation of water pumping is arranged according to the flow of the river. The Directorate of Integrated Environmental Enforcement, as the executing arm of the controls and inspections of MADES, go by land and/or river to these sites and controls compliance with the provision, intervening, notifying, and communicating to the Legal Department for the purposes of proceed to the legal analysis of the facts found. These inspections, of environmental importance to ensure that aquatic conditions are not affected, trigger a social assessment since many families subsist from fishing activity, and the river is a source of water supply for basic needs in many human communities.

¹ <http://hidricos.mades.gov.py/monitoreo-cuenca-rio-tebicuary>



Photo1: One of the dam opening works on the Pilcomayo River.

On the other hand, another of the basins that suffers the consequences of the drought is that of the Pilcomayo River in the Western Region of Paraguay - Chaco. This channel has a special trinational management between Argentina, Bolivia, and Paraguay; considered one of the rivers with the highest transport of sediments in the world, the National Commission for the Regulation and Multiple Use of the Pilcomayo River Basin (CNRP) was formed, through which cleaning and maintenance works are conducted on the channel to guarantee the entry and distribution of water within Paraguayan territory. However, throughout its route, it suffers from the consequences of the anthropogenic activities and works of diversions and dams, for which it is key, first, the inter-institutional relationship with the CNRP, the Public Ministry and other state agencies, and second, monitoring through satellite images in real time and multi-temporal for the identification of water stagnation points, for subsequent

on-site environmental inspection, intervention of those responsible, the opening of dams and the application of administrative and criminal sanctions. These procedures, conducted by the Integrated Environmental Enforcement Directorate of MADES, can be described as vitally important due to the dependence on water for the recovery of wetlands, the maintenance of wildlife, and the equitable distribution for use in production, in addition to urge and oblige the environmental adaptation of the different projects related to hydraulic works in the basin, to guarantee its comprehensive management.

As has been seen, despite being a country considered rich due to its natural resources, population growth



Photo2: Inspection in the Tobicuary River basin.

and climatic conditions, it is becoming a more significant challenge to guarantee the comprehensive management of water basins in Paraguay, for the preservation of wild fauna and flora as well as for the supply of water for different human uses, where the preparation of plans and programs are

key, but environmental enforcement will guarantee that these are applied correctly by the different actors, and adding to this the early warnings, it will be possible to provide a preventive approach.

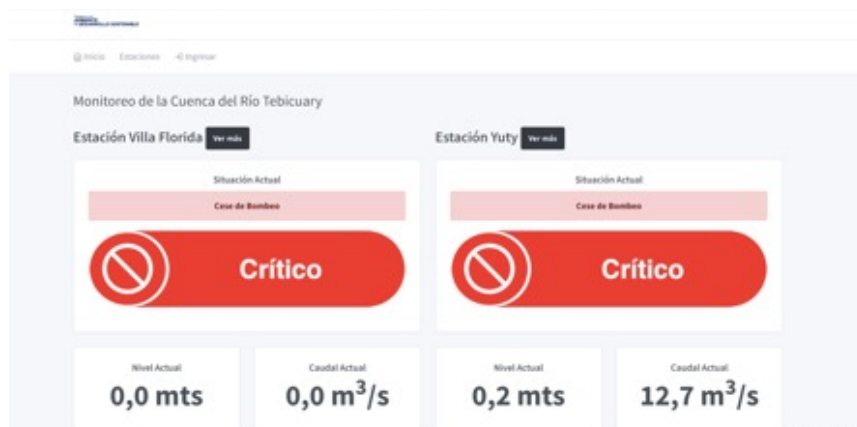


Photo 3: Real-time monitoring view, basin status and pumping situation.



Photo 4: Inter-institutional work in the Pilcomayo River basin.



ORGANISM OF EVALUATION AND AUDIT ENVIRONMENTAL OEFA

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TOWARDS AN EFFECTIVE ENVIRONMENTAL ENFORCEMENT IN PERU

This article addresses the process initiated in 2016 to guide the work of the Environmental Assessment and Enforcement Agency (OEFA) towards tangible results for citizens.

Paradigm change in environmental enforcement

One of the main challenges for the entities that exercise environmental enforcement is to guide it to tangible results. This implies abandoning a common paradigm in public management, which privileges compliance with “administrative” indicators; and go towards one that affects the improvement of environmental quality; whose success is evaluated in the impact of the actions of public bodies.

It was necessary to have allies to conduct this change. A key actor was the German Development Cooperation, implemented by the Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ, for its acronym in German), with whom the same vision of effective enforcement was shared.

Evidence and information

The first step in the change process was to improve information management at

OEFA. The lack of reliable information prevented knowing the status of the matter, the success of the implemented solutions and the need for improvements in the organization. Information management underwent major changes, one of which was the formation of the Systematization, Statistics and Process Optimization Coordination (CSEP) to consolidate and validate data.

Once the information of the internal processes was consolidated, the information of the environmental enforcement began to be compiled in a systematized and digital way. Information contained in physical and virtual documents was rescued to organize it in databases that allow its management. Thus, value was given to the experience generated in the supervision process and the implementation of technological tools to store information in databases and repositories, to share it and, above all, to analyze it.

In this context, we sought to strengthen internal tools before implementing external solutions. The Applied Information System for Environmental Enforcement began as a repository to consolidate supervision reports; and then it was strengthened with more functionalities, until it became a fundamental tool for the supervision process, which allows us



Photo 1: Presentation of the "Regulatory Compliance Assessment and Enforcement in OEFA of Peru" conducted by the Organization for Economic Cooperation and Development (OECD). Lima Peru.

to measure our performance and provide information through the [OEFA quarterly statistical report in figures](#).

When information management was consolidated, efforts were made to disseminate it. For this reason, in April 2019, the [Interactive Environmental Enforcement Portal](#) was launched, which contains information on the status of the environment, environmental enforcement actions in Peru, environmental conflicts, environmental management instruments, etc.



Photo 2: Main view of the OEFA's Interactive Environmental Enforcement Site (Portal Interactivo de Fiscalización Ambiental - PIFA).

Optimized and standardized processes

Before 2017, the supervision process did not have clear or defined procedures, the time to issue the products, also, was not controlled, which generated organizational problems and work overload. Given this, the standardization of the process began to eliminate by-products that do not add value, reorganize the entity, and systematize information.

Internal measures were adopted to simplify the procedure to "go through the guillotine" those actions that did not provide any value to the process or affect the result. In this way, a standard supervision process was built for all supervision teams, which is mandatory, and its implementation is monitored by the CSEP.

Organizational structure and environmental enforcement strategy

The change also led to the modification of the organizational structure of the ins-

titution. Before, there was a single body in charge of all environmental supervision, with deficiencies in administrative management and lack of initiative to implement actions to promote compliance. Given this, specialized units were implemented, and a directorate was also created in charge of formulating and evaluating policies and strategies.

The optimization process also had an impact on the conformation of the supervision teams, under the principles of cooperation and competition. These were reorganized according to the profile of each worker, to territorial criteria or by areas of supervision. The decision of the criteria to be used for the reorganization of the teams (territory or competition) was defined by each direction according to the strategy to be implemented.

Towards effective environmental enforcement

Once the internal changes were consolidated, strategies were developed to promote compliance with obligations to improve environmental quality. This implied incorporating various legal tools in the supervision process that allow solving the environmental problems faced: the required step from managing reports and files to managing environmental problems.

At this point, a number of supervisions were prioritized to adopt a results approach in terms of environmental quality, for example, achieving air quality

enforcement in the city of Chimbote, among others.

This aspect was also promoted in the other environmental enforcement entities of Peru, through the strengthening of the National System for Environmental Evaluation and enforcement (Sinefa), whose governing body is the OEFA. For this, an intense training program was developed on the value chain of environmental enforcement, which came to summarize the entire previous process and the change in the supervision paradigm.



Photo 3: National workshops for the preparation of the Annual Environmental Evaluation and Enforcement Plan (Plan Anual de Evaluación y Fiscalización Ambiental - Planeфа).

OEFA positioning

The implementation of this process had a positive effect on the positioning of OEFA as an entity with technical solvency and capacity for innovation. This has been recognized at the country level by civil society organizations, by implementing 39 good practices in public management between 2016 and 2021. Likewise, this year, NGO Ciudadanos el Día recognized eight initiatives such as

Good Practices in Public Management 2022, for its results aimed at improving services in the public sector for the benefit of citizens.

The OEFA has also undertaken actions to strengthen technical knowledge with the exchange of experiences among international peers, with the aim of joining forces and working together.

An important moment in the process of change was the evaluation conducted by the Organization for Economic Cooperation and Development (OECD) of the OEFA regarding the supervision process. The policies, practices and resources used in the activities to promote compliance and inspections were evaluated. As a result of this process, the document [“Regulatory Compliance and](#)

[Inspections in the Environmental Sector of Peru”](#) was approved.

Pending challenges

In retrospect, OEFA is an innovative institution that has made great strides in knowledge management, implementing technological tools, and technically strengthening its members and peers through international cooperation with Redlafia. It is possible to state that a paradigm shift has been consolidated towards effective environmental enforcement, which seeks to promote compliance with obligations and improve environmental management.



Photo 4: OEFA supervisor at the air quality monitoring station in Ilo, Moquegua.



Photo 5: OEFA supervisors preparing drone in Cotabambas, Apurímac.

OPINION PIECE

Sylvia Reátegui
Responsible for the Triangular
Cooperation Project



REGIONAL COOPERATION AND KNOWLEDGE MANAGEMENT FOR A BETTER **ENVIRONMENTAL COMPLIANCE IN LATIN AMERICA AND THE CARIBBEAN**

Due to its global relevance, the countries of Latin America and the Caribbean increasingly address conservation and environmental care from a cross-cutting perspective and incorporate it into their public policies as a response to the goals of the 2030 Agenda. In addition, the region has an enormous wealth of biodiversity and forests, global assets of great value for the sustainable development of its nations, as well as of strategic importance in the global challenge of combating climate change.

The German Development Cooperation, implemented by the Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH, accompanies its partner countries in the region in the development of projects aimed at environmental conservation and compliance. At the same time, it promotes joint learning and exchange between countries through the triangular cooperation modality, promoted by the Regional Fund for Triangular Cooperation with Partners in Latin American and the Caribbean of the German Federal Ministry for Economic Cooperation and Development (BMZ).

Triangular cooperation projects combine experience and knowledge, as well as financial, institutional and human resources, and reinforce trust and horizontal relations between the countries involved. Combining the complementary strengths of each partner – typically a supporting partner (facilitator), a pivotal partner and one or more beneficiary partners – as well as the multi-stakeholder approach of triangular cooperation, contribute to a high development impact.

Under this modality, since 2019 the triangular cooperation project between Chile, Peru and Germany on environmental enforcement and compliance has been developed in two phases. The project is implemented by the Environmental Assessment and Enforcement Agency (OEFA) of Peru and the Superintendence of the Environment (SMA) of Chile, with the support of the German cooperation.

The second and current stage of the project, which lasts until the end of 2023, aims to exchange experiences in the development and application of technical and methodological tools in environmental enforcement, both for the

improvement of processes and for compliance with environment regulations in Peru and Chile. In addition, within the framework of one of its lines of action, knowledge management is promoted to increase the contribution of triangular cooperation to the Latin American Network for Environmental Enforcement and Compliance (Redlafica). Thanks to this, technical experience exchange sessions are held periodically between the member countries of Redlafica, which address the issue of environmental supervision and enforcement from different angles, such as mine tailings deposits, mine closures, aquaculture and fisheries, solid waste management, exotic species, the methodology for determining sanctions, among others.

The contribution to the dissemination of good practices and successful experiences, as well as mutual learning, by

the partner countries of the project and, in general, by the members of Redlafica, fosters and reinforces the horizontality of relationships and trust between them. As a result of this fruitful exchange, the measures and activities on display can be implemented or considered by other countries in the region to strengthen their compliance functions with environmental regulations. German cooperation is committed to this model of regional cooperation and knowledge management to help preserve the environment for the entire planet and future generations.



Photo 1: On October 4, the workshop began, focused on good practices in the planning and supervision of the closure of mining facilities, organized by OEFA-Peru, SMA-Chile and GIZ.



Photo 2: In August, the seventh workshop for the exchange of experiences was held within the framework of the triangular cooperation project for environmental Enforcement and compliance between Peru, Chile, and the German Development Cooperation, implemented by GIZ. In this case, the Brazilian Institute for the Environment and Renewable Natural Resources (IBAMA) offered the workshop "Control of the dispersion of invasive alien species related to fish farming."



Photo 4: In June, the 5th workshop within the framework of the agreement was held. Mexico, in turn, presented the "Environmental Management and Supervision of Municipal Solid Waste Open Pit Dumps", an activity that was in charge of the Office of the Attorney General for Environmental Protection (PROFEPA).



Photo 3: During the month of July, and with more than 120 participants, the 6th workshop was held within the framework of the triangular cooperation project for environmental Enforcement and compliance between OEFA of Peru, SMA of Chile and the German Cooperation for the Development – GIZ. Then, SMA offered the topic: "Methodological Bases for the Determination of Environmental Sanctions", lectured by the Department of Sanctions and Compliance (DSC).



Photo 5: "Experiences in environmental Enforcement of aquaculture activities in Chile" was the workshop held in May 2022, led by teams of specialists from the Superintendencia del Medio Ambiente (SMA) and the National Fisheries and Aquaculture Service (Servicio Nacional de Pesca y Acuicultura SERNAPESCA).

With the support of:

