Asbestos Ban, How can I explain?

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- Both for those countries that have banned and for those countries that have not yet banned asbestos,

- how can I understand your decision and how can I explain myself?

Asbestos Ban

- Understood as transfer of knowledge?
- Understood as legislation?
- Understood as political decision?

Asbestos Ban

1) disease burden as pressure,

2) problem appraisal and solving system represented here as data-information-knowledge-wisdom cycle, and

3) alternative but feasible solutions.

Asbestos Ban

1) Disease burden as social pressure: asbestos consumption and latency
2) D-I-K-W(Data-Information-Knowledge-Wisdom) cyclic axis, HR(Human Rights) based system
   - Roles of stakeholders
   - Health as HR: Medical system
   - Social security as HR
   - Political freedom as HR
3) Alternatives from neighboring countries

Cultural Change and Organizational Learning

- Edgar Schein – brainwash among war prisoners
- System approach
  - Equilibrium or stability of organization not easily disturbed
- Organizational Culture
  - A pattern of shared basic assumptions that the group learned as it solved its problems of external adaptation and internal integration, that has worked well enough to be considered valid and, therefore, to be taught to new members as the correct way you perceive, think, and feel in relation to those problems

Stages of the change process

- Stage 1. **Unfreezing**: Creating the motivation to change
  - **Disconfirmation**
  - **Creation of survival anxiety or guilt**
  - **Creation of psychological safety to overcome learning anxiety**
- Stage 2. **Changing**: Learning new concepts, new meanings, and new standards
  - Imitation of and identification with role models
  - Scanning for solutions and trial-and-error learning
- Stage 3. **Refreezing**: Internalizing new concepts, meanings, and standards
  - Incorporating into self-concept and identity
  - Incorporating into ongoing relationships and groups

Disease Burden

- Social Pressure ~ Disease Burden
- Disease Burden ~ Asbestos Consumption
- Disease Burden ~ Asbestos Consumption * Life Expectancy (under competing risks)

	Per capita asbestos consumption	Life Expectancy	% of 65 years and older		Per capita asbestos consumption	Life Expectancy	% of 65 years and older
Thailand	76.03	75	10	Hong Kong	-2.93		14
Indonesia	7.72	71	5	Taiwan			
Malaysia	54.15	74	5	Singapore	36.88	83	10
Philippines	2.3	69	4	Japan	84.36	84	25
Vietnam	7.27	76	7	Korea	59.34	81	12
Laos		66	4				

Where to look for evidence base?

- First Industry to notice asbestos disease
- Exposure Level * Industry Size * Tenure
- Class and sex based
- Sometimes perceived as needle in the haystack – need to be targeted and specific – long term workers or retired workers

Problem Appraisal

- Even with an increasing disease burden, if the problem is not appraised enough and appropriately, the solutions can never be sought.

- To get to the appropriate solution, the problems need to be appraised and then fed back to potential answers repeatedly.

D-I-K-W cyclic axis

- Data is there as we collect them based on what we know.
- Data becomes information only when we assess them purposely for the search of what we don't know but should have known based on known yardsticks or values.
- Information becomes knowledge only when we test and validate the supporting mechanism to the available information, usually by comparing through spatial association or temporal trends.
- Then the knowledge becomes wisdom only when the knowledge is embodied and proved to be useful even for those unexpected and unknown areas.

D-I-K-W axis

- **Data collection** based on known knowns (we know what we know)
  - Consumption figures
  - Disease profiles
- **Information assessment** for the search of unknown knowns (we don't know what we should have known)
  - Toxicity assessment
  - Permissible level
- **Knowledge generation** for the known unknowns (we know what we don't know)
  - Association - spatial
  - Trend - temporal
- **Wisdom embodiment** including the areas of unknown unknowns (we should have known what we don't know)
  - Deep understanding of underlying principles
    - Assumptions about human nature
    - History and perspectives

D-I-K-W axis in Health & Safety

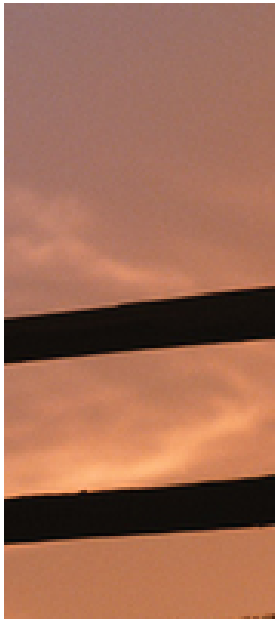
- Data Collection Function
  - Radon Clearance Program to measure radon, asbestos by every homeowner
- Information Assessment Function
  - Toxicity (Carcinogenicity) Review Committee
  - Occupational Exposure Level Review Committee
- Knowledge Generation Function
  - Occupational health and safety research institute
- Wisdom Embodiment Function
  - President's Cancer Panel

Radon Clearance Program

ityConcepts

dividuals, families & communities

enagers | Homebuyers | Homeowners | Emergency Help | Renters | Transportation | Businesses

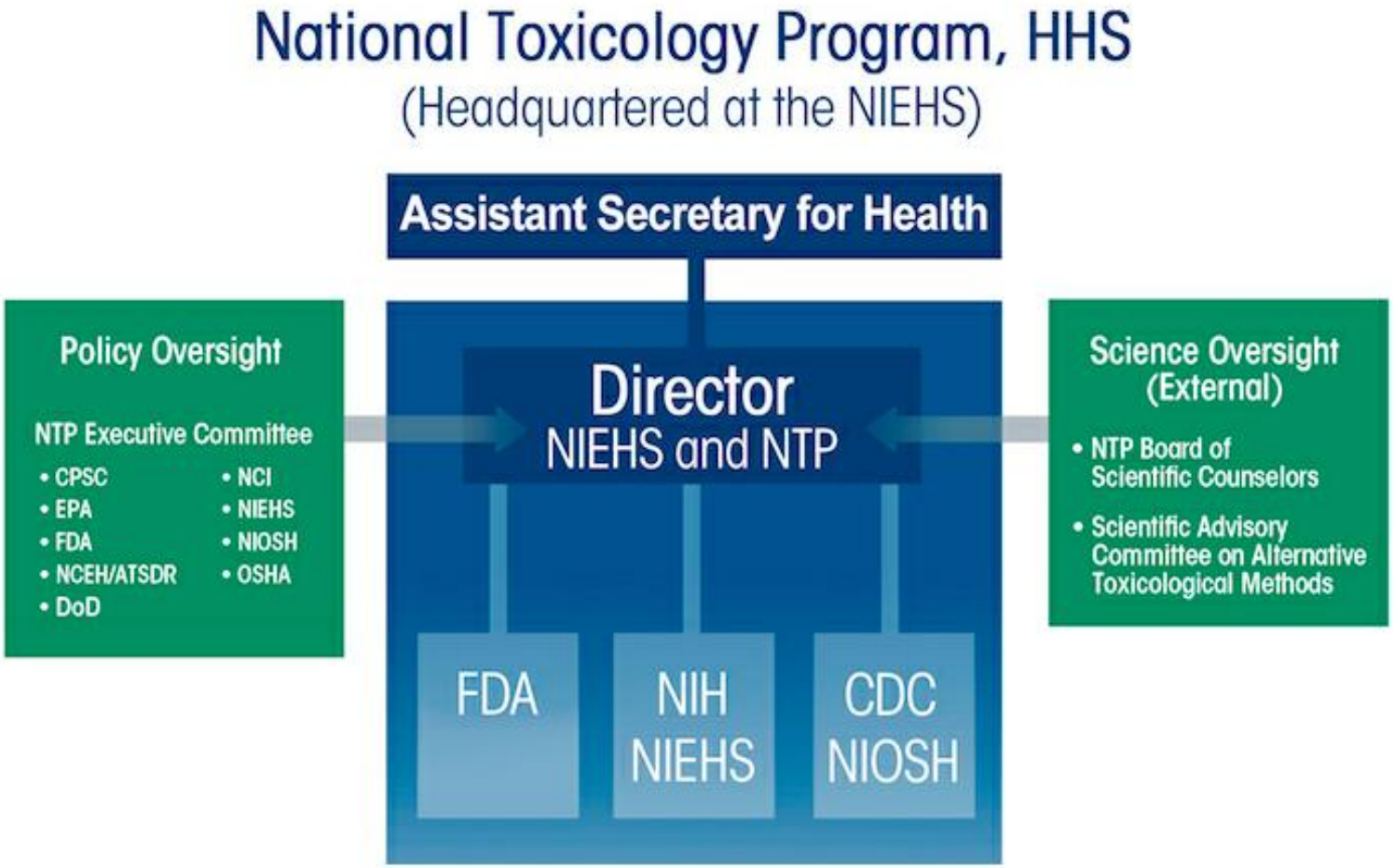


For Homeowners

Lead, Radon & Asbestos Testing

Community Concepts performs lead clearance testing for many Housing Authorities and individual landlords throughout the state. Radon and asbestos testing are recommended for indoor air quality. Asbestos and lead testing should be performed before remodeling an older structure as particles become airborne during home rehabilitation.

Toxicity Data





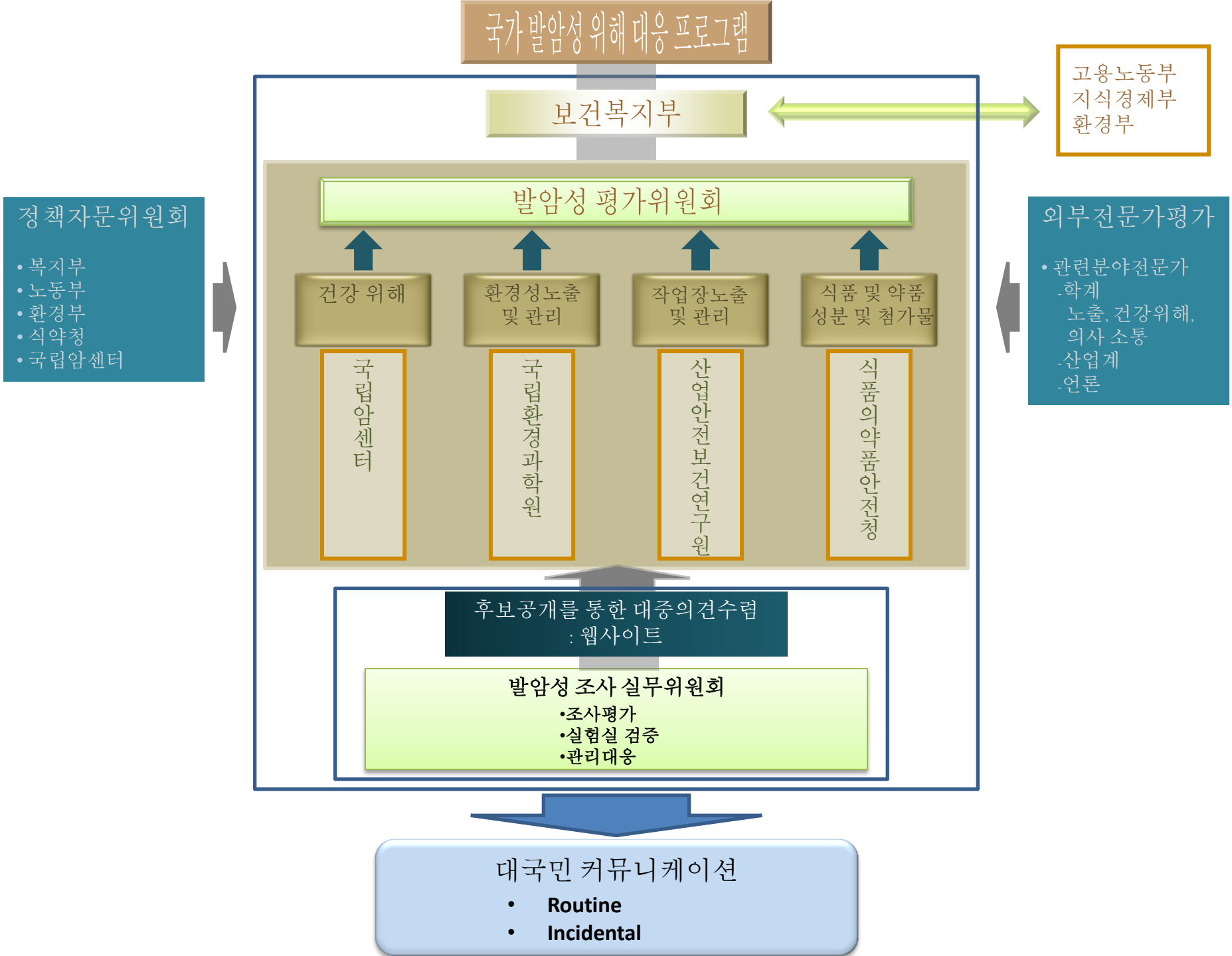
Agents Classified by the *IARC Monographs*, Volumes 1–105

Group 1	*Carcinogenic to humans*	108 agents
Group 2A	*Probably carcinogenic to humans*	64
Group 2B	*Possibly carcinogenic to humans*	271
Group 3	*Not classifiable as to its carcinogenicity to humans*	508
Group 4	*Probably not carcinogenic to humans*	1

For definitions of these groups, please see the Preamble.

It is strongly recommended to consult the complete *Monographs* on these agents, the publication date, and the list of studies considered. Significant new information might support a different classification.

For agents that have not been classified, no determination of non-carcinogenicity or overall safety should be inferred.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고용노동부
지식경제부
환경부
정책자문위원회
• 복지부
• 노동부
• 환경부
• 식약청
• 국립암센터
발암성 평가위원회
외부전문가평가
• 관련분야전문가
-학계
노출, 건강위해, 의사 소통
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2012 Workshop Series: Accelerating Progress in Cancer

LIZ ARMSTRONG, GUY DAUNCEY and ANNE WORDSWORTH

Foreword by Dr. Devra Davis

The Solutions Project

CANCER

101 SOLUTIONS TO A PREVENTABLE EPIDEMIC

Pubmed Search (Asbestos + Country)

Country	# of Articles	Country	# of Articles
Thailand	11	Hong Kong	25
Indonesia	4	Taiwan	31
Malaysia	8	Singapore	25
Philippines	4	Japan	555
Vietnam	4	Korea	79
Laos	0		

Japan 251 + 204, Korea 22 + 57

	Japan	Korea
2004 (Japan)	12	3
2005	11	1
2006	15	4
2007 (Korea)	23	0
2008	37	2
2009	40	7
2010	**50**	9
2011	44	10
2012	40	**17**
2013	39	15
2014	33	9

- banning asbestos was a very useful lesson for other health and safety problems of Korea

System is …

- Network of parts
- Dynamics of inputs and outputs
- Equilibrium

- ➢ Agents and Roles
- ➢ Demands and Goals
- ➢ Sustainability

System is a Story

- System is a story of networking parts, dynamics, and equilibrium.

- Story of why, who, what, where, when and how of roles (and risks)

From data to wisdom

- Data ≠ Information
  - only when useful
- Information ≠ Knowledge
  - only when true
- Knowledge ≠ Wisdom
  - only when enacted

System of H&S (RISK) Management

- System for Data Generation
- System for Information Dissemination
- System for Knowledge Translation
- System for Action & Learning (Wisdom)

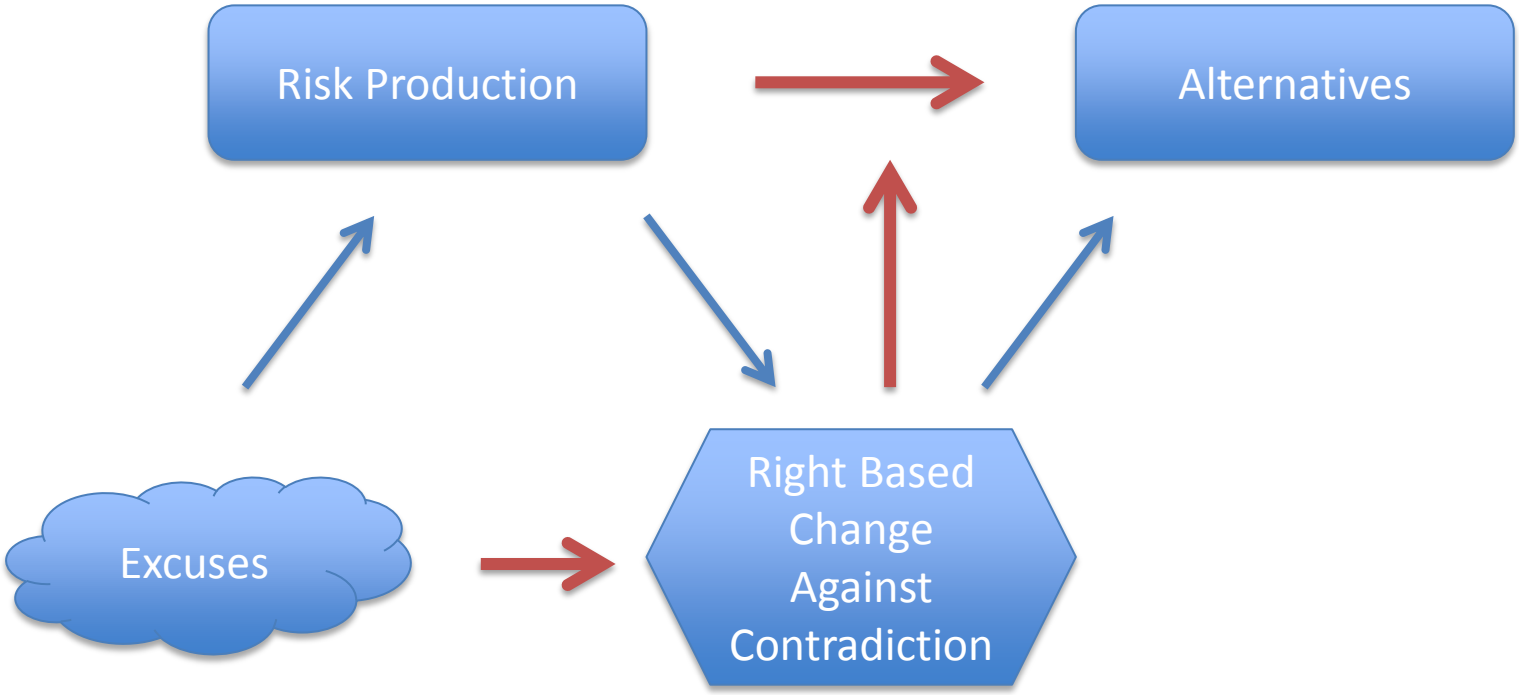
Risk-Cognition Process of Alternatives

- Cognition of Risks together with Alternatives
  - If no alternatives are deemed available, no risks are recognized.

- Alternatives are sought in sequence.

  -> the less difficult, the earlier
  - Technical: position of pro-asbestos side
  - Managerial
  - Cultural
  - Post-cultural: position of anti-asbestos side

Risk-Cognition Process of Alternatives



Narrative Structures of Risk System and Their Evolution Stages

Stage / Dimension		Chaotic	Technical	Managerial	Cultural	Post-Cultural
Why (Objective)		Self-Interest Based	Politics Based	Economy Based	Health Based	Human Right Based
Who (Key Role Players)		No (Every) Body	Government Employers	Professionals Unions	Victims NGOs	Every Body
What	Content	Self-care	Input Dominant	Process Dominant	Output Dominant	Input to Output
	Risk Handling	Innate Heuristics	Assessment	Management	Communicate	Continuous Cycle
How	Politics	None	National Legislation	Corporate Guideline	Court Cases	Open Mass Media
	Enforcement	Self-Discipline	Code Based	Labor Based	System Based	Precautionary Way
Problem Construct Level		None	Data	Information	Knowledge	Wisdom

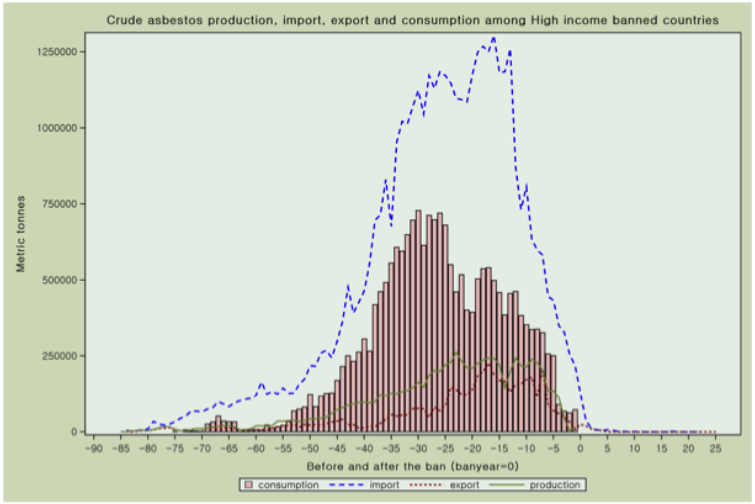
Alternatives from regional or global partners

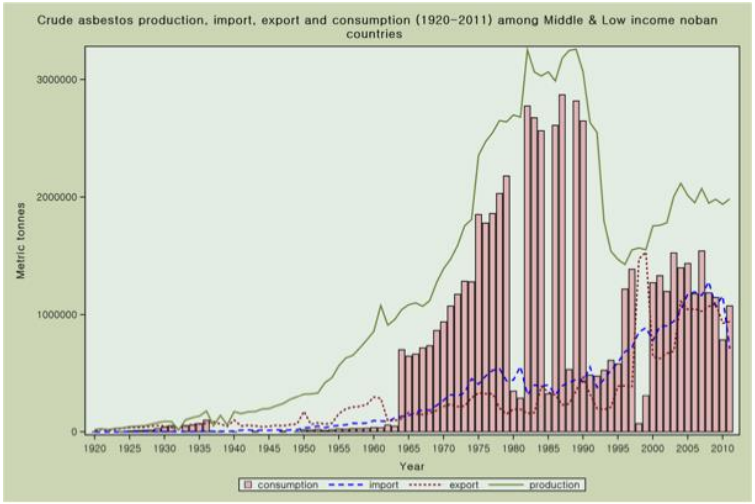
- Having alternatives in a proven and feasible format is sometimes the key to the solution.
- In this sense, asbestos ban in neighboring countries can be a good alternative to those countries searching for the control and solution of the asbestos problem.
- Asbestos Industry in the neighborhood

Asbestos consumption: 1962-2011
(unit: kg/capita).

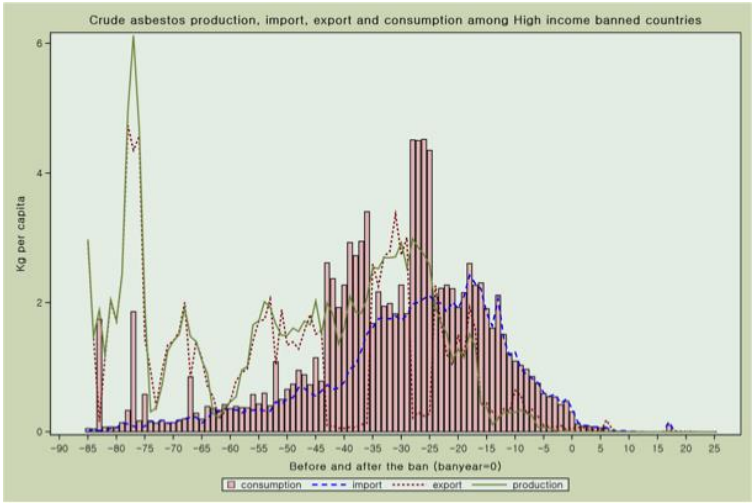
Country	1962-66	1967-71	1972-76	1977-81	1982-86	1987-91	1992-96	1997-01	2002-06	2007-11	Total
Hong Kong	0.17	0.19	0.42	1.59	0.32	0.09	0.02	-0.24	-3.06	-2.42	-2.93
Japan	8.21	12.55	14.34	11.97	10.31	12.15	9.02	5.24	0.58	-0.02	84.36
Korea, Rep.	1.08	5.13	10.57	8.72	9.59	9.79	9.62	3.44	1.42	-0.02	59.34
Singapore	15.53	7.48	14.28	10.15	2.22	2.05	-0.55	-4.09	-5.1	-5.09	36.88
Indonesia	0	0.02	0.19	0.64	0.86	0.62	1.07	0.94	1.29	2.09	7.72
Lao PDR	0.17	0	.	.	.	.	.	-0.02	.	.	0.15
Malaysia	2.38	5.46	7.11	10.77	7.15	7.05	5.77	4.5	2.48	1.48	54.15
Philippines	0.28	0.21	0.33	0.56	0.16	0.17	0.16	0.17	0.16	0.12	2.3
Thailand	1.47	3.41	4.88	6.27	5.79	12.13	13.7	9.39	12.6	6.41	76.03
Vietnam	.	.	.	.	.	.	.	0.94	3.08	3.24	7.27

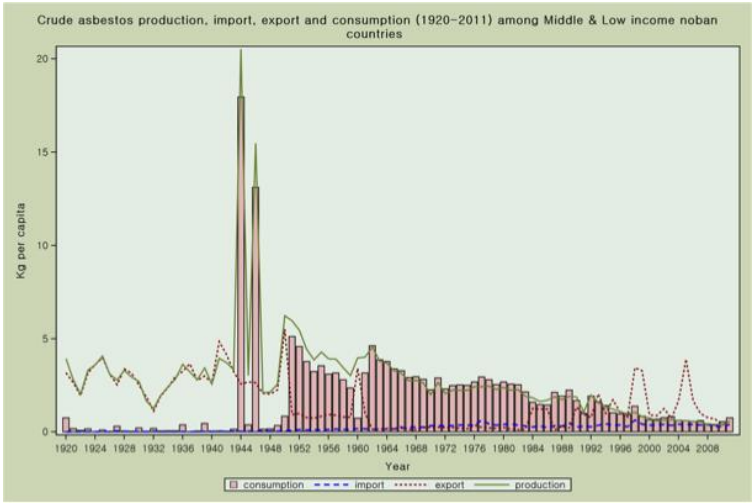
Raw Asbestos (metric ton)



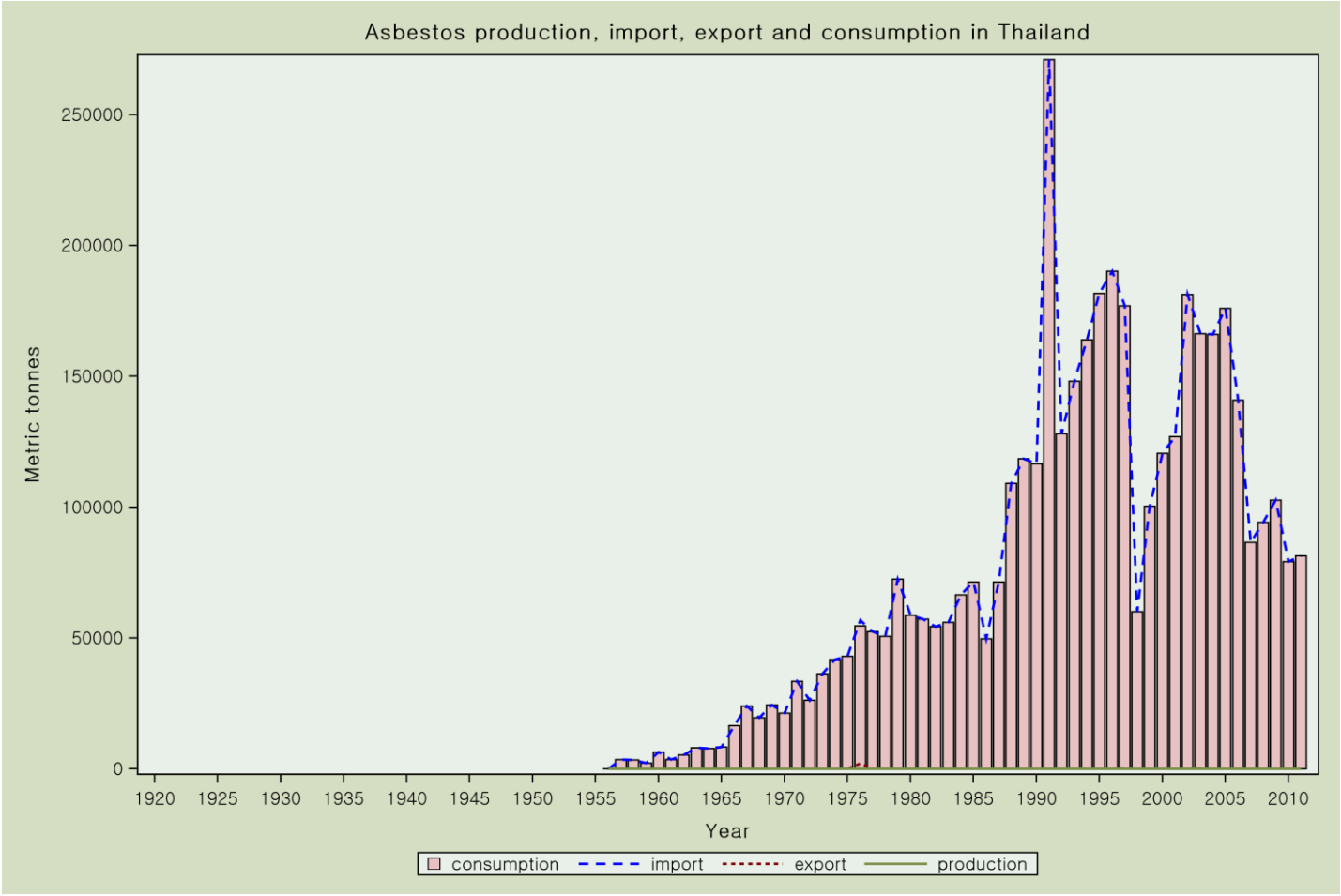


Raw Asbestos (Kg per capita)

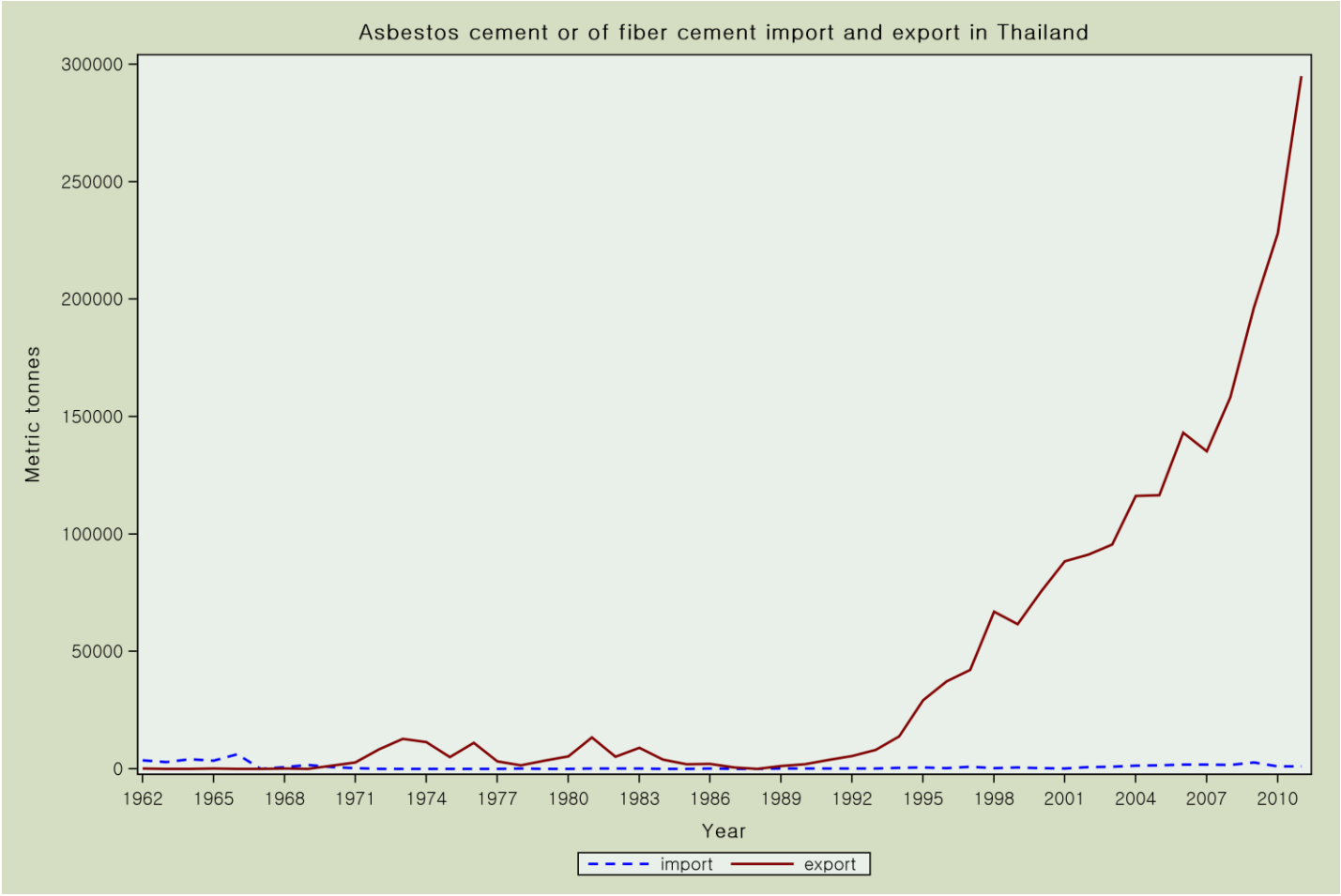




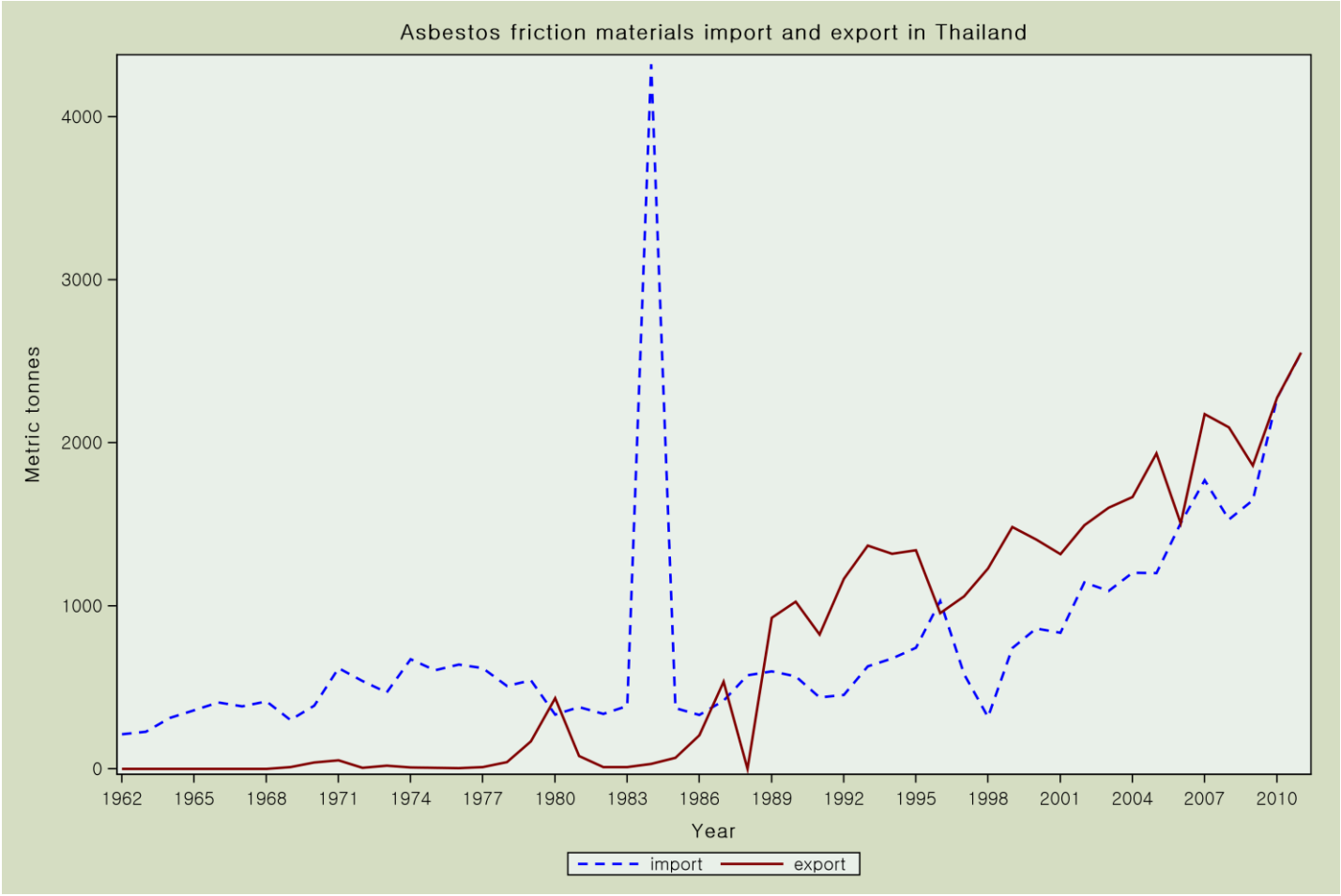
Raw Asbestos in Thailand



Asbestos Cement in Thailand



Asbestos Friction in Thailand



Non Friction in Thailand

Adopt the viewpoint of (potential) victims (and/or consumers), Not to be unspecific, But to be specific to the local (and/or regional) problems and feasible to the current system

References

Trades of Dangers: A Study of Asbestos Industry Transfer Cases in Asia. AJIM 2012

Why some, but not all, countries have banned asbestos. IJOEH 2013

A model for system change in occupational health and safety. (In preparation)

THANKS

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