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# Regulatory Best Practices Compliance Monitoring

## A Presentation for Environmental Ministries & Regulators

Simon Bingham

Recorded for the OECD on Zoom - 30<sup>th</sup> April 2024

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## Introduction to the Presenter – Simon Bingham



### **Regulatory Experience – 30+ years**

Permitter, Inspector, Specialist & Manager

Developer of regulatory systems (e.g. Risk & Inspection Frequency)

### **International Experience – 19+ years**

Capacity Building & Management Consultancy

15+ country & organizational reviews

Worked on 4 continents on regulatory & environmental topics

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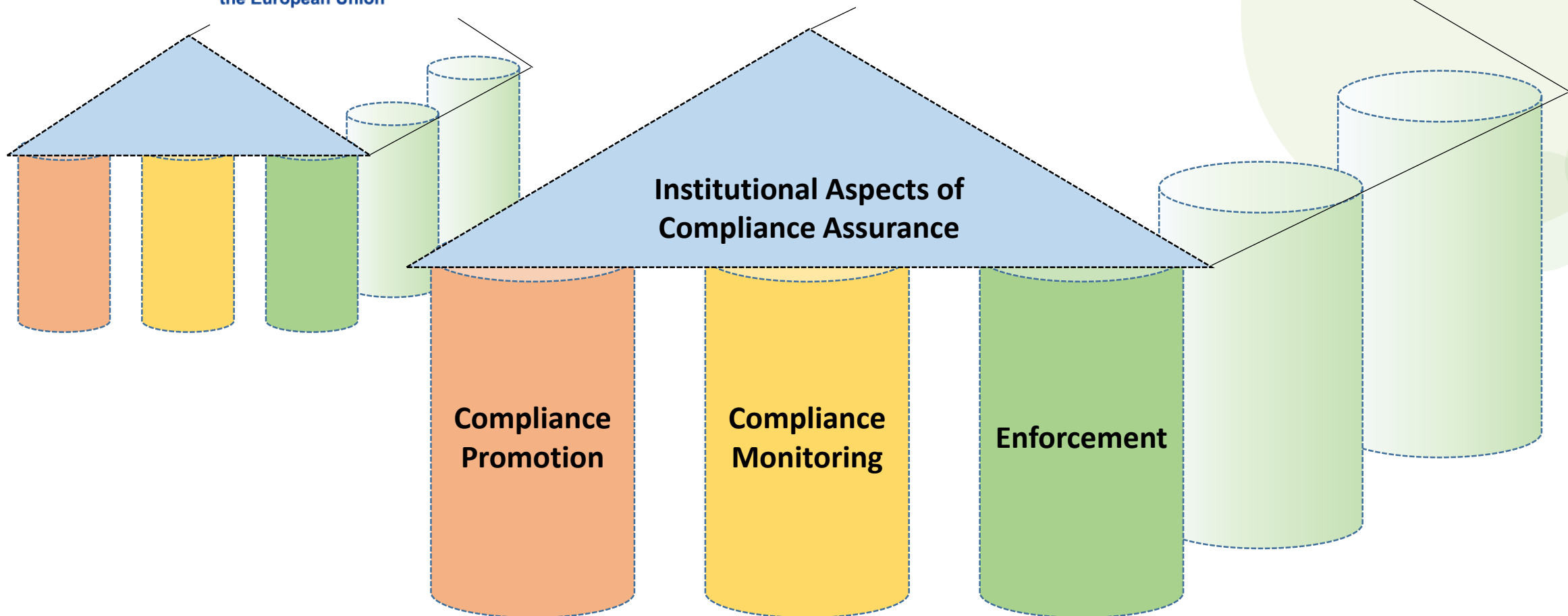




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Resource.

## OECD Recommendation of the Council on Environmental Compliance Assurance

OECD/LEGAL/0494 – Published 2023

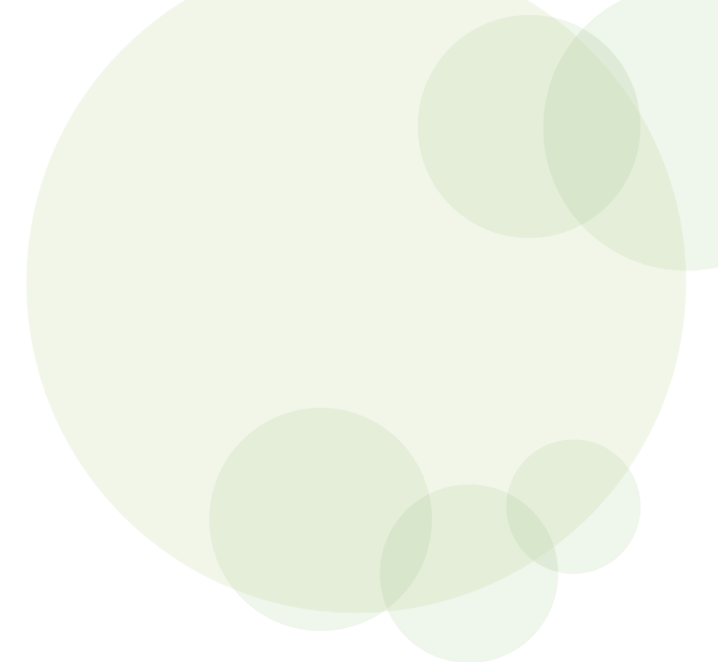


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## Topics Covered

- Compliance Monitoring
  1. Planning (Prioritisation)
  2. Execution
  3. Assessment

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# Topic 1.

## Compliance Monitoring - Planning

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# The reality of being a regulator

“stretched, like butter over too much bread” - J.R.R. Tolkien





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# Resource Use Principles

**Effectively** – achieves the desired outcome

**Efficiently** – achieve maximum output with minimum effort

**Economically** – cost effectiveness

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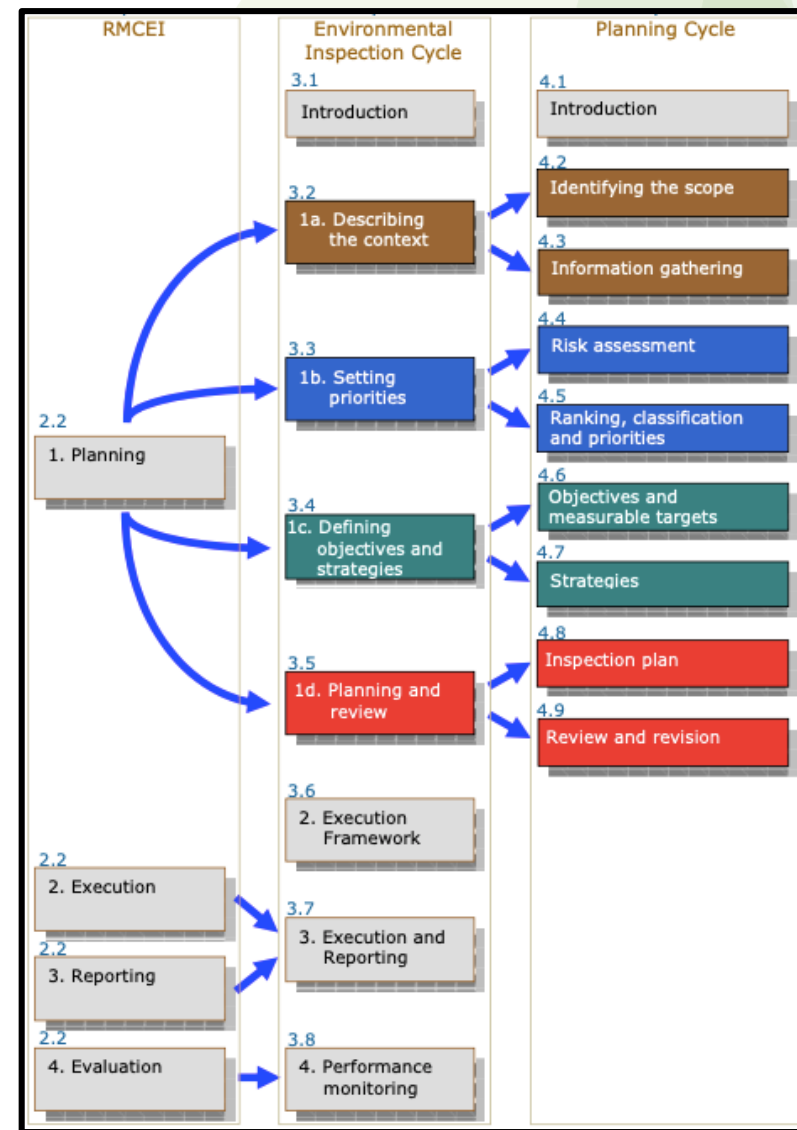
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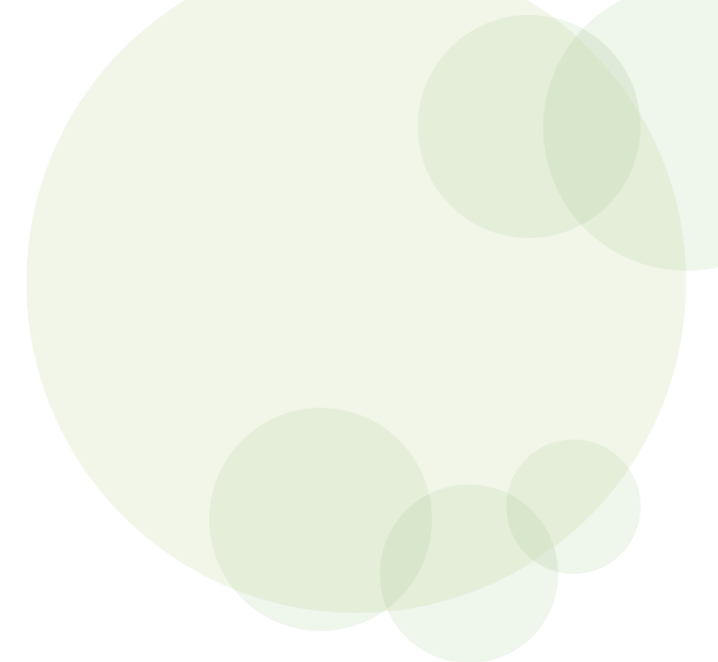
## Resource

### 'Doing The Right Things' Methodology IMPEL ([www.impel.eu](http://www.impel.eu))

- Detailed, step-wise methodology
- Highlights the importance of planning



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# Prioritisation Considerations

- What are you trying to achieve?

“Pick important problems and fix them” - Malcolm Sparrow

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# Setting the baseline ('the what')

- Legal Mandate
- Strategic Objectives
- Identifying areas, activities & operators
- Compiling register of sites and operators

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# Targeted Freeloader Campaigns

- Legislative change
- High sectoral/ activity non-compliance
- Based on intelligence
- As frequently as necessary



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# Understanding what you can do

- Resource Constraints
- Technical Capacity
- Different Methodologies

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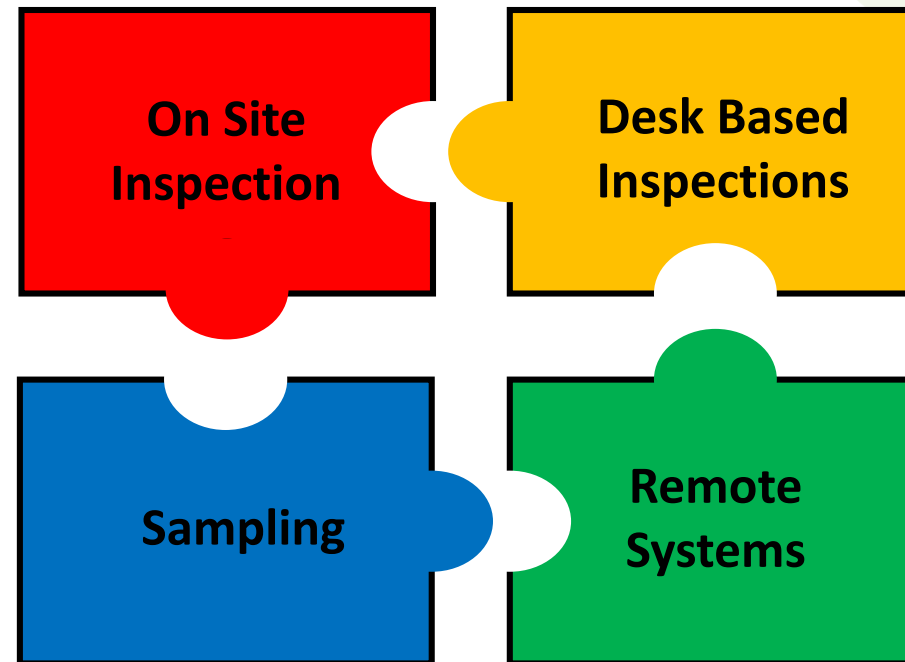
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# It is not all about site inspections!

- Industrial Emissions Directive
- SEVESO III Directive
- Waste Shipment Regulations

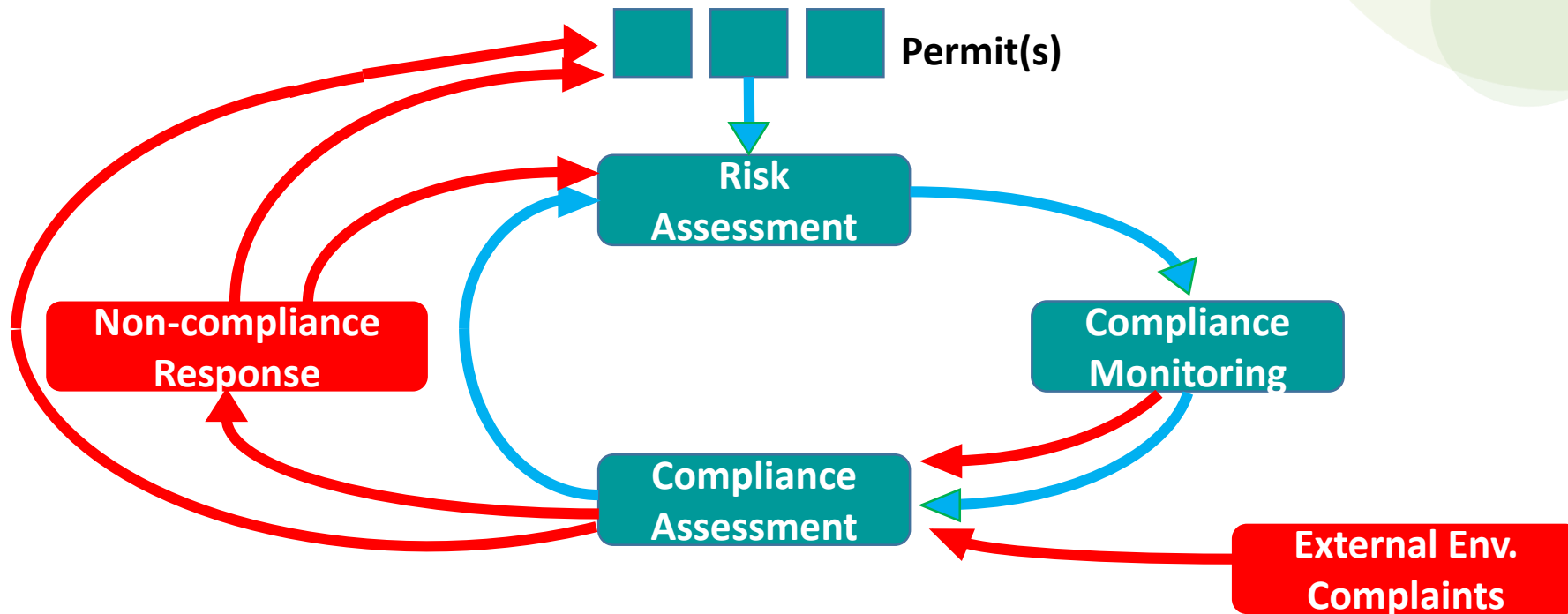


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# Prioritisation – Risk Criteria

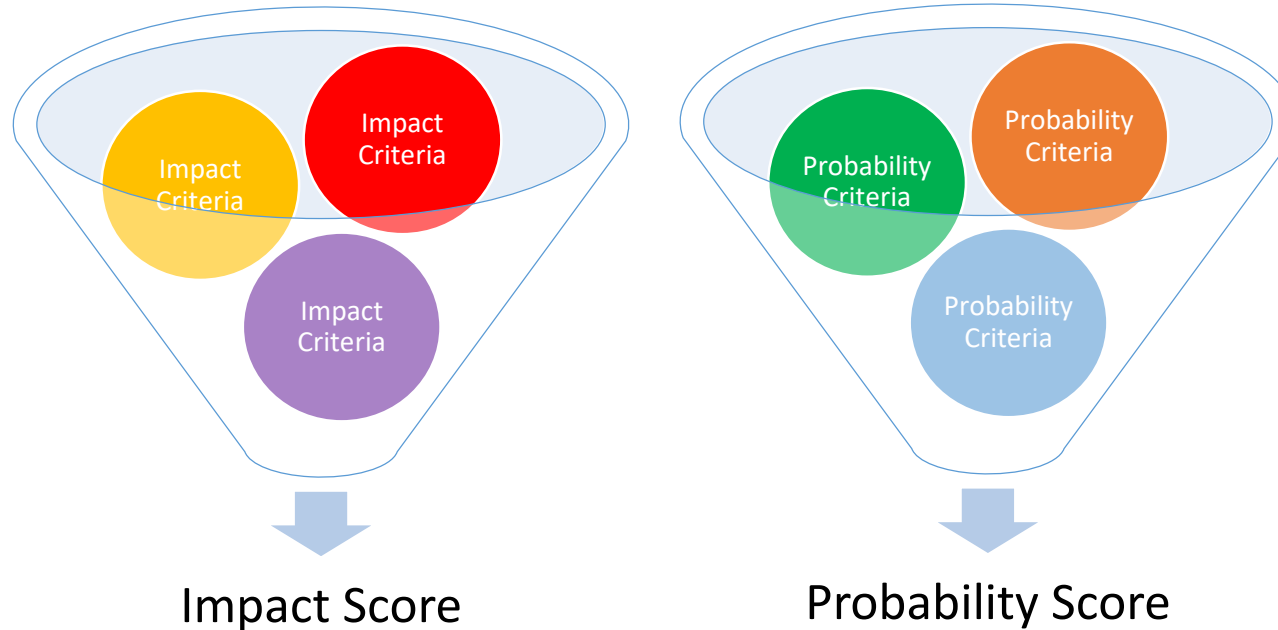


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# Risk Assessment – 'Choice of Criteria'



*\*Remember  
Strategic Objectives*

- Resource: [www.impel.eu](http://www.impel.eu) Risk Criteria for the prioritization of environmental inspections

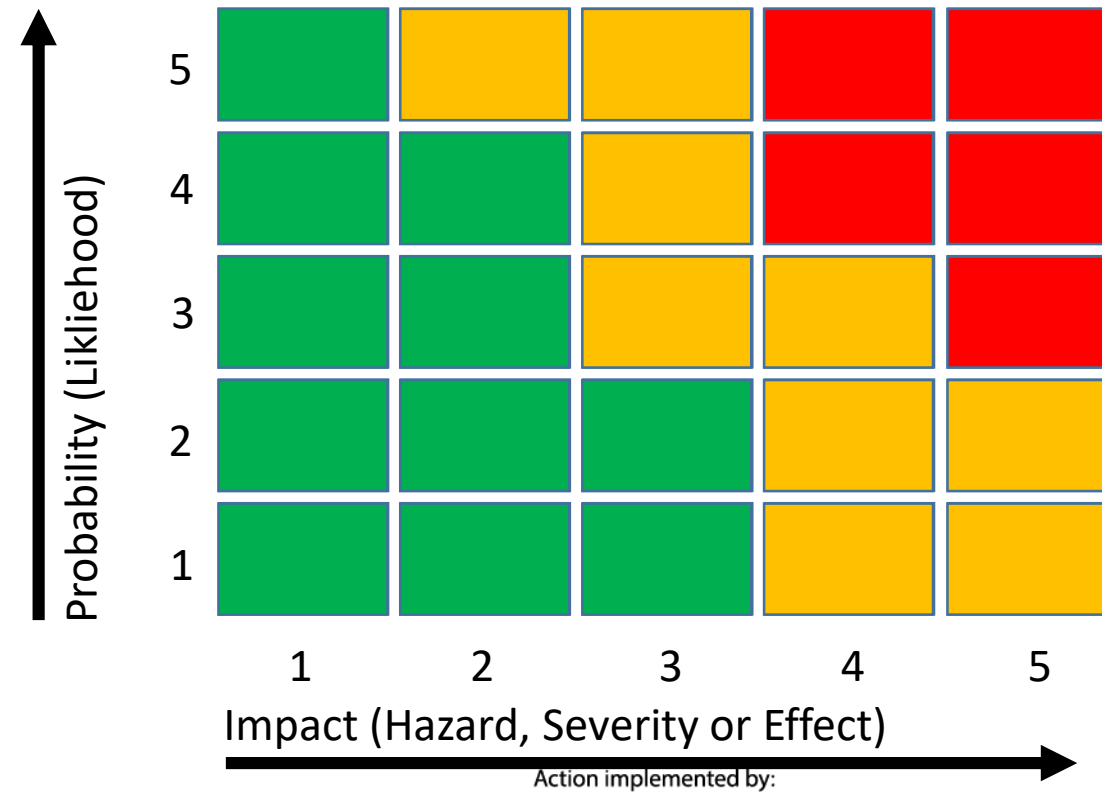
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# Risk Assessment – ‘Inspection Frequency’



# IMPEL's IRAM - Integrated Risk Assessment Method

- Used in organisations around Europe including Austria, Belgium, Croatia, Estonia, Germany, Italy, Portugal, Slovenia and Turkey etc
- Resource: [www.impel.eu](http://www.impel.eu) Search for easyTools or IRAM

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# IRAM use in Slovenia



• Slovenian Inspectorate of Environment & Energy

- Industrial Emissions Directive
- Transfrontier Shipment of Waste
- Waste Management Activities

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# Idealised risk vs effort relationship

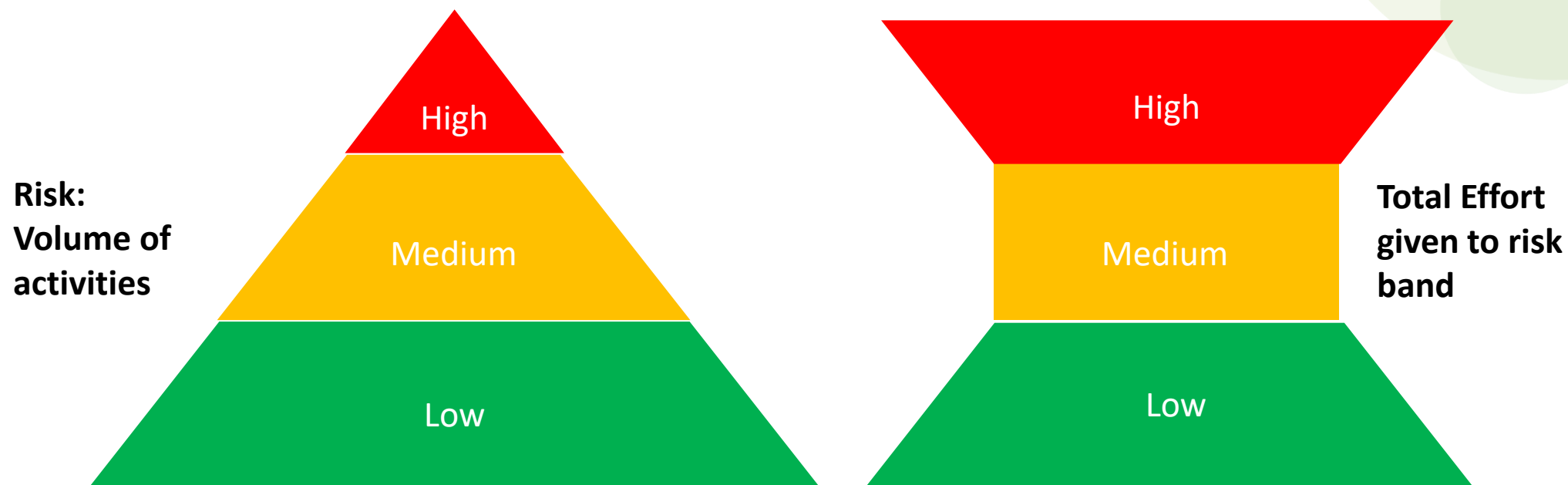


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# More usual risk vs effort distribution

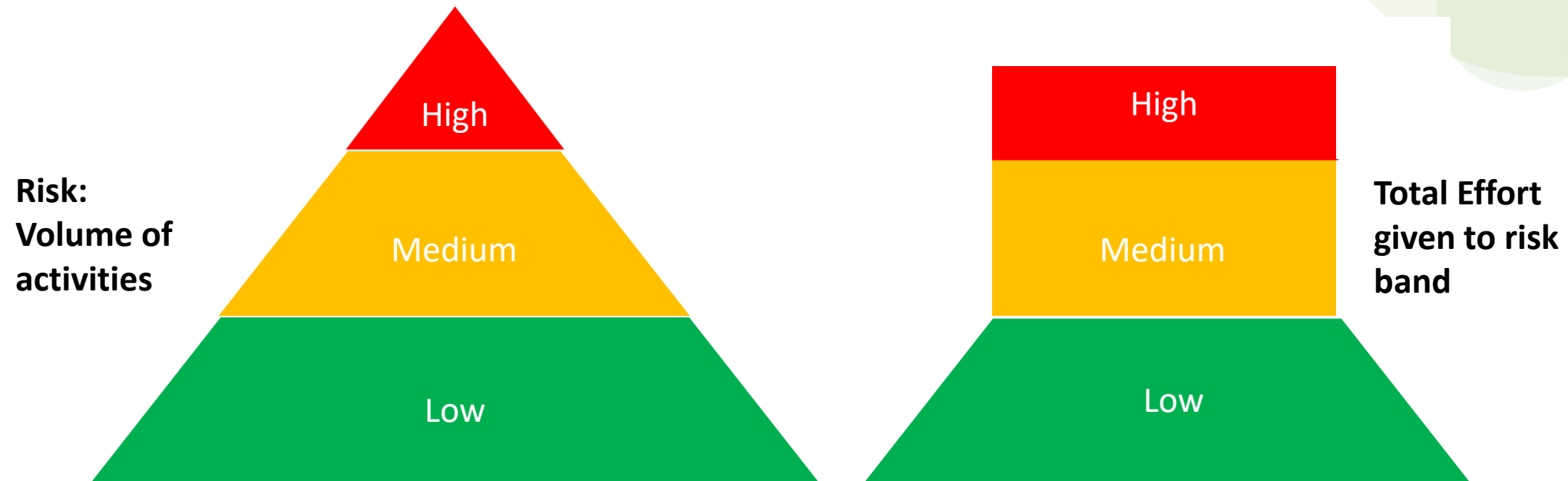


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# Common unintended impacts of resource constraints

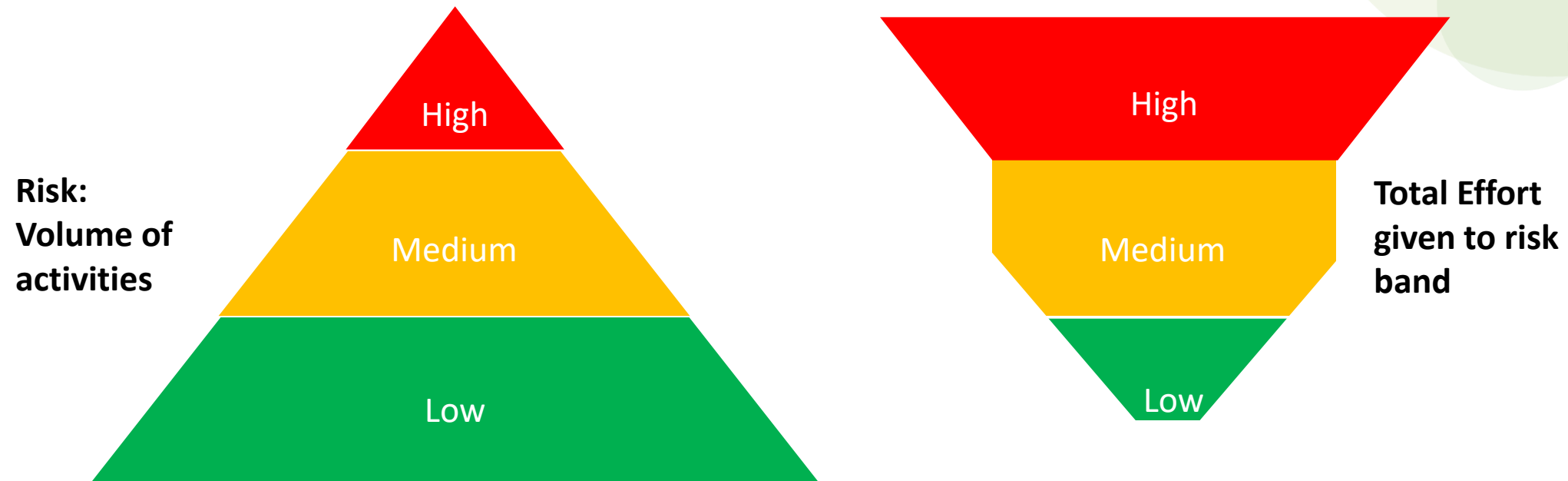


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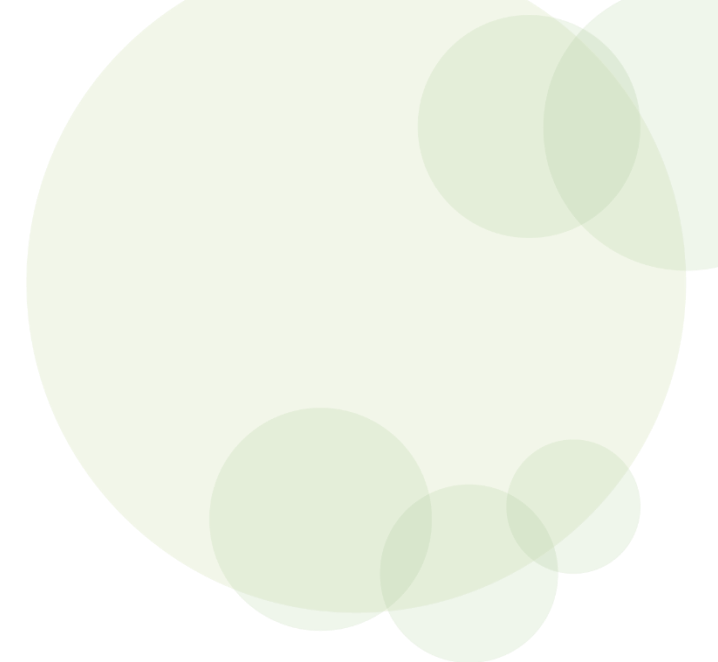


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# Ideal reaction to resource constraints



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## Topic 2.

### Compliance Monitoring - Execution

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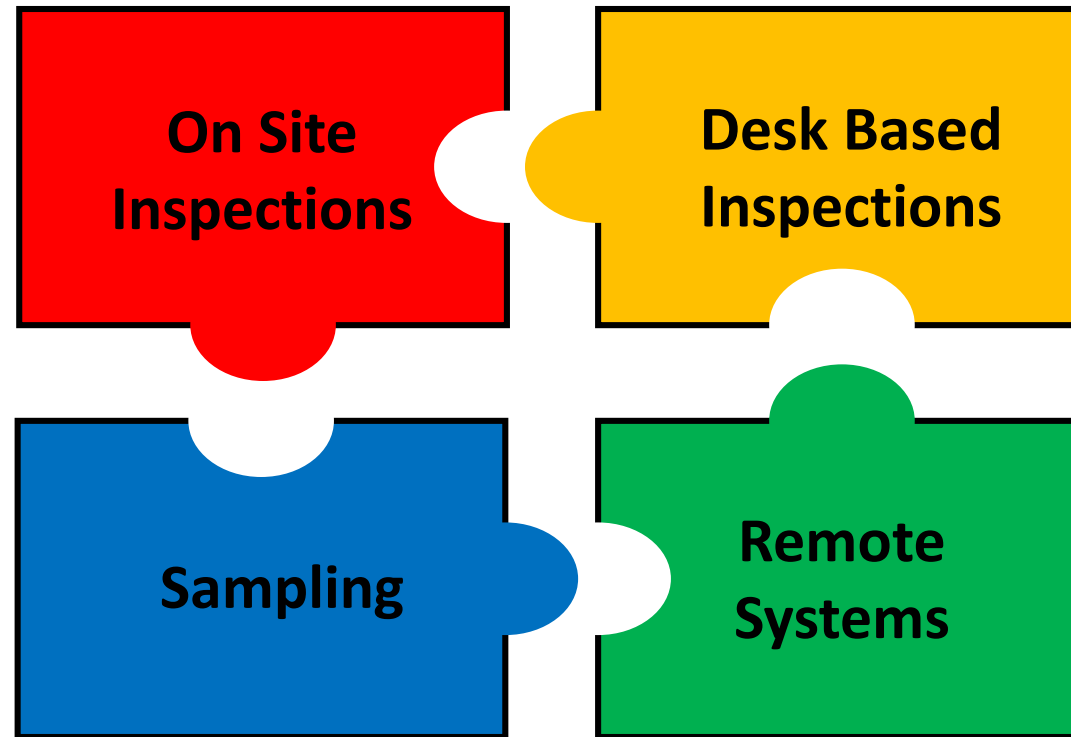




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# Compliance Monitoring



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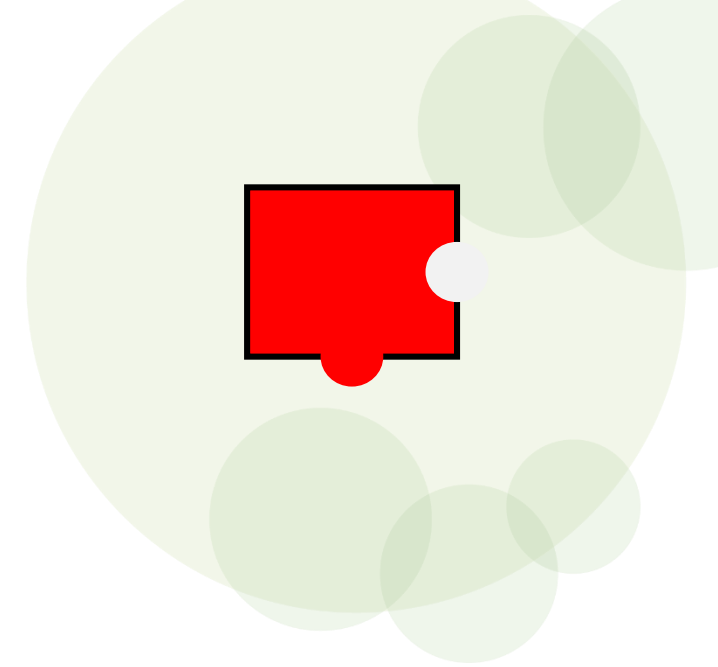


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# On-site Inspections

- Routine/Planned
- Reactive/Unplanned
- Joint Inspections
- Full Audit
- Targeted
- ‘Sample’

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# Sharing Inspection Resource



- Scottish Environment And Rural Services (SEARS – 8 partners)
- Scottish EPA & SG Rural Payments Inspectorate
- Sheep Dip Units

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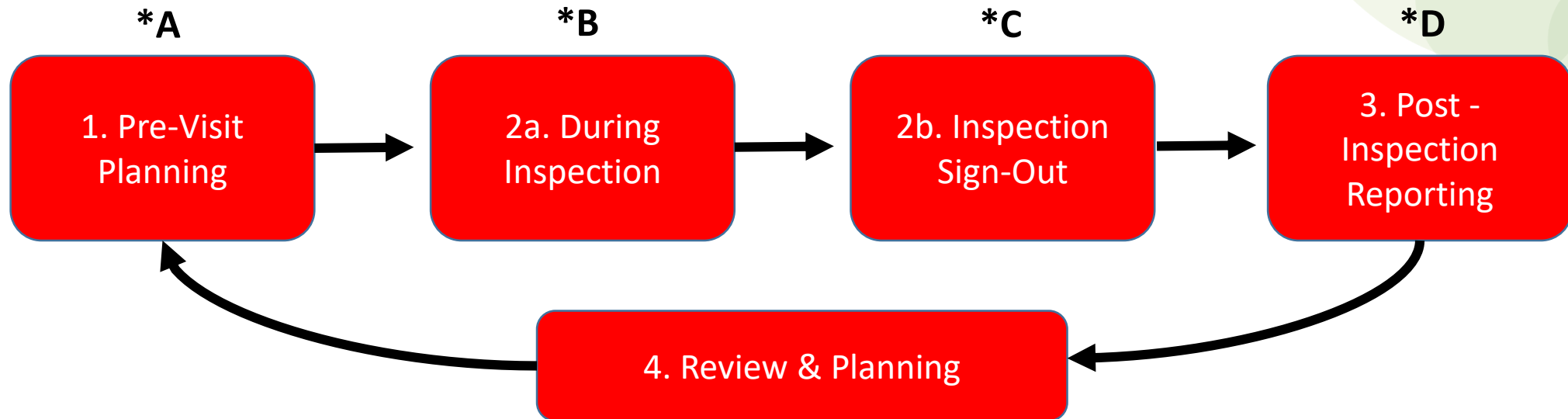


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# On-site Inspections



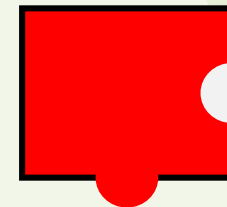
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# On-site Inspections - Technology



Estonian State Environmental Board

- Drones
- Mobile Technology



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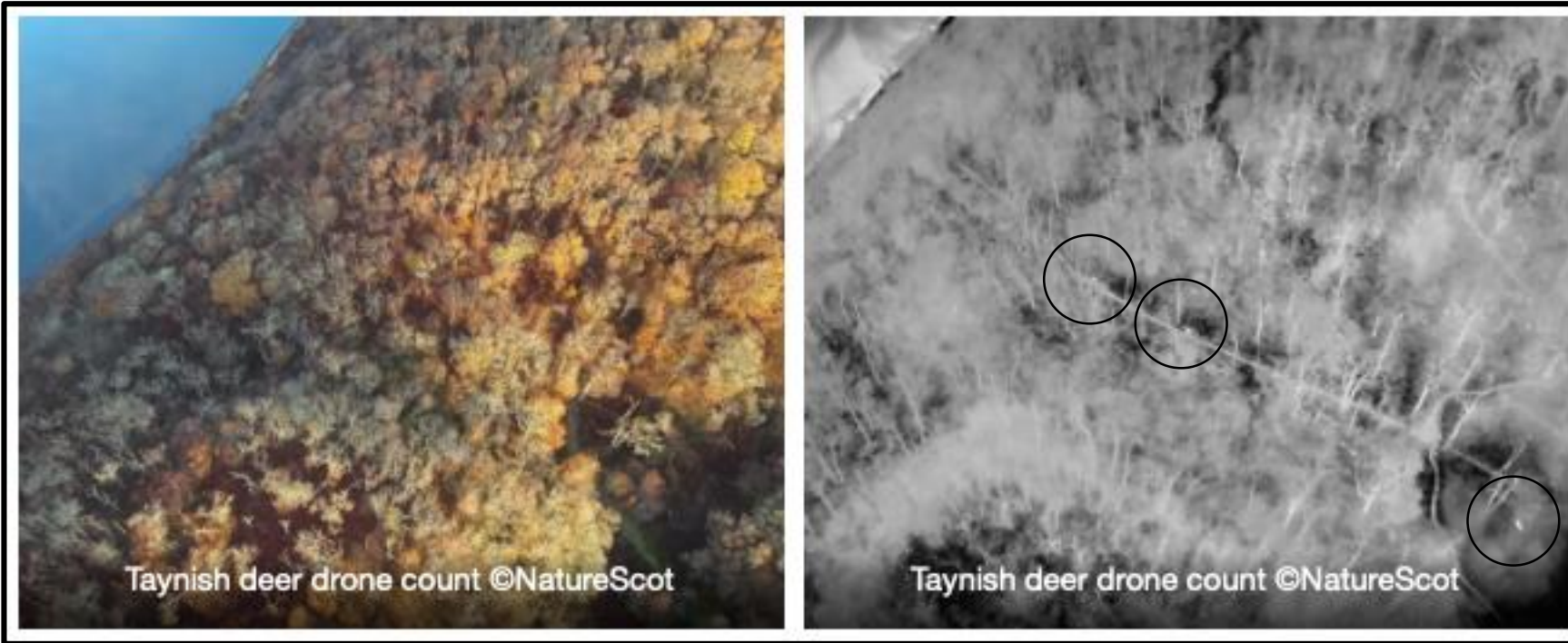
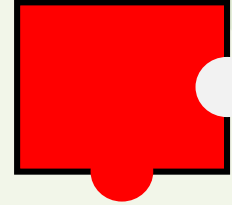
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# On-site Inspections - Technology



- NatureScot
- Drones
- Habitat/Birds Dir.
- Thermal Imaging

Action implemented by:



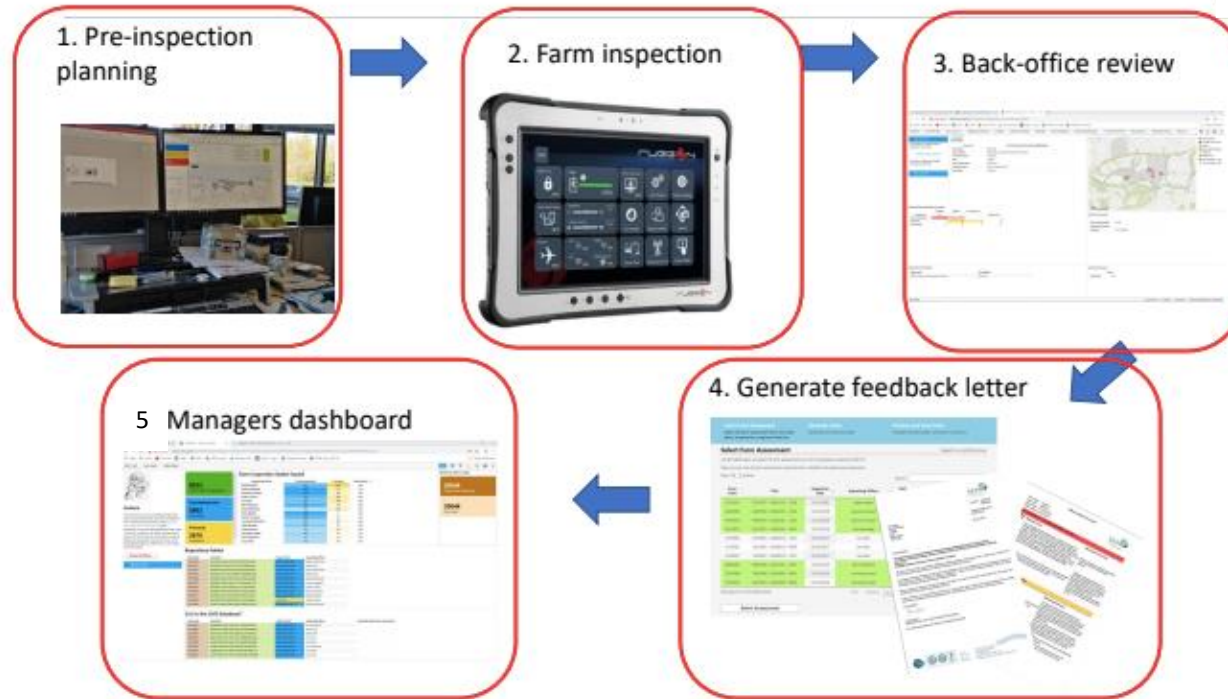




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# On-site Inspections - Technology



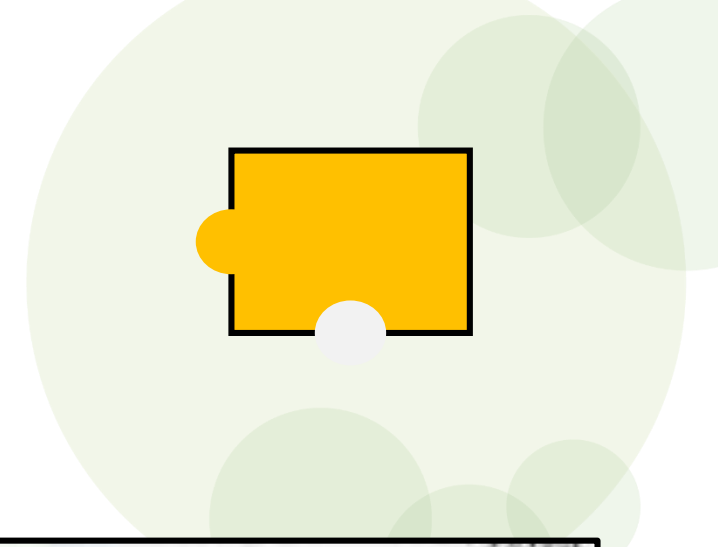
- Scottish Environment Protection Agency
- Mobile Technology
- Shared Data Sets
- Back Office Savings

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# Desk Based Inspections

- Technical Reports
- System Efficacy
- Development Plans
- Start-Up & Close Down
- Descriptive Compliance - habitat



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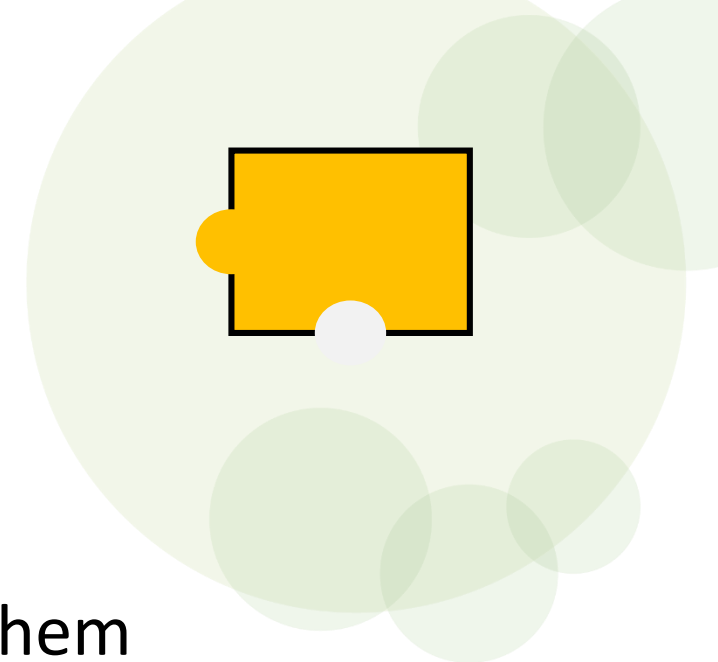
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# Desk Based Inspections

- Operator Data Returns
  - Know why you need them & do something with them
- Automated Systems
  - Data Submission (& Sharing), Data Checking & visualization

Mánuður	Álfam- leiðsla tonn	Hreinsað kergas frá reykháfi þurrhreinsivirkis						Ræstiloft í kerskála			Heildarlosun		
		Flúor í lofti kg F/t ál	Flúor í ryki kg F/t ál	Ryk kg ryk/t ál	Brennisteinslosun frá forskautum SO <sub>2</sub> kg SO <sub>2</sub> /t ál	COS kg SO <sub>2</sub> /t ál	Frá súráli SO <sub>2</sub> kg SO <sub>2</sub> /t ál	F í lofti kg F/t ál	F í ryki kg F/t ál	Ryk kg ryk/t ál	Heildar F kg F/t ál	Ryk kg ryk/t ál	SO <sub>2</sub> kg SO <sub>2</sub> /t ál
Janúar	29.079	0,020	0,001	0,02	11,9	1,28	0,10	0,107	0,07	0,20	0,20	0,23	13,3
Febrúar	26.674	0,023	0,002	0,04	11,4	1,24	0,10	0,163	0,10	0,30	0,29	0,33	12,8
Mars	29.776	0,018	0,003	0,04	11,4	1,24	0,10	0,115	0,13	0,38	0,27	0,42	12,7
Apríl	28.677	0,021	0,001	0,02	11,7	1,27	0,10	0,19	0,03	0,11	0,25	0,13	13,0
Mai	29.672	0,022	0,004	0,04	11,7	1,27	0,10	0,27	0,09	0,30	0,39	0,34	13,1
Júní	28.672	0,025	0,003	0,04	10,7	1,17	0,10	0,39	0,25	0,87	0,67	0,91	12,0



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# Making compliance data publicly available

- Icelandic Environment Agency



UMHVERFIS STOFNUN

Veiði Loft Haf og vatn Náttúra Atvinnulíf Hringrásarhagkerfi

20. Maí 2011

### Eftirfylgni frávika **Deviation Follow-Up**

- [Samþykkt úrbótaáætlun 8. mars 2023](#)
- [Úrbótaáætlun samþykkt. 22. september 2015](#)

### Vottun **Certification**

- Alcoa, Fjarðarál. vottun, [ISO 9001:2015](#), gildir til 18. janúar 2021
- Alcoa, Fjarðarál. vottun, [ISO 14001:2015](#), gildir til 18. janúar 2021
- Alcoa, Fjarðarál. vottun, [OHSAS 18001:2007](#), gildir til 17. janúar 2021

### Ársfjórðungsskýrslur **Operator Annual Returns**

- [Ársfjórðungsskýrsla II. ársfjórðungur 2023](#)
- [Ársfjórðungsskýrsla I. ársfjórðungur 2023](#)
- [Ársfjórðungsskýrsla 2022](#)
- [Ársfjórðungsskýrsla 2021](#)
- [Ársfjórðungsskýrsla 2020](#)
- [Ársfjórðungsskýrsla 2019](#)
- [Ársfjórðungsskýrsla 2018](#)
- [Ársfjórðungsskýrsla 2017](#)
- [Ársfjórðungsskýrsla 2016](#)
- [Ársfjórðungsskýrsla 2015](#)



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# Sampling (Laboratory & Field Based)

- Chemical Analysis
  - Water, Air, Waste (+modelling)
  - HV Routine, Stack & Specialist, Mobile Response & Static
- Biological Analysis
  - Microbial & eDNA
- Ecological Surveys
  - Aquatic, Benthic, Habitat, Fish, Invertebrates, Reptiles & Mammal

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# Technology - eDNA



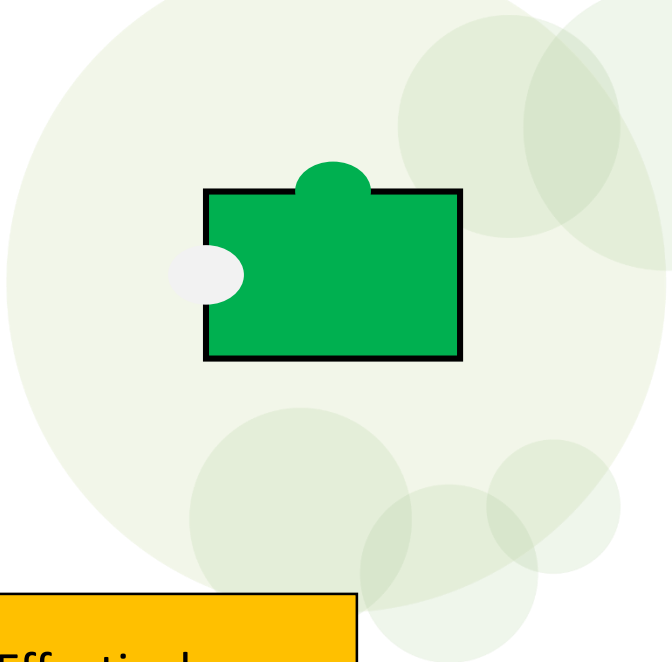
UK Environment Protection Agencies

- eDNA
- Fish
- Invertebrates

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# Remote Monitoring

- Biggest area of development
  - Technological Advancements
  - Improved Data Accuracy
  - Improved Remote Connectivity and Affordability
  - Enhanced Compliance Oversight
  - Cost Savings (Spend to Save)
  - Potential for Real-Time Oversight



Effectively  
Efficiently  
Economically

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# Technology - Static Monitoring Sites



- Netherlands, Regional EPA's
- E-Noses on Refineries, Steel plants
- Romania, National Environmental Guard
- In-stream chemical monitors on the Danube

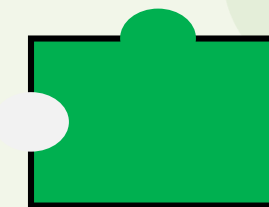
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# Technology - Monitoring by Satellite



- SYKE – Finnish Environmental Institute
- Problem: How to assess nutrient status of 10,000 remote lakes?

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# Technology – Continuous Monitoring



## Spain - CMS

- National Law (Large Combustion Plants & Incinerators)
- Regional Law (optional)
- 10 second data acquisition
- Corrected (eg O<sub>2</sub> content)
- **Remote dial-in whenever!**

Italy (similar system)

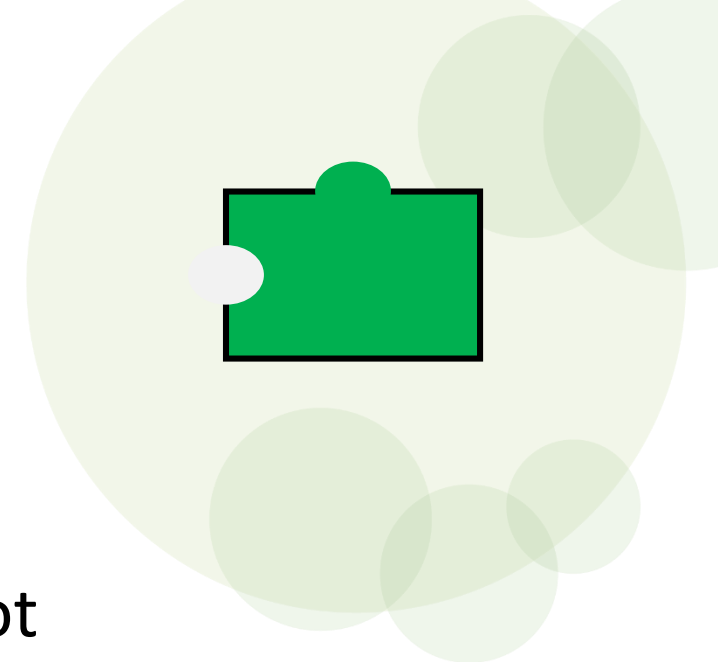
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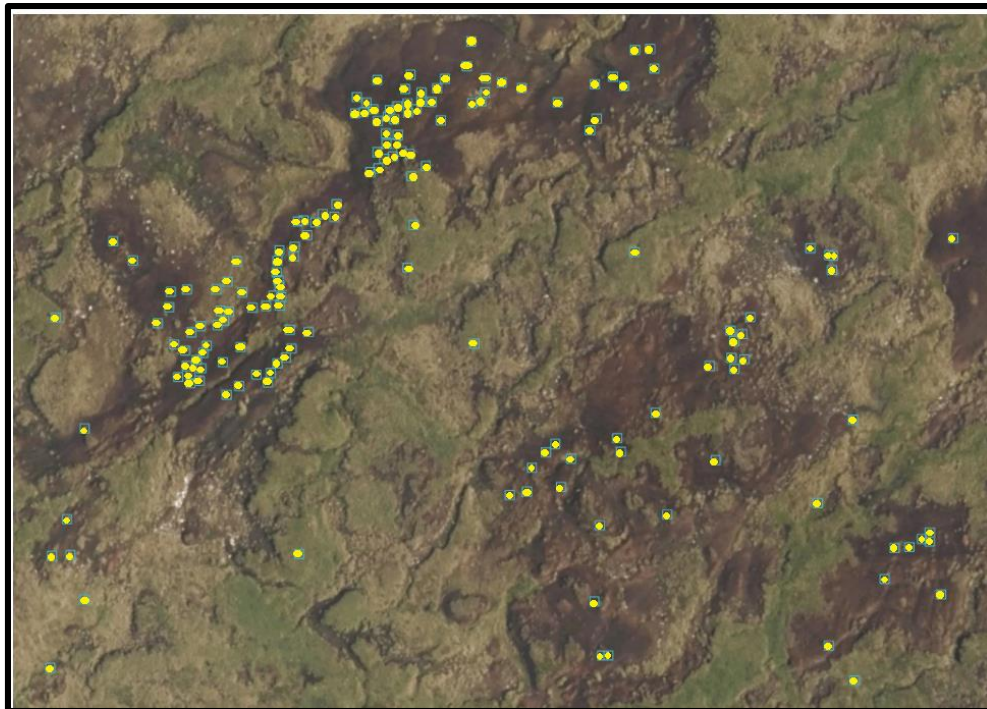


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# Technology – Artificial Intelligence



- NatureScot
  - Deer Count by AI
  - Photography by light aircraft
  - Stags, Hinds & Calves

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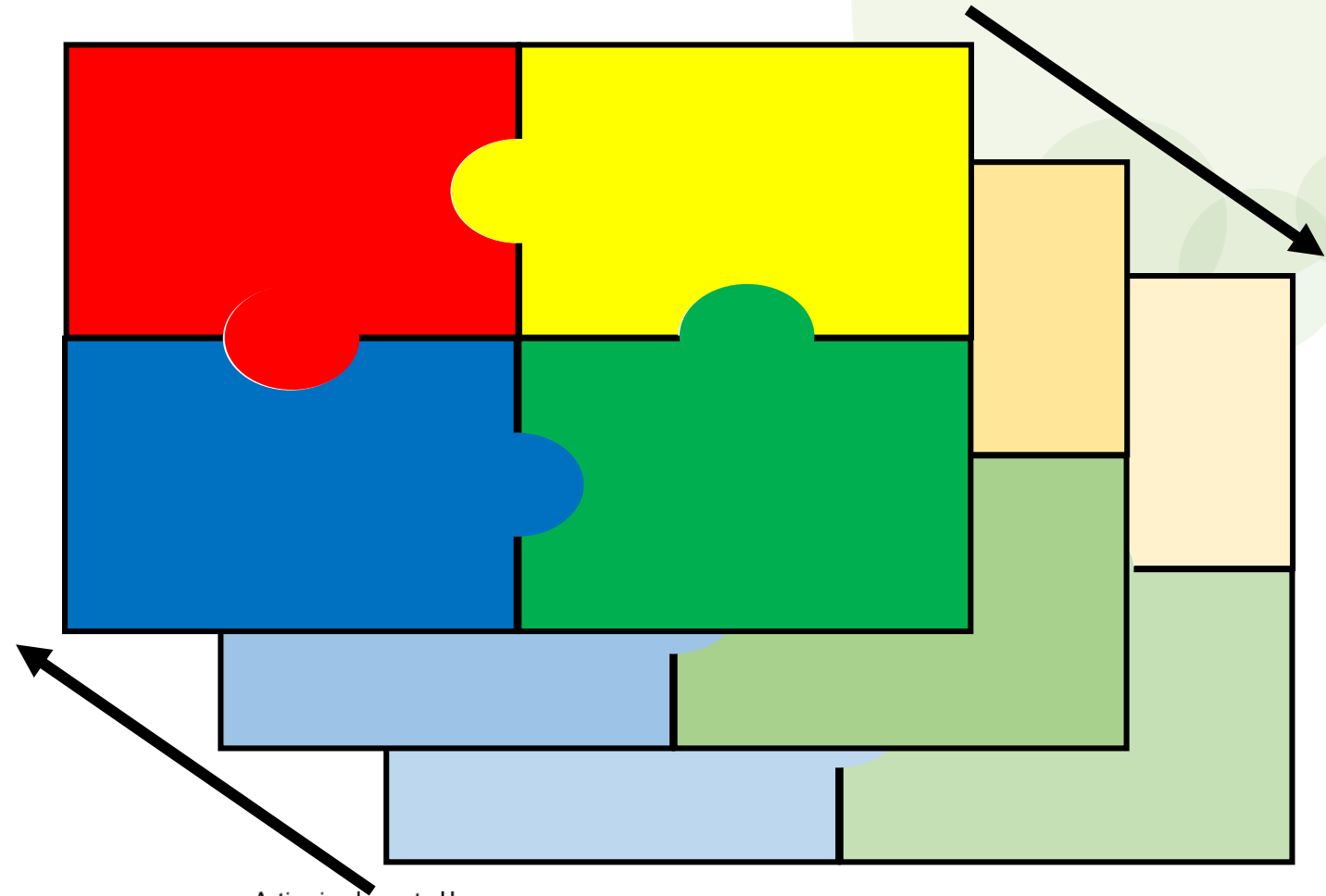
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## Multi-Agency

- Co-ordinated Approach
- Data Sharing
- Assessment (Joint?)



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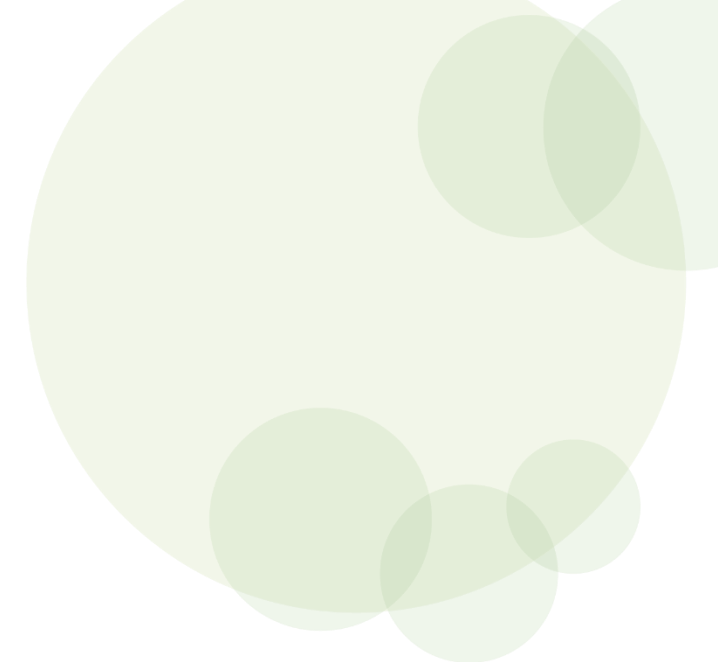


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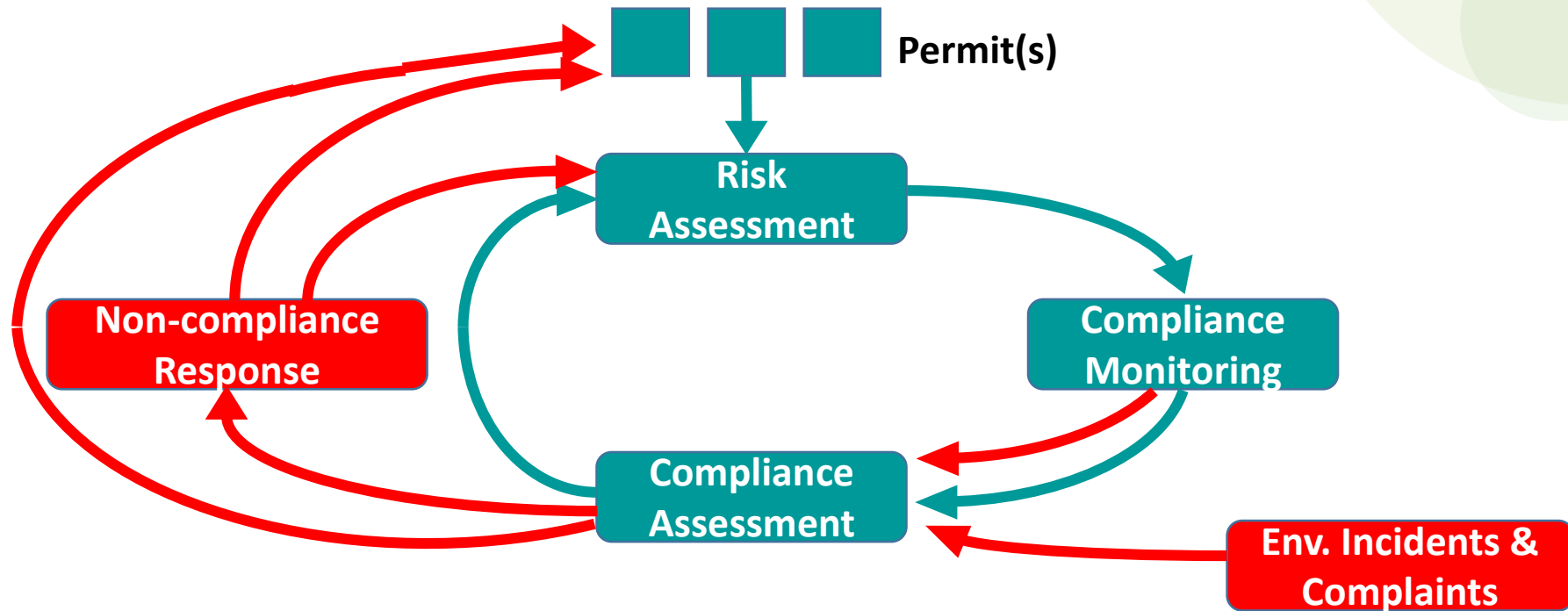


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# Assessment – Pulling it altogether



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# Environmental Incidents & Complaints

- 24/7 365 mechanism for reporting (telephone, web)
- 24/7 365 ability to respond to reports of serious pollution or non-compliance (stopping & evidence collection)

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## Environmental Incidents & Complaints

- Irish Environment Protection Agency
- App. 'See it – Say it'
- GPS & Photographs



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# TYPES OF BEHAVIOUR AND RESPONSES



Champion



Compliant



Confused



Careless



Under-resourced



Opportunistic



Contemptuous



Criminal



REWARD



ENGAGE



ENABLE/FUND



EDUCATE



INSPECT/CHECK



ENFORCE



European  
Commission





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# Compliance Assessment

- Identification of follow-up actions
- Identify future resource deployment
- Publishing compliance data has two main impacts:
  - Rewards compliance (Name & Fame)
  - Deters non-compliance (Name & Shame)

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# Site Based Compliance Assessment

- Name & Shame
- Quarterly update
- Based on:
  - Inspections
  - Complaints
  - Incidents

## National Priority sites Q4 2023

Licensee	County	Issue	Sector
North Cork Co. op. XXXXXXXXXX	Cork	Discharges to water	Food & Drink
Timoleague Agri Gen XXXXXXXXXX	Cork	Infrastructure & management	Anaerobic Digestion
Wetman International XXXXXXXXXX	Meath	Odour	Wood, Paper, Textiles & Leather

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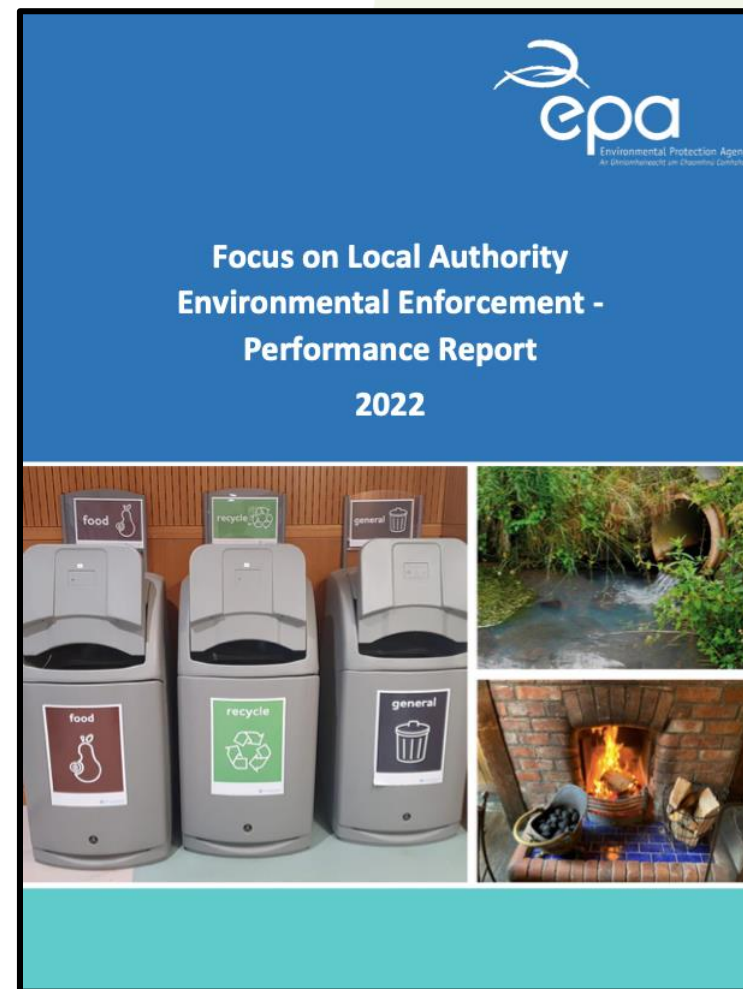


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# 'Meta' Compliance Assessment of Regulators

- Annual
- Performance of Local Authorities
- Name & Fame/Shame



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# Open provision of compliance information





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# End – Thank you for your attention

We hope you found this useful – please note there are two other presentations in this series.

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