

# Open applications study case: Colombia



Project Unit on Persistent Organic Pollutants  
Bogotá, March 26, 2025

# POPs projects in Colombia (2013 – 2025)



**LECCIONES APRENDIDAS DEL PROYECTO**  
COL/B4851-71268

Desarrollo de la capacidad para la gestión y eliminación ambientalmente adecuada de los bifenilos policlorados - PCB

Ministerio de Ambiente y Desarrollo Sostenible  
Dirección de Asuntos Ambientales Sectorial y Urbana

**2018**

Logos: PNUD, gef, TRANSACCIONES, GOBIERNO DE COLOMBIA

**Programa para la gestión integral de bifenilos policlorados (PCB) en transformadores eléctricos**

**Obligaciones**  
Estimado propietario de transformadores eléctricos, recuerde que, de acuerdo con lo establecido en las resoluciones 222 de 2011 y 1741 de 2015, al ser propietario de equipos eléctricos que contengan fluidos aislantes en estado líquido, usted debe:

- 1. Demostrar el contenido de PCB de cada uno de los equipos por medio de alguna de las siguientes opciones:**
  - Certificado libre de PCB (documento expedido por el fabricante o placa "Libre de PCB" o "No PCB")
  - Toma de muestra y análisis de equipos con aceite dielectrico (por medio de un análisis cuantitativo)
  - Muestreo estratificado
- 2. Marcar el 100 % de los equipos eléctricos que contengan fluidos dieléctricos (art. 8 de la Resolución 222 de 2011); el plazo para hacerlo es el 31 de diciembre de 2024 (art. 9 de la Resolución 222 de 2011).**
- 3. Inscribirse y realizar el registro de sus equipos en el Inventario Nacional de PCB.**  
Estas actividades son adelantadas ante las autoridades ambientales locales y regionales, quienes verificarán la información suministrada.

**Tener en cuenta que, de acuerdo con los artículos 9 y 27 de la Resolución 222 de 2011:**

- Al 31 de diciembre de 2025, se deben haber dejado de usar los equipos contaminados con PCB.
- Al 31 de diciembre de 2028, se deben haber eliminado las existencias contaminadas con PCB.

El cumplimiento de estas directrices será verificado por las autoridades ambientales.

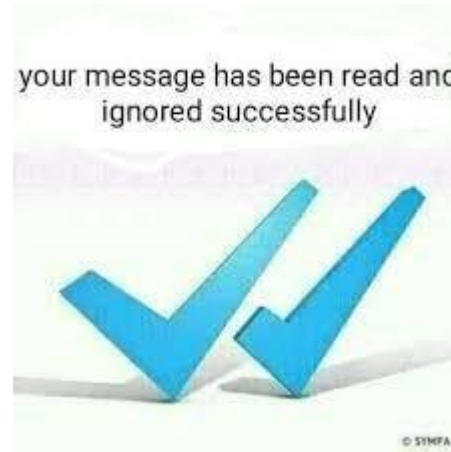
Adicionalmente, en caso de identificar que sus equipos se encuentran contaminados con PCB (contenido mayor a 50 ppm de PCB en aceite dieléctrico o 10 microgramos /dm<sup>2</sup> en superficies sólidas) o que tienen residuos con estas sustancias, usted deberá:

- Reemplazar el equipo contaminado por un equipo libre de PCB.
- Eliminar el equipo y/o los residuos contaminados con PCB, a través de un gestor autorizado por la autoridad ambiental competente, por medio de una licencia ambiental.

We have learned and evolved... facing challenges

# From closed to open... lessons learned

The first survey on open applications was conducted in 2016...



*Target: Environmental subnational authorities, and some private companies....*

No information on open applications

# From closed to open... lessons learned

The first “inspection” took place in early 2016...



Abandoned power generation facilities

# From closed to open... lessons learned



*SCWO pilot plant (2016)*



*Satisfactory PCB project closed (2017)*



*Multiple stakeholders engaged and active (2014 - 2018)*

**How can we leverage our key achievements to address open applications in Colombia?**

# The call to action: New POPs project

We included a formal set of activities under the GEF Project 112906 (2022 - 2026):

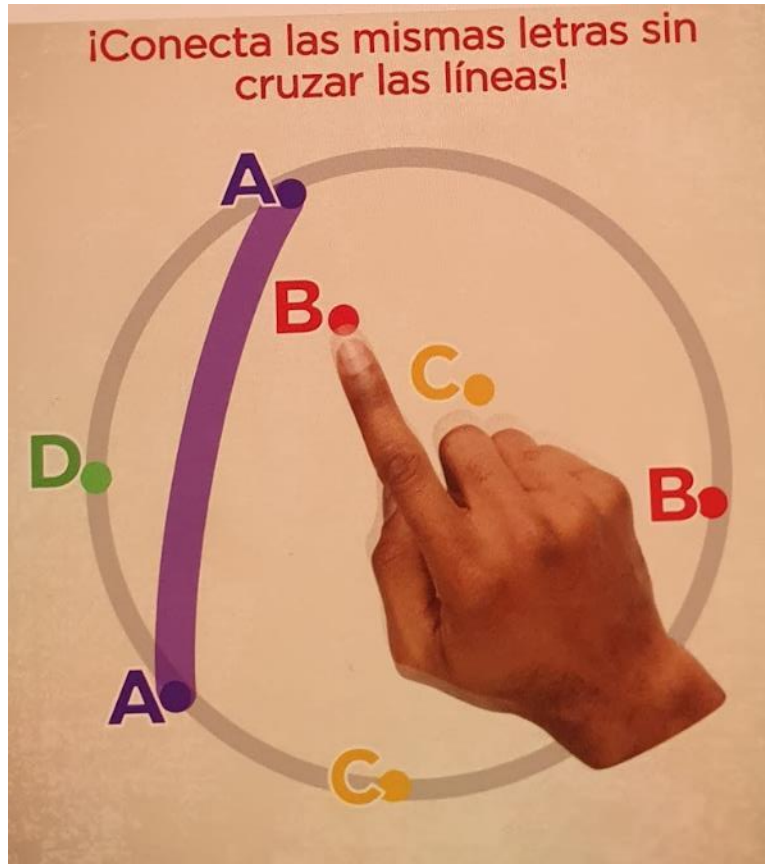


*“The following incremental activities will be carried out to achieve Output 1.4:*

- I. *Designing and implementing a **monitoring plan** for the identification of open PCB applications in oil pipelines, seaports, airports, government facilities and waste related to coatings, cables and sealants<sup>1</sup>.*
- II. *Developing a **preliminary study** to identify some of the open PCB applications in Colombia.*
- III. *Preparing an **elimination plan** of PCB in open applications and the necessary inputs for the NIP update”.*

1. Based on technical guidelines available since 2019 by BRS Secretariat and some expert's advices (2017)

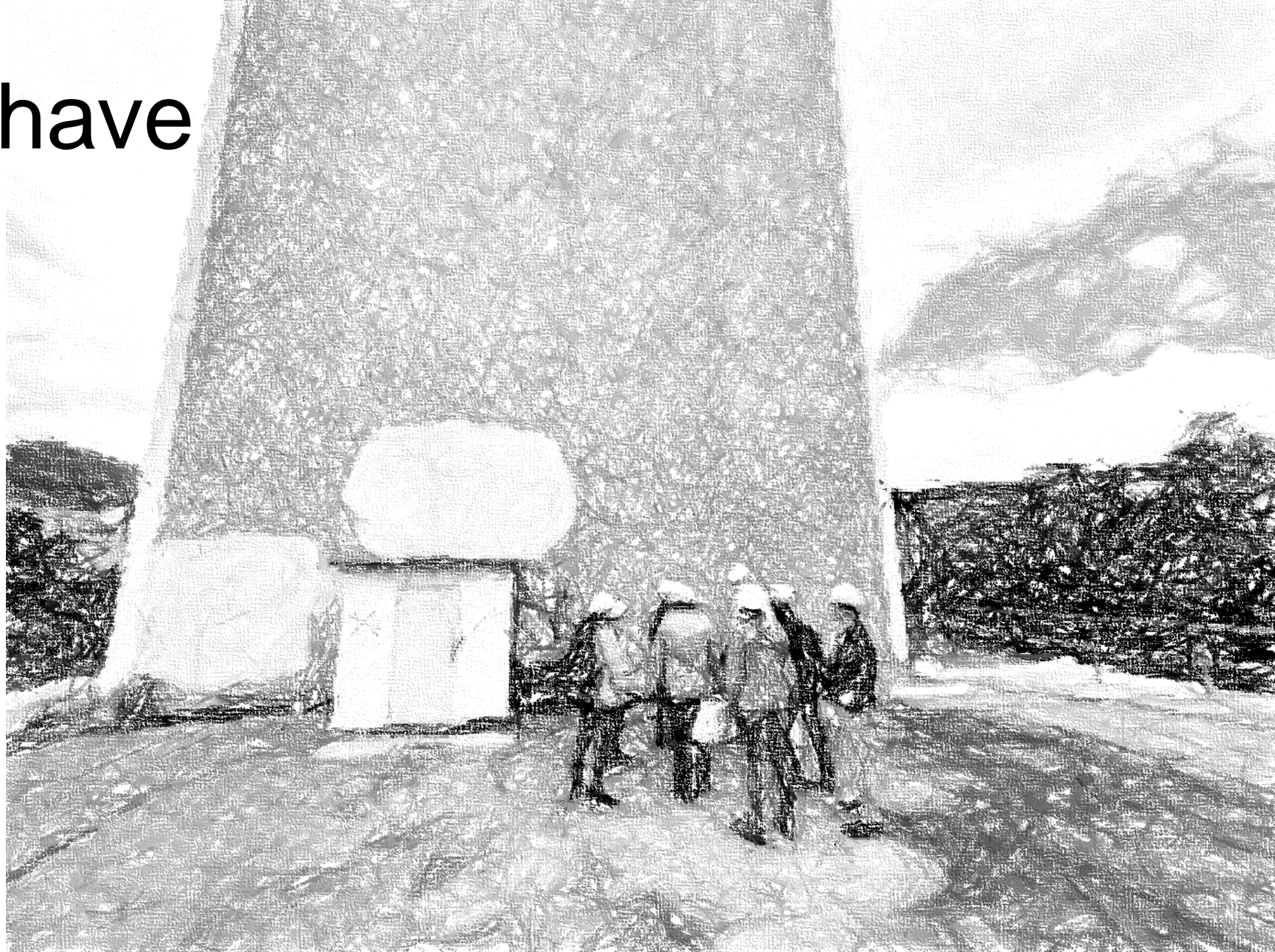
# The call to action: New POPs project



To do so, we had a plan:

1. Gather and analyze information on our buildings
2. Train and build capacity for better inspections
3. Implement a monitoring plan in a sample of buildings
4. Prepare the national elimination plan for PCB in open applications
5. Strengthen capacity for the treatment and elimination of PCB containing waste

# What we have done...





# Our preliminary results...

## The second survey focused on buildings...not PCBs (2024)



About 100 letters were sent... and we received less than 50 answers (information of 178 buildings)

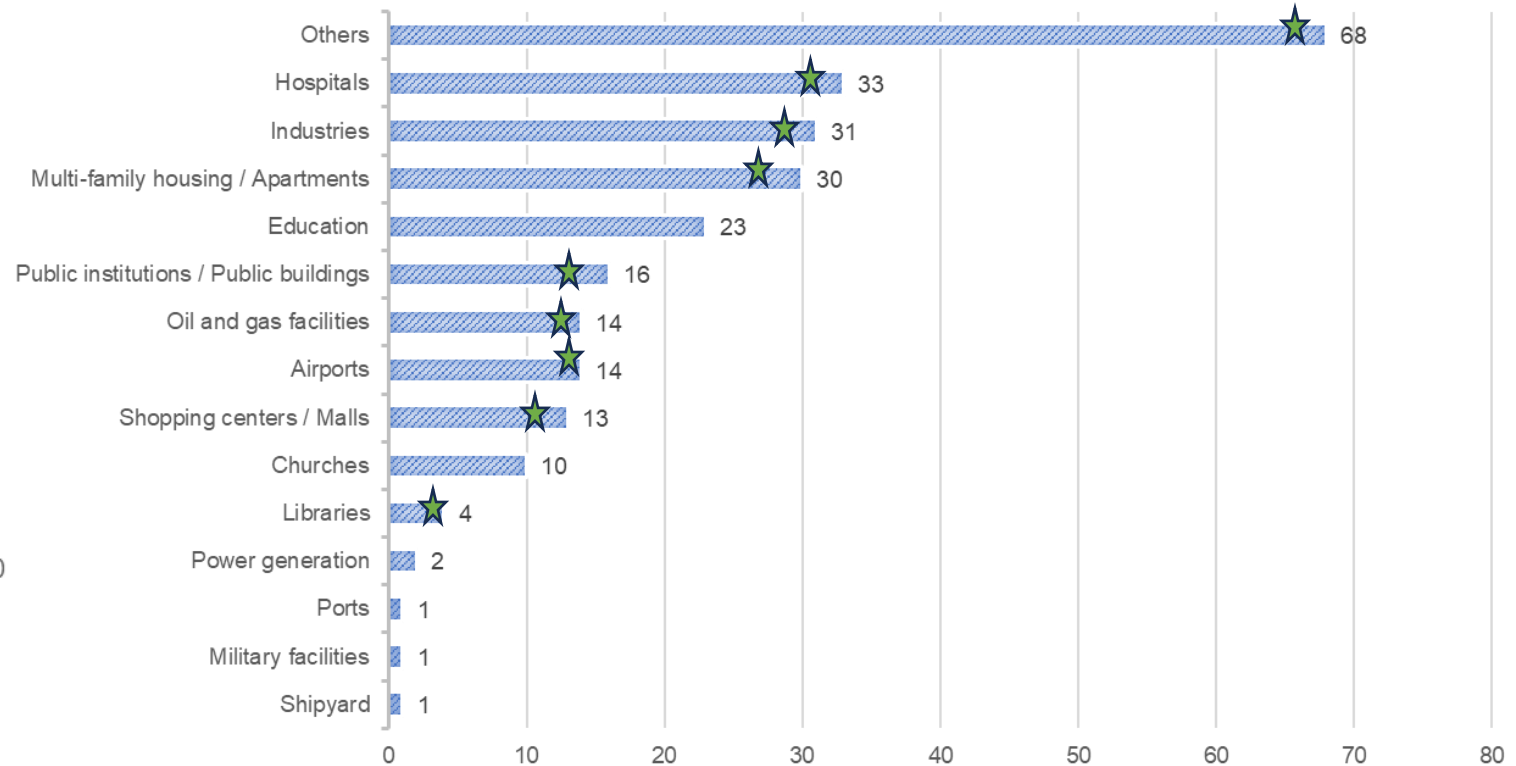
We gathered information of 120 buildings using internet (public information).

From 298 buildings, 261 are in the timeframe (1950-1990)

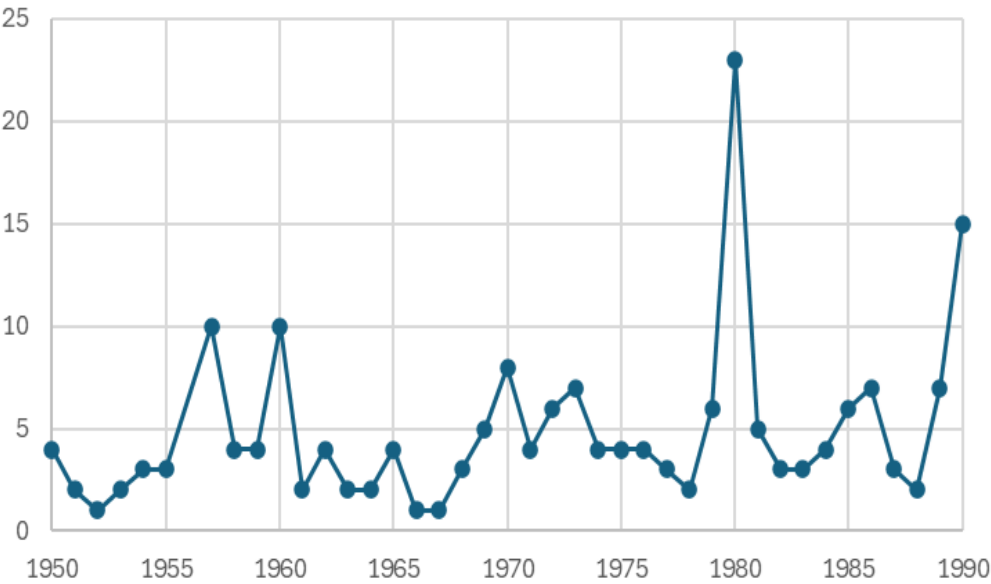
*Targets: Subnational environmental authorities, municipalities and other public entities related to **construction and renovation permits** in Colombia .*

# Our preliminary results...

Buildings by usage

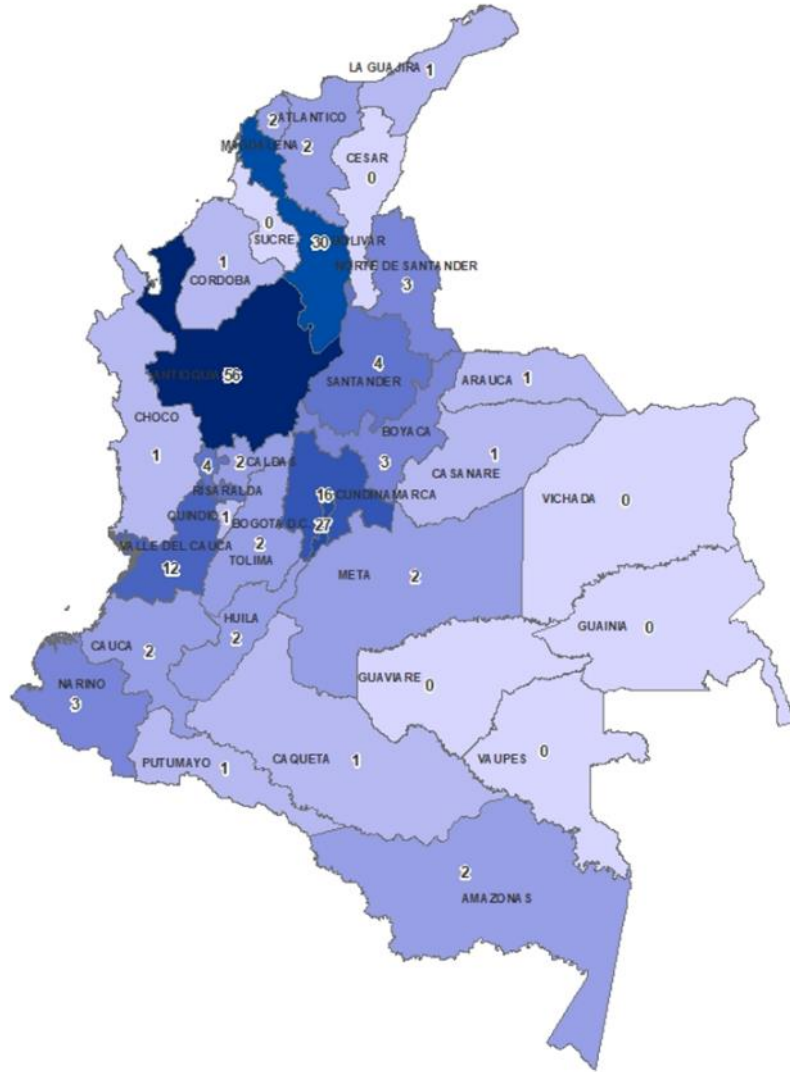


★ At least one building included in the first round of inspections

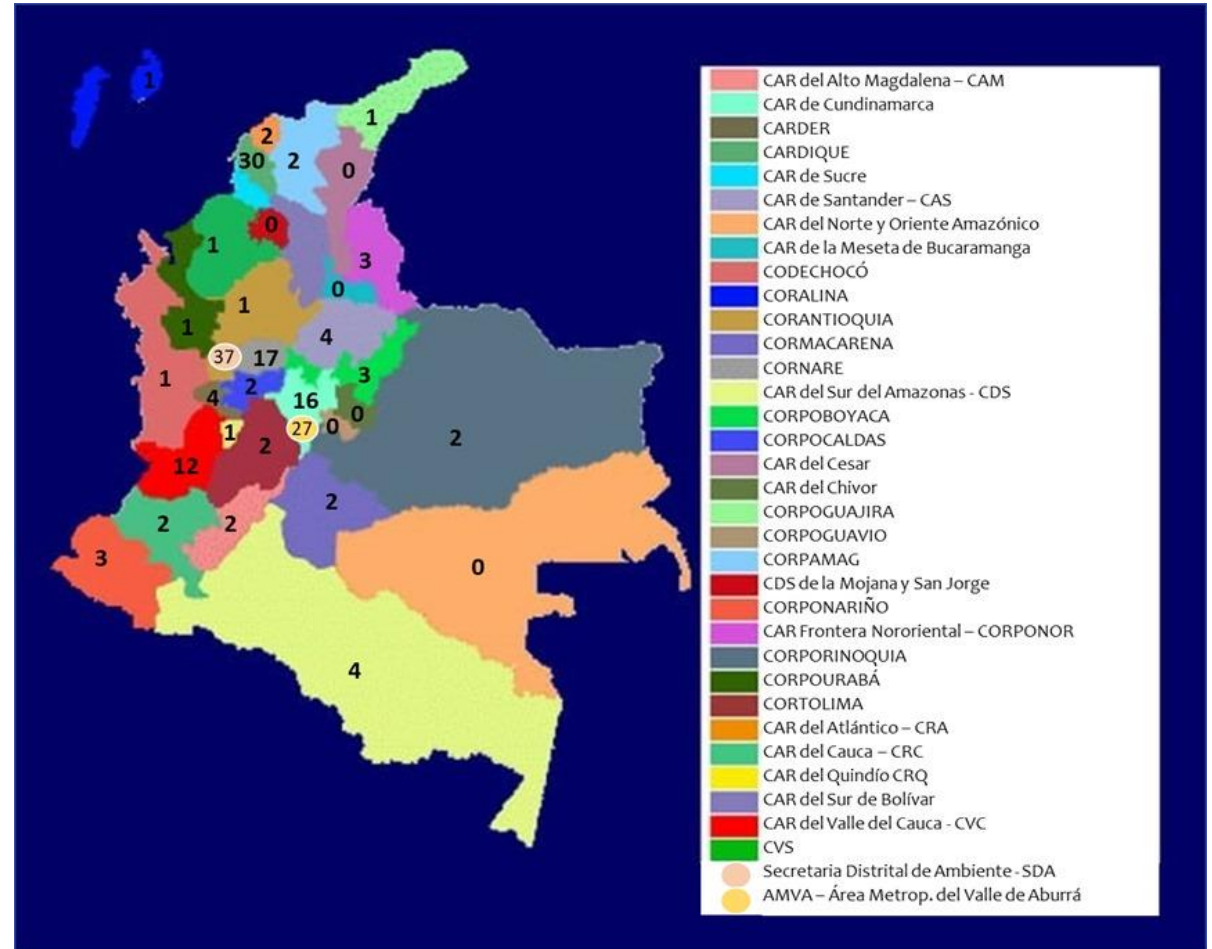


Buildings by reported year of construction

# Our preliminary results...

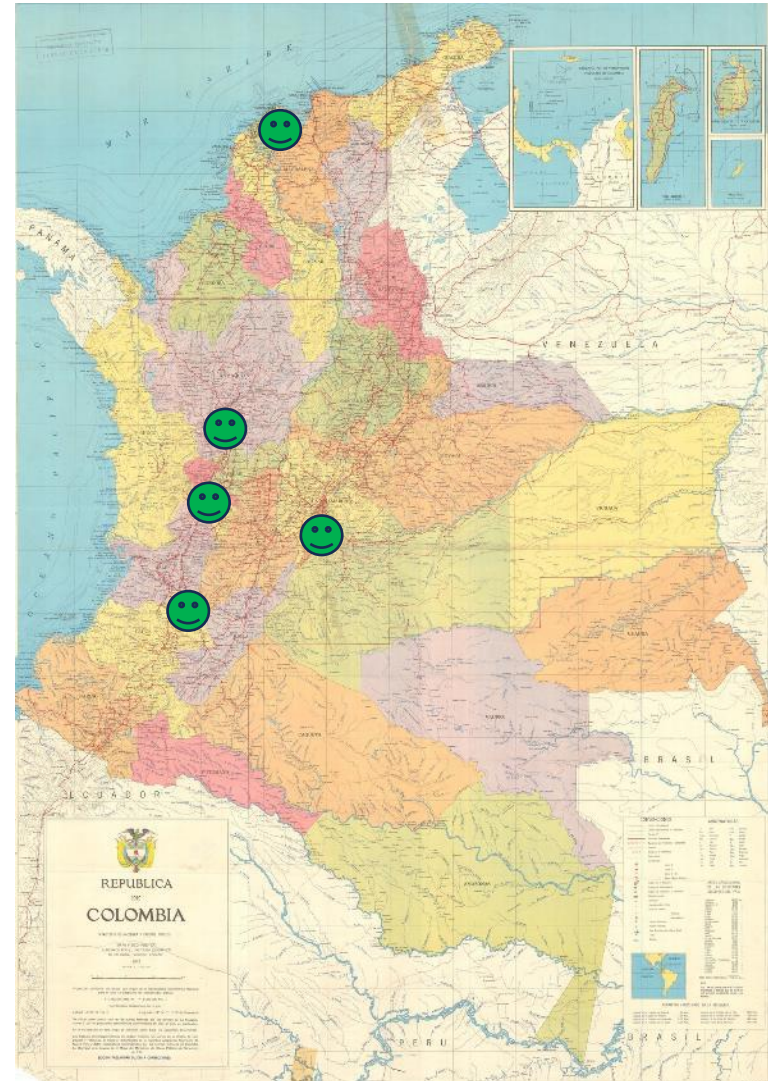


Buildings by state



Buildings by subnational environmental authorities

# Our preliminary results...



Four sub-national and one national working groups on PCB, with OA included in the agenda!

# Our preliminary results...

A theoretical – practical workshop took place in February 2024.

It was the first of its kind in the GRULAC region *(as far as we know)*...



Real-life materials and use of tools



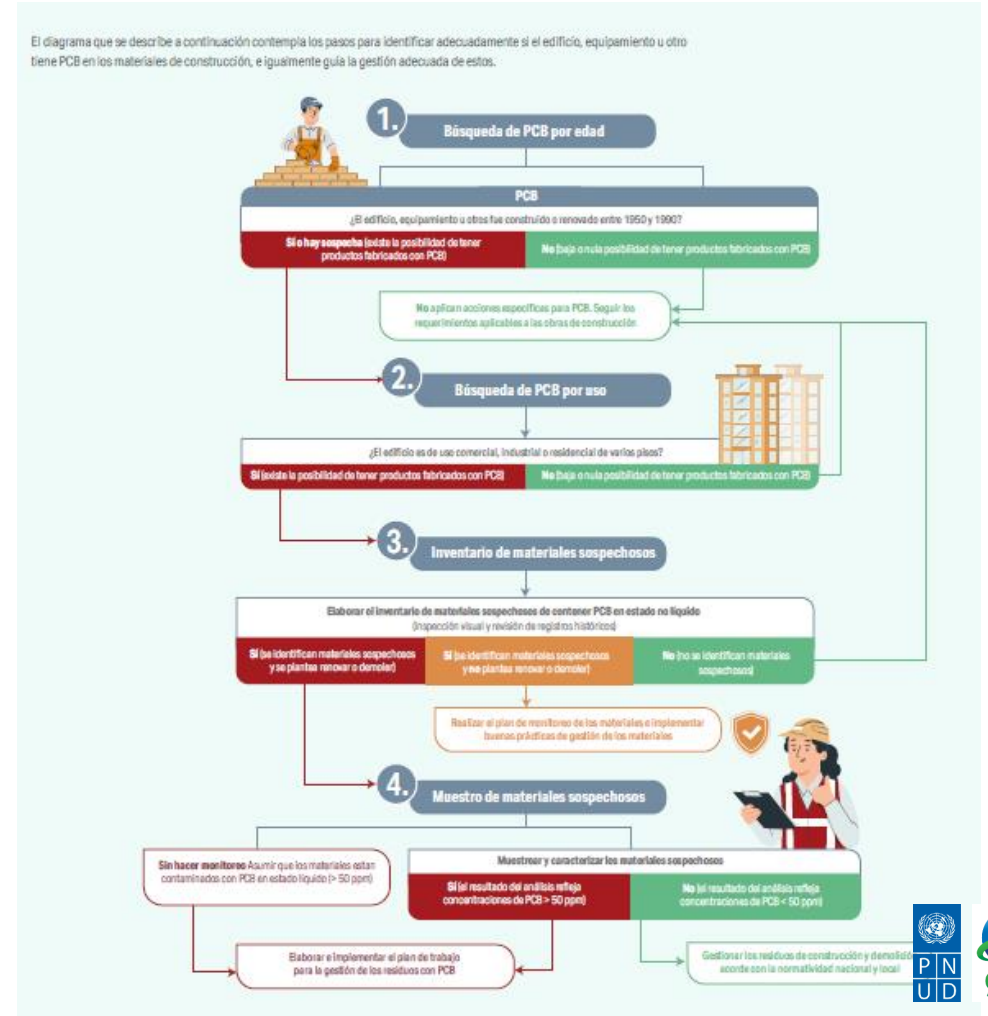
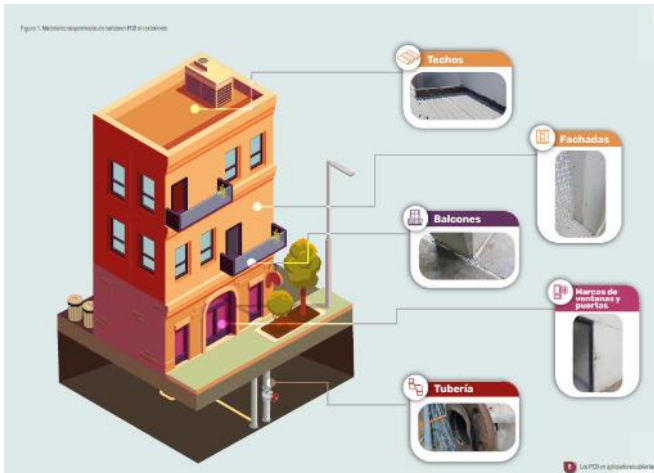
Site 1: Abandoned steel-making facility



Site 2: Abandoned institutional building

# Our preliminary results...

A document and a booklet were drafted, to guide owners and environmental officers in identify PCBs and Asbestos in construction materials.



South-west region



Antioquia



# Our preliminary results...

Four regional workshops on construction and demolition waste, with open applications **mainstreamed...**

Caribbean region



Central region

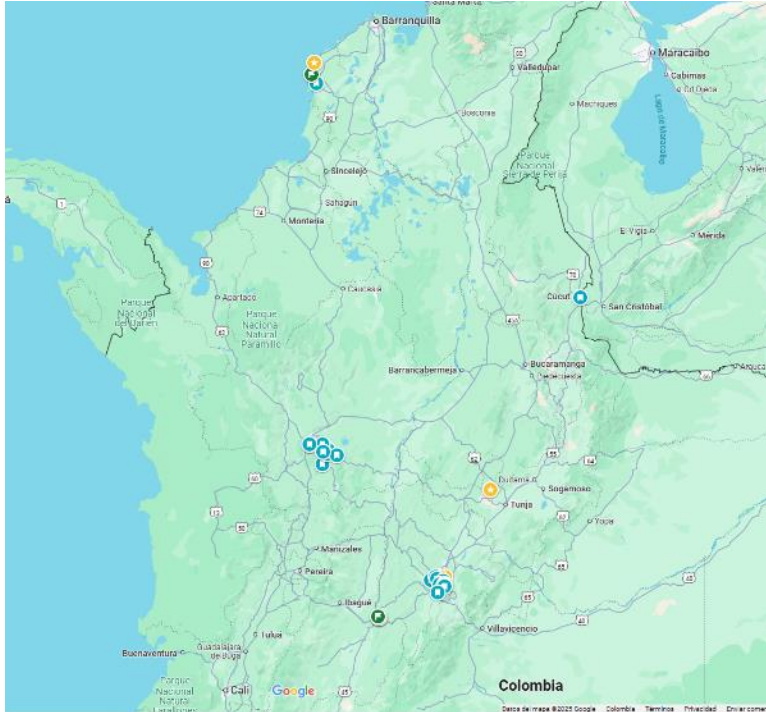


**Environmental authorities**  
**Municipalities**

Waste management companies  
Permits & Licenses officers  
POPs Project unit

(Lead by the Ministry of Environment)

# Our preliminary results...



From June to November 2024:

22 sites were inspected

56 samples were taken



# What we have found...



# Our preliminary results...



<https://fontsinuse.com/uses/4932/galbestos-ads-1945-49>

They may be similar, but they are not Galbestos



## Our preliminary results...



There is imported equipment, and its original paint remains, but old pipelines may have been replaced and recycled

# Our preliminary results...



Four paint samples (out of 20) contain PCBs, but they are below than 50ppm.

# Our preliminary results...



A typical pre-1979 PCB-containing fluorescent light ballast (FLB)



A typical Non-PCB containing fluorescent light ballast. The ballast has a "No PCBs" marking on the top of the ballast and the text "electronic ballast". Only magnetic fluorescent light ballasts contained PCBs.



Even though fluorescent lamps are still in use, the ballasts are relatively new (1990 – 2010): no PCBs.

# Our preliminary results...

And mercury is still there in bulbs and tubular lamps



# Our preliminary results...

Asbestos is present in many  
“forgotten applications”



## Our preliminary results...

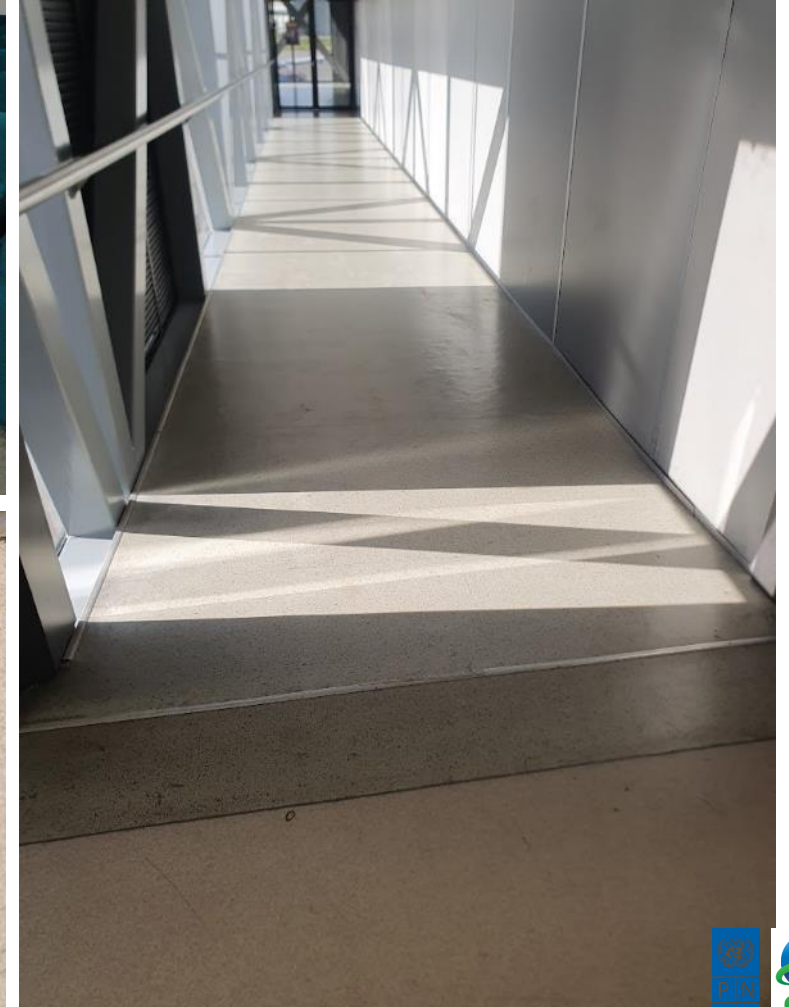
The sealants found so far are not suspected to contain PCBs... and we must check for SCCPs.





# Our preliminary results...

Some vinyl flooring, carpets, and LED strips contain SCCPs.



# Our preliminary results...



*We also sampled for brominated flame retardants POPs, but results are not ready yet.*

## Our preliminary conclusions

There is a low prevalence of PCBs in open applications: only 4 from 20 samples and they were below 50 ppm.

There is a prevalence in applications apart from shingles and tanks. Relevant measures should be considered when intervening materials.

There are SCCPs in flooring and other construction materials.



Inspect at least 20 more buildings, including military facilities, shipyards, and Oil & Gas sites.

## Our next steps...



Conduct at least two subnational workshops / training sessions on contaminants in construction materials.

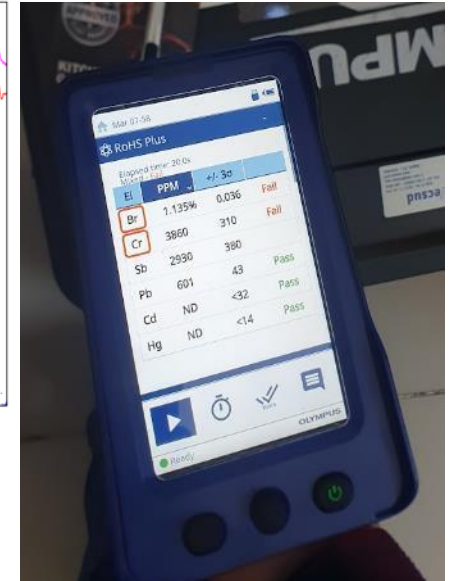
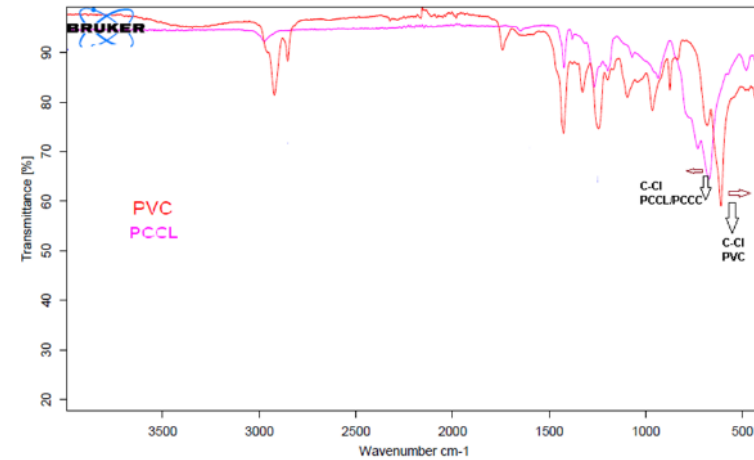


## Our next steps...

Develop a procedure to integrate XRF and FTIR screening techniques in the analysis of samples.

Publish the booklet and the national report on open applications.

Draft an elimination plan of PCB in open applications



## Our recommendations...

Engage stakeholders from the outset. Use the existing work on asbestos and other contaminants as a foundation for addressing POPs and similar pollutants.

Owners are often surprisingly receptive to collaboration, provided that you maintain the trust of those who facilitated your access. Owe that trust with feedback.

When inspecting buildings, take the opportunity to thoroughly assess for all possible contaminants. This is cost-effective and maximizes the value of the inspection.

Develop analytical capacity for POPs and related contaminants; universities and research institutions can provide crucial expertise and resources.

# ¡Muchas gracias!

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**Ambiente**