PRELIMINARY ASSESSMENT OF HBCD IN VIETNAM

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Situation

- Currently, there is no information on production of HBCD in Vietnam. HBCD-containing products may have been used in Vietnam: XPS and EPS
- High impact polystyrene volume used in electrical and electronic equipment has not been inventoried

Situation

- NIP update project estimated amount of polymer in electrical and electronic

The amount of polymers in electrical and electronic devices in Vietnam from 2007 to 2014

Year	Weight of the polymer; thousand tons
2007	337
2008	374
2009	425
2010	444
2011	476
2012	474
2013	511
2014	879

Situation

- HBCD in samples that were collected in e-waste recycling villages in Vietnam

		Chicken muscle (n = 5)	Chicken liver (n = 5)	Chicken skin (n = 5)	Chicken egg (n = 15)	Soil (n=6)	River fish (n = 5)	Pork (n = 2)	Sediment (n = 8)
a-HBCD	average	34	1,700	600	2,800	6.7	2.5	0.9	-
	median	20	1,000	640	2,500	5.0	2.3	-	-
	range	1.2-55	180-2,500	20-850	330-3,500	1.0-8.9	0.1-3.3	-	-
b-HBCD	average	0.15	28	0.06	79	4.8	0.41	<0.002	-
	median	0.25	20	0.1	70	3.8	0.51	-	-
	range	0.1-2.0	2.5-35	0.02	0.15	15-80	0.5-8.0	0.04-0.65	-
g-HBCD	average	5.3	1,500	330	700	110	0.5	0.2	-
	median	8.9	890	450	910	100	0.6	-	-
	range	0.1-15	160-3,000	3.8-580	200-2,300	56-710	0.05-0.12	-	-
SHBCD	average	39	3,200	930	3,600	120	3.4	1.1	-
	median	29	1,900	1,000	3,500	110	3.4	-	-
	range	2.0-80	330-5,500	25-1,400	540-5,800	0.03-580	0.2-4.1	-	-

Situation

- Average concentrations of ΣHBCD in chicken liver (3,200 ng/g lw) and egg (3,600 ng/g lw) samples in the study exceeded substantially those found in chicken liver and eggs from an e-waste processing area in Taizhou City, China
- Median ΣHBCD concentration in breast milk samples collected in Bui Dau (craft village) was 2 ng/g lipid wt, much higher than those of other places in Vietnam (2009)

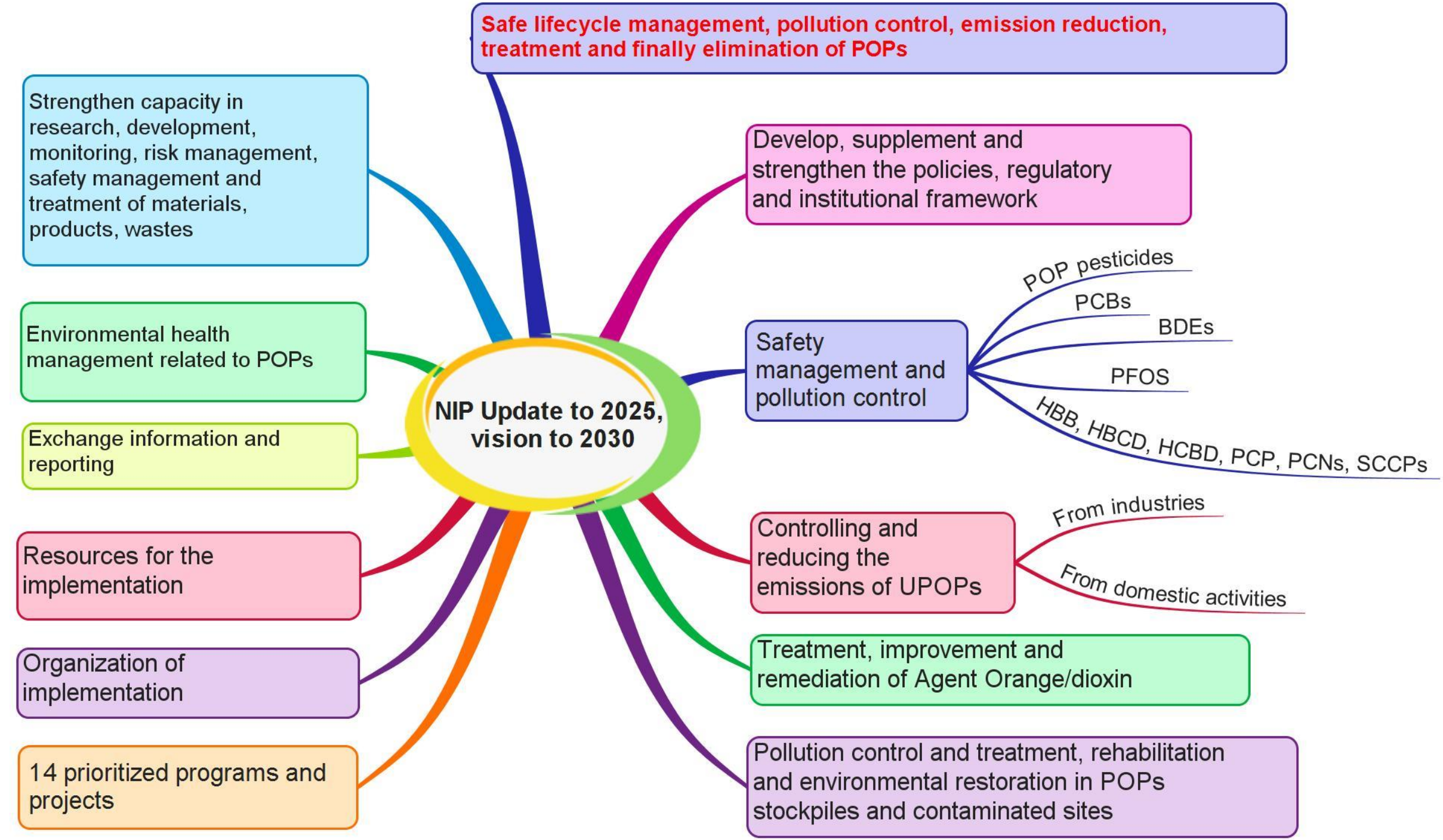
Situation

- **Concentrations (ng/g) of HBCD in settled house dust samples from urban and suburban Hanoi and two e-waste recycling sites (2012),** (Unit: ng/g)

	Suburban Hanoi (n = 7)		Urban Hanoi (n = 6)		Trang Minh (n = 10)		Bui Dau (n = 10)	
	Range	Median	Range	Median	Range	Median	Range	Median
α – HBCD	0.37 – 15	4.5	0.84 - 11	4.6	2.3 - 100	10	2.7 - 340	**48**
β – HBCD	ND – 4.0	0.48	ND – 2.1	0.78	0.61 – 8.0	2.5	1.0 - 34	**4.7**
γ – HBCD	0.57 - 47	3.3	0.46 - 21	4.0	4.6 - 44	8.6	1.7 - 110	**8.4**
Total HBCD	**0.99 - 61**	**7.4**	**1.3 - 32**	**8.7**	**7.5 - 130**	**29**	**5.4 - 400**	**120**

Management

- Circular on registration before use
- Circular on management of hazardous wastes
- Decision on recall and treatment of discarded products
- Decision approval the NIP update for the Stockholm Convention on POPs up to 2025, with a vision to 2030:
  - evaluating and identifying materials and products, registration for exemption
  - controlling export and import of materials and equipment containing HBCD;
  - monitoring in the environment, materials, products, waste and contaminated sites for effective management.
  - treatment


Safe lifecycle management, pollution control, emission reduction, treatment and finally elimination of POPs
Strengthen capacity in research, development, monitoring, risk management, safety management and treatment of materials, products, wastes
Develop, supplement and strengthen the policies, regulatory and institutional framework
Environmental health management related to POPs
Safety management and pollution control
POP pesticides
PCBs
BDEs
PFOS
HBB, HBCD, HCBD, PCP, PCNs, SCCPs
NIP Update to 2025, vision to 2030
Exchange information and reporting
Controlling and reducing the emissions of UPOPs
From industries
From domestic activities
Resources for the implementation
Treatment, improvement and remediation of Agent Orange/dioxin
Organization of implementation
Pollution control and treatment, rehabilitation and environmental restoration in POPs stockpiles and contaminated sites
14 prioritized programs and projects

Conclusion

- Potential use: construction and electronic devices
- Inventory has not been conducted
- NIP Update activities:
  - Inventory
  - Monitoring
  - Waste treatment
  - Contaminated site
  - Health issues
  - Develop regulations

Thank you very much!