

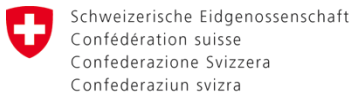


SUSTAINABLE
RECYCLING
INDUSTRIES

SRI Workshop 1: Legacy substances in the circular economy: Example WEEE-plastic

WRF Davos 2015, Mo Oct 12, House A Room Seehorn

Michael Gasser, Mathias Schluep



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Federal Department of Economic Affairs FDEA
State Secretariat for Economic Affairs SECO



Materials Science & Technology



Outline

- Welcome
- Country Presentations
- Overview: E-waste plastic in the different countries
- Group Discussion - 1
- Presentation: History of legislation in regulating additives, example PVC.
- Group Discussion - 2

Country Presentations

Peru

Colombia

Egypt

Ghana

India

Why focus on Hazardous Additives?

- E-waste plastic: Relatively low value, very difficult to process sustainably, contains additives like Brominated Flame Retardants (BFRs).
- These are toxic materials and exposure can lead to:
 - BFRs (PBDEs): potential carcinogen, act on the nervous system and affect our behaviour. Found in almost everybody.
 - Dioxins and Furans: Carcinogenic, reproductive and developmental problems, weakened immune system, interferences with the hormone system.
- Recycling may worsen the problem (formation of dioxins / furans)
- These additives increasingly regulated and banned. Banned PBDEs should be removed and destroyed.
- Lack of attention and sustainable solutions in developing countries?

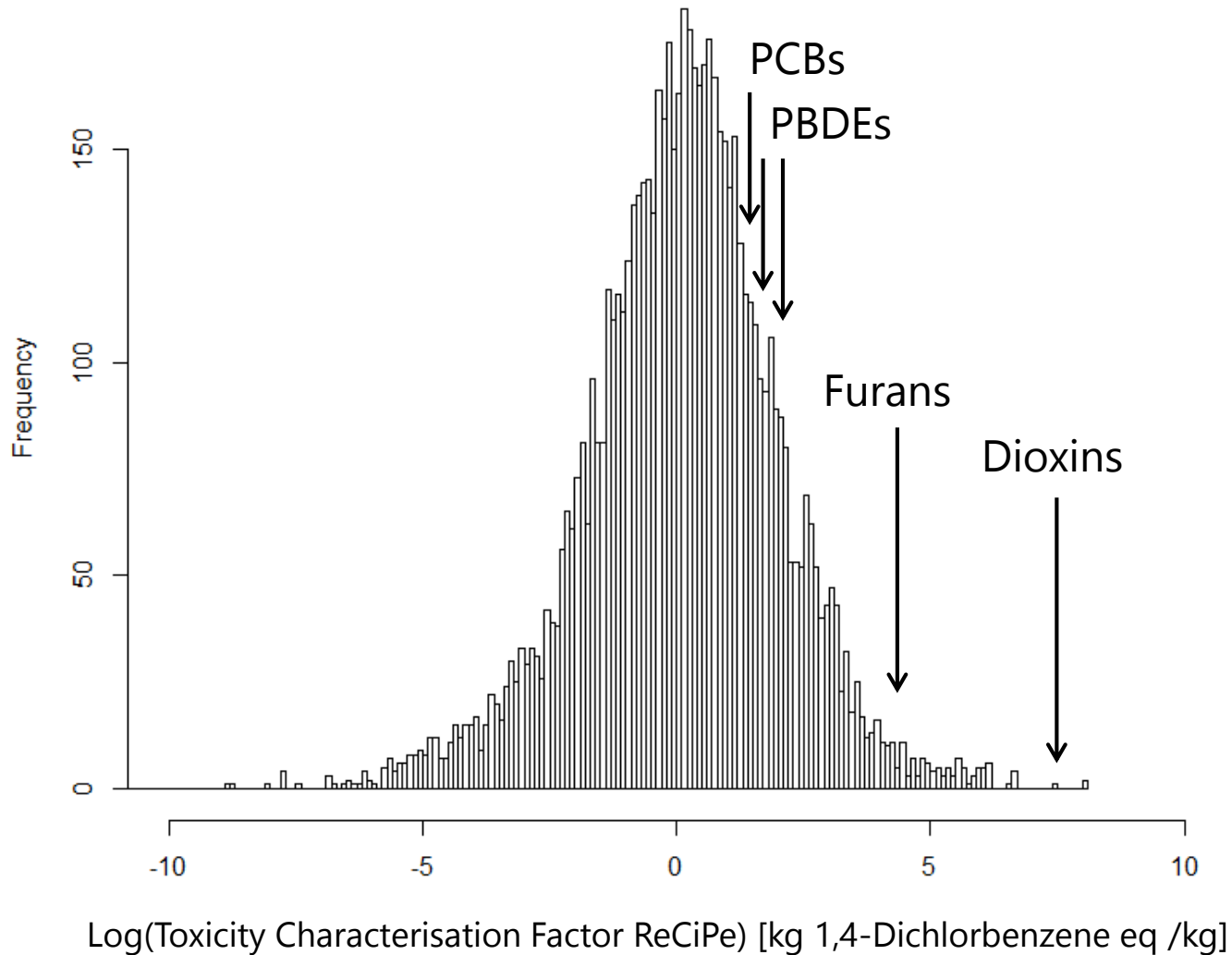


-> **What is the legal situation in the SRI countries?**

-> **What are on the ground realities?**



Toxicity of the substances.



E-waste plastic: Overview

Overview	Peru	Colombia	Egypt	Ghana	India
Stockholm convention	Y	Y	O	Y/O	Y
SC 4/10-4/18	Y	Y	O	O	O
RoHS	N	N	O	N	Y
E-waste law	Y	Y	O	O	Y
Responsibility	EPR	EPR	EPR / state	EPR / state	EPR / (bulk) cons.
TG	O	y	Y	N	Y

Technical Guidelines

TG's	Peru	Colombia	Egypt	Ghana	India
Plastics are problematic	Y	N	Y	N	N
Concentration Limits	N	N	N	N	N
Mixing forbidden	N	N	Y	N	N
Compliance Mechanism	N	N	N	N	N

Compliance and ground reality

	Peru	Colombia	Egypt	Ghana	India
RoHS compliance	Y	N	S	N	S
%Formal	20	30	20	20	9
Formal: Depollution	Y	S	Y	Y	S
Informal: Depollution	N	N	S	N	S
Fate	Recycled / Disposed / Shipped	Recycled / Disposed Shipped	Recycled locally	Recycled / Disposed	Recycled / Disposed
Shipping Dest.	USA / GER / CHI	USA / CHI			
Methods	Classification	Classify	Classify, density	Classify	Classify, density, (xrf)

Group Discussion - 1

- Country specific tables (Gha, Egy, Per/Col, India)
- Task 1: Identify applicable strategies regarding e-waste plastic.
 - Keep locally
 - Preprocess and keep some (which?)
 - Preprocess and export
 - Bulk export
- You must
 - (a) ensure proper treatment (separation / disposal)
 - (b) consider cost
- Task 2: How does / can the SRI project support this development?
- 20 minutes time, local country coordinator determines who does records / does it himself
- Help / Knowledge is available.

Example India «Keep locally»

- A lot of material, especially also bad material (CRT manufacturing and use still ongoing).
- Well organised, big (informal) plastic recycling sector, can already sort out bad material to some extent (and there is a business sense behind)
- Material ends up there and is concentrated, can only try to pull out bad parts.
- Keep locally, build business case for plastic cleaning, evaluate disposal technologies.

Presentation

Group Discussion – 2

- You have a numbered set of questions on your table.
- Once you have answered it, you can tackle the next.
- You may always go back to an earlier question.

Question 0:

«What can the example of PVC additives teach us?»

Workshop proceedings

- Table secretaries to brief us on the discussion.
- Short summary presentation -> WRF
- Short summary text -> WRF
- ...

- Developed ideas, strategies
 - Work in progress, refine further during the coming week.