

RPS

Human Health Risk Assessment and Brownfield Redevelopment



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Introduction



- Contaminated Land Vs Land Contamination - the UK Approach
- Contaminated Land in Ireland
- Is the Grass really Greener?
- Lessons to be Learned?
- Human Health Risk Assessment: Things to consider



Contaminated Land Vs Land Contamination: The UK Approach

- Contaminated Land Regime (Part IIA)
 - Definition of “Contaminated Land”

“any land which appears to the local authority in whose area it is situated to be in such a condition, by reason of substances in, or under the land that –

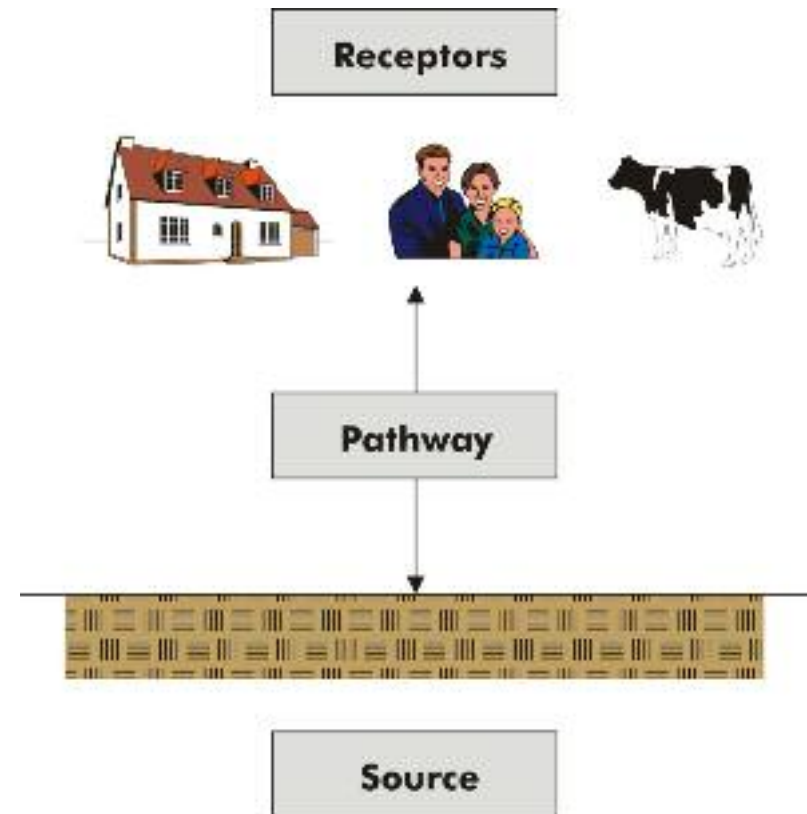
“a) significant harm is being caused or there is a significant possibility of such harm being caused; or

“b) pollution of controlled waters is being, or is likely to be caused;...”
 - Provides framework for identification, remediation and apportionment of liability with respect to “Contaminated Land”
 - Contaminated Land Regulations
 - Statutory Guidance
 - Non statutory Technical Guidance



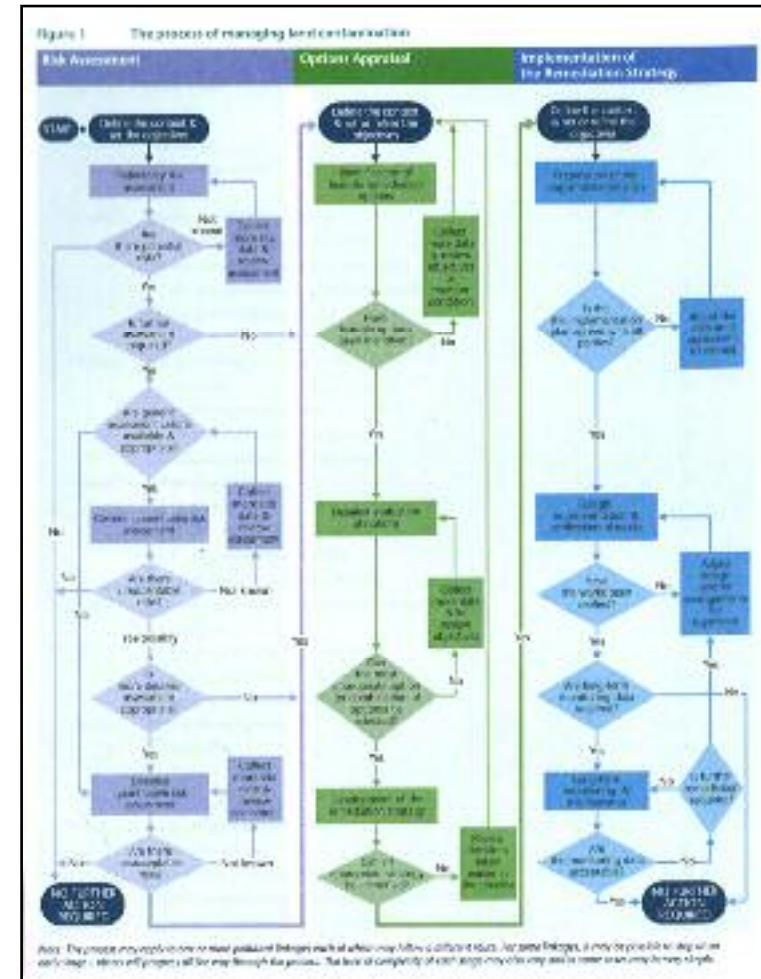
Contaminated Land Vs Land Contamination: The UK Approach

- Planning Regime
 - “Land Contamination”
- Suitable for Use Approach
 - Unacceptable risks/absence of
 - Current [and future] land use
 - Source-pathway-receptor
- Remediation
 - Assessment/works/monitoring
 - Break linkage



Management of Land Affected by Contamination

- Model Procedures (CLR11)
- Three Phase Approach
 - Risk Assessment
 - Options Appraisal
 - Remediation Design and Implementation
- Tiered Risk Assessment
 - Preliminary
 - Generic Quantitative
 - Detailed Quantitative
- All receptors



Human Health Risk Assessment

Risk Assessment “The formal process of identifying, assessing and evaluating the health [and environmental] risks that may be associated with a hazard”

Hazard “A property or situation that in particular circumstances could lead to harm [or pollution]”

Toxicological Assessment

&

Exposure Assessment

The amount of contaminant that can be taken into the human body without causing noticeable health effects

(Health Criteria Value)

VS

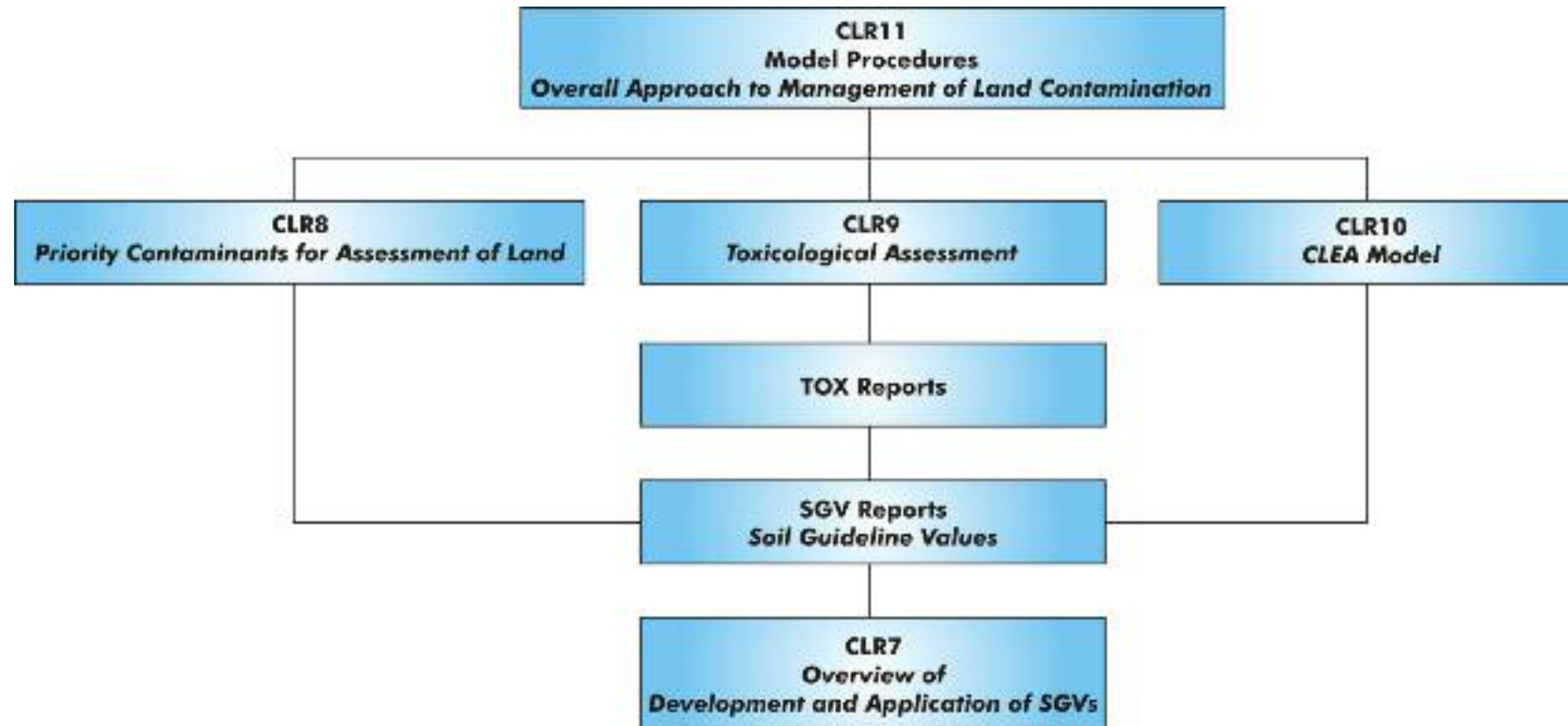
Amount of contaminant that a human can take into their body in a particular situation

(Exposure Concentration)

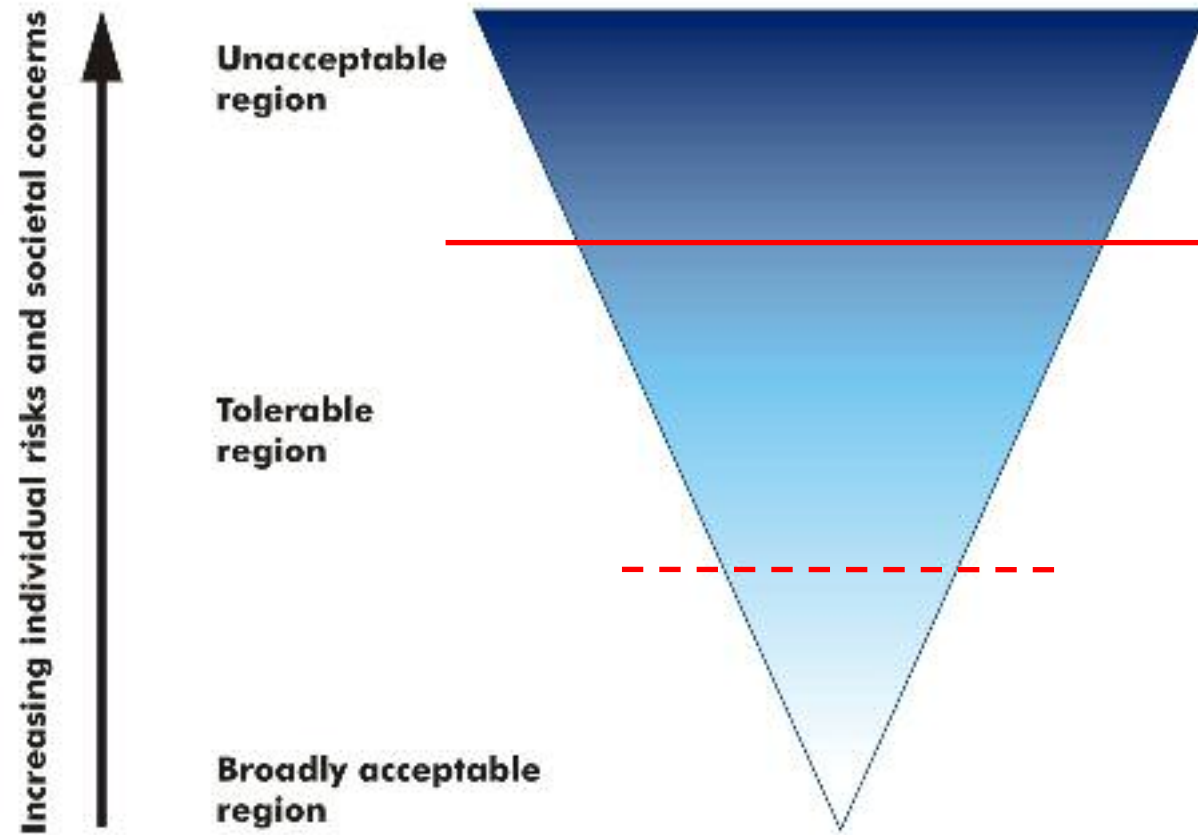


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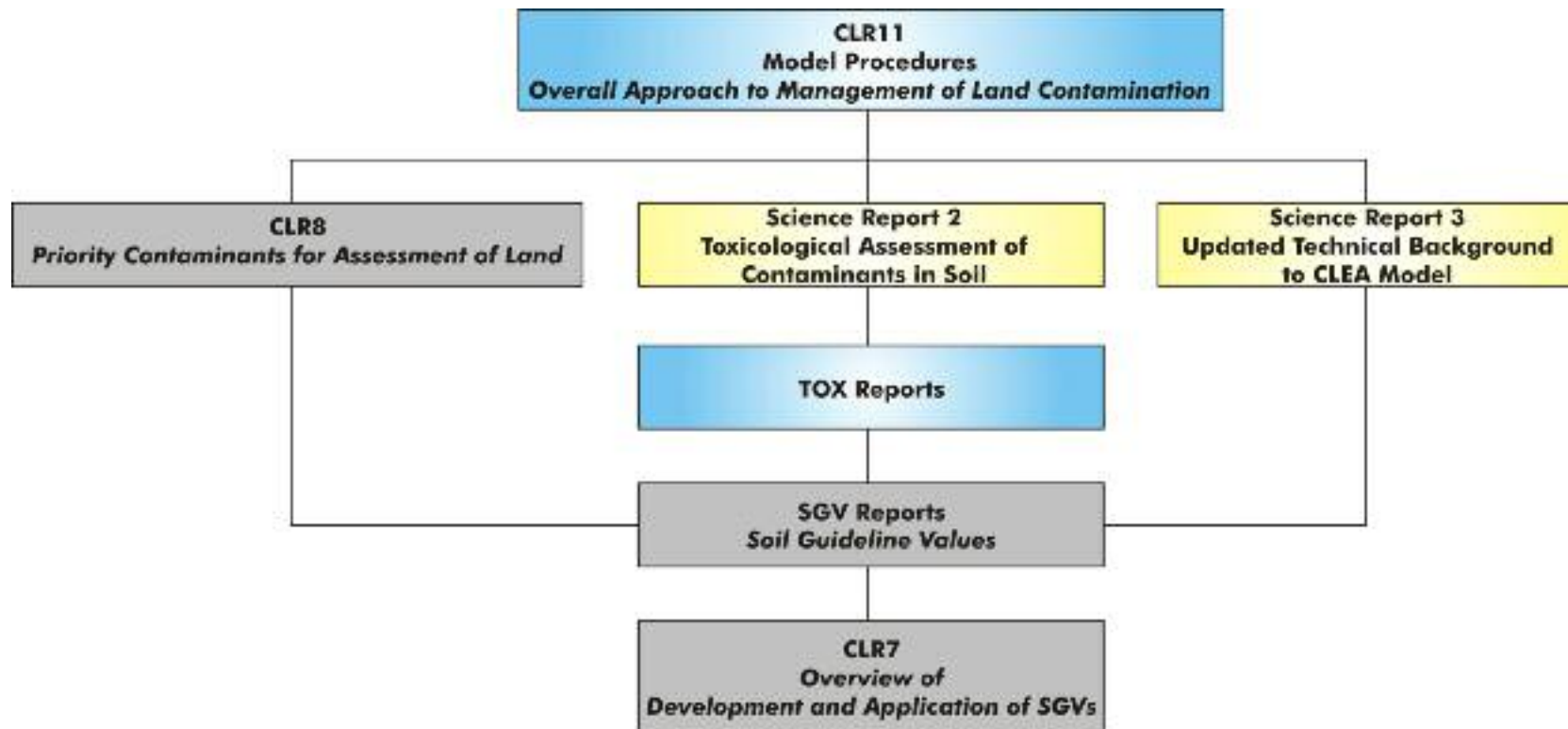
Technical Guidance



SGVs



The Way Forward?



Contaminated Land in Ireland

- Limited large scale historical industrial development
- No specific regime to deal with contaminated land
 - No statutory definition of “Contaminated Land”
- Soil and/or groundwater pollution
 - Historic /Illegal Waste Disposal
 - Agriculture
 - Industry
- Pollution Issues addressed in various legislation
 - Contaminated soils not specifically addressed
 - Reliance on UK guidance

Risk Assessment in Ireland

- Principles of risk assessment are recognised
 - Source pathway receptor
 - Conceptual model
- Code of Practice for Unregulated Waste Disposal Sites
- Environmental Liability Directive
- No formalised approach to human health risk assessment
- Risk assessment = Use of Generic Assessment Criteria
 - SGVs/Dutch
 - IGV
- Risk Assessment likely to have important role in the future

Is the Grass Greener?

- **UK**
- Defined Regulatory Regime & Risk Assessment Framework
- Tiered assessment
- Comprehensive Technical Guidance
- Constrained by statutory guidance
- SGVs
- Risk assessment as tool in mitigating risks

- **Ireland**
- “Contaminated Land” = Land Contamination
- Limited technical guidance for [HH]RA
- Freedom to select risk assessment tool
- Waste vs contaminated land
- Generic Quantitative Assessment
- Remediation = source removal

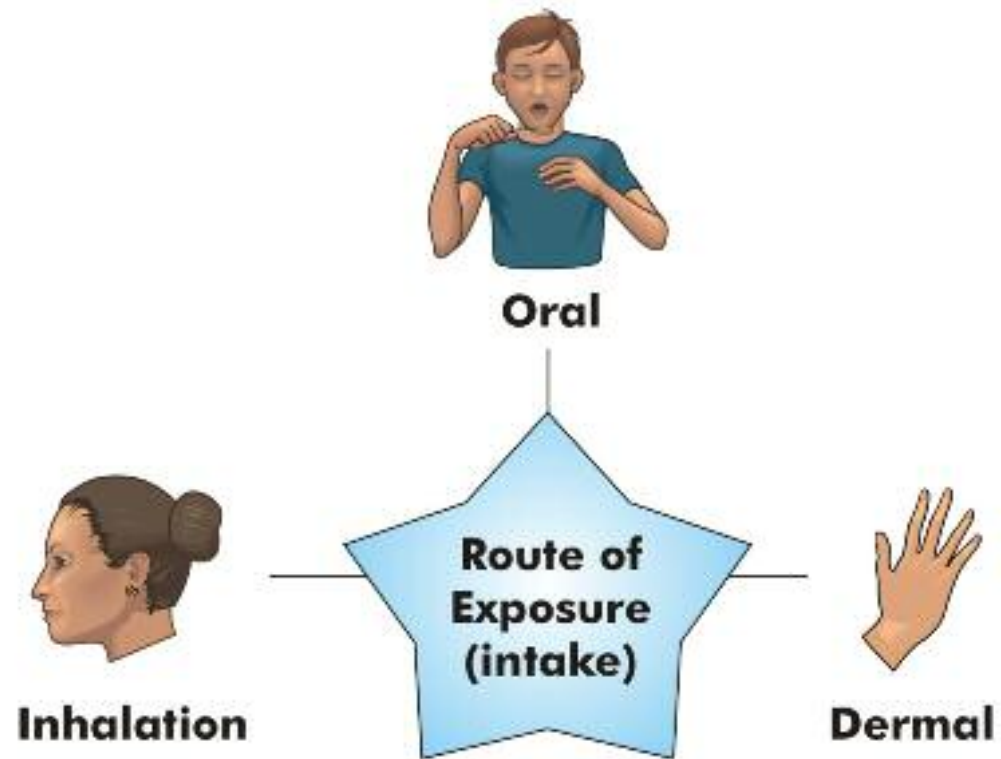
Lessons to be Learned?

Need to know:

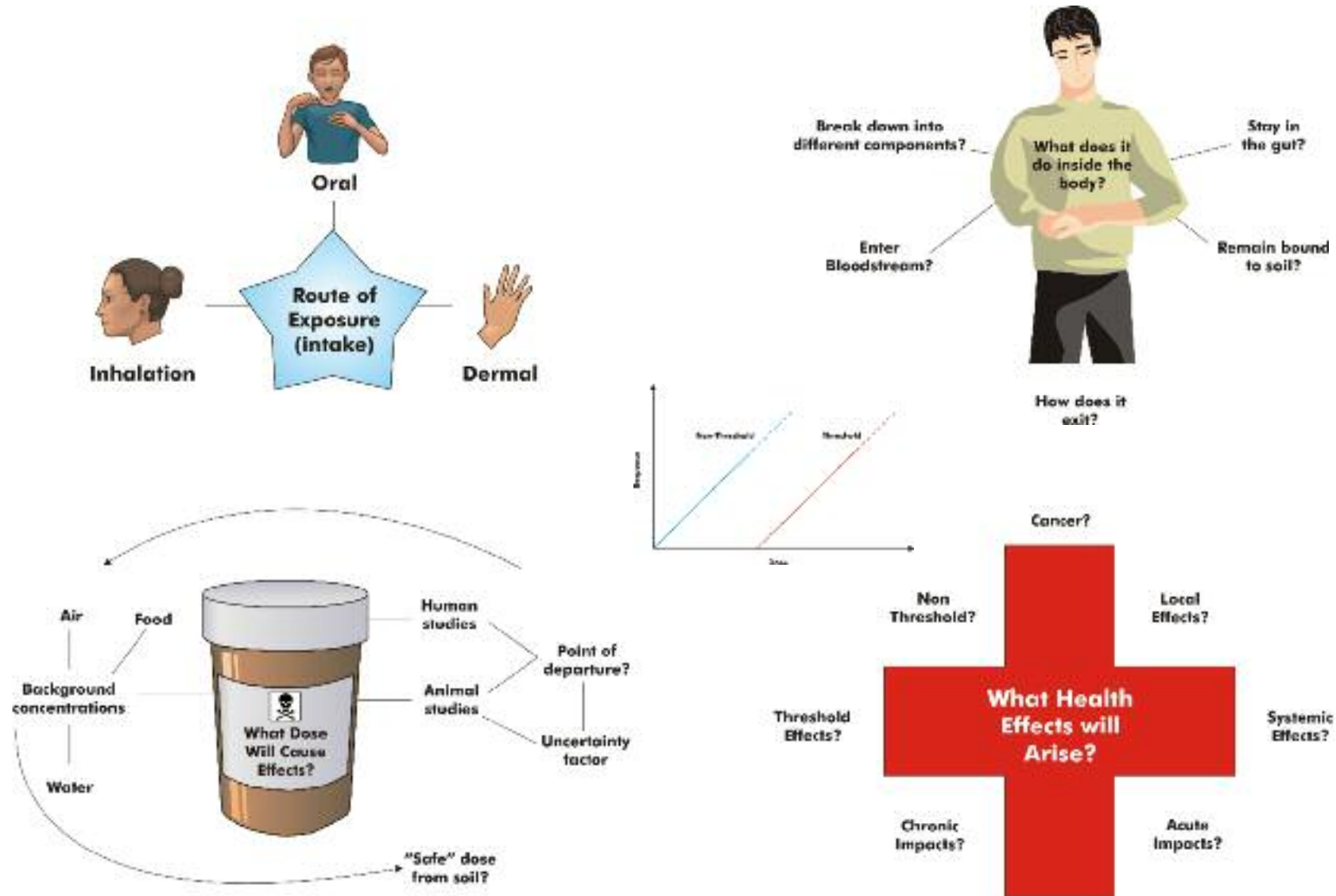
- **Why?**
 - For what reasons?
 - **How?**
 - In what way?
- **Regulatory Context**
 - **Conceptual Model**
 - **Risk Assessment Tool**



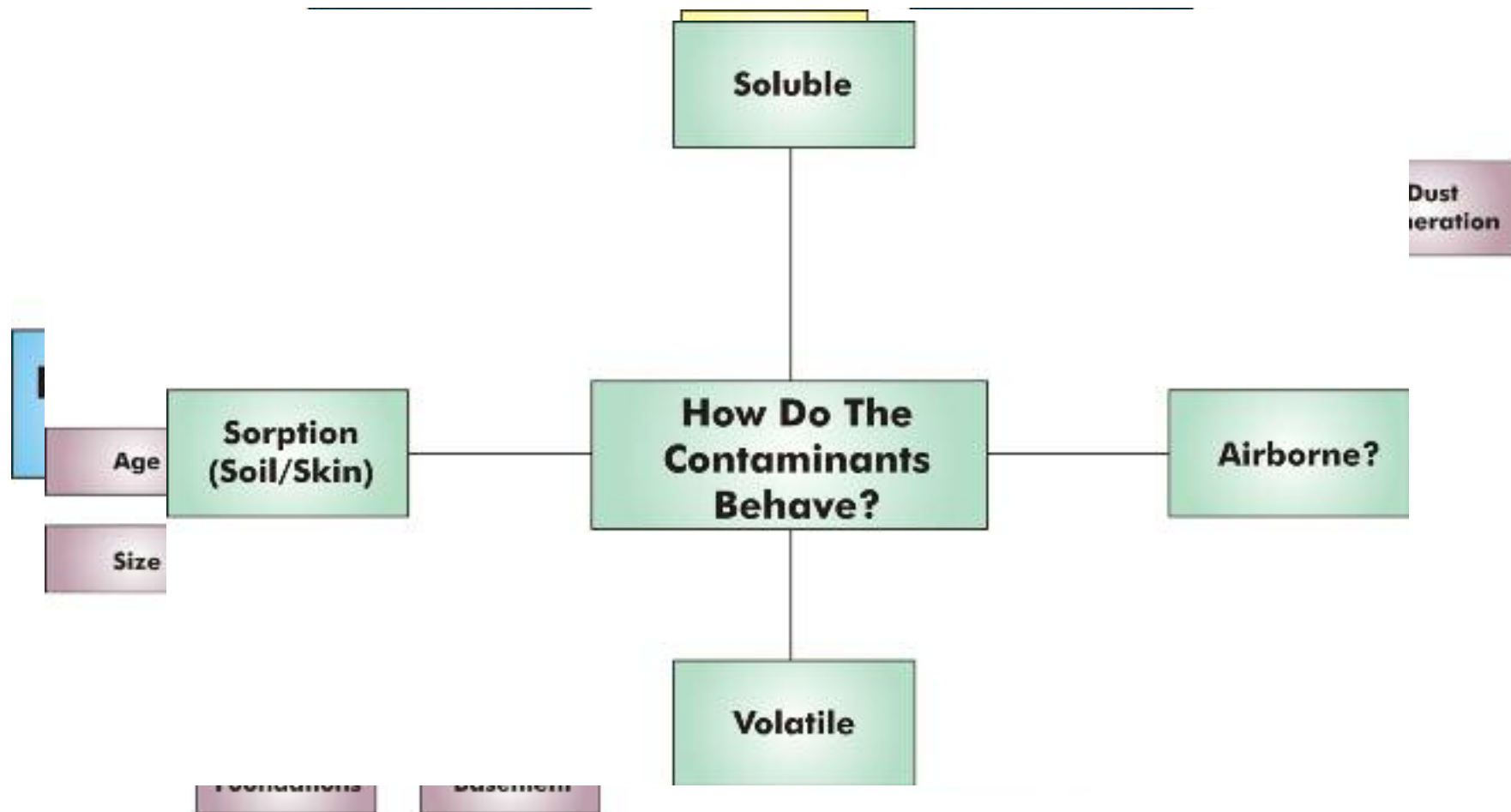
Toxicological Assessment



Toxicological Assessment



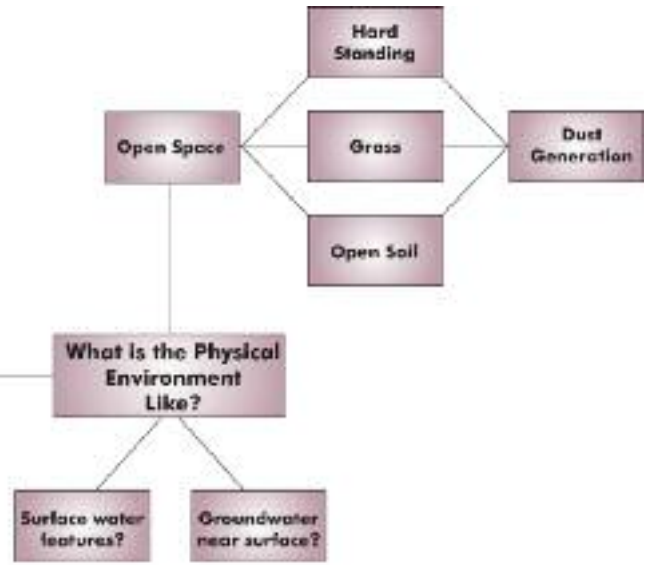
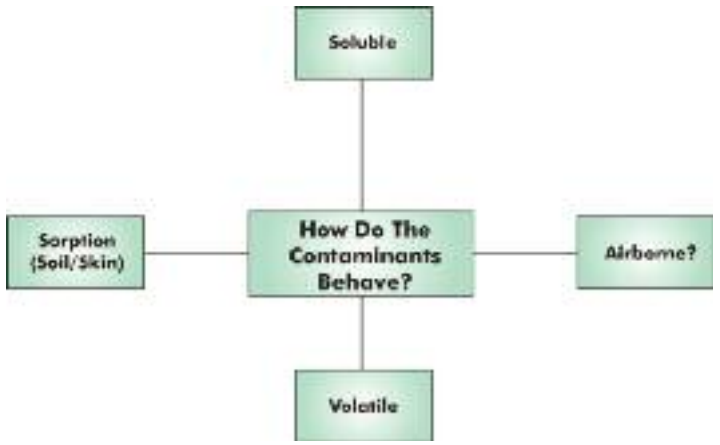
Exposure Assessment



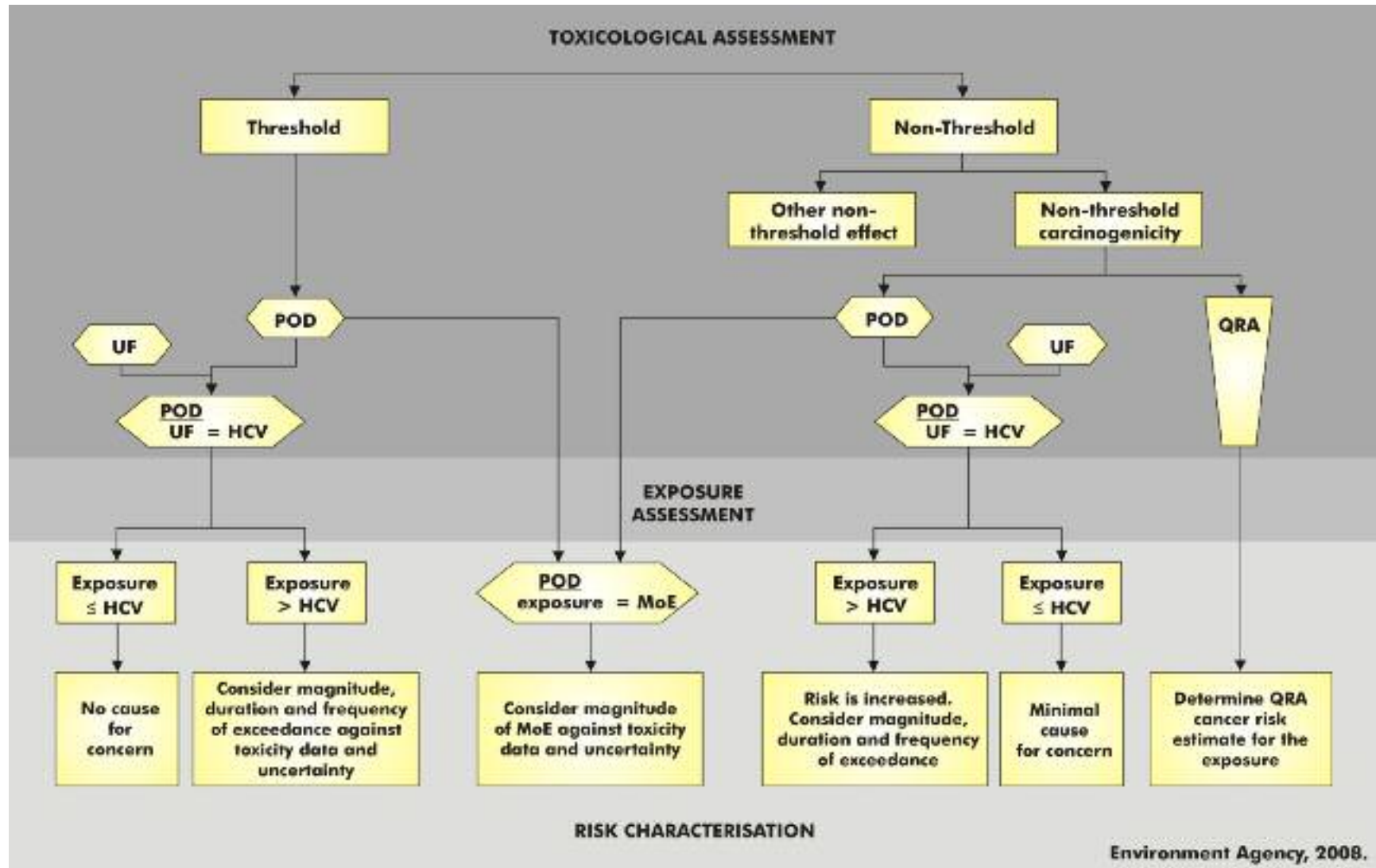
Exposure Assessment



Exposure



To sum up....



Conclusions

- UK vs Ireland
 - Same but different
- Contaminated land vs land contamination vs waste
- Human health risk assessment
 - More than just a number
- Conceptual site model =
- Appropriate and robust assessment =
- Proportionate and Effective Mitigation =



Any Questions?

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