

Seminar Amalan Industri Hijau:

Ke Arah Industri Hijau

28 October 2015

Greening Malaysian Industries Through Cleaner Production Strategic

by

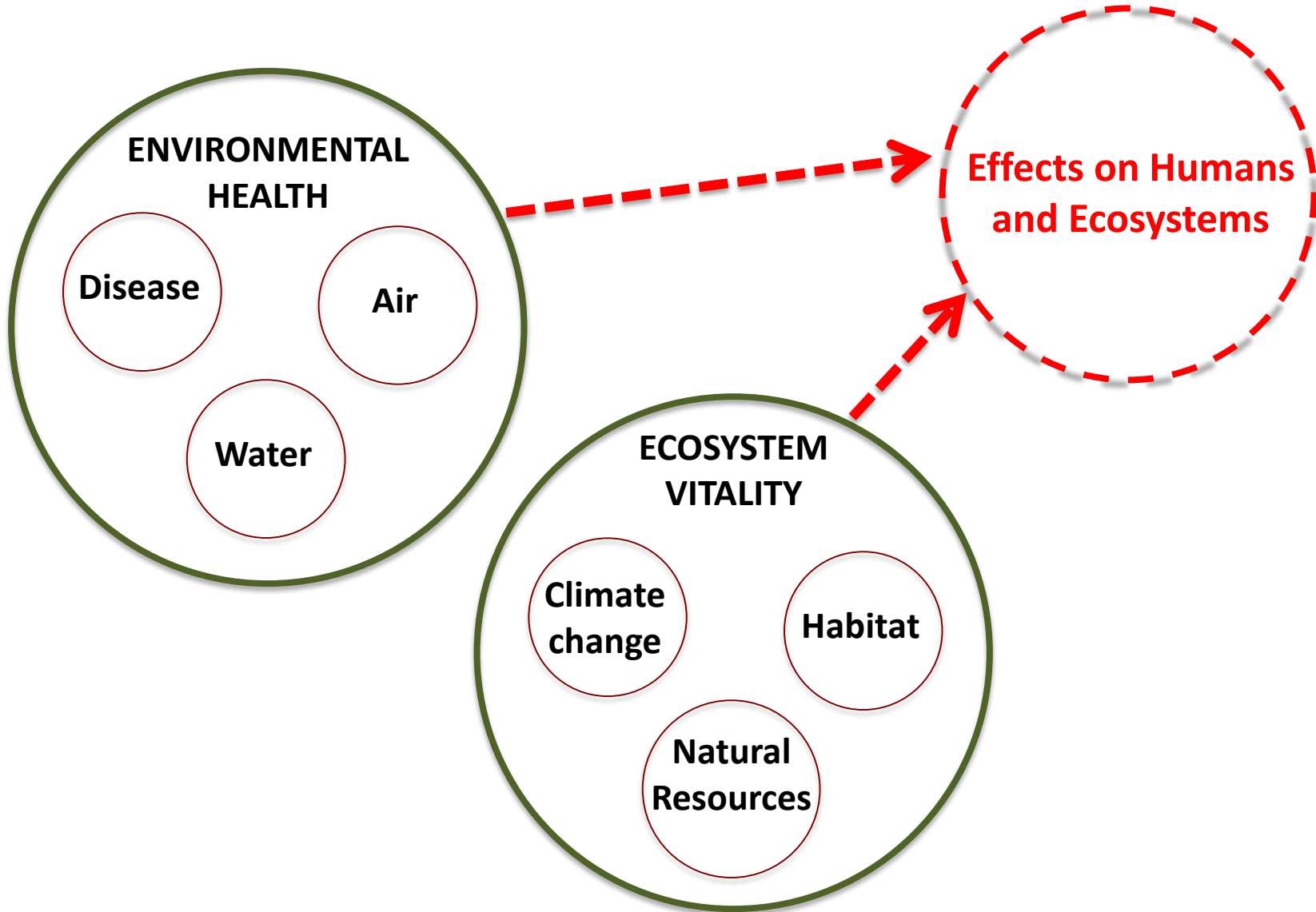
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Environmental Performance



Criteria used for the Environmental Performance Index

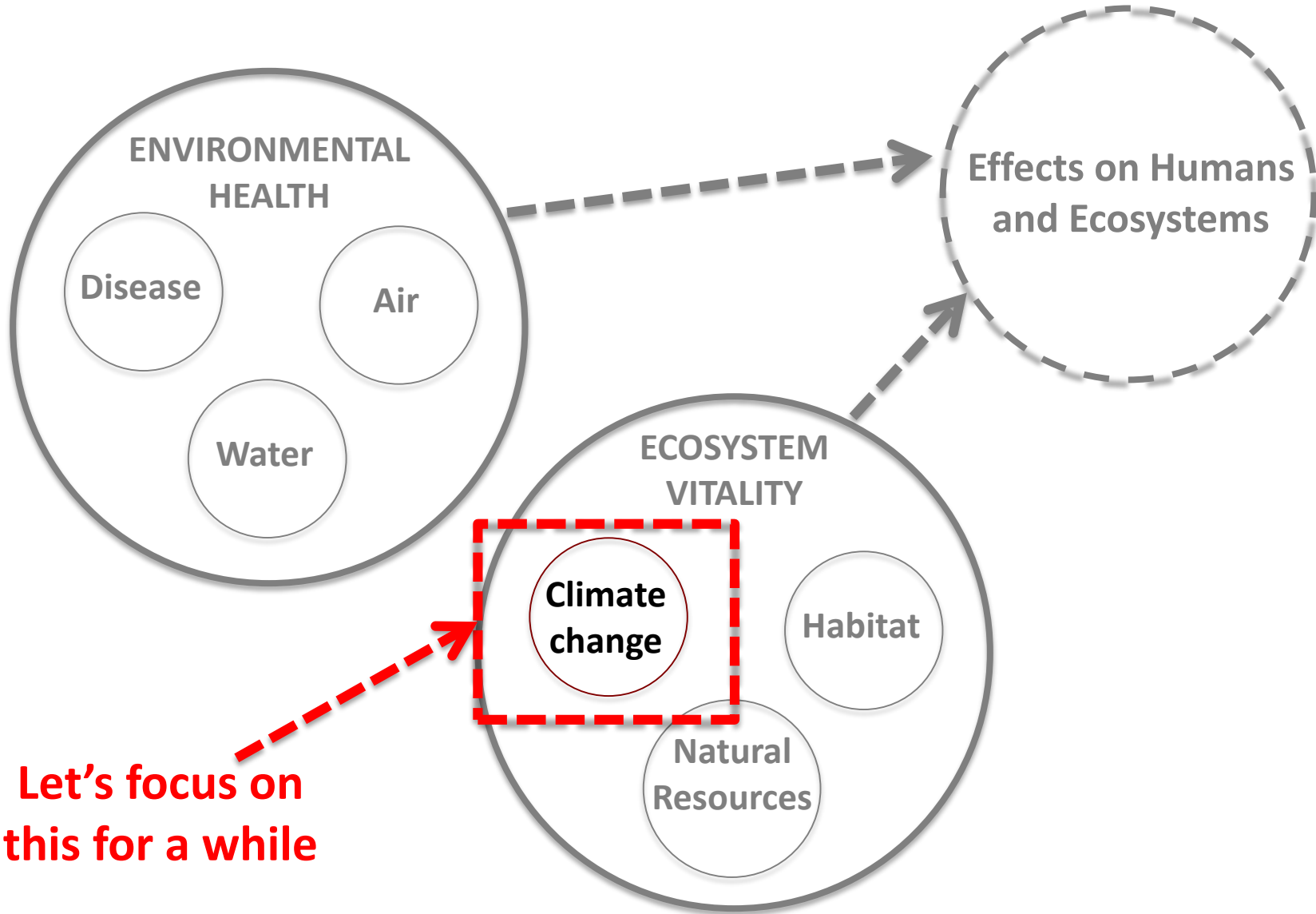
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|----------------------------|--|-------------------------------------|--|
| OBJECTIVE | ENVIRONMENTAL HEALTH | | |
| POLICY CATEGORIES | Environmental Burden of Disease | Water (effects on humans) | Air Pollution (effects on humans) |
| INDICATORS | 1. Environmental Burden of Disease | 2. Adequate Sanitation | 4. Indoor Air Pollution |
| | | 3. Drinking Water | 5. Urban Particulates |
| | | | 6. Local Ozone |
| OBJECTIVE | ECOSYSTEM VITALITY | | |
| POLICY CATEGORIES | Air Pollution (effects on ecosystems) | Water | Biodiversity and Habitat |
| INDICATORS | 7. Regional Ozone | 9. Water Quality Index | 11. Conservation Risk Index |
| | 8. Sulfur Dioxide Emissions | 10. Water Stress | 12. Effective Conservation |
| | | | 13. Critical Habitat Protection |
| | | | 14. Marine Protected Areas |
| POLICY CATEGORIES | Productive Natural Resources | Productive Natural Resources | Productive Natural Resources |
| POLICY SUB-CATEGORY | Forestry | Fisheries | Agriculture |
| INDICATORS | 15. Growing Stock | 16. Marine Trophic Index | 18. Irrigation Stress |
| | | 17. Trawling Intensity | 19. Agricultural Subsidies |
| | | | 20. Intensive Cropland |
| | | | 21. Burnt Land Area |
| | | | 22. Pesticide Regulation |
| POLICY CATEGORIES | Climate Change | | |
| INDICATORS | 23. Emissions per capita | | |
| | 24. Emissions per electricity generated | | |
| | 25. Industrial carbon intensity | | |

2012: Study by Yale University and Columbia University on Environmental Performance Index for Top 30 countries

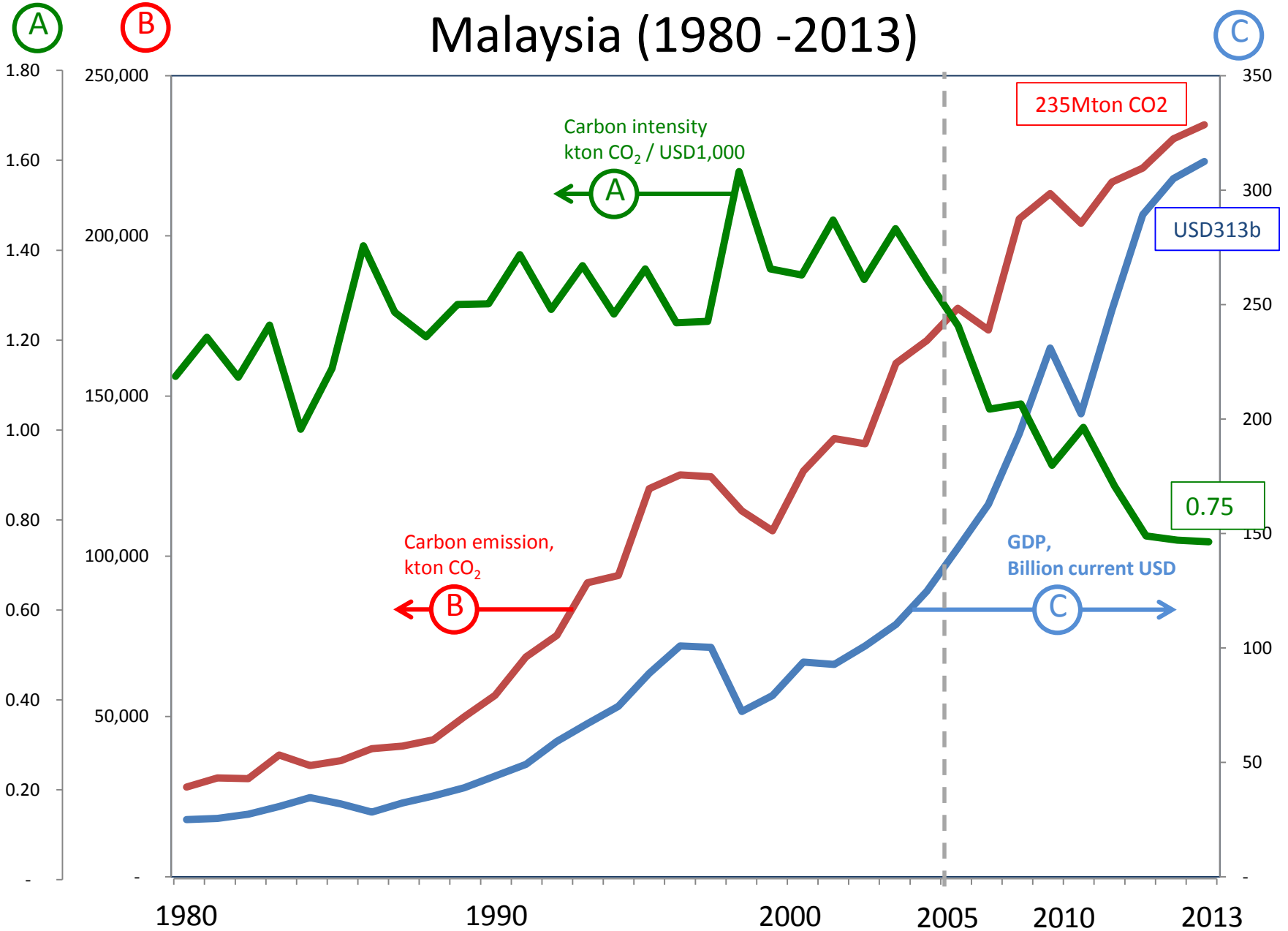
| | | | | | | | | | | | |
|-----|---|----------------|-------|-----|---|----------------|-------|-----|---|----------|-------|
| 1. |  | Switzerland | 76.69 | 11. |  | Germany | 66.91 | 21. |  | Denmark | 63.61 |
| 2. |  | Latvia | 70.37 | 12. |  | Slovakia | 66.62 | 22. |  | Poland | 63.47 |
| 3. |  | Norway | 69.92 | 13. |  | Iceland | 66.28 | 23. |  | Japan | 63.36 |
| 4. |  | Luxembourg | 69.2 | 14. |  | New Zealand | 66.05 | 24. |  | Belgium | 63.02 |
| 5. |  | Costa Rica | 69.03 | 15. |  | Albania | 65.85 | 25. |  | Malaysia | 62.51 |
| 6. |  | France | 69 | 16. |  | Netherlands | 65.65 | 26. |  | Brunei | 62.49 |
| 7. |  | Austria | 68.92 | 17. |  | Lithuania | 65.5 | 27. |  | Colombia | 62.33 |
| 8. |  | Italy | 68.9 | 18. |  | Czech Republic | 64.7 | 28. |  | Slovenia | 62.25 |
| 9. |  | United Kingdom | 68.82 | 19. |  | Finland | 64.44 | 29. |  | Taiwan | 62.23 |
| 10. |  | Sweden | 68.82 | 20. |  | Croatia | 64.16 | 30. |  | Brazil | 60.9 |

2014 Malaysia is NOT on the list!

Environmental Performance



Carbon emission, carbon intensity and GDP for Malaysia (1980 -2013)



Questions to ask ourselves...

How does environmental performance affect economy and business sustainability?

**World
Trends**

**What's
happening
Locally?**

**What the
future
holds?**

What we know NOW

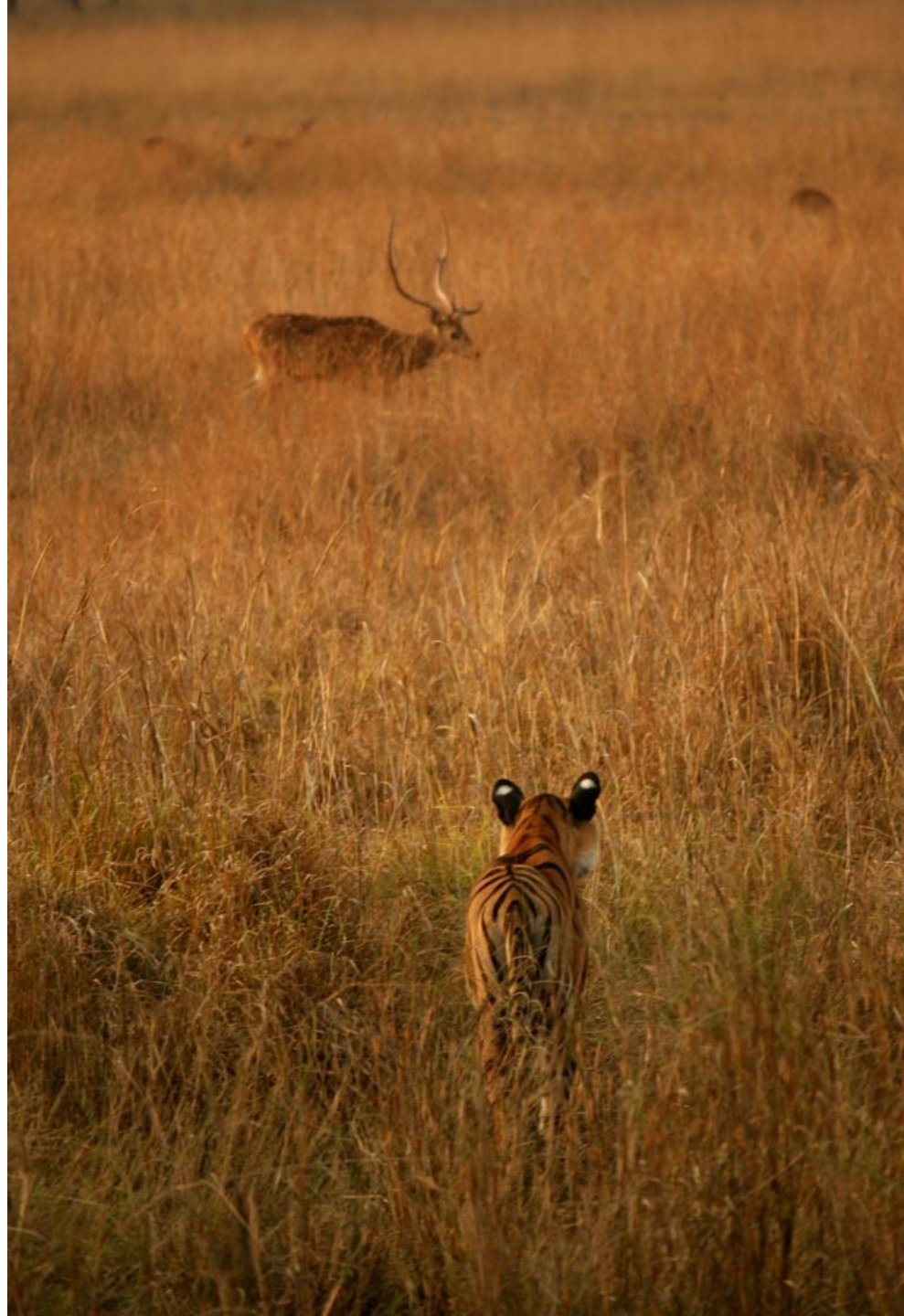
Possible Threat

- Market penetration
- Competitiveness
- Regulations
- Incentives



Are we doomed?

- No!
- Why?
- How?
- Let's see...



Strategies available

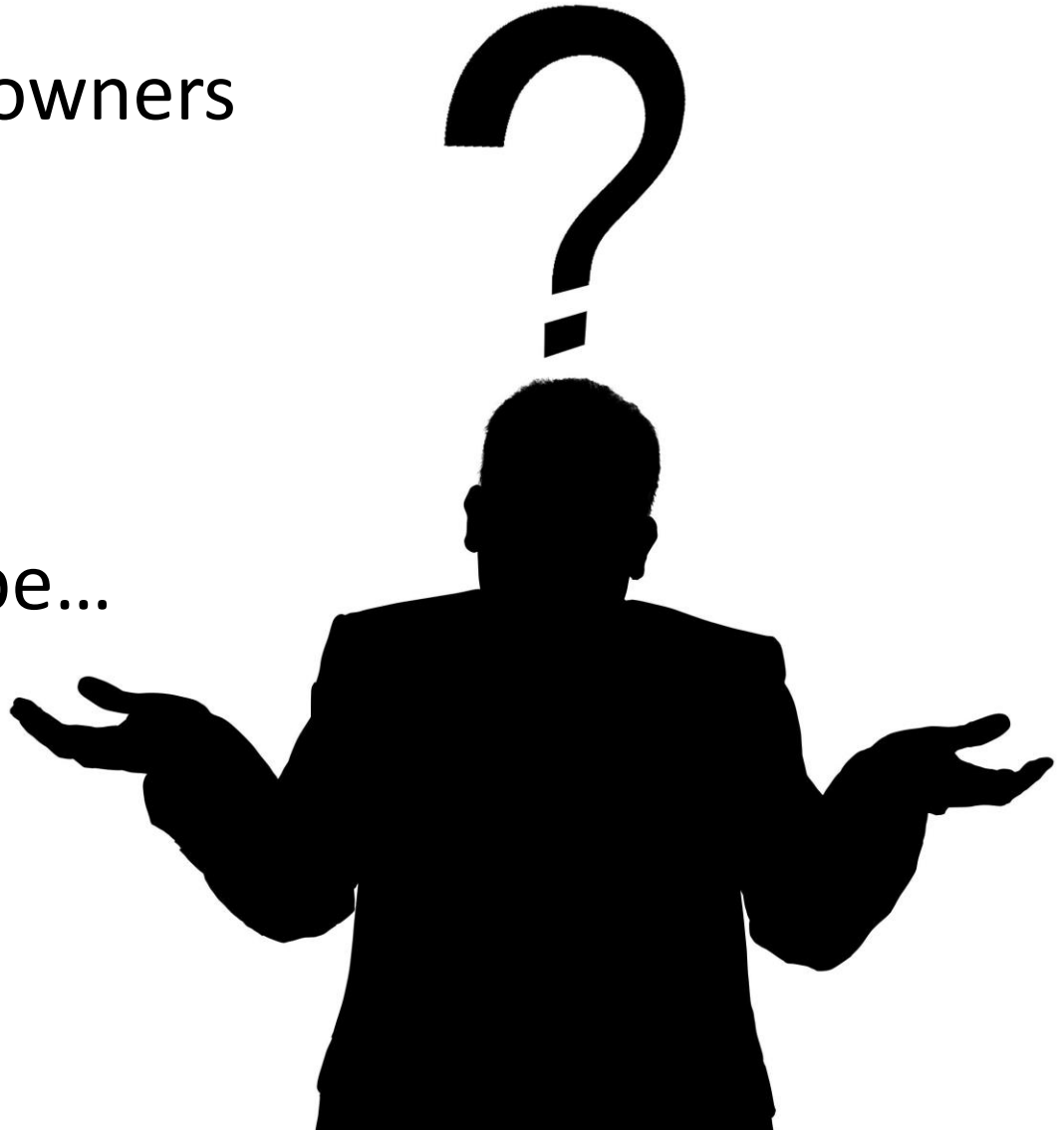
- Cleaner Production
- Green Technology
- Industrial Ecology
- ISO14000
- Recycling
- Green Policies
- Pollution Reduction
- **COMPLIANCE**



What is CP for...

- Plant/Business owners
- Individuals
- Policy makers

The answer may be...



CP is...

- Continuous
- Reduce pollution
- Reduce waste
- Reduce waste
- Reduce resources
- Reduce energy consumption

CP benefits...

- Cost reduction
- Increase productivity
- CF reduction
- Reduce GW effects
- Economic advantage???



Case studies: Sharing experience



Canned juice manufacturing

- Issues in BOD and COD – heavy load to WWT due to sugar contents
- Simple options



Aluminium parts

- Leakage in compressed air flow system
- Reducing 4 compressor to 2 compressor



Palm oil refinery

- Implementation of “integrated CP”



Food additive manufacturing

- 2-in-1 unit operations
- Incorporate and invest in green technology



Juice manufacturing (glass bottle)

- Reduction in raw material storage
- Reduction in “shelf life”

Bihun manufacturing

- The importance of “n”
- Optimization of material flow rate





Chicken manufacturing

- **Benchmarking concept**
- **The importance of processing time**
- **Effect of “compounding”**

The background of the slide is a close-up photograph of numerous small, dark-colored plastic resin granules. These granules are scattered across the frame, with some in sharp focus in the foreground and others blurred in the background, creating a sense of depth. The granules appear to be uniform in size and shape, typical of raw plastic resin used in manufacturing.

Resin manufacturing from recycled plastics

- Dirty ≠ Polluting

Batik making

- Batik Kelantan = green batik!



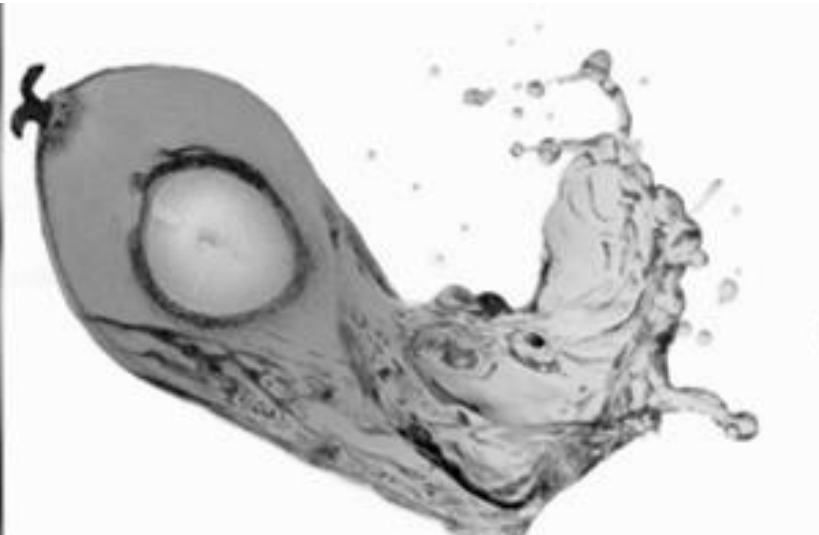


Kue tiaw and laksam

- Automation and modernization of traditional steps = green activities

Palm oil refinery

- Simple options to reduce high electricity consumption
- Elimination of raw material and product heating



Palm Oil Mill

- *zero-discharge*





Steel fabrication

- Require basic knowledge and continuous improvement

Formaldehyde manufacturing

- Optimization of temperature, flow rate and processing time



感修区

Plywood processing

- *Get it right the first time*



A large stainless steel pot is shown from a high-angle perspective, filled with a dark, thick chili paste. The paste has a chunky texture with visible pieces of chili peppers and seeds. The pot is sitting on a burner, and the background is dark and out of focus. A semi-transparent grey horizontal bar is overlaid across the middle of the image, containing text.

Chilli paste manufacturing

- FIFO concept

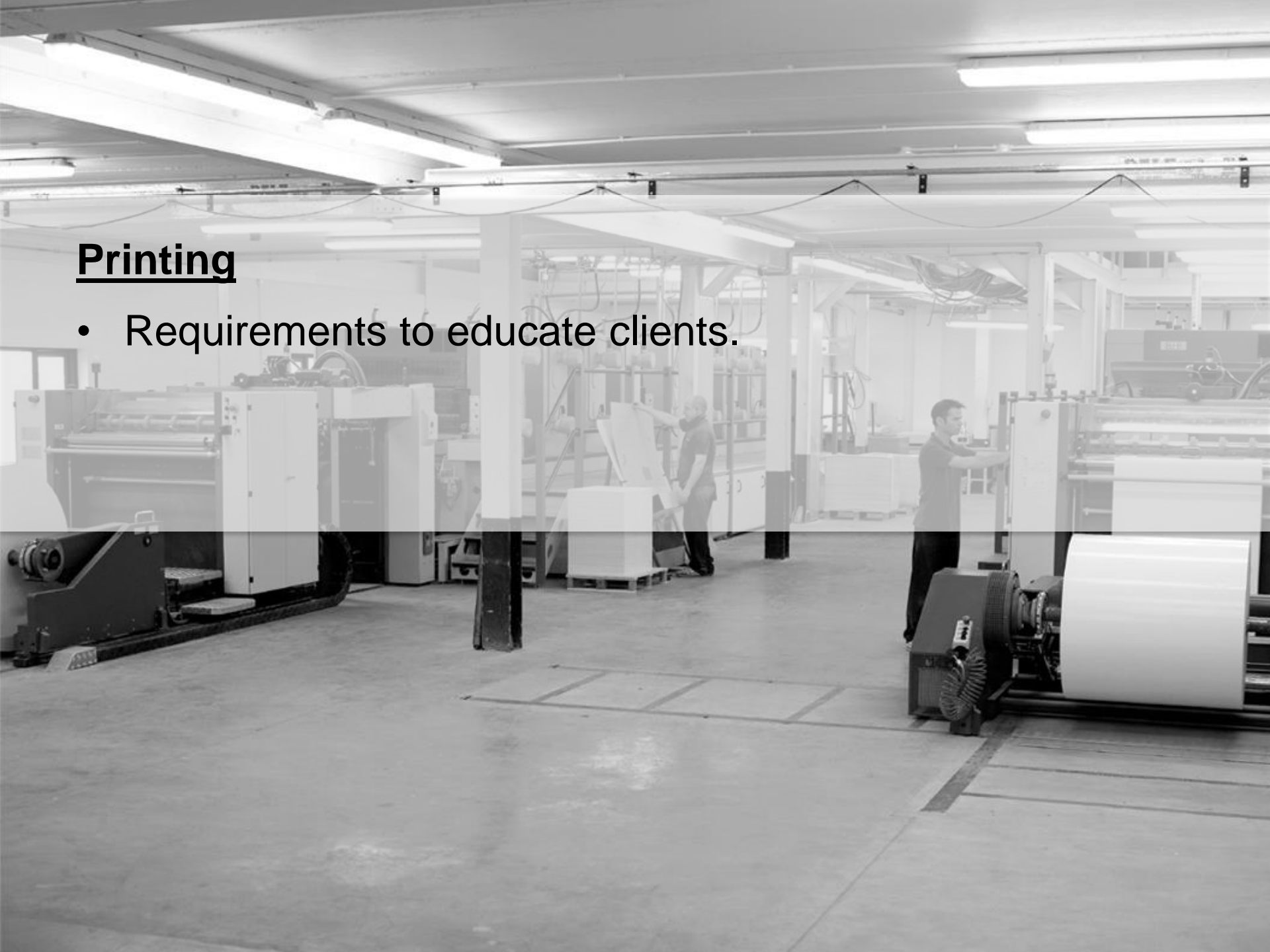


Kaya manufacturing

- *Thinking outside the box*

Printing

- Requirements to educate clients.



Conclusion

- Understand the need (different motivation for different individual)
- Open up to possibilities – it does not always mean cost will go up
- Take up cleaner production