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Strengthening the management, storage and transport of mercury: Peru's World Leading Progress

Side event - Fourth meeting of the Conference of Parties

Friday, 11 March 2022



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**Strengthening the
management, storage and
transport of mercury: Peru's
World Leading Progress**

Mercury traceability

**Milagros Paredes Verástegui
Jhoana Canchanya Melchor
Ministerio del Ambiente (MINAM), Perú**

Legal Frameworks and Policies

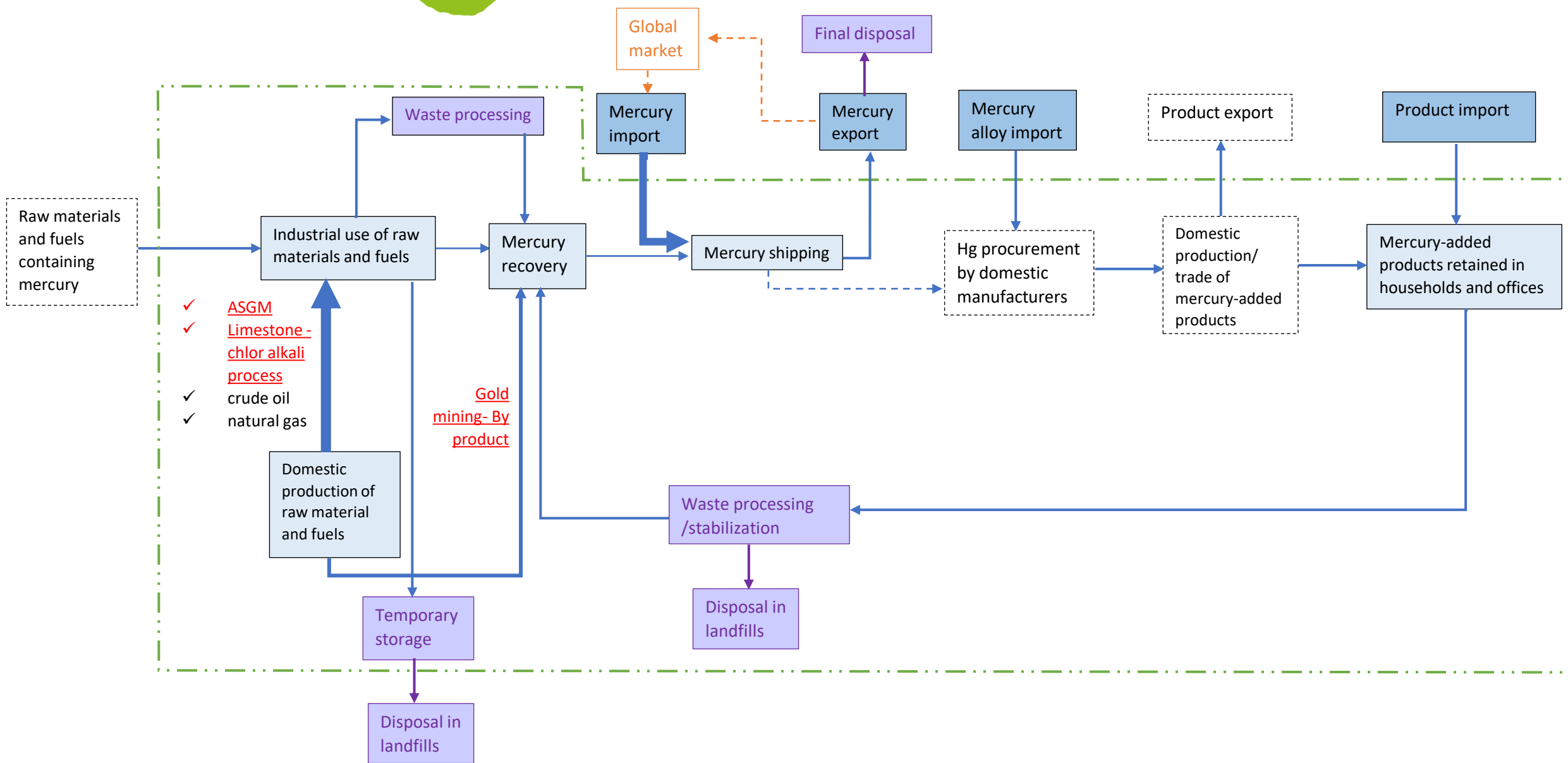
International regulation

- Mercury as a subject of the Minamata Convention
- Mercury as a hazardous material (by MTC)

Specific regulation

- Mercury as evidence of environmental crimes (by FEMA)
- Mercury as a controlled chemical (by SUNAT)

The Mercury Material Flow





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Metal mercury Flow



Approves consent according to the agreement.

Validates and gives conformity to the consent, authorizes and controls the entry of mercury into the national territory.

It stores, controls and supervises the entry and exit of mercury.

MINEM

SUNAT

0)
Production

IQBF
Transportation Permits

IGA
IQBF

IGA
IQBF Registration, Temporary storage plan, registered in the IGAFOM

1)
Import

2)
Transport

3)
Trade/Use

4)
Storage and/or Disposal

MINAM

SUNAT

IQBF and CUSTOMS

SUNAT

MTC

SUNAT

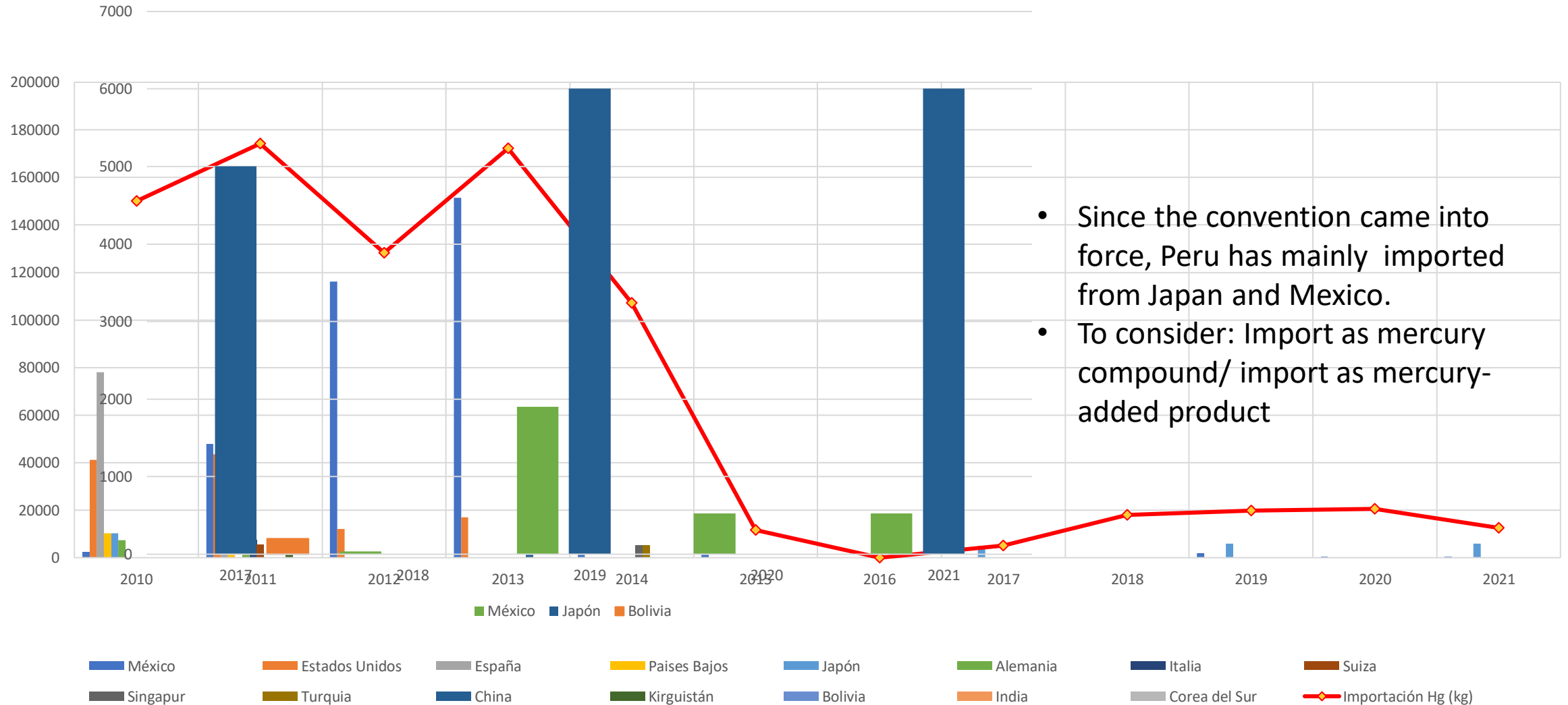
Regulatory Sector

Regulatory Sector

SUNAT

IQBF and CUSTOMS

Mercury import (Kg)



- Since the convention came into force, Peru has mainly imported from Japan and Mexico.
- To consider: Import as mercury compound/ import as mercury-added product

Source: Customs office



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Transportation – Fiscal Routes

Source: Prepared by AGC, based on the RM N° 350-2013-MTC-02



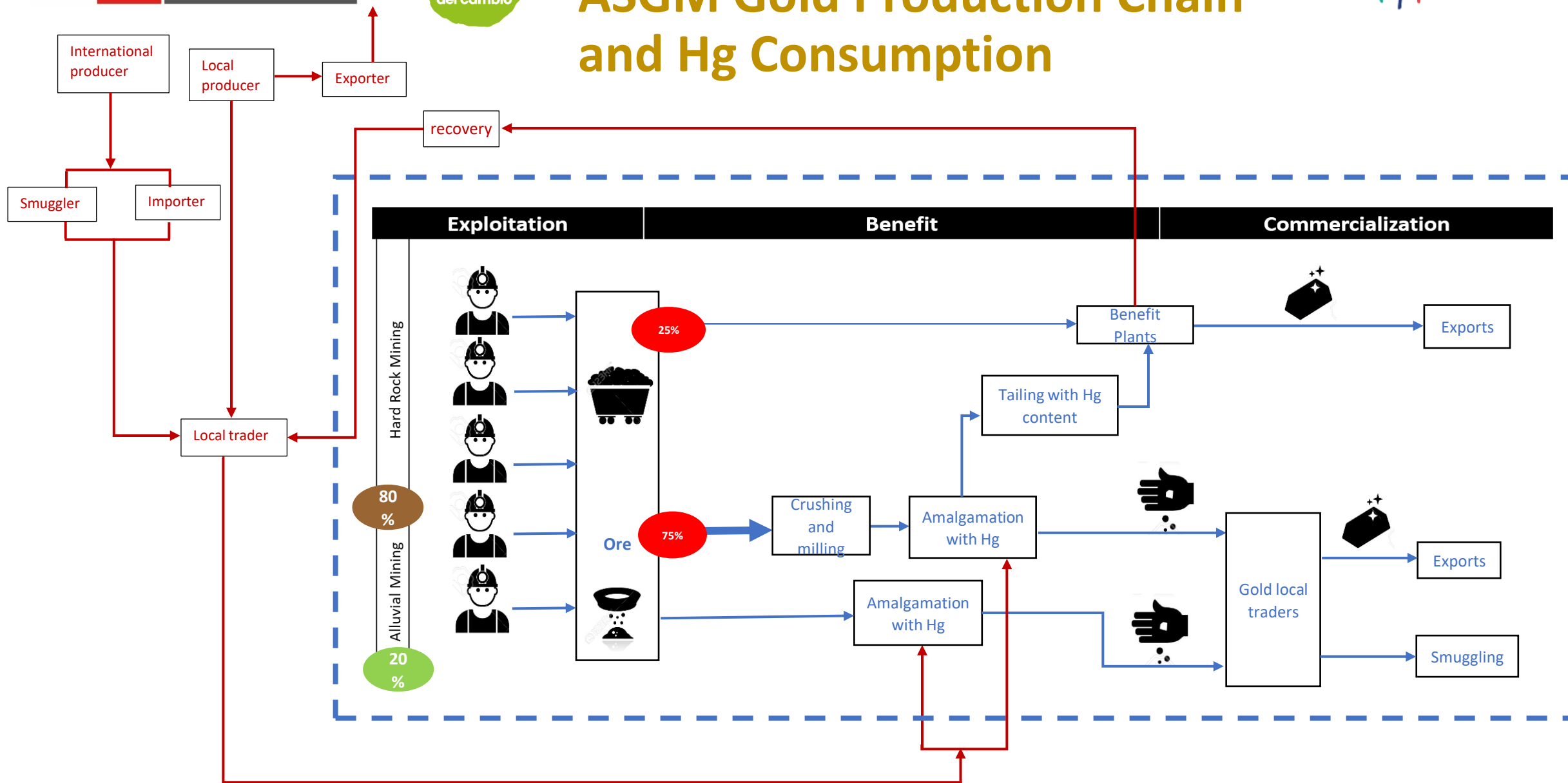


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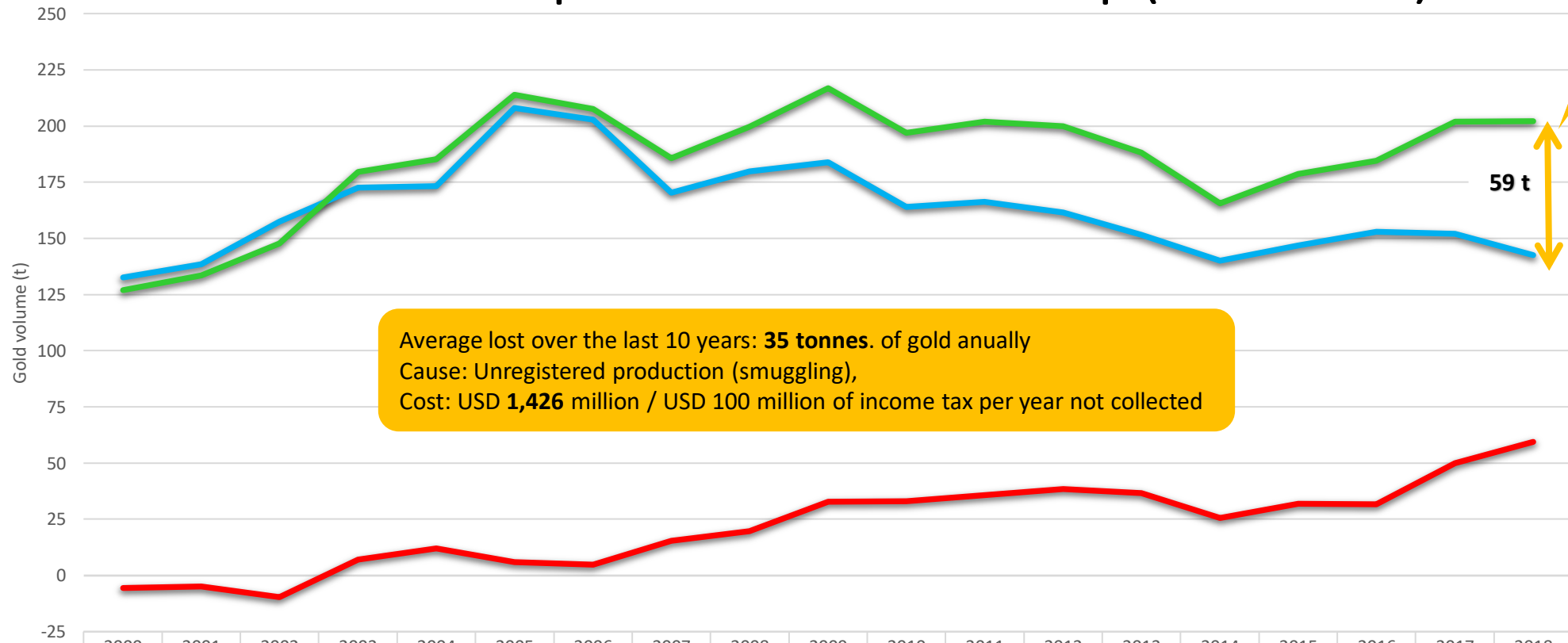
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ASGM Gold Production Chain and Hg Consumption



Historic Gold Export and Production Gap (2000-2018)

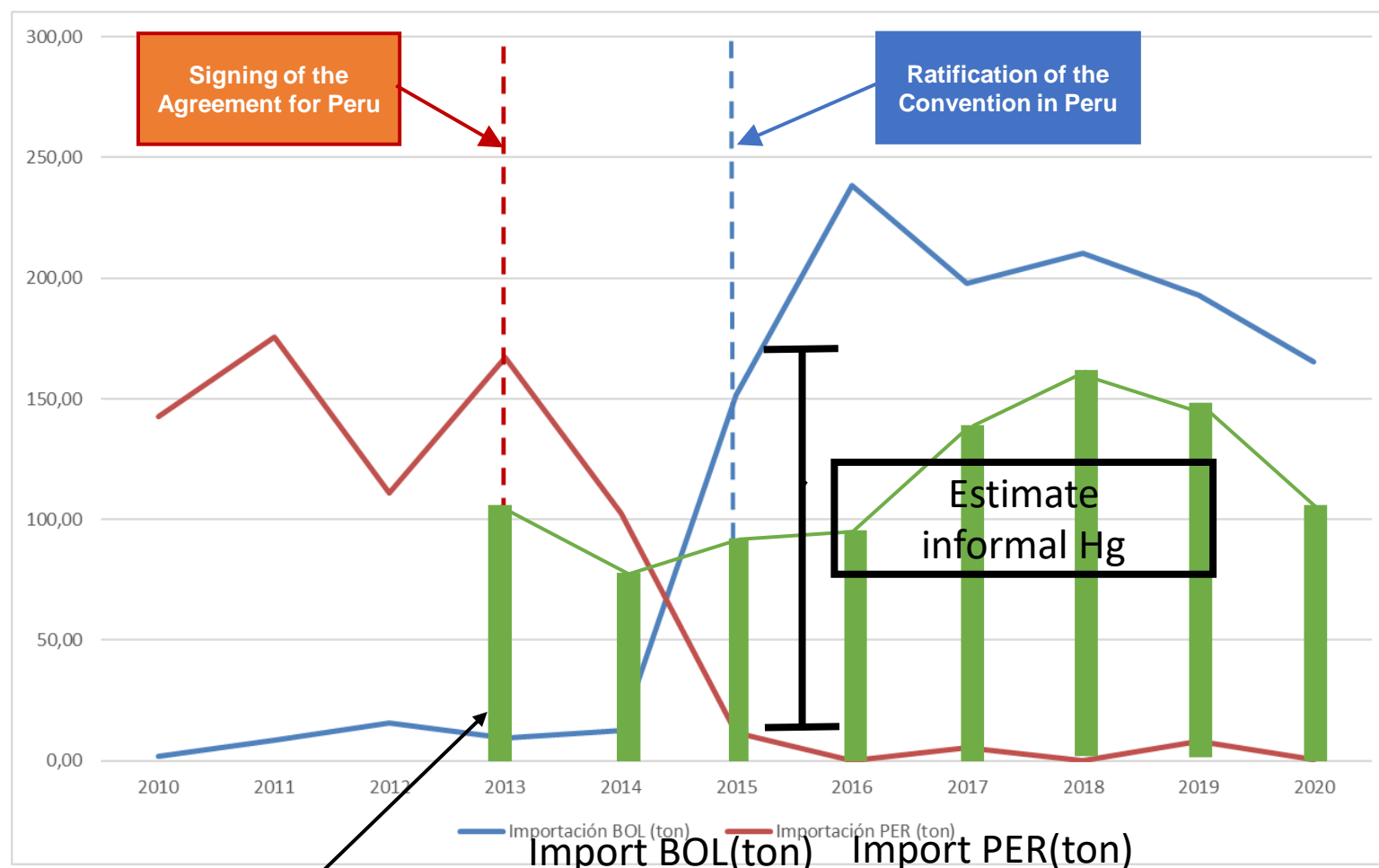


	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Production (t)	132.59	138.52	157.53	172.63	173.22	208.00	202.83	170.24	179.87	183.99	164.08	166.19	161.54	151.49	140.1	146.82	153.01	151.96	142.64
Export (t)	126.99	133.57	147.75	179.68	185.24	213.86	207.58	185.61	199.61	216.86	197.03	201.93	199.9	188.09	165.58	178.65	184.65	201.97	202.12
Gap (t)	-5.60	-4.95	-9.78	7.05	12.02	5.86	4.75	15.37	19.74	32.87	32.95	35.74	38.36	36.60	25.48	31.83	31.64	50.01	59.48

Source: MEM, BCR, SUNAT.

Import of Mercury in Peru and Bolivia Pre – and Post – Minamata Convention

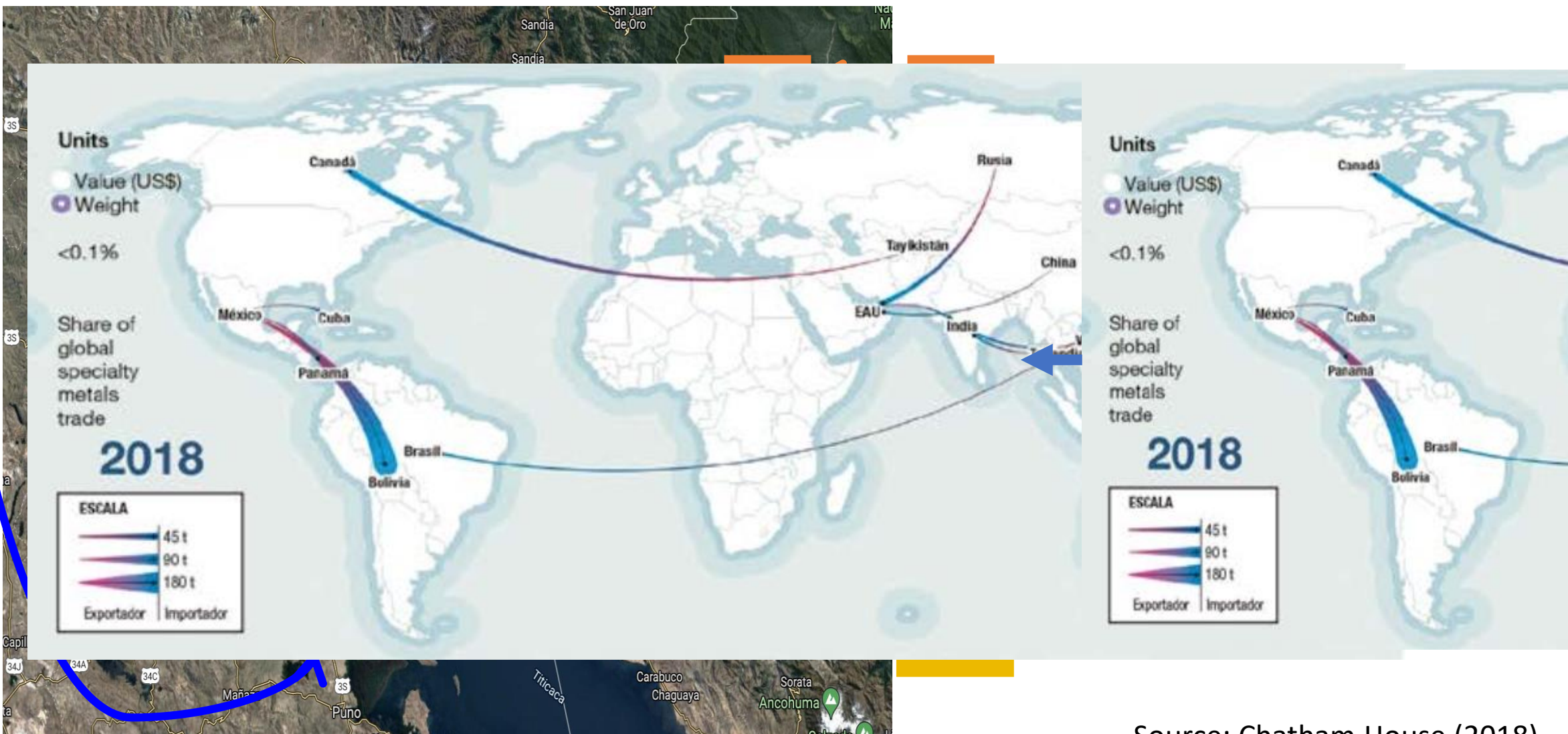
- The behavior of imports from Peru vs. Bolivia is inversely proportional, after the signing of their respective agreements.
- Lack of control of smuggling at borders
- Evidence of the existence of informal routes and mercury black market



Estimation of mercury requirements in ASGM (Peru)

The Smuggling Routes for Mercury

Lima



Source: Chatham House (2018)

Seizure of Illegal Mercury

Institution	Legal Framework	Role	Storage of confiscated mercury
SUNAT	Alleged commission of crime "Clandestine trade"	Administrative actions (control and inspection of the point of entry, permanence, transport or transfer and exit of mercury, as well as the distribution, to and from the customs territory and in the national territory)	Yes
Public Ministry	Criminal investigation of environmental crime	Interdiction operations	No
Police	"Illicit traffic of chemical supplies and machinery destined for illegal mining"	Support the Public Ministry	No
Navy		Support the Public Ministry	No

Challenges and Future Approaches

- ✓ **Strengthen intelligence** and regional coordination actions to control the flow of illegal mercury across the border with Bolivia; and prevent smuggling
- ✓ **Increase enforcement,** strengthen border controls and train customs officials
- ✓ **Clarify laws** and regulations for mercury and gold
- ✓ **Develop guidance on temporary storage and final disposal of mercury.**
- ✓ **Increase incentives** for formalization and access to international and responsible markets
- ✓ **Regional approach:** Harmonization of mercury regulations and policies at national and regional levels



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Future projects and projects in progress

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RUMMO

Proyecto GEF

Project "Greater transparency and control of mercury in Peru" project financed by the United States Department of State (USDoS).

AGC

Regional project "Accelerating compliance with the Minamata Convention through a better understanding and control of mercury trade in Latin America" (Bolivia, Colombia, Ecuador, Honduras, Mexico, and Peru) *Proposal before the GEF-8

Environment Background

Prevent Project: Mercury confiscation protocol

USAID



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Este año



Expedición Mercurio - ¿Cómo afecta el mercurio la salud y el ambiente?



Expedición Mercurio - Conoce más sobre el mercurio



Perú promueve campaña de concientización sobre el mercurio | planetGOLD



<https://www.planetgold.org/es/peru>
<https://girh-tdps.com/>



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**Strengthening the
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Guidelines for Interim Storage, Handling and Transportation of Mercury

**Peter Maxson
Artisanal Gold Council**



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Peru's situation is typical of many countries

- Authorities often confiscate and handle mercury without proper personal protective equipment (PPE).
- Seized mercury is typically stored in a manner lacking adequate measures to protect human health and the security of the mercury.

There are no generally accepted national guidelines on the storage and handling of mercury.

Estimated mercury smuggled into Peru (tonnes/year)		
Means of transport	Minimum	Maximum
Heavy duty trucks	360	720
Couriers on foot	50	75
Private transport (vans, motorcycles, boats)	N.A.	N.A.
Public transport (buses)	N.A.	N.A.
Total	410	795





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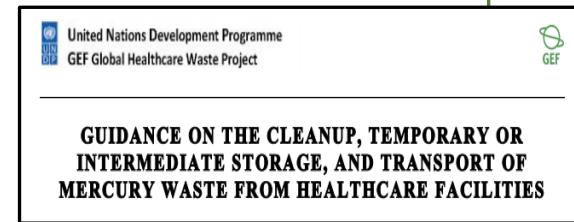
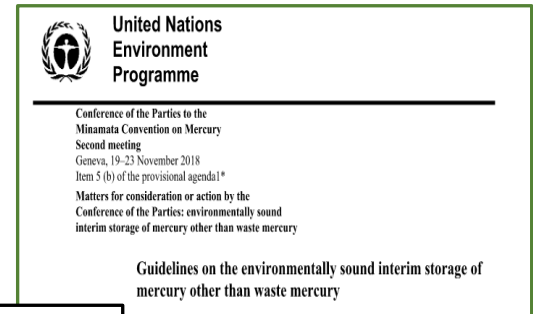
General Content of the Guidelines

The guidelines developed by AGC, with funding from the U.S. State Department, are divided into three main sections:

1. The temporary storage of mercury and mercury-contaminated wastes, covering storage containers and facilities, emergency planning, personnel training, documentation and reporting.
2. Mercury handling, including worker protection, spill response and mercury transfers from one container to another.
3. The transport of mercury and mercury-contaminated wastes, including certification, planning, management protocol, monitoring and emergency response.



GUÍA PARA EL MANEJO Y ALMACENAMIENTO DE MERCURIO





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Temporary Mercury Storage Facilities

Key concerns:

- Storage facility specifications (sealed floor, ventilation, etc.)
- Emergency planning and response (e.g., fire and other risks)
- Worker training
- Mercury storage containers (temporary, longer term)
- Storage areas (further handling, ready for transport)
- Labeling requirements
- Periodic monitoring and inspection of storage areas, PPE, etc.
- Documentation and inventory
- Facility closure procedure

Options: Designed specifically for mercury storage

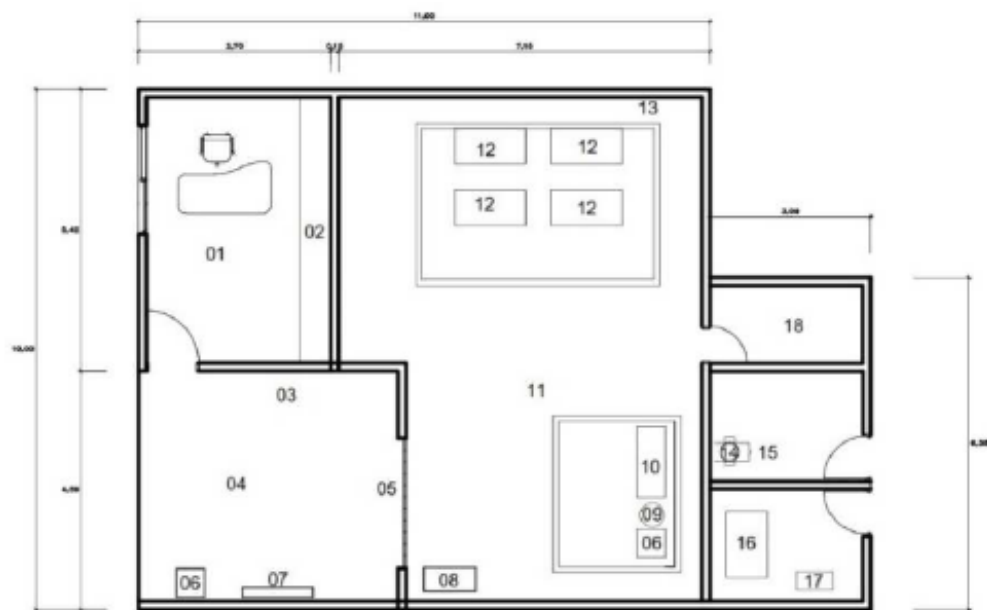


Image 2: Sample floor plan for a temporary mercury storage facility (01. Administration office; 02. File and storage; 03. Equipment storage; 04. Driveway covered; 05. Roll-up security / garage door ; 06. Spill Kit, 07. Fire Hose Coil; 08. EPP Cabinet; 09. Overpack Barrel; 10. Workbench with Fume Hood; 11. Floor Containment Barrier Enclosures to Limit Spills; 12. Hg storage chest coolers; 13. Ground level ventilation fan; 14. Chimney; 15. Centrifugal fan with Hg filters for extractor hood; 16. Backup generator; 17. Electrical box and 18. Sanitary Facilities).



A second-hand 10-ft container can be made by cutting a 40-ft container into four parts and adding a back wall or doors as necessary.



Mercury storage unit design discussed at the Simposio del Oro 2020, La Paz, Bolivia.



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Mercury Handling Guidance

Key requirements:

- Personal protective equipment
- Mercury spill kit
- Mercury spill clean-up
- Mercury spill reporting
- Protocol for mercury seized in the field
- Procedures for mercury transfer from one container to another (physical transfer, record-keeping, etc.)



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Basic Mercury Handling Requirements

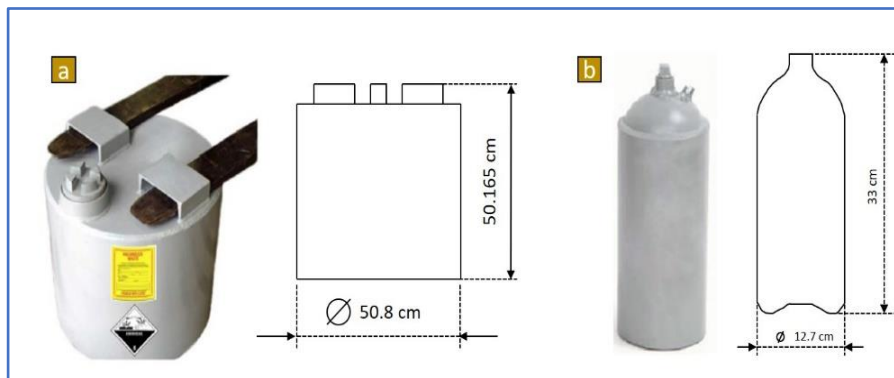
- Appropriate work area
- Basic PPE
- Ventilation
- Plastic liner or other sealed work surface
- Labelling materials
- Plastic spill tray
- Mercury transfer tools
- Recording mercury receipts & transfers
- Adequate and clean storage containers
- Spill clean-up materials
- Secure storage area



Mercury Storage Containers

Suitable Containers

Longer term, secure storage, for liquid Hg



Temporary storage for smaller Hg containers and wastes



Another very use piece of mercury storage equipment



Inadequate Containers

Temporary tailings storage at Puerto Belen Concession (Madre de Dios), and Rinconada (Puno) - Peru



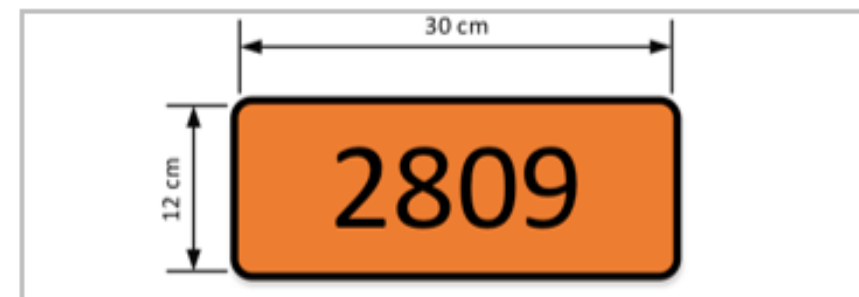
Mercury Transport

Key requirements

- Regulations, conditions, licensing required for the transport of hazardous materials
- Contingency plan
- Vehicle specifications
- Transport plan
- Emergency management plan
- Vehicle labeling
- Tracking (check-list, record-keeping)
- Protocol for initiating a shipment of mercury



Examples of dangerous goods marking and labeling: GHS06, GHS08, GHS09, Corrosive Class 8, Class 6.1 Toxic, "fish and tree" pictogram.



Vehicle class identification label



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Applicability of guidelines to GRULAC and other regions





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Good Practices Adopted for Mercury Handling and Interim Storage in Peru: Cases in Madre de Dios and Puno

**Daniel Merino
Artisanal Gold Council**



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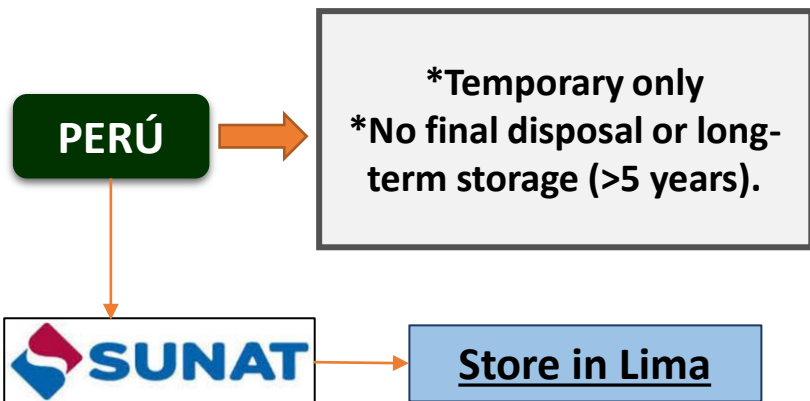
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Siempre con el pueblo

Mercury Storage



Policía Nacional del Perú

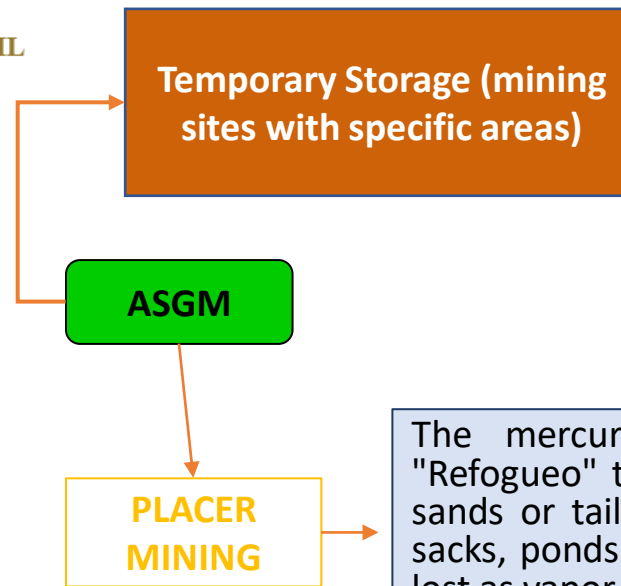


FISCALIAS ESPECIALIZADAS EN MATERIA AMBIENTAL - FEMAs



DIRECCIÓN GENERAL DE CAPITANÍAS Y GUARDACOSTAS DEL PERÚ

NO TEMPORARY STORAGE FACILITIES FOR SEIZED MERCURY FROM ASGM



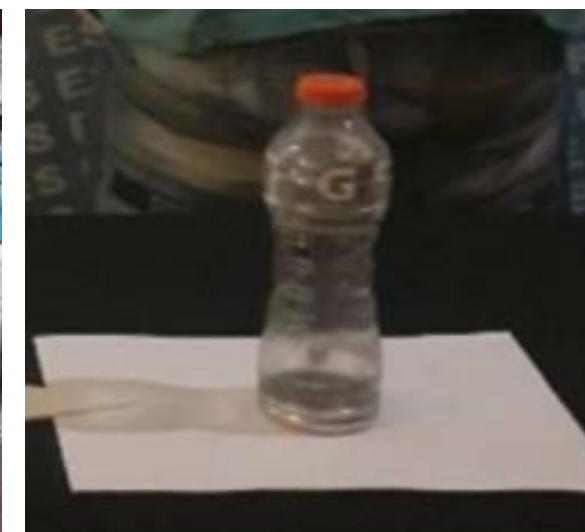
The mercury recovered in the "Refogqueo" that remains as "black sands or tailings" is stored in rice sacks, ponds or piles. Some of it is lost as vapor.



Temporary storage of black sands tailings in a cement room of the Puerto Belen Concession, Puerto Punkiri, Madre de Dios

Seized Mercury

- Receipt of seized Hg and how to handle Hg that is not in the proper containers
- Personal protective equipment (PPE)
- Preparation of the area before Hg storage (spill prevention)
- Materials to use
- Spill kit (recommended)



Personal Protective Equipment - PPE

5



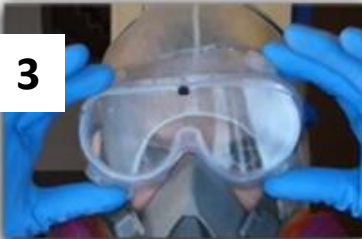
1



2



3



4



- 1) 3M gas respirator US\$ 21.52
- 2) Nitrile glove US\$ 2.13
- 3) Security lenses US\$ 2.83
- 4) Safety shoes US\$ 26.92
- 5) Tyvek suit US\$ 10.74

Total cost US\$ 64.14

- a) Plastic container US\$ 6.70
- b) Ziploc bags US\$ 4.01
- c) Absorbent cloths US\$ 3.74
- d) Teflon tape US\$ 0.59
- e) Anti spill tray US\$ 7.51
- f) Airtight buckets US\$ 4.28

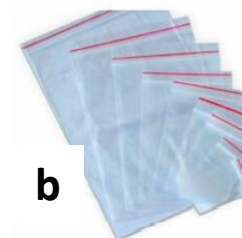
Total cost US\$ 26.83

Materials required

a



b



c



d



e



f





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Madre de Dios



Puno





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- Video



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