Dragonfly Biotic Index (DBI) Applied in Banyuwangi

By

Mr. Diagal Wisnu Pamungkas
Indonesia Dragonfly Society

IDS
http://indonesiadragonfly.org
Email: indonesiadragonfly@gmail.com

Hazard Whistle

Studies conducted in Kalongan River Banyuwangi

Dragonflies as Environmental Indicator

Using dragonflies to measure environmental quality

Dragonfly Biotic Index (DBI)

This approach's role:

- to monitor the freshwater environment quality of an area: rivers, forests and restoration sites
- to identify the landscape quality in relation to dragonfly habitats

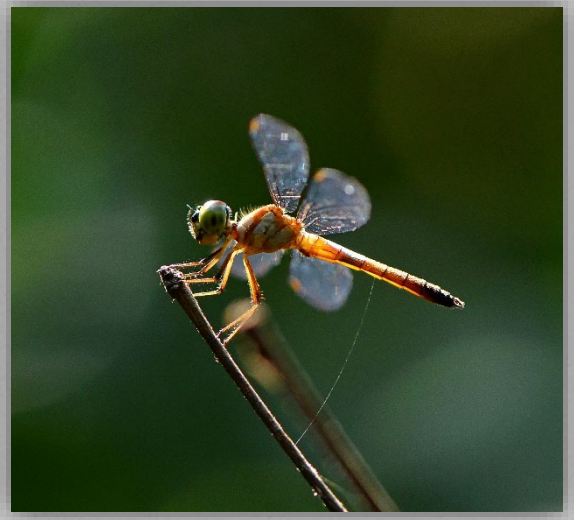
This approach's benefits:

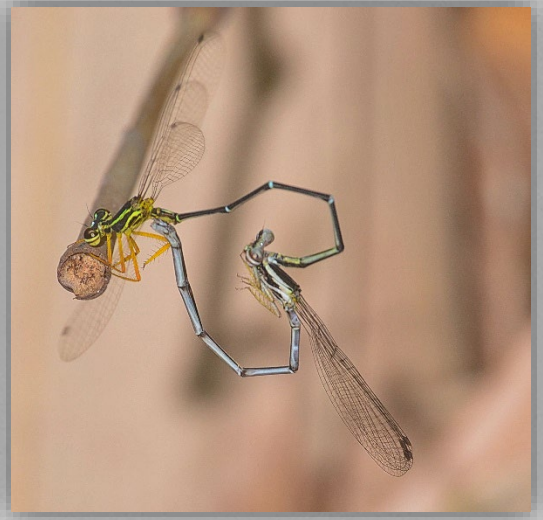
- Simple and rapid (dragonfly identification and scoring can be done in the field, allowing for quick monitoring and assessment of an area)
- Affordable (using simple equipment and allowing any person to engage)

Dragonfly Biotic Index (DBI)

Dragonflies have various benefits in this approach, including:

- Simple to recognize and identify
- Sensitive to environmental changes
- Each species has a distinct habitat distribution
- As dragonflies reproduce swiftly, differences across generations are simple to spot





Dragonfly Biotic Index (DBI)

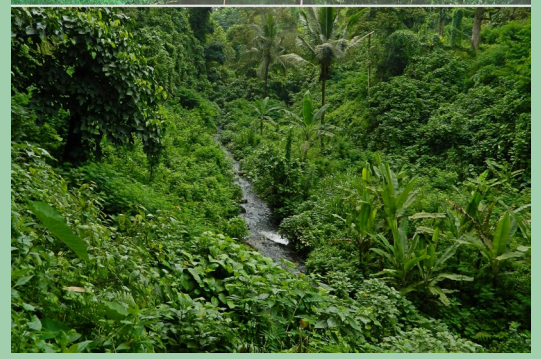
Things to do:

- Assessment of vegetation and freshwater quality
- Dragonfly identification
- Dragonfly distribution
  - **DBI scoring:**

No	Species	(A) Distribution	(B) Sensitivity	A+B
1				
2				
3				
Total DBI Score (N)				$N=\Sigma(A+B)$

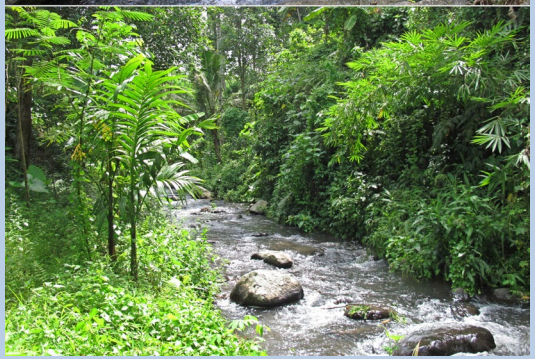



1 Habitats of the Very Sensitive Dragonflies



inhabitants

2 Habitats of the Sensitive Dragonflies



inhabitants

3 Habitats of the Tollerant Dragonflies

inhabitants

4 Habitats of the Very Tolerant Dragonflies

inhabitants

Thank you ☺

Watch the Dragonfly, See the Change!

Diagal Wisnu Pamungkas
diagal.ids@gmail.com
+62822 5173 3193

BELARUS

Collection, and safe disposal of PCB-containing waste
BLR/SGP/OP5/Y4/STAR/CH/14/05

Mr Andrei Pinihin

Background

STOCKHOLM CONVENTION
Protecting human health and the environment from persistent organic pollutants

Since 2003

BASEL CONVENTION
the world environmental agreement on wastes

Since 1999

State Program "Environmental Protection and Sustainable Use of Natural Resources«
Sub-program 3 “Management of persistent organic pollutants”

Background

Risk to local communities of PCB contamination in food or feed

PCB-containing equipment on the enterprises processing of food or feed.

- There is 10% of the total number of transformers and 5% of capacitors containing PCB
- main categories of PCB owners are milk factories and bakeries
- about 9 thousand capacitors and more than 40 transformers remain in operation at such enterprises

Background

No destruction and handling capacities of PCB

- no facilities for the PCB destruction in an environmentally friendly manner
- about 600 owners of PCB-containing wastes. More 2,000 tons PCB-containing equipment
- the owners (and all companies in the country) have no experience and capacity in packaging and transboundary movements of hazardous wastes in accordance with the requirements of the Basel Convention
- there are no guidelines for the collection, packaging and transboundary movement of PCB

Key results

Collection, transportation across the country, transboundary movement and destruction in an environmentally friendly way at a specialized enterprise outside of the Republic of Belarus of 14,540 tons of PCB-containing waste from 5 food industry enterprises

Key results

- The knowledge and capacities of the PCB owners of about the Basel Convention, the European Agreement on the International Carriage of Dangerous Goods by Road (ADR) and other national and international procedures governing the packaging, transportation and disposal of hazardous wastes has been expanded

- Contractual, legal, organizational and logistical schemes for the collection, packaging and destruction of PCB wastes outside Belarus according to the national requirements and the Stockholm and Basel conventions tested in practice, documented and recommendations for their implementation have been developed.

Lessons learned

The lessons learned and experience gained from the implementation of the project was used for the development of the large-scale UNDP\GEF project “GEF-6 POPs Legacy and Sustainable Chemicals Management” which started for implementation in 2018, as well as for the development of activities of the State Program "Environmental Protection and Sustainable Use of Natural Resources" for 2021-2025

Thank you!

Andrei Pinihin
apinigin@tut.by

зеленая
экономика

AWARENESS RISING, CAPACITY BUILDING AND POLICY ADVOCACY FOR REDUCTION OF POPs ,MERCURY & PCB IN NEPAL

Ram Charitra Sah

Executive Director/ Environment Scientist

ANROEV Coordinator

CEPHED, Kathmandu, Nepal

Tel/Fax: 0977-1-5201786, Mobile: 0977-9803047621

Web: www.cephed.org.np, Email: info@cephed.org.np ,

ramcharitra@gmail.com

Local Action and Sustainable Management of POPs including PCB

June 8, 2023

Center for Public Health and Environmental Development (CEPHED)

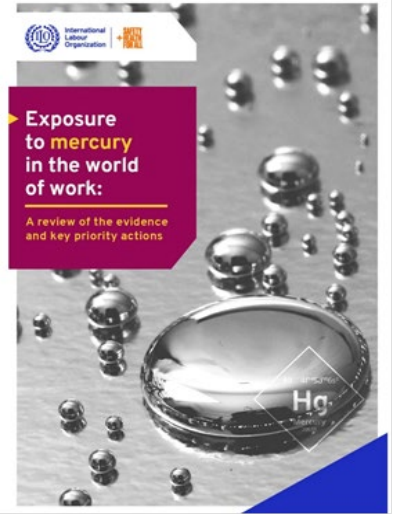
WWF Cons. Award 2020

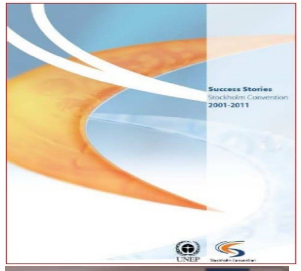
Established: October 2004

Goal: Improved environment management and public health

Vision: Bridging people with science and technology for healthy living and environmental safety.

Activities: Research, Publication, Dissemination, Policy influences, Feedback, and model demonstration





Global Linkage: IPEN, GAIA, ELAW, CEH, Toxics Link, ZMWG/EEB, WAMFD, Asian Center, ABAN, IBAS, ANROEV

Inter/National Recognitions: CEPHED Works is Recognized all over and also serves many task force /committees formed under Government.

PEN AWARD 2011

GRILL ENTP Award 2011

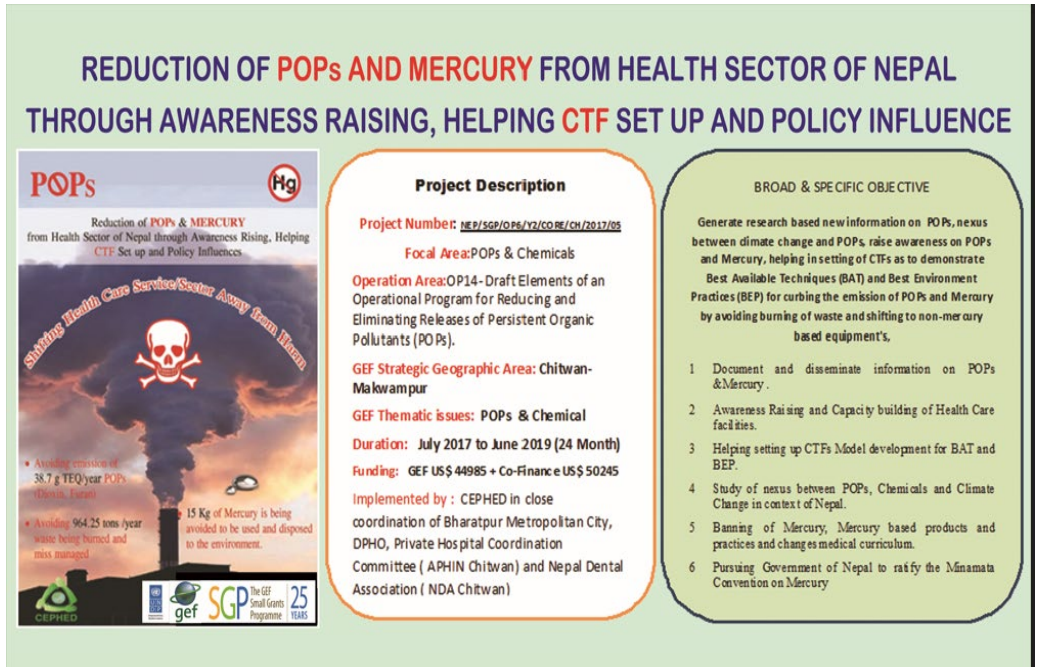
Envt. Cons. Award 2012

Best Paper. Award 2015

Envt. Cons. Award 2016

3 GEF SGP project completed between 2009-2019

1st Project: Public Awareness and Participation for POPs and its Sources Elimination (2009-11)
2nd Project: Awareness Raising and Capacity Building for POPs and its sources elimination 2012-14
3rd Project: Reduction of POPs and Mercury from the Health Sector of Nepal 2017-19



Activities	Targets	Accomplishment %	
Obj.1. Document and disseminate information on POPs & Mercury.			
Production and Dissemination on Poster on HCWM and Mercury	2000	100%	
Production and Dissemination of fact sheet on New NIP in Nepali	1000	100%	
Briefing Paper on Mercury and Minamata Convention on Mercury	1000	100%	
Publication of Training Manual on HCWM, POPs and Mercury	1000	100%	
Access to information through mass media(News articles)	50	>100 %	
Obj.2. Awareness Raising and Capacity building of Health Care facilities.			
Training and Capacity binding for Health Care Facilities	1000	1282 (128.2%)	
Training , Capacity building and convince for mercury free dentistry	200+ 150	402(114.86%)	
Radio program on HCWM, POPs, NIP, CTFs and Mercury	3	5 (166%)	
Video Documentary on HCWM, Mercury Free Dentistry (Production and Broadcasting)	1	2(200 %)	
Waste Assessment towards helping CTF set up	20	20 (100%)	
Mercury Free Dentistry training in Dental College	2	2(100%)	
Mercury Free Bharatpur Rally on World Oral Health Day	500	1000 (200%)	
Obj.3. Helping setting up CTFs Model development for Best Available Technology (BAT) and Best Environmental Practices (BEP).			
Preparing /helping to join Centralized Treatment Facilities (CTFs) for medical waste management of Bharatpur, Chitwan Medical City		• Waste Assessment and Training completed. • Bharatpur Metropolitan City signed MOU with Korean Company to develop Master Plan for Solid Waste and Health Care Waste.	

POPs & Their Source Elimination

Figure. Mr. Ram Charitra Sah, Executive Director of CEPHED receiving Environment Conservation Award 2012 from Dr. Babu Ram Bhattarai, Honourable Prime of Federation Democratic

Develop one Model Hospital in Bharatpur, Chitwan for Environment Sound Management (ESM) of Health Care Waste (HCW).		Treatment Center constructed, Model developed at Manakamana hospital handed over formally to the hospital in May 2019 Model Wards also developed in BPKMCH Baratpur and formally handed over to Management system,	
	 		

Mercury Free Health Care Service and Mercury Free Dentistry (Policy and Practices)

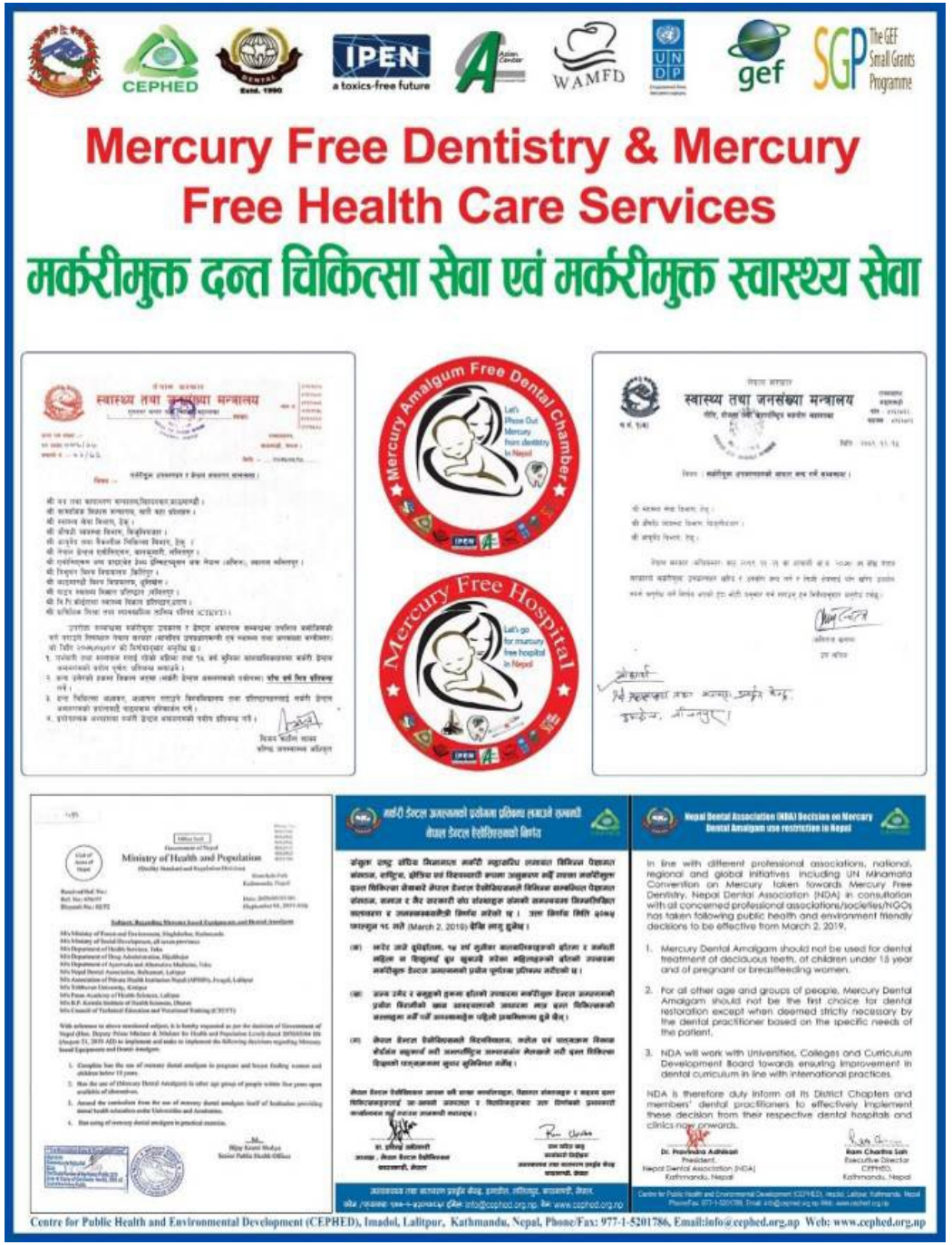
news | the kathmandu post | 02

Dentists commit to stopping mercury use in dental fillings

समाचार | नागरिक

भरतपुर मर्करीमुक्त घोषित देशकै पहिलो स्थानीय तह

NDA bans use of mercury dental amalgam



CEPHED | IPEN a toxics-free future | WAMFD | UNDP | gef | SGP The GEF Small Grants Programme

Mercury Free Dentistry & Mercury Free Health Care Services

मर्करीमुक्त दन्त चिकित्सा सेवा एवं मर्करीमुक्त स्वास्थ्य सेवा

Mercury Amalgum Free Dental Chamber

Let's Phase Out Mercury from dentistry in Nepal

Mercury Free Hospital

Let's go for mercury free hospital in Nepal

स्वास्थ्य तथा जनसंख्या मन्त्रालय

Ministry of Health and Population

Nepal Dental Association (NDA) Decision on Mercury Dental Amalgam use restriction in Nepal

Centre for Public Health and Environmental Development (CEPHED), Imadol, Lalitpur, Kathmandu, Nepal, Phone/Fax: 977-1-5201786, Email:info@cephed.org.np Web: www.cephed.org.np

PCB Elimination Program Leads to PEN Award 2011

Fig. Mr. Ram Charitra Sah, Executive Director of CEPHED receiving UN POPs Convention`s PEN AWARD 2011 from Dr. Carel Blah, President of the 5th Conference of Parties of the POPs Convention at Geneva, Switzerland on 28th April 2011.

Fig. Mr. Ram Charitra Sah, Executive Director, CEPHED receiving National Award 2068 of Grill Association.

STOCKHOLM CONVENTION

PCBs Elimination Network (PEN) 2028

2011 Stockholm Convention's PEN Awards

Cross-cutting issues Award of the PCBs Elimination Network

Outreach and Capacity Building

Awareness and Capacity Building program on PCB Contaminated transformer oil and its impact on public health and environment in different parts of country jointly with Nepal Federation of Grill and Steel Fabricators and PCB Free Metal Fabricators Model Developments in Nepal

PCB Free Metal Fabrication Workshop developed in different part of country

PCB Free Dry Welding Machine provided in different part of country

Awareness and Capacity Building training on PCB in different part of country

Center for Public Health and Environmental Development (CEPHED)
Nayabasti, Imadol-5, Lalitpur, Kathmandu, Nepal
Tel/Fax: 00977-1- 5201786,
Mobile: 00977-9803047621
Email:cephed04@yahoo.com, info@cephed.org.np
Web: www.cephed.org.np

MAJOR LESSON LEARNED & WAY FORWARD

1. Number of successful policy influences (Ban pesticides, Mercury free HCFs, and Mercury free Dentistry, Deprioritize burning technology, and promote alternatives (BAT and BAP) to eliminate and/or reduce the POPs, Mercury, and Other Chemicals.
2. Successful Contributions in the adoption of several Laws (Acts, Regulations, Standards, and policies)
3. Working with Partnership, Collaboration, and Coordination (Concerned government & Stakeholders)
4. In the case of PCB Free Welding Research, Advocacy, and sectoral Improvement: It was excellent and high-level Sectoral cooperation from the Project Participants, Beneficiaries, and their Federation.
5. Mercury Free Health Care Service and Mercury Free Dentistry: High level of government commitment and support from professional organizations (e.g. NDA).
6. Help in scaling up chemical safety issues in the country in addition to POPs
7. Exclusive Research Reports on POPs, Pesticides, PCBs, Mercury, etc., enriched Government`s NIP (2007, 2017, and MIA 2019)
8. Publications IEC Materials (Both in Eng & Nepali) on POPs, PCBs, and Other Chemicals
9. Enhance personal, professional, and organizational profile and credibility over the years
10. Nationwide Networking that has helped and still helping in localizing chemicals issues in Nepal.
11. National and International Recognitions (PEN AWARD 2011 to RECENT Nomination for Future Policy Award 2023)
12. **MORE NEEDS TO BE DONE: in the area of POPs, PLASTICS, and Other new chemicals and environmental challenges.**

Increased Compliance Over time

1. 92.85% of HCFs were found not to be using mercury thermometers.
2. None of the HCFs found to be using Mercury based Sphygmomanometer
3. Overall, 93.62% (44 of 47) Dental health Care facilities were found to be shifted to mercury-free alternative dental fillings like GIC and Composite


March 2023

Briefing Paper on Mercury Free Health Care Services and Mercury Free Dentistry in Nepal

1. BACKGROUND

The World Health Organization (WHO) considers Mercury one of the top ten chemicals of major public health concern. Mercury exposure – even in small amounts – may cause serious health problems and is a threat to the development of the child in the uterus and early in life. Mercury may have toxic effects on the nervous, digestive, and immune systems, the lungs, kidneys, skin, and eyes.

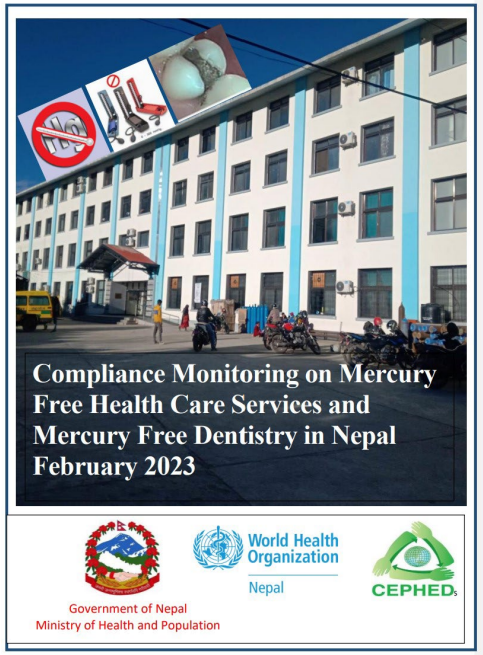
A decade ago, there was a high import, purchase, and use rate of mercury-based equipment, such as mercury-based thermometers and sphygmomanometers in the Nepalese health sector. The high breakage rate of thermometers and mercury spillage from sphygmomanometers resulted in the high release of mercury into the environment from the health sectors, which were considered one of the major sources of occupational exposure among healthcare professionals. The use of mercury dental amalgam for tooth filling was also widespread in Nepal. In the Minamata Initial Assessment (MIA) report 2019, the Ministry of Forests and Environment (MoFE) estimated the release of mercury from the use and disposal of mercury-based products as 2,590 Kg from the health sector, which is 13.2% of the total 19,615 Kg. annual release from all mercury related activities in Nepal.

FIGURE 1. GoN, MoHP DECISION ON MERCURY FREE HEALTH CARE SERVICE

FIGURE 2. STAKEHOLDER MEETING AT MoHP DECIDE BAN OF DENTAL AMALGAM

In addressing the mercury-related and associated health problems in the country, the Government of Nepal (GoN), the Ministry of Health and Population (MoHP) in March 2013 took very progressive decisions on banning the import, purchase, and use of all mercury-based equipment in both public and private healthcare facilities with effect from 17th July 2013.

FIGURE 3. GoN MoHP DECISION OF MERCURY-FREE DENTISTRY



THANK YOU

Awareness raising, capacity building and advocacy Activities in Cameroon

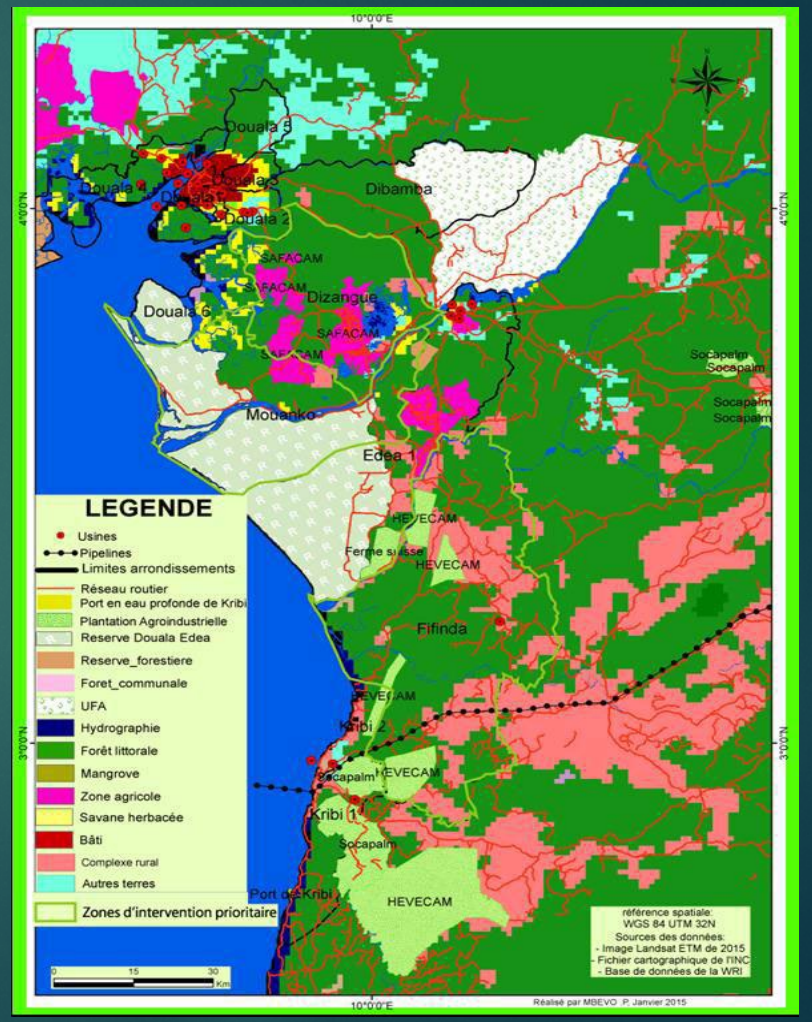
By:
Gilbert KUEPOUO, PhD.,
CREPD, Cameroon

Local Action and the Sustainable Management of POPs including PCBs ***GEF SGP Side Event, Thursday, 08 June 2023***

POPs and Heavy Metals (Mercury and Lead) Risk Reduction in the Cameroon Estuary Landscape (CMR/SGP/OP6/Y2/CORE/CH/16/02)

- ***Project justification***

Institutions and actors responsible for effectively managing POPs in Cameroon have not always been able to transfer information, knowledge and tools for the sound management of these toxic chemicals throughout their life cycle to the community/grassroots level, **including in very sensitive areas like the estuary that hosts large cities, agricultural and industrial activities likely to involve POPs**. As consequences, there is a widespread exposure of populations, vulnerable groups and ecosystems to these hazardous chemicals (POPs).



POPs and Heavy Metals (Mercury and Lead) Risk Reduction in the Cameroon Estuary Landscape (CMR/SGP/OP6/Y2/CORE/CH/16/02)

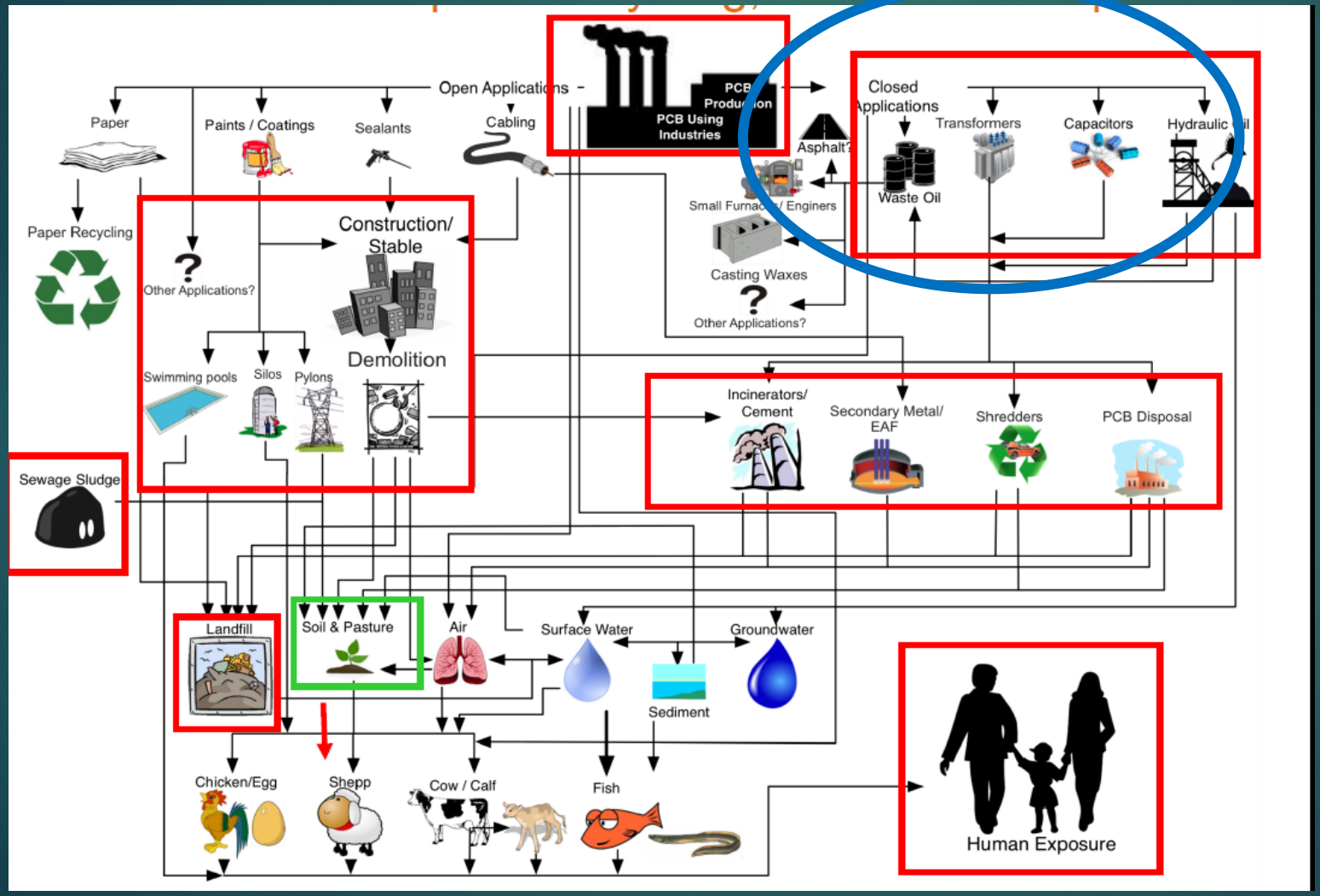
- ***Project Interventions***

Targeted audience for intervention (beneficiaries) identified included: Representatives of women's groups, youth, men, farmers, the private sector, workers' unions, traditional leaders and other stakeholders

Key intervention activities were:

1. **Awareness raising**: Power point presentations on Stockholm Convention and POPs, including the adverse effects of POPs on human health, and key activities involving or releasing POPs in the landscape were developed and used during outreach workshops in Edea and Douala,
2. **Capacity building**: Stakeholders' ability to use information and knowledge on POPs to effectively reduce their risk of exposures to them was enhanced during the workshops and through take home materials developed. Municipalities, CBOs and CSOs were trained on how to identify POPs related environmental issues and transform them into project proposals,
3. **Advocacy:** Participants, including recycling and waste disposal companies, building on the knowledge gained during the project intervention called for transparency in the labelling of products and articles susceptible to contain POPs in order to reduce the risks of pollution during the recycling or final disposal of the resulting waste. This will also avoid toxic recycling in the context of the circular economy promoted as one of the solutions to reduce the pressure on natural resources and promotion of resources efficiency.

POPs and Heavy Metals (Mercury and Lead) Risk Reduction in the Cameroon Estuary Landscape (CMR/SGP/OP6/Y2/CORE/CH/16/02)



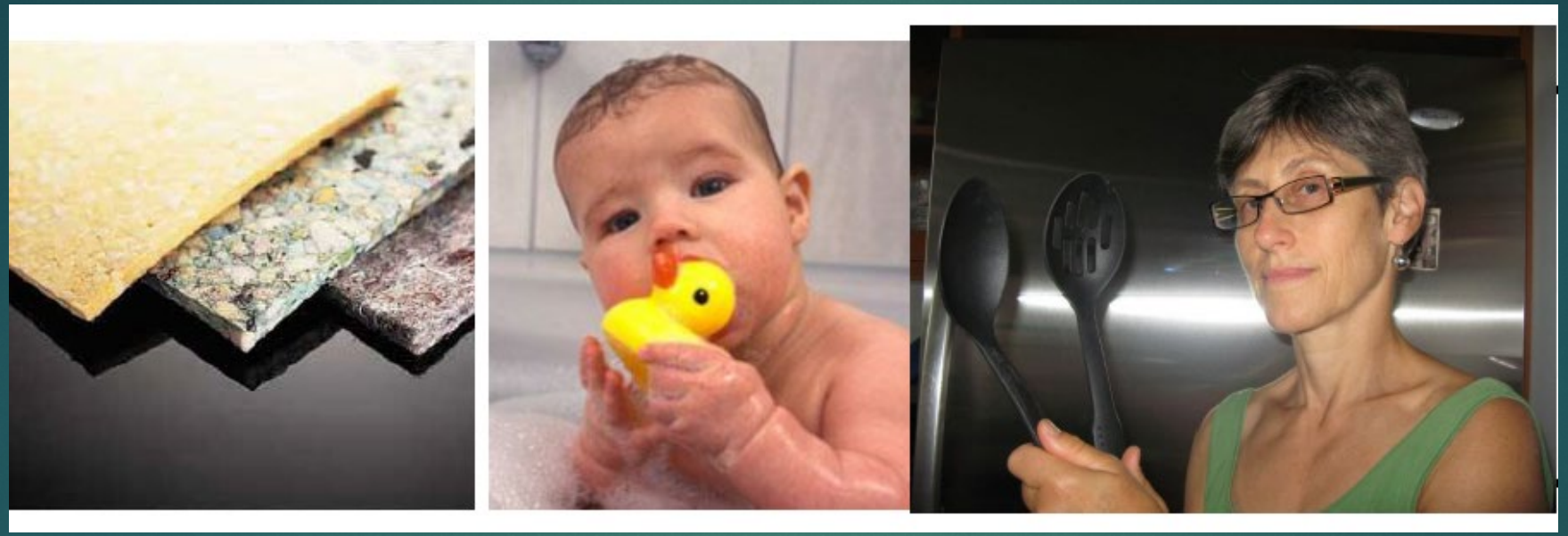
Life cycle of PCBs
In closed and open systems

POPs and Heavy Metals (Mercury and Lead) Risk Reduction in the Cameroon Estuary Landscape (CMR/SGP/OP6/Y2/CORE/CH/16/02)

Plastic recycled products susceptible to contain POPs (HBCD)

How POPs can enter the food chain

POPs and Heavy Metals (Mercury and Lead) Risk Reduction in the Cameroon Estuary Landscape (CMR/SGP/OP6/Y2/CORE/CH/16/02)



Direct exposure to POPs in daily consumer products

POPs and Heavy Metals (Mercury and Lead) Risk Reduction in the Cameroon Estuary Landscape (CMR/SGP/OP6/Y2/CORE/CH/16/02)

Sources of Unintentional POPs applicable to the project area:

1. Forest fire.
2. Industrial fire accident.
3. Refinery and cement production
4. Open burning of waste

POPs and Heavy Metals (Mercury and Lead) Risk Reduction in the Cameroon Estuary Landscape (CMR/SGP/OP6/Y2/CORE/CH/16/02)

- ***Challenges, experiences and lessons learned***

Main challenges were related the difficulties to communicate on chemicals with complex scientific names. Simplification efforts were made to overcome that complexity by focusing on different articles/products that may contain POPs, and the relevant human activities (open burning of waste, forest and bush fires) that may release unintentional POPs (dioxins and furans).

We learned during the implementation of this project that:

1. The involvement of administrative and traditional authorities is crucial in the successful implementation of the project;
2. POPs are very poorly known among stakeholders involved directly or indirectly in their use (Industrial POPs such as PCBs, UPOPs such as dioxins and furans), their environmentally sound disposal is poor or lacking;
3. Actions that can be designed and implemented to reduce the risks of pollution by POPs need to be promoted among stakeholders;
4. Stakeholders do not perceive the interactions between chemicals or chemical pollution and biodiversity conservation, land degradation, and positive feedbacks from climate change, which contributes to abuses in certain practices (pesticide use, waste disposal, deforestation and bush or forest fires).

POPs and Heavy Metals (Mercury and Lead) Risk Reduction in the Cameroon Estuary Landscape (CMR/SGP/OP6/Y2/CORE/CH/16/02)

5. Fishermen (in the Bonaberi site) claim to use agricultural chemicals (without naming names) to catch fish that they sell on the local market, posing a serious problem of the unauthorized use of chemicals and pollution of aquatic environments.

6. With a little support, local populations, through their observations and endogenous knowledge, are well able to recognize impacts of poor management of chemicals and wastes on their environment and health, hence the importance of future workshops.

7. Involvement of researchers during the Edéa and Bonaberi workshops was very rich in nourishing exchanges and sharing experiences of the risks posed by POPs from various sources, including PCBs in transformers in project area.

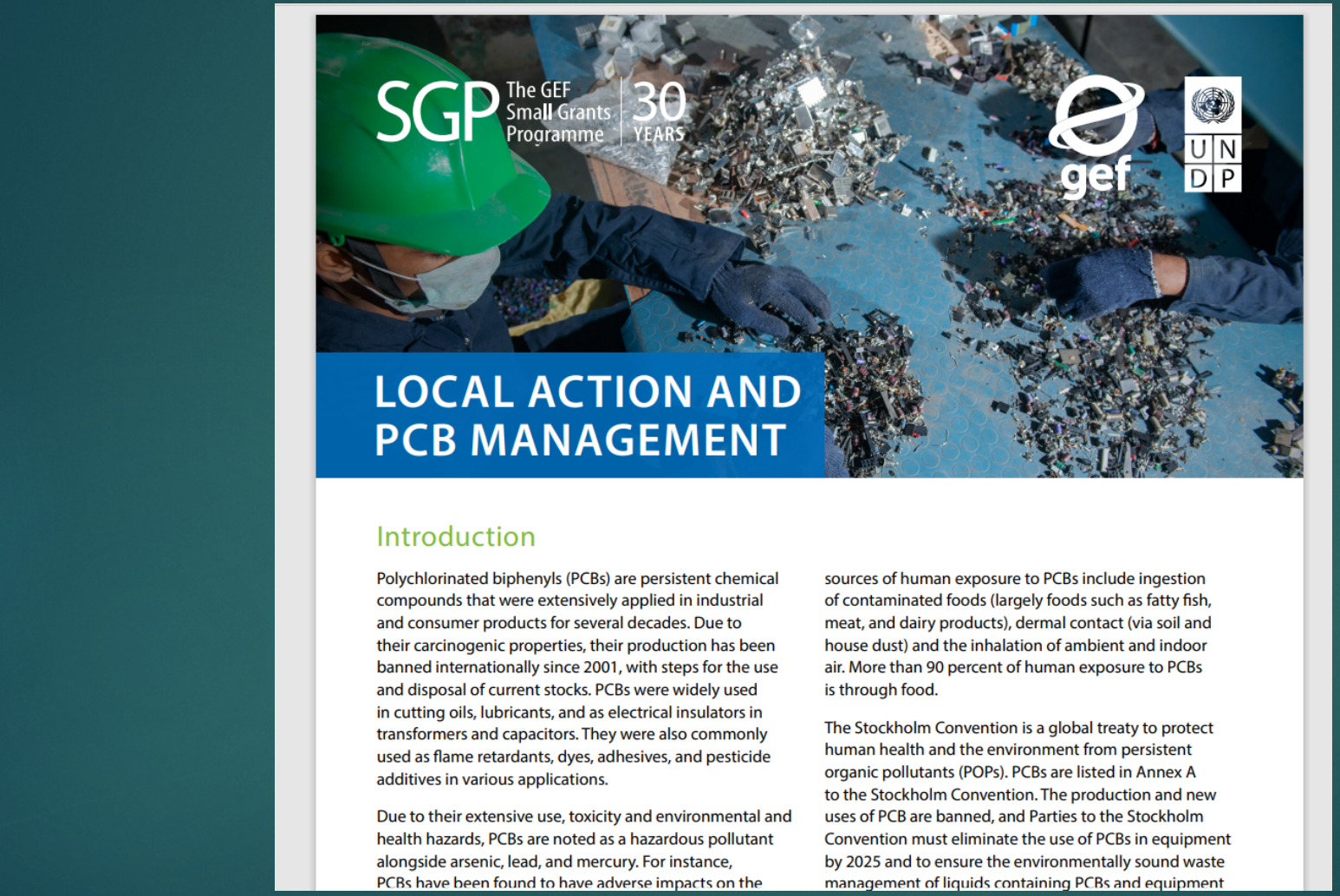
8. Recycling and waste disposal companies, need transparency through labelling of products and articles containing POPs and heavy metals for the Environmentally sound management of their waste, particularly in the context of Circular Economy (one of the solutions promoted by the government to reduce the pressure on natural resources and resources efficiency).

Certificate award Upon successful Online training course on POPs

THANK YOU FOR YOUR ATTENTION

www.crepdcm.com
Email: gkuepouo@gmail.com

SGP PCB Management Brochure



Local Action and PCB Management (undp.org)