



PROYECTO REGIONAL  
**PINTURAS  
 LIBRES  
 DE PLOMO**  
 COLOMBIA ECUADOR PERÚ



# Testing of Paint Reformulation Guidelines and the Reformulation Results

CEER – NCPC Ecuador



Global Alliance to  
 Eliminate Lead Paint



# Feedback on the Guidelines

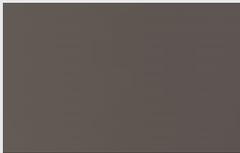
## Companies and Collaborators

- Dissemination in six companies and one supplier, of which:
- Six companies (86%) did not indicate comments to the Guidelines.
  - One company (14%) agreed with the content of the Guidelines.

## Pilot Tests (CEER)

- Include alternative pigments for the replacement in the case of no grinding processes (e.g., pigment pastes).
- Update the list of suppliers for Latin America.
- Incorporate examples of pigment reformulations for Latin American suppliers.
- Include lead-free pigment pastes information for reformulation processes.

# Reformulation overview in Ecuador

	LIP-01		LIP-02	LIP-03		LIP-04	
Stage	S7		S5	S7		S7	
Type of current products manufactured	Alkyd modified enamel for taxi repainted		Grey coating	Traffic marking paint		Alkyd enamel	
Applications of current products manufactured	Automotive		Metal-mechanic	Signal marking		Domestic	
Selected paints	Standard paint	Reformulated paint	Standard paint	Standard paint	Reformulated paint	Standard paint	Reformulated paint
							
Volume of lead paints production (ton/year)	13.10		7	196		1.4	
Type and quantity of lead-containing in raw material (ton/year)	Medium chrome yellow (0.82)		Medium chrome yellow (0.15)	Medium chrome yellow (17)		Medium chrome yellow (0.29)	

# Reformulation Results

Selected product: Yellow alkyd enamel

Request (according to technical specifications)	Lead paint Company LIP-04	Lead-free paint Canary Yellow LF-761 (Mathiesen&Pyosa)
Lead content on dry base	34,689 ppm	<56 ppm
Specular Gloss 60°	5.4 UB	43.8 UB
Solids by mass	40.21 %	37.68%
Fineness of dispersion	50 µm	10 µm
Flexibility	33%	33%
Waterproof	No blistering, softening, adhesion loss or color change	No blistering, softening, adhesion loss or color change
Dry time free to touch	1.75 hours	1.9 hours
Drying time when handling	10 hours	11 hours

# Drivers and barriers to SMEs reformulation

## DRIVERS

- Have a legal document (Ecuadorian Technical Regulation RTE INEN 061 “Paints”), in approval process (INEN/Ministry of Production).
- The existence of global regulations related to the reduction of lead content in paints, accepted by our neighboring countries: Colombia and Peru.
- Interest of companies for scheduling meetings with new suppliers with cheaper alternative pigments.
- Understand the effects that lead can cause on human health and the environment.

## BARRIERS

- Not all companies have testing or research laboratory for the development of quality analysis or reformulations.
- Not all SMEs have a grinding process for manufacturing their paints.
- Few national suppliers have lead-free alternative pigment pastes. They usually have only powdered pigments.
- There is only one accredited laboratory in the country to quantify lead content in paints.
- There is only one Authority to control the quality of all products marketed in the country, with limited technical resources, so control in the paint sector is not as expected.

# Economic Evaluation of Reformulated Paints

Request	Medium chrome yellow PY 34	Alternative Canary Yellow LF-761
Stage	S7	S7
Company LIP-04 Yellow alkyd enamel		
Price of pigment	5.76 USD/Kg	21.83 USD / Kg (382% more expensive)
Price of paint	6.92 USD/Kg	9.84 USD / Kg (42.20% more expensive)

# Lessons learned and best practices

1



Strengthen the commitment of manufacturers of heavy metal-free pigments.

2



Technical capacity for research and reformulation of paints in SMEs is limited. (production and laboratory).

3



Conduct an initial meeting between the alternative pigment suppliers and the manufacturers (details reformulation process).

4



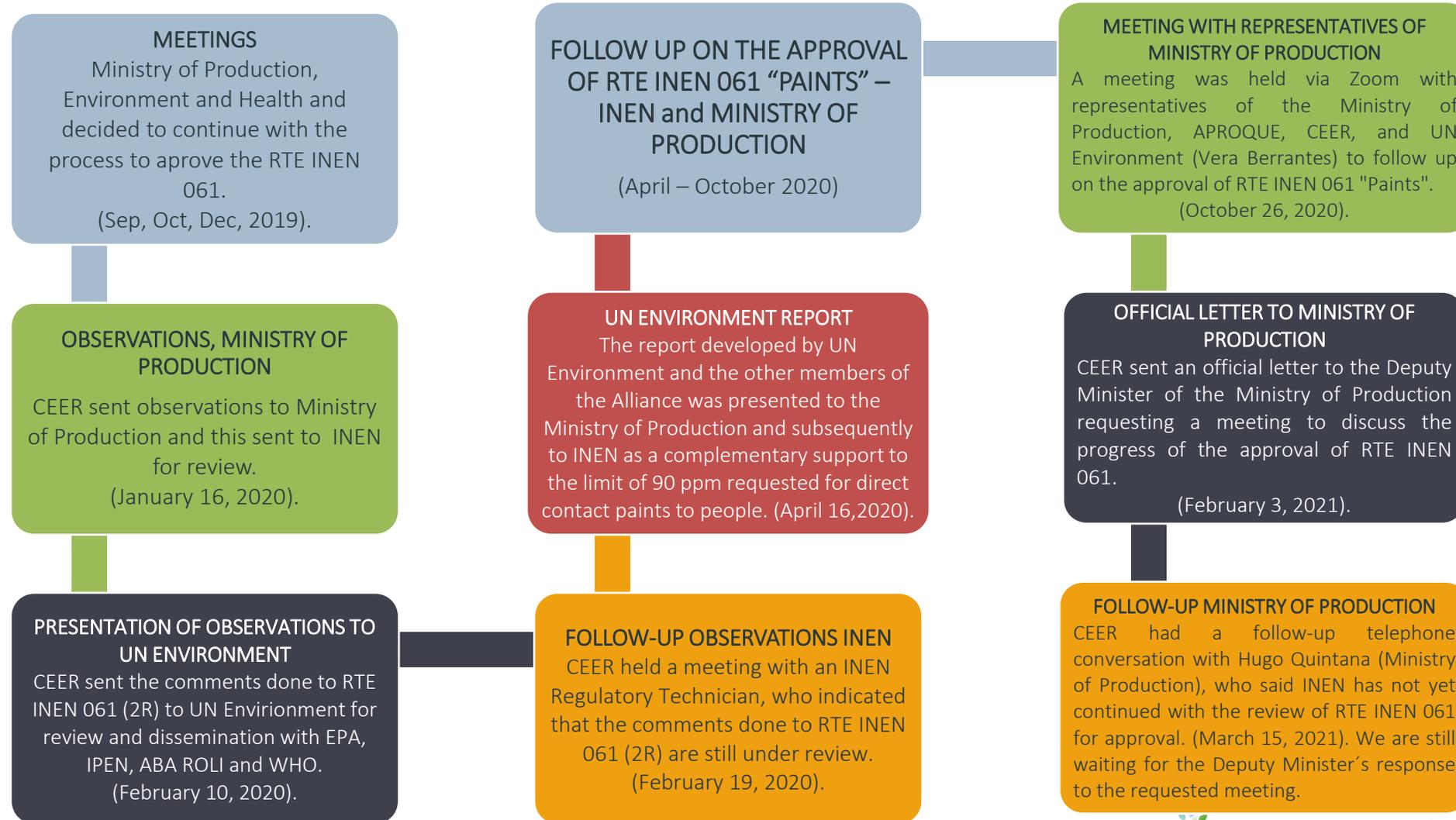
The lead-free pigments available in the country are high cost, which increases the price of paints.

5



There is no an approved regulation in the country to commit the paint industry to migrate to free-lead content paints.

# Influence of lead paint laws on reformulation

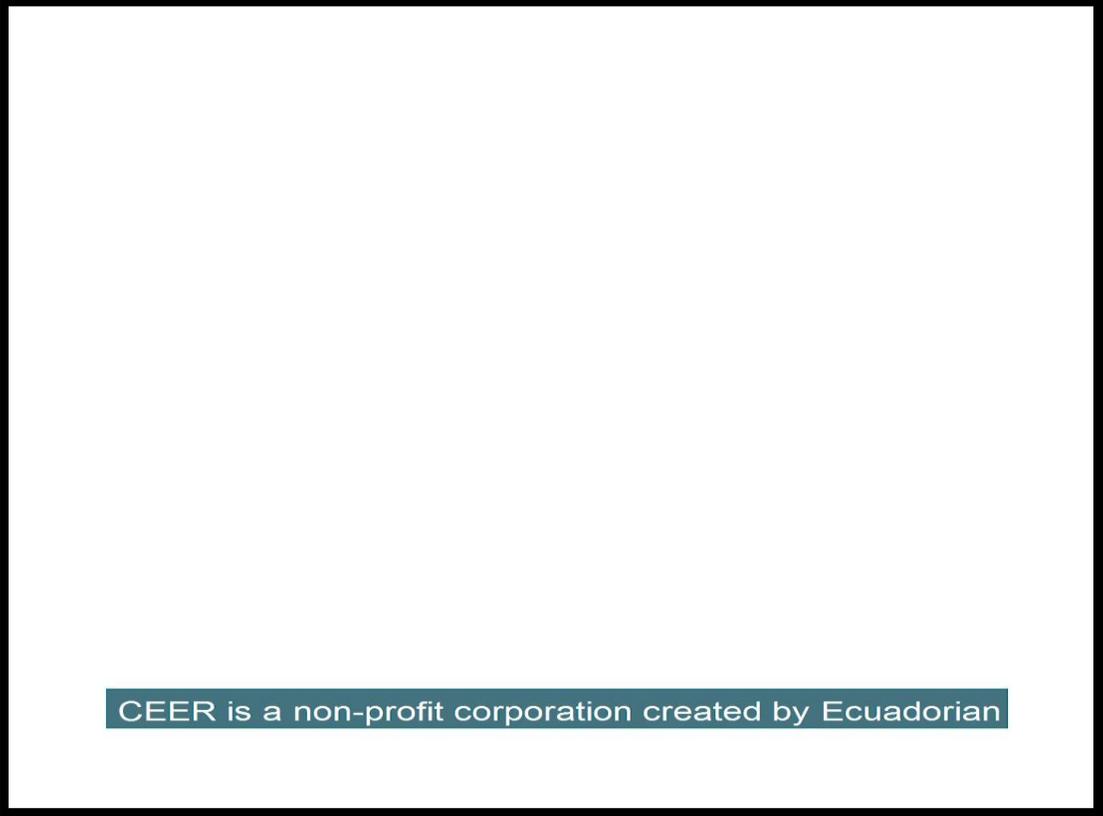


## Conclusions and the way forward: views on the future of reformulation in Ecuador

- Insist with the Production, Environment and Health authorities to obtain the approval of the Technical Regulation RTE-INEN 061 Paints, which includes the limit on lead content for different types of paints.
- Establish agreements or regulations that define responsible environmental management for the safe handling of batches of high-lead paints that are still on the market.
- Encourage that lead-free paint companies carry out awareness-raising activities at the level of distributors and customers such as hardware shops, building chambers, among others. In order to understand the importance of migrating and consuming heavy metal-free paints. It is also recommended for these activities the participation of the Ministries of Environment, Health, and Production.
- Promote a global network with the countries participating in the project, in which progress can be reported on the elimination of lead in paints. Besides, it will serve as an input for awareness-raising activities at International Lead Poisoning Prevention Week (ILPPW).
- Promote the accreditation of more laboratories in the country for the quantification of lead in paint.
- Work with the construction sector to include a ban on the use of heavy metal paints in eco-efficient buildings (e.g., Municipal Ordinance of Quito No. 003).

# Video with testimony of a participant company in the project

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CEER is a non-profit corporation created by Ecuadorian



# Thank you

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## Project Team:

Miriam Orbea  
Executive Director  
[miriam.orbea@ceer.ec](mailto:miriam.orbea@ceer.ec)

María Fernanda Herrera  
Environmental Specialist  
[mfernanda.herrera@optime.ec](mailto:mfernanda.herrera@optime.ec)

Ana López  
Environmental Specialist  
[ana.lopez@ceer.ec](mailto:ana.lopez@ceer.ec)

