European Union Network for the Implementation and Enforcement of Environmental Law

CHALLENGES IN THE PRACTICAL IMPLEMENTATION OF EU ENVIRONMENTAL LAW AND HOW IMPEL COULD HELP OVERCOME THEM

2021 Survey Report

Date of report: April 2022

Report number: 2021/18

Introduction to IMPEL

The European Union Network for the Implementation and Enforcement of Environmental Law (IMPEL) is an international non-profit association of the environmental authorities of the EU Member States, acceding and candidate countries of the European Union and EEA countries. The association is registered in Belgium and its legal seat is in Brussels, Belgium.

IMPEL was set up in 1992 as an informal Network of European regulators and authorities concerned with the implementation and enforcement of environmental law. The Network's objective is to create the necessary impetus in the European Community to make progress on ensuring a more effective application of environmental legislation. The core of the IMPEL activities concerns awareness raising, capacity building and exchange of information and experiences on implementation, enforcement and international enforcement collaboration as well as promoting and supporting the practicability and enforceability of European environmental legislation.

During the previous years IMPEL has developed into a considerable, widely known organisation, being mentioned in a number of EU legislative and policy documents, e.g., the 7th Environment Action Programme and the Recommendation on Minimum Criteria for Environmental Inspections.

The expertise and experience of the participants within IMPEL make the network uniquely qualified to work on both technical and regulatory aspects of EU environmental legislation.

Information on the IMPEL Network is also available through its website at: www.impel.eu

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Project Manager/Authors: Project Executive: Simon Bingham Project Managers: Lauren Davidson and Connor McKnight Authors: Lauren Davidson and Connor McKnight	**Report adopted at IMPEL General Assembly Meeting**: 28-29 June 2022, Paris (France) **Total number of pages: 96** Report: 73 Annex: 23

Executive Summary

Background

The European Union Network for the Implementation and Enforcement of Environmental Law (IMPEL) is an international non-profit organisation of environmental authorities in Europe that works for a more effective implementation of environmental legislation. In its project "Implementation Challenges" it sought to identify remaining challenges in the implementation of EU Environmental Law as well as barriers to its enforcement.

This report follows on from previous reports in 2015 and 2017 and aims to collate common challenges to implementation from across the IMPEL Network. This series of reports allow for:

- A better understanding of the linkages between the implementation challenges and cross-cutting themes and issues.
- Greater clarity on the underlying causes of implementation problems and where they are occurring, and how IMPEL can address them through projects and activities in its work programme.
- A better prioritised and targeted work programme for future years with greater benefits for IMPEL members who participate in the programme.

Project structure

IMPEL used a questionnaire to ask its members and other relevant networks and organisations to submit information on implementation challenges and how they might be overcome. The 2021 survey built upon topics featured in the previous surveys, such as water and land; waste and trans-frontier shipment of waste; industry and air; nature protection and also incorporated topics which

have grown in prominence in the past 4 years including climate change, environmental damage and restoration, single use plastics and COVID-19.

Main findings

This survey focused on the practical challenges associated with the application and implementation of environmental law by practitioners across Europe. The results highlighted a number of issues relating to the challenges to implementation, as well as barriers to compliance, including:

- Waste; including waste from industry, issues related to illegality in the waste industry (including trafficking and disposal of waste), waste management consistency, new waste types, waste storage, and movement of waste.
- Water; protection of resources, water pollution, scarcity and drought, freshwater and marine water quality, wastewater treatment.
- Pollution; pollution from agriculture and forestry, diffuse pollution, noise and air pollution
- Climate Change; the climate emergency, reaching net zero and climate adaptation.
- Staffing difficulties; including staff capacity, ability to access suitable training resources and guidance and clarity on the role of the individual or organisation.

Next steps

IMPEL will continue to identify challenges and raise awareness of the importance of effective implementation in Europe. The survey should be repeated periodically in the future to assess progress in improving implementation and identify future challenges.

There are several important actions that IMPEL can do to overcome the barriers to effective implementation. These include but are not limited to:

- Improved sharing of knowledge and good practice between countries.
- Developing new approaches and techniques to apply scarce resources more efficiently and effectively.
- Improving communication and cooperation between organisations responsible for different parts of the implementation chain.
- Wider inclusion of those responsible for environmental planning, permitting, monitoring, compliance promotion and assessment, enforcement, prosecution, and the judiciary.

IMPEL will continue to play an important role in bringing together different actors and building relationships with other networks. This will help with progression of this work (plus other projects), leading to an improvement in the implementation of environmental law.

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Introduction

Purpose of project

The IMPEL Implementation Challenge programme aims to identify implementation challenges faced by environmental authorities in its member countries. As part of the work programme, a series of surveys have gathered information from members about their experiences of the implementation of environmental law. This is the third Implementation Challenge survey and will build on the information gathered in previous years (2015 and 2017) to allow IMPEL and IMPEL Network members to gain greater clarity on the underlying causes of implementation problems.

This survey aims to gather information on the obstacles and challenges that environmental regulators (permit writers, inspectors, policy drafters, etc.) within Europe are currently facing. It also seeks to collate information on innovative practices and solutions that have been developed to overcome these challenges.

IMPEL will use this to identify or develop strategies, projects, capacity building and tools for better environmental compliance.

Reflections on previous surveys

2015 Implementation Challenge

In the previous survey from 2015, the lack of overall staff resources and suitably qualified personnel in regulatory authorities were the most commonly reported barriers to achieving effective implementation of environmental law. Other areas that emerged in 2015, included lack of skills at municipal level, insufficient data, evidence and information, and inadequate sanctions and low level of fines.

Problem areas that emerged particularly strongly in the 2015 survey were:

- Regulation of the agriculture sector
- Definition and classification of waste
- Clarity of environmental permits
- Operator self-monitoring
- Tackling environmental crimes
- Reducing nuisance, conflicts and complaints
- Unclear, incomplete or overly complex legislation

- Access to environmental information

The survey also asked respondents about possible solutions to overcome implementation challenges. They were especially in favour of:

- Exchange and communication between different authorities and within networks
- Application-oriented guidance and training
- Improved availability and accessibility of data and information
- Coordinated action between different inspection authorities

2017 Implementation Challenge

The nature of the specific implementation challenges varied in different sectors and involved different problems and actors. However, there are some common underlying factors which are significant causes of poor progress with implementation. This included:

- lack of resources
- insufficient capacity in the organisations responsible for environmental regulation and enforcement
- inadequate sanctions and low level of fines for those that breach the law

A challenge already identified on several occasions is the need to improve communication and cooperation between organisations responsible for different parts of the implementation chain. The chain of implementation encompasses a range of parties, including those responsible for environmental planning, permitting, monitoring, compliance promotion and assessment, enforcement, prosecution, and the judiciary. IMPEL has already done much in this field and should continue to play an important role in bringing together different actors in projects and building relationships with other networks within and outside the EU.

Scope of Methodology

Questions were developed based on recommendations from previous surveys, with the aim of gathering an updated set of responses from those who implement environmental regulation across Europe.

The approach taken for the 2021 survey differed from previous surveys in a number of ways:

- The focus of this survey was on the challenges of implementing environmental legislation, so the survey was made available to anyone who routinely implements legislation, not just the national co-ordinator as in previous years. In doing this, it was

hoped that a more representative picture of issues from a national, regional, and local perspective could be gained.

- The survey was simplified, with clear topic areas which respondents could skip if they had no experience of. Respondents were also asked to be selective in answers where they could choose more than one option, by choosing 3 or 5 answers. It was decided this would give a better representation of the most important issues.
- New topics were introduced to reflect changes that have taken place since the previous surveys. This included new legislation (Single Use Plastics Directive), a new sense of urgency around climate change and the increased recognition and uptake of non-regulatory techniques, including partnerships and peer to peer knowledge exchange.

A test group comprised of IMPEL members was used to ensure the questions covered the question topics in the right level of detail and that there were no obvious gaps.

The questions asked in the survey are included in Annex 1.

Respondent information

In total there were 156 responses (this includes 10 responses from the test group) submitted in the time the survey was open (5 weeks). The survey was available within Basecamp for 5 weeks, and 84 submissions were made via this route. The survey was made available on the IMPEL website for a further 2 weeks and 62 responses came from this route.

Responses were received from 26 countries, with 2 or more responses coming from 16 countries (detailed in Table 1). There were no responses received to the survey from 11 countries; Albania, Bulgaria, Cyprus, FYR Macedonia, Hungary, Kosovo, Lithuania, Luxembourg, Slovak Republic, Turkey.

Table 1. A full breakdown of country responses.

Country	Responses	
Portugal	18.57%	26
Denmark	12.14%	17
Germany	10.71%	15
Finland	10.00%	14
Ireland	7.86%	11
United Kingdom	7.14%	10

Iceland	4.29%	6
Norway	3.57%	5
Poland	3.57%	5
Romania	3.57%	5
Czech Republic	2.86%	4
Belgium	2.14%	3
Spain	2.14%	3
Austria	1.43%	2
Slovenia	1.43%	2
Switzerland	1.43%	2
Croatia	0.71%	1
Estonia	0.71%	1
France	0.71%	1
Greece	0.71%	1
Italy	0.71%	1
Latvia	0.71%	1
Malta	0.71%	1
Netherlands	0.71%	1
Serbia	0.71%	1
Sweden	0.71%	1

Respondents were asked to select the operational level of their organisation. Previous surveys only considered responses from a national level. However, as seen in Figure 1. over 45% of responses came from those working at a regional (30.41%) or local (14.86%) level. The operational level of respondent organisations shows that National level organisations are still providing most responses, but input from regional and local organisations are also important to note.

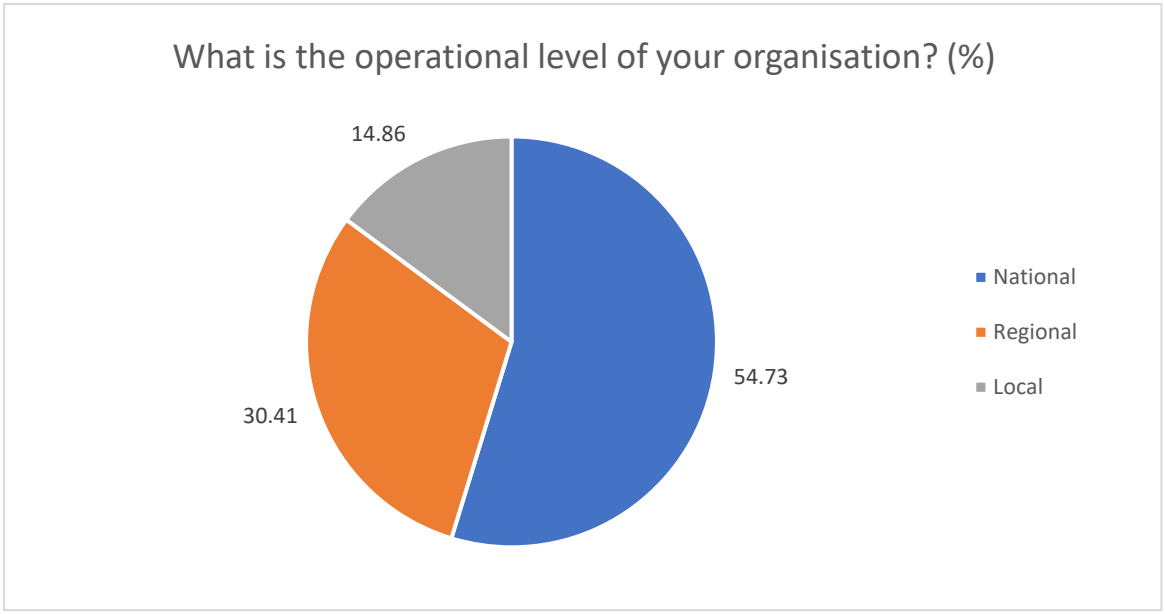


Figure 1. Respondents were asked to indicate which level of authority they worked at. The majority were from a national level, but there is also representation from both regional and local levels.

The expected audience for the survey was those who work in environmental implementation and regulation. However, as the survey was made available on a publicly accessible website, it was decided that the type of organisation that the respondent represented would also be recorded (shown in Figure 2.).

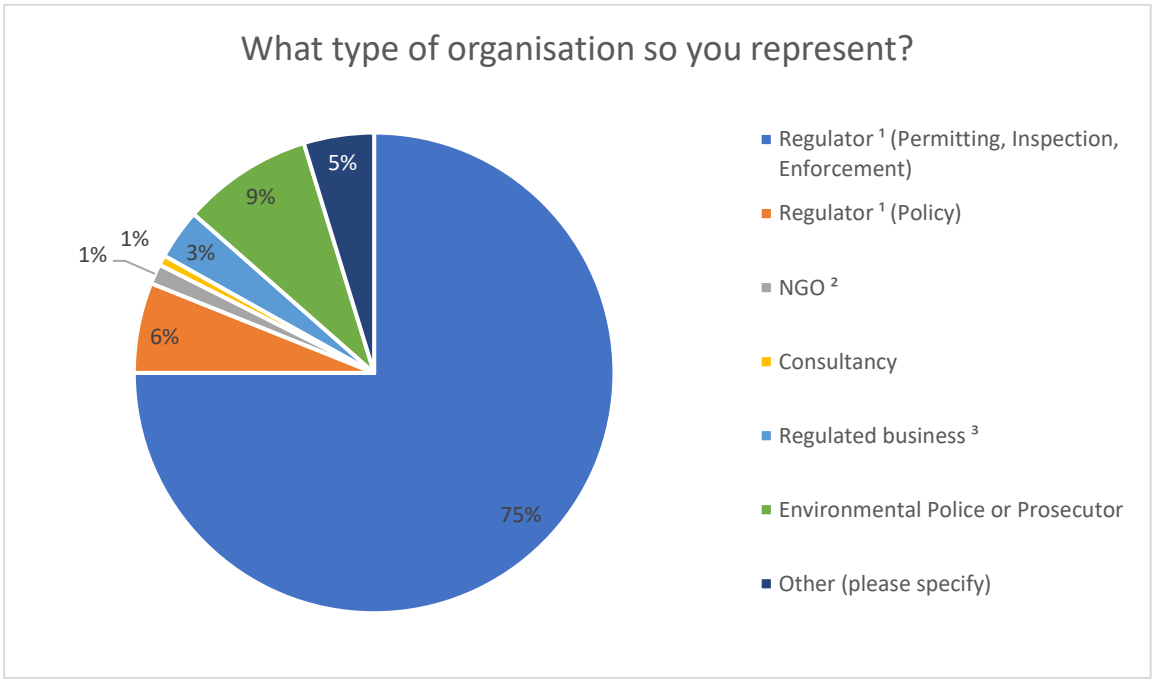


Figure 2. Organisation types represented in the survey. As expected, most respondents were regulators, however as the survey was available on a public website there were also responses from outside of the target audience.

Most responses came from those who work in the regulatory field. In total 81.08% of the responses were from Regulators (working in permitting, inspection, enforcement, and policy). The next biggest response group was environmental police or prosecutors. As expected, there were low numbers of responses from NGOs, consultancy and regulated business.

An additional option of 'other' was provided to capture any additional response groups. This made up a small portion of the total responses. Some examples of additional organisations included; national water management authority, a joint submission from 2 authorities, a business organisation (not a regulated business), auditing organisation, IMPEL, and an environmental surveillance body.

The final piece of information gathered before the environmental topic questions was around the most challenging environmental issues being faced at this time. This question was included in the introduction to ensure that the respondent was not influenced by any of the subsequent questions or topic areas in the survey.

The most popular themes for environmental issues being faced at this time are:

- Waste; including waste from industry, issues related to illegality in the waste industry (including trafficking and disposal of waste), waste management consistency, new waste types, waste storage, and movement of waste
- Water; protection of water resources, water pollution, water scarcity and drought, freshwater and marine water quality, wastewater treatment
- Pollution; pollution from agriculture and forestry, diffuse pollution, noise, and air pollution
- Climate Change; the climate emergency, reaching net zero and climate adaptation

Question Group 1: Environmental Topic Areas

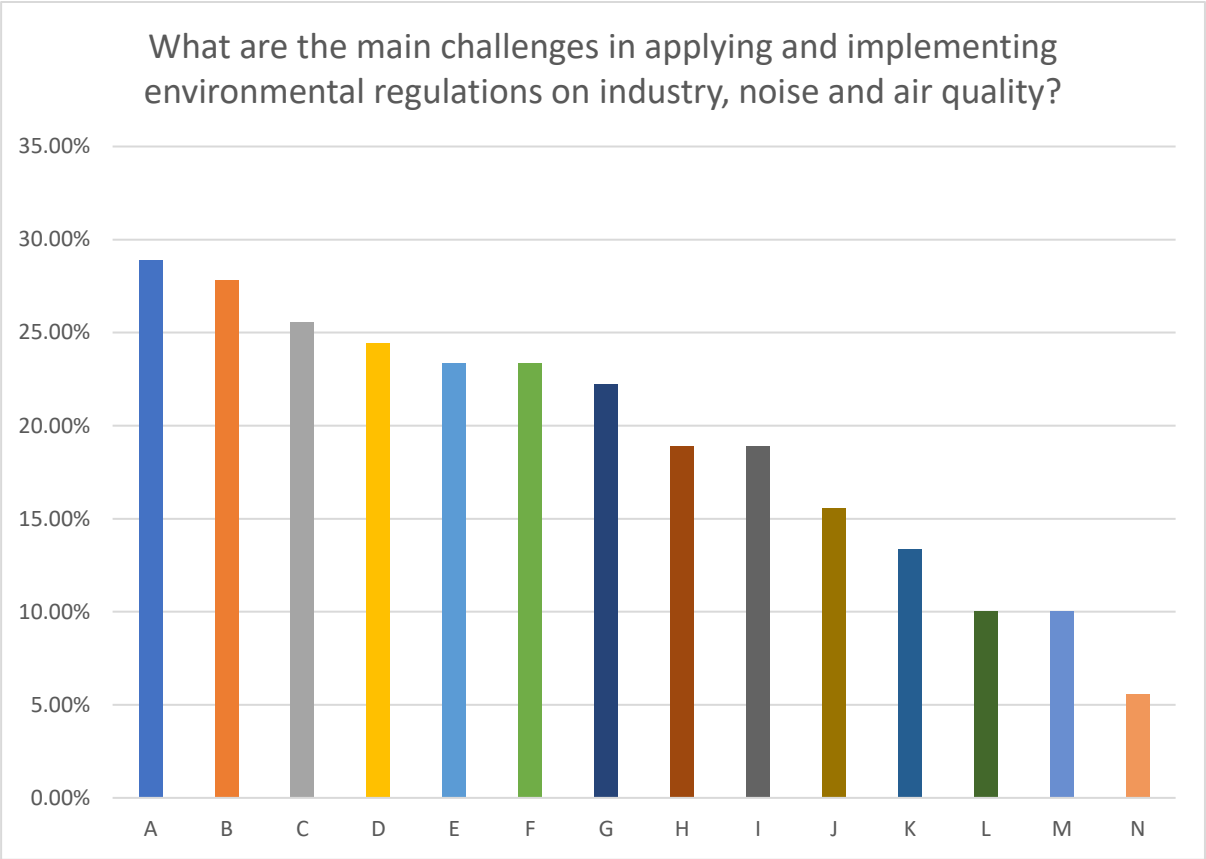
The first topics covered in the survey can be reviewed as standalone sections, each topic deals with a different aspect of environmental regulation and presents some of the ongoing challenges in compliance and enforcement.

Industry, Noise and Air Quality

The effects of pollution from industry on the surrounding environment, including noise and air quality are still causing substantial damage to human health, ecosystems and the economy. This topic encompasses many processes and different industrial sectors that support economic growth useful to development. However, this needs to be balanced with the need for environmental compliance.

Summary of information collected in this section:

- 76 responses indicated that they were responsible for industry, noise and air quality regulations within their role (48.71% of the total responses).
- With such a wide-ranging area of work, respondents were asked to pick the five most challenging elements of their role from the list of answers provided. This prioritisation allows for clearer identification of the most pressing challenges, and for resources to be directed to these. Following this, the top answers were; effect of industrial emission on air quality (42.22%), identification of pollution sources (34.44%), clarity of permit requirements (30.0%), application of emission limit values (30.0%) and insufficient flexibility in current regulations to respond to industrial changes driven by, for example, climate change, decarbonisation or circular economy (30.0%).
- The inability to quantify pollution or its effects makes it difficult to set appropriate emission limits, or select the right permit conditions for operations. In addition to this, the speed of change in industry in the past 5 year has not been met with similar updates to regulations to encourage a regulatory approach to fit the challenges posed by climate change, the need to decarbonise and the move to a circular economy. Further answers selected to this question can be seen in Figure 3.



Letter	Corresponding answer option
A	Application of best available techniques in permits
B	Effect of traffic on air quality
C	Adapting permits in result to BAT/BREFs
D	Regular soil and groundwater monitoring
E	Defining more stringent emission limit values
F	Improving public access to industrial emissions, noise and air quality information
G	Planning/execution of risk-based inspections
H	Effect of domestic heating on air quality
I	Effect of agriculture on air quality
J	Assessing/preventing further soil contamination around installations
K	Effect of traffic on noise pollution
L	Drawing up noise action plans
M	Dust pollution from regulated sites
N	Drawing up air quality action plans

Figure 3. A wide range of answers was available to describe the main challenges in relation to industry, noise, and air quality. Aside from the most popular answers (detailed above), the application of best available techniques and differing factors affecting air quality (traffic, heating, agriculture) were chosen by several respondents.

- The most challenging sector in dealing with the regulation of industry, noise and air quality was identified as waste management. This was the top answer by a large amount (72.45% compared to the second most chosen answer of energy production at 37.76%). Waste management as an industry is incredibly varied, with different sizes of operations, different waste types being processed and different processes being used, so it's clear that there is a considerable amount of work to be done to address these different challenges. Following waste management and energy production, the next most chosen answers were incineration (31.63%), intensive livestock farming (29.59%) and chemicals production (23.47%). Additional comments clarified that regulation of small operations tend to present the biggest challenge. For example, the number of small operators which fall into waste management or intensive farming, will present a big challenge in reaching compliance.
- Overall compliance in relation to industry, noise and air quality is generally broadly compliant (35.92%), with over a quarter of respondents (25.24%) stating in their experience that compliance is good. However, there was still a number of responses indicating that the compliance of this sector was unknown (12.62%).
- The biggest barrier to good levels of compliance is complex legislation, with 54.74% of respondents agreeing. With significant pieces of legislation such as the Industrial Emissions Directive applying to operations in this area of work, both terminology and requirements in the Directive can be misunderstood. Further answers identified by respondents included lack of resource for inspections (40.0%) or visible presence within the industry, that economic incentives offered to the industry do not support compliance with environmental regulations (38.95%) and insufficient self-monitoring or reporting by operators (29.47%). Further comments also indicated that changes to processes or products happen quickly in this sector. The permitting process should therefore be able to meet these needs. There is an awareness that integrating legislation which applies to this area, as well as others, for an individual operator will work better to achieve a positive environmental outcome.
- The biggest barrier to enforcement was identified as a lack of resources for inspection (68.42%). Inspections are a key requirement in environmental regulation, and a lack of trained staff with the time to carry out a thorough inspection is a problem. Further to this are inadequate sanctions or fines (57.89%) which do not act as a strong deterrent and complex prosecution procedures (49.47%) that are time consuming and often do not result in suitable penalties (often due to a lack of appropriate training for prosecutors).
- A large number of responses (50.49%) indicated they would welcome training, resources or guidance on this area of work; specifically, case studies of experiences from local up to national scale, training for environmental prosecutors and police,

and tools or approaches that help inspectors to maximise their impact with reduced resources. A slightly lower number of responses indicated they weren't sure if this material would be useful (40.78%).

Enforcement

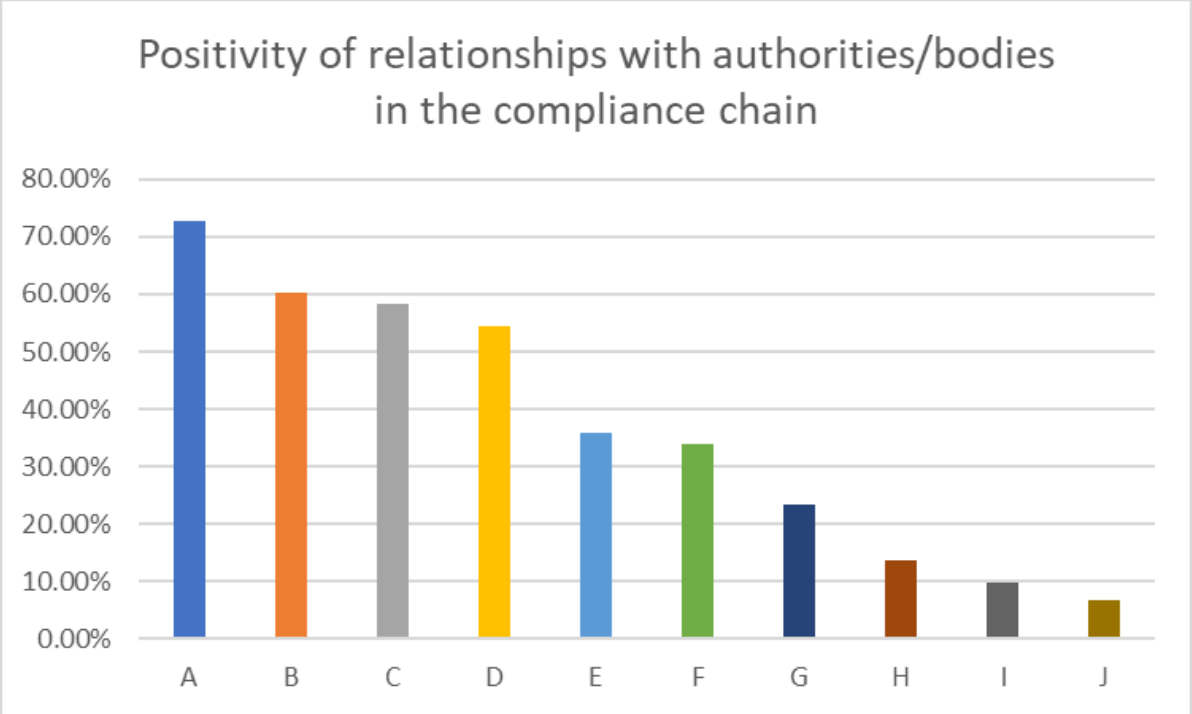
The decision to dedicate a section of this survey solely to enforcement was made to better understand the process as a whole, rather than only focus on actions and outcomes that occur towards the end of the chain. As such, questions in this section explored relationships that participants have with authorities/bodies across the compliance chain, gain an understanding of the most used enforcement interventions and their effectiveness, legal processes and what the barriers to prosecution of environmental crimes are.

Summary of information collected for this question area:

- This section proved to be popular amongst participants, with between 84-103 (53.85-66.03%) individuals answering depending on the question. This is likely a result of the crosscutting nature of this topic, with enforcement being a key aspect to all sectors.
- As shown in Figure 4, the relationship status that participants have with the various parties involved within the compliance chain shows a great degree of variability. The party cited as having the 'best' relationship with participants is inspectors at 72.82%. This was followed by the police (60.19%), other national authorities competent for implementation and enforcement (58.25%) and permitters (54.37%). Parties at the lower end of the scale were prosecutors (23.30%), NGOs (13.59%) and the judiciary (6.8%). This is perhaps due to the legal complexity of dealing with cases of environmental crime or a general lack of collaboration with these parties. Groups which comprised the 'Other' (9.71%) category included customs, government departments and legislative bodies such as Legislators of the Länder.
- A range of answers was provided for the question detailing which enforcement interventions were most often used. Popular answers included site inspections, provision of formal advice/guidance, use of notices/warning letters, issuing fines and to a lesser extent, involvement of the police and escalation to the prosecution level.
- When asked if these interventions were effective, most participants answered 'most of the time' (47.73%). This was followed by 'sometimes' (26.14%) and 'yes' (22.73%), with very few participants stating that these interventions do not work (3.41%). Based on these responses, it seems that there is some degree of variability on the success and effectiveness of these enforcement interventions. However, this tends to lean towards the positive side of the scale. The variability of responses was not

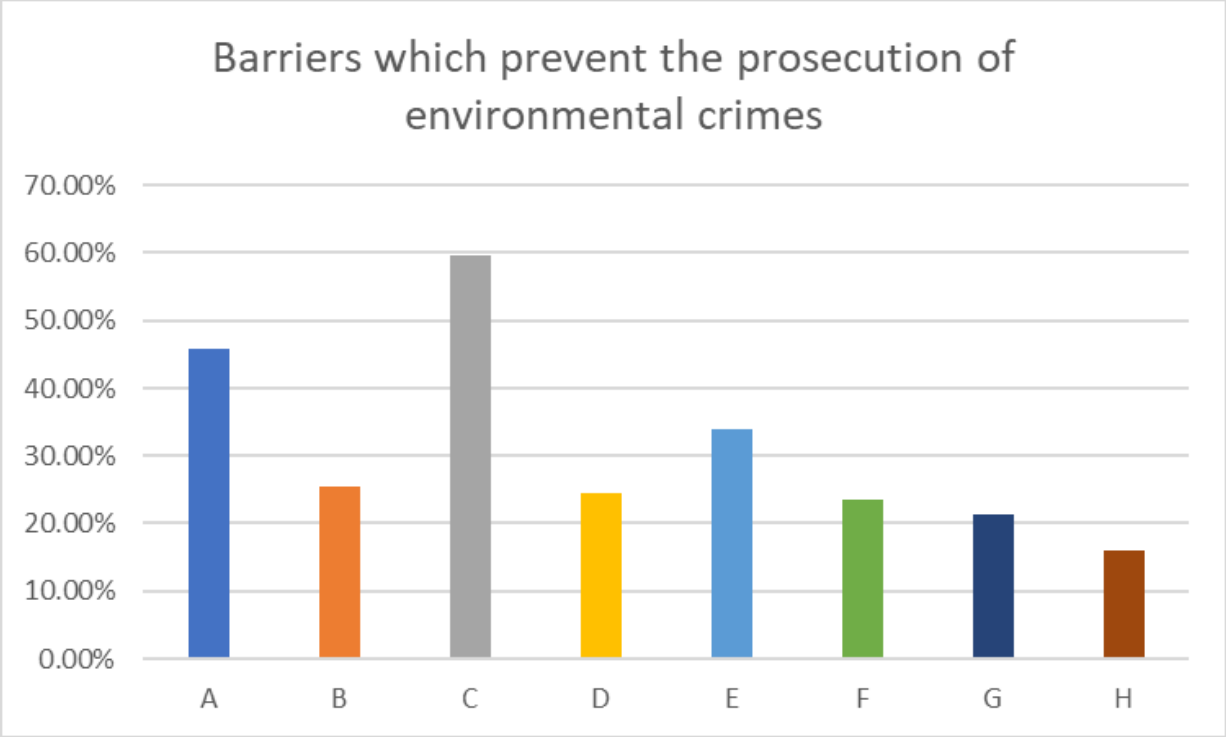
unexpected, as this question generalises the effectiveness of all the utilised interventions. To overcome this bias, a question on barriers to enforcement has been included for most of the topics present in section 1 of this report.

- On the legal processing of environmental crimes, a large percentage (62.75%) of participants feel that the legal process for prosecution is too complex in their country. Just under a quarter (24.51%) of respondents believe that the current process of prosecution in their country is satisfactory, while a smaller group of participants (12.75%) answered that they were unsure.
- When asked to comment on the fairness of legal sentencing for environmental crimes in their country, over half of participants said that it is too lenient (51.52%). The was followed by 'sometimes' (22.22%) and 'yes, it is fair' (14.14%), while 10% of respondents were unsure and very few thought that current legal sentencing in their country was too harsh (2.02%).
- The fairness of legal sentencing appears to be reflected in the follow up question on how often do convicted parties receive the maximum criminal penalty. The top three answers were closely aligned, with 'never' being the most favoured answer (30.69%), followed by both 'not too often' and 'unsure' at equal percentages (28.71%). An extremely small percentage of respondents selected 'often' (1.98%) and 'almost always' (0.99%), strongly indicating that it is a rare commodity for criminals to receive the maximum penalty (for environmental crime cases).
- The reasoning behind this is clearly complex based on the range of answers selected, as shown in Figure 5. Although, the top two answers which stand out as being the biggest contributing barriers are the complexity of cases (59.57%) and heavy workloads (45.74%).
- A large proportion (51.02%) of respondents think that training and guidance provided by IMPEL would be helpful to address the challenges that have been raised in association with enforcement. The biggest individual piece of training/guidance that participants cited as being the most helpful to overcome these barriers to enforcement, is provision of training to prosecutors to better understand cases of environmental crime (particularly in cooperation with partner networks). A lesser extent (33.67%) indicated that they weren't sure if training/guidance provided by IMPEL would be helpful.



Letter	Corresponding answer option
A	Inspectors
B	Police
C	Other national authorities competent for implementation and enforcement
D	Permitters
E	IMPEL and other implementation and enforcement networks
F	Other national competent authorities or regulators (e.g., health authorities or safety regulators)
G	Prosecutors
H	NGOs
I	Other
J	The Judiciary

Figure 4. Overview of the relationship status that respondents have with the various groups involved in the compliance chain. Larger bars equate to a more positive relationship.



Letter	Corresponding answer option
A	Heavy workload
B	Case presented to prosecution is not moved forward
C	Complexity in cases
D	Ability and expertise to build a robust case is not available
E	Not enough technical knowledge at prosecutor level
F	Focus on high profile cases so lower profile cases are not a priority
G	Difficult to build a case on potential future impacts
H	Hard for prosecutor/judge to identify 'victims'

Figure 5. Depiction of the various factors which contribute to the difficulty in prosecuting environmental crimes. Larger bars represent the most commonly chosen answers.

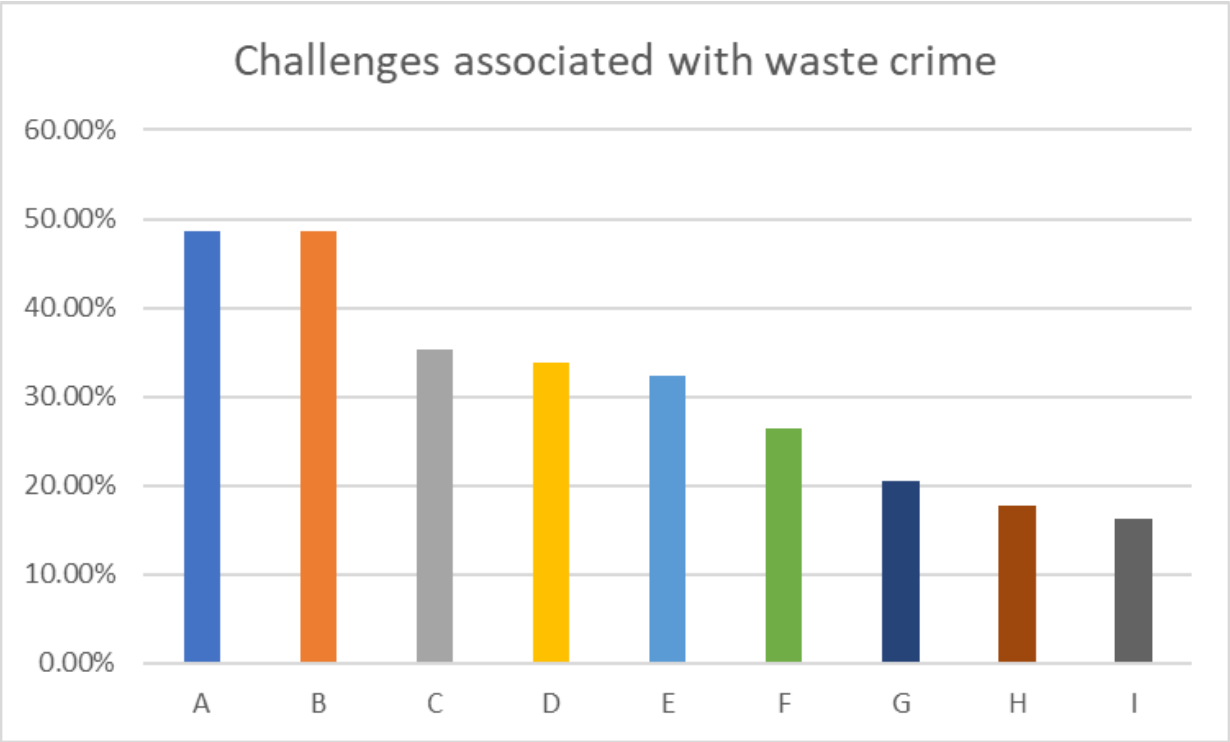
Waste Crime

Waste crime is an opportunistic criminal practice that is prevalent across Europe. The low risk, high reward nature of waste crime blights efforts to create a circular economy. This creates a cycle, where individuals that practice illicit activity profit at the expense of the environment and legitimate operators. Due to the ever-evolving nature and difficulties in detection of illicit activities, waste crime poses a significant threat to environmental regulation.

Summary of information collected for this question area:

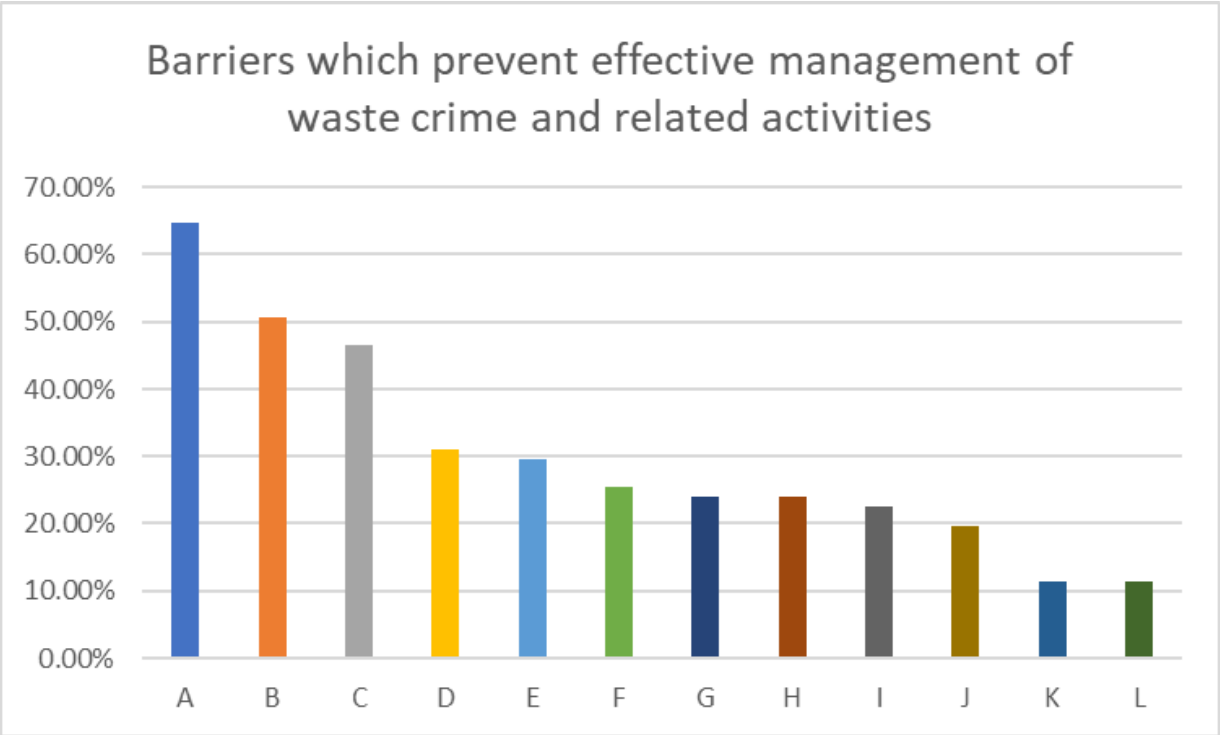
- 57 participants cited waste crime as being part of their work. This represented just over a third of total participants at 36.54%.
- The most used approaches to combat waste crime were issuing of fines, site inspections (including regular routine checks, investigation of complaints, targeted inspections, on the spot checks and ad-hoc inspections), cooperation with the authorities, gathering intelligence and conducting transport checks (e.g., roadside inspections).
- A range of answer options were provided for what the biggest challenges associated with waste crime are, as seen in Figure 6. The top three biggest challenges were detection of illegal activity (64.79%), illegal storage of waste (50.70%), and improper classification of waste types (46.48%). Interestingly, initial detection of illegality was cited as being the biggest challenge. This could indicate that waste crime related activities may be occurring at a higher rate within Europe, compared to what is currently being reported. It may also hint that there isn't a clear system of infrastructure, that allows for identification of waste crime and related activities. Apart from the top three answers given, many of the other challenges were actively selected by participants. These answers ranged from issues related to staff resourcing and capacity, problems with waste handling, transportation and the prosecution process. This shows that challenges related to waste crime are not just siloed into one area and that this is a highly complex environmental issue.
- The top three barriers which prevent effective management of waste crime (and related activities) were highlighted as efficiency of waste tracking (48.53%), staff capacity (48.53%) and lack of site inspections (35.29%). These answers suggest that a lack of resourcing seems to be the biggest contributing factor with regard to management of waste crime. As seen in Figure 7, although each answer does not have equal weighting, all were selected in some capacity. Again, this highlights the complexities that are associated with this particular environmental issue.
- On the topic of training, participant answers were almost equally split between 'yes' (47.37%) and 'I don't know' (46.05%), when asked if it would be useful for IMPEL to provide training resources. Very few participants selected no. This pattern has been highlighted in several other topic areas. Training resources that were highlighted in participant comments were as follows:
    - Training on dealing with waste crime by environmental inspections or sanctioning of waste crime would be useful and in line with the current work of Environmental Compliance and Governance Forum.

- International waste transport, especially guidance for authorities and operators when waste does not meet original classification type or waste cannot be utilised as originally planned.
- Use of waste codes.
- More peer-to-peer learning.
- Best practice in interpretation of waste shipment regulations.
- Guidance in how to address the changing (international) perspectives with end of waste approaches and circular economy.
- Training on waste tracking.
- Information/material for national authorities which are not competent authorities for waste shipments, but do inspections more often (e.g., national police).
- Good practices on information sharing (e.g., how relevant parties are organised and communicate at higher and operational level, committees, tools used, joint checklists to be used by inspectors, customs, etc) that can be used in national strategies to compact environmental crime (waste) based on the relative EC guidance.
- Illegal export/import of (unsorted) plastic waste and how to handle it/ cooperate internationally.
- Training on interpretation of complex legislation.
- Training on how to conduct effective site inspections.



Letter	Corresponding answer option
A	Efficiency of waste tracking
B	Staff capacity
C	Lack of site inspections
D	Licensing complications (e.g., application of waste broker and waste carrier licenses)
E	Communication between relevant parties
F	Overly complex legislation
G	Inconsistencies with waste transfer notes
H	Lack of knowledge of the legislation
I	Lack of equipment or tools for targeted work

Figure 6. Graphic which details the various challenges which contribute to the act of waste crime. Larger bars represent the most popular answers and therefore the biggest challenges.



Letter	Corresponding answer option
A	Detection of illegal activity
B	Illegal storage of waste
C	Improper classification of waste types
D	Illegal transportation between countries
E	Burning of waste
F	Lack of specialists to carry out inspections
G	Prosecution
H	Illegal transportation within your country
I	Fly-tipping
J	Impacts due to lack of capacity
K	Taking advantage of different management practices between local authorities
L	Taking advantage of different management practices between countries

Figure 7. This chart summarises the barriers which are actively deterring management of waste crime and related activities. Larger bars correspond to the biggest challenges.

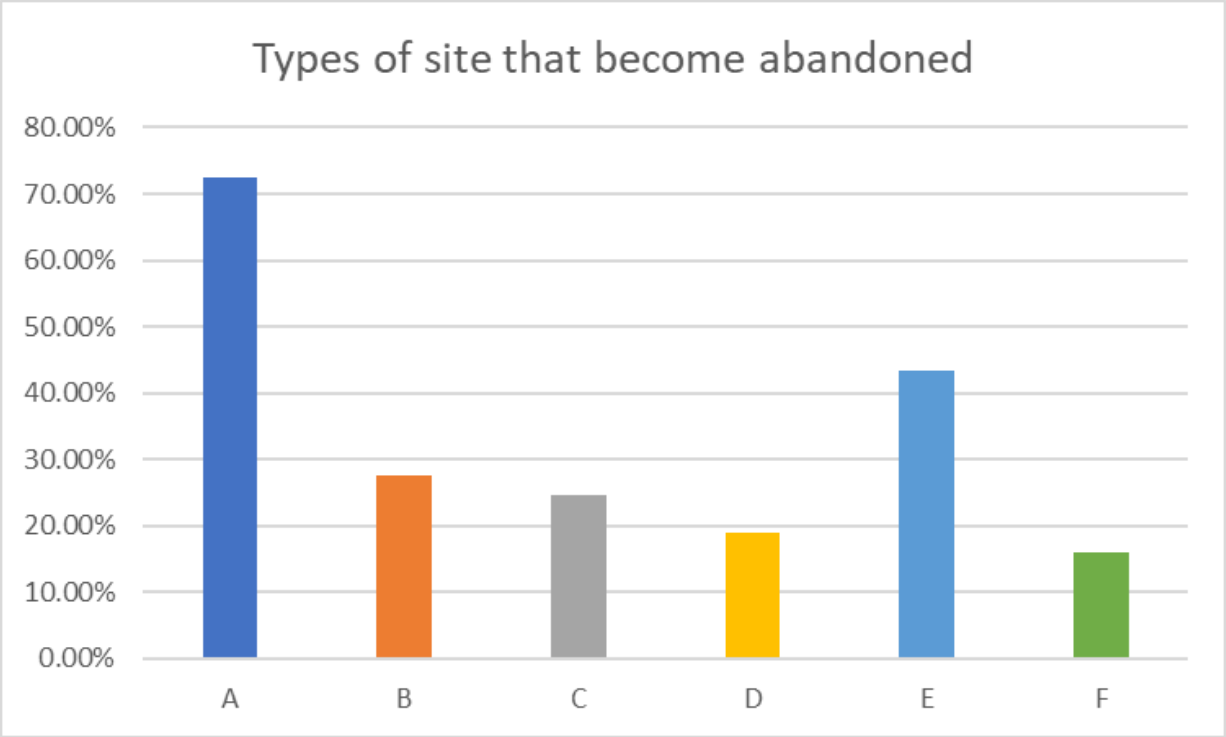
Abandonment of sites

Sites which become the subject of abandonment threaten the environment and are economic drains to society. The responsibility surrounding the clean-up process of abandoned sites is often ambiguous. Tracking down site owners is a challenging task. This often leads to other parties adopting the responsibility of clean-up operations. With this shift in responsibility, conflict can arise between involved parties while original site owners are free of any associated consequences.

Summary of information collected for this question area:

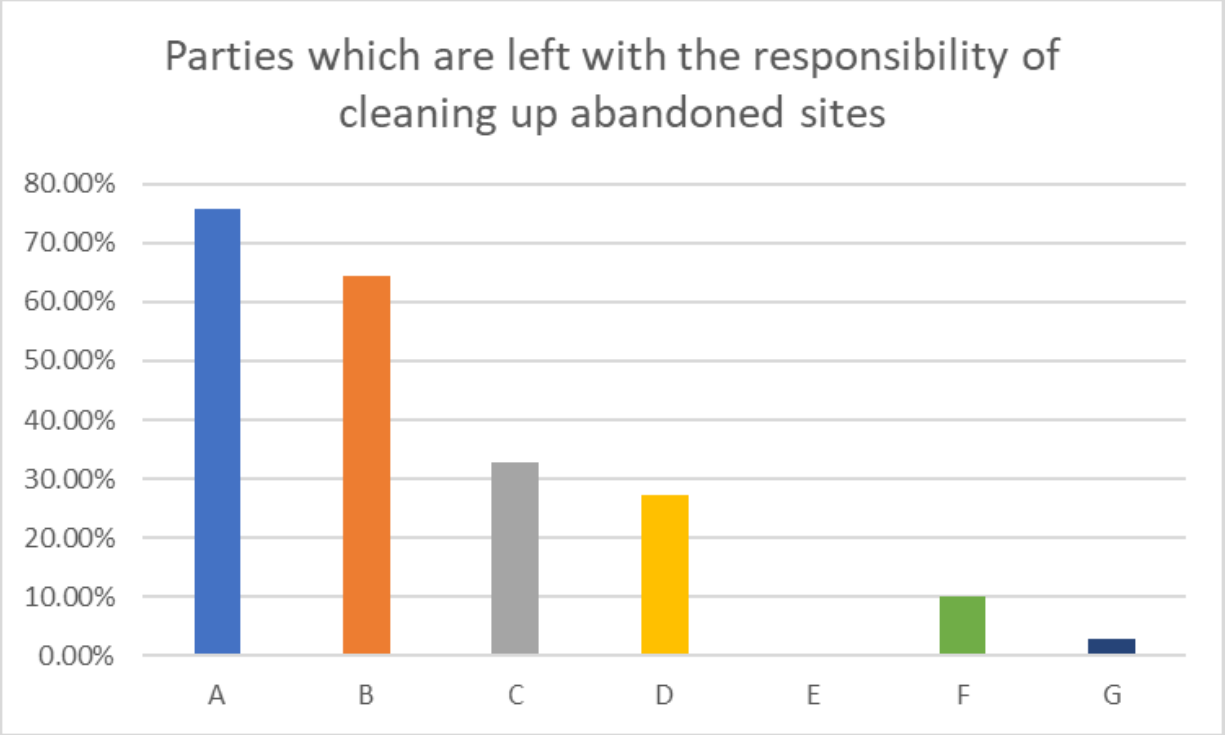
- 48 respondents selected that abandonment of sites falls within their line of work. This represented just under a third (30.77%) of total respondents.
- Figure 8 shows that the types of sites that become abandoned vary, but by far the biggest category which participants deal with is abandoned waste sites (72.46%). This was followed by abandoned industry (43.48%), while all other answer options were <30%.
- As seen in Figure 9, the parties which appear to be left with the responsibility of cleaning up abandoned sites tends to either be landowners (75.71%) or government bodies - local (64.29%), regional (32.86%), and national (27.14%). Some participants did comment that responsibility can vary depending on the case.
- There seems to be an overwhelmingly unclear stance on which parties should be responsible for cleaning up sites which have become abandoned. Just under half (48.61%) of participants answered that there is conflict created between parties due to clean up responsibilities being unclear, while 29.17% answered that they did not know. A little over a fifth (22.22%) of participants selected that no conflict was created. This suggests that ownership of clean-up operations is clear for some cases, but overall, this responsibility is unclear for most cases and leads to conflict.
- Very few organisations (<20%) seem to use innovative tools/techniques to either detect sites which may become subject to abandonment (16.42% answering yes) or track down owners of sites that have become abandoned (7.14% answering yes). Most organisations seem to still focus on traditional techniques, although a few participants did state that their organisations were making use of drones and conducting aerial/satellite surveys.
- Most respondents (52.86%) answered that they didn't know if IMPEL training would be helpful for overcoming challenges associated with abandonment of sites. However, a portion of respondents (37.14%) did say that training resources and

guidance delivered by IMPEL would be helpful. In particular, respondents cited training on how to use innovative tools/techniques such as drones and satellites would be beneficial. This poses an opportunity for peer-to-peer knowledge exchange with organisations which are actively making use of these techniques/tools.



Letter	Corresponding answer option
A	Waste
B	Mines and quarrying
C	Buildings in urban settings
D	Buildings in rural settings
E	Abandoned industry
F	Other

Figure 8. Graphic which provides detail on abandoned sites based on participants experiences and categorised into different types of sites. Largest bars represent the most common types of sites which become the subject of abandonment.



Letter	Corresponding answer option
A	Landowners
B	Government bodies (local)
C	Government bodies (regional)
D	Government bodies (national)
E	NGOs
F	Other
G	I don't know

Figure 9. Summary of respondent opinions/experiences, yielding information on which parties are left with the responsibility of cleaning up sites which have become abandoned. Larger bars represent the parties which are most often left with clean up procedures.

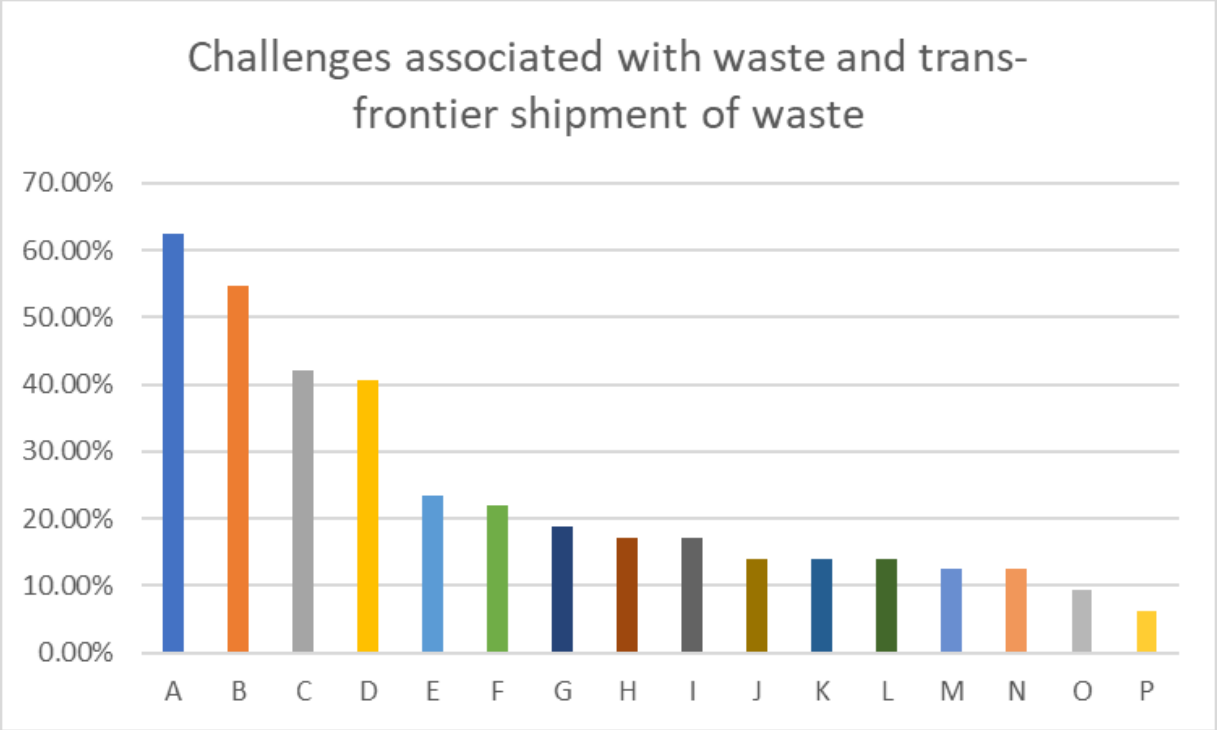
Waste and Trans-Frontier Shipment of Waste

Waste management (including handling, treatment, transport and disposal) is a vital service, that is needed to minimise damage caused to the environment and human health from waste. Economic growth and globalisation have led to the worldwide transport of waste across borders. Due to the scale of operations, risks in the form of mismanagement and intentional law-breaking are created and can lead to serious environmental consequences.

Summary of information collected for this question area:

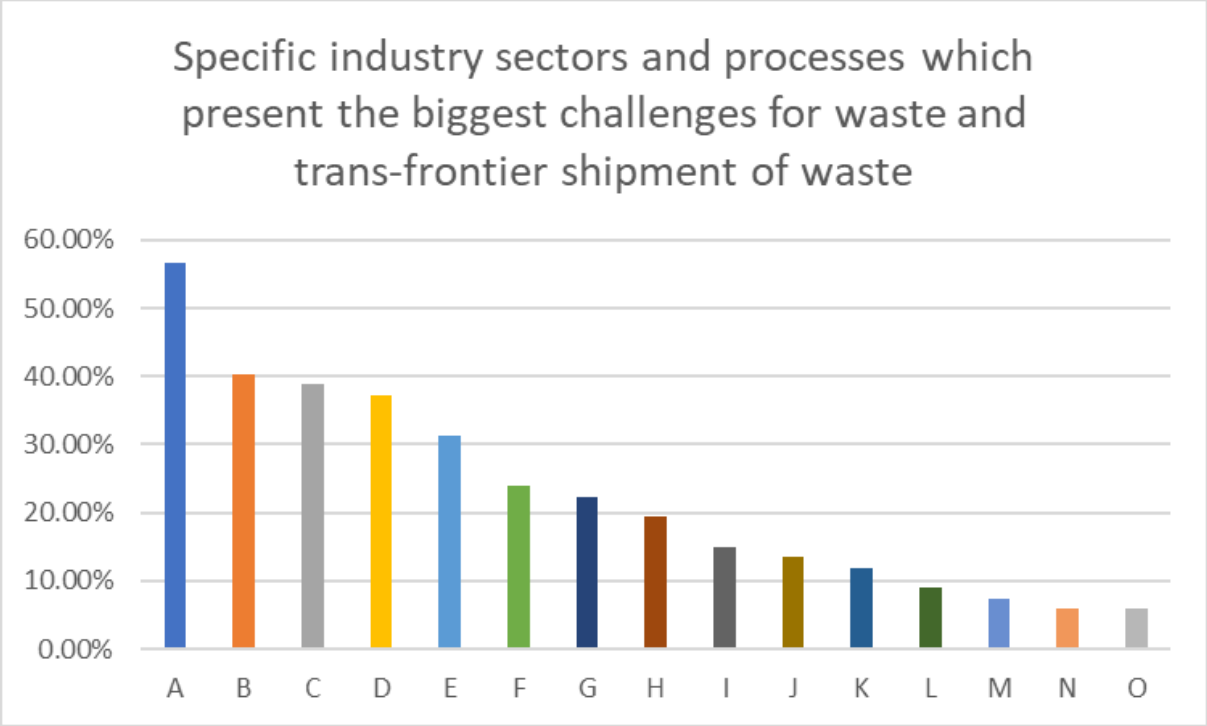
- 49 participants answered that waste and trans-frontier shipment of waste fell within the remit of their work. This represented almost a third of total participants (31.41%).
- Figure 10 represents the main challenges which apply to this sector. All answer options were selected to some degree, highlighting both the variety and complexity of challenges relating to this sector. The top five answers were classification of waste types (62.50%), fighting organised waste crime (54.69%), surveillance of illegal dumping/burning of waste (42.19%), tracking hazardous waste (40.63%), and insufficient capacity to deal with waste legally. (23.44%). These answers are unsurprising (with the exception of the fifth most popular answer), given that these issues have been raised as causes for concern in the previous sections of this report. Answers provided in the 'other' category included the following:
    - A lack of visibility relating to waste transport, especially on shipments outside of the EU
    - Correct waste treatment (e.g., depollution, dismantling)
    - Air pollution
    - Verification of overseas end destinations
    - Knowledge of local import controls
    - Site restoration
    - Understanding the % of pollution caused by different waste types
- Similarly to the previous question, all answer options were selected to some extent as detailed in Figure 11. However, there were clear frontrunners for the specific industry sectors or processes which present the greatest challenges within this topic area. The top four answers were end of life vehicles (56.72%), plastic waste (40.30%), electrical waste (38.81%), and trade in "used goods" (37.31%). Further answers which were provided as part of the 'other' answer option were trade in stolen goods (e.g., catalytic converters and other high value metals), crushed concrete waste and refuse derived fuel (RDF).
- 60% of participants acknowledged that illicit action and illegality are now common within the waste management sector. This was followed by 21.43% selecting 'I don't know', while 18.57% said that this was not common.
- Interestingly, despite the response of the previous question, the majority (42.86%) of participants stated that the status of compliance within this sector is broadly compliant. This was followed by 20% of participants stating that compliance within this sector is at risk. It should also be noted that 12.86% of participants responded with 'I don't know' and that no one cited compliance as being excellent (the latter of which is not unexpected).

- There appears to be several factors which create barriers to good compliance within this sector. The top three answers which were provided (with almost equal weighting) are lack of knowledge of legislation (48.48%), lack of knowledge/resources for inspection (48.48%), and adverse economic incentives (46.97%). Answers provided in the 'other' category included the following:
    - The profits that are gained from conducting poor compliance often outweigh the penalties which are received e.g., received fines are small scale in comparison to the financial turnover gained through non-compliant procedures.
    - There are many actors and responsible parties throughout the chain (e.g., production, supply, collection, transport, and end use).
    - Mixing waste fractions is profitable.
    - By focusing all efforts on the poor performing sites, compliant sites are not inspected. This creates the capacity for these sites to become poor performers. If this occurs, then it will go unnoticed as they are not being routinely inspected.
- Regarding barriers to enforcement within this sector, there were two issues that stood out – inadequate levels of sanctions and fines (70.77%) and lack of resources for inspections (69.23%).
- A large majority of participants (66.18%) agreed that training delivered by IMPEL would be beneficial for overcoming challenges within this sector. Specific training which was highlighted included training of prosecutors, creation of simpler procedures/guidance that can be used uniformly, guidance on how to deal with waste that does not meet agreements or must be rejected for other reasons, tracking of waste transport and knowledge exchange (particularly tools/strategies/approaches that are utilised for site inspections).



Letter	Corresponding answer option
A	Classification of waste types
B	Fighting organised waste crime
C	Surveillance of illegal dumping/burning of waste
D	Tracking hazardous waste
E	Insufficient capacity to deal with waste legally
F	Establishing adequate waste treatment infrastructure
G	Establishing inspection plans for TFS
H	Reaching recycling targets
I	Surveillance of operating landfills
J	Promotion of waste pre-treatment
K	Surveillance of closure/after-care of landfills
L	Other
M	Managing nuisance around waste treatment plants/landfills
N	Overly complex procedures/forms
O	Creating waste prevention plans
P	Creating waste management plans

Figure 10. The full answer breakdown identifying the main challenges relating to waste and trans-frontier shipment of waste. Larger bars represent the most popular answers selected by respondents.



Letter	Corresponding answer option
A	End of life-vehicles
B	Plastic waste
C	Electric or electronic waste
D	Trade in "used goods"
E	Problems with waste transport chain
F	Waste tyres
G	Hazardous/toxic waste
H	Recycling centres
I	Organic waste
J	Landfills
K	Waste combustion for energy production
L	Impacts due to lack of capacity
M	Other
N	End of life-ships
O	Mineral waste

Figure 11. Further analysis of specific industry sectors and processes relating to waste and trans-frontier shipment of waste. Particular focus as shown in this graphic relates to specific waste streams. Larger bars indicate the biggest challenges.

Single Use Plastics

There has been an increased societal focus on the issue of plastics including excess consumption, improper disposal and pollution since the last survey. In addition, the Single-Use Plastics Directive (EU 2019/904) which aims to reduce the impact of single use plastics can now be enforced, so it's expected that regulatory organisations will be incorporating this into their work.

Summary of the information collected for this question area:

- 37 (23.71% of the total number of responses) responses were recorded. As a still emerging area of work, it's unsurprising that there was a relatively low number of responses compared to other sections.
- Most respondents indicated that they had not been responsible or worked with any aspect of single use plastics within their role until this point (39.34%). Some respondents had been involved in regulation (32.79%), implementation (31.15%) and policy development (18.03%) relating to plastic pollution and single use plastics, so could use some of their experience to inform future work. The remaining responses showed that plastic is dealt with on an ad hoc basis (as and when it becomes a problem) (11.48%) but a few organisations do have pre-existing authorities to deal with this issue (9.84%). Additional comments provided also included dealing with plastics as part of a time bound project and as part of work relating to Extended Producer Responsibility.
- It is clear there is still some uncertainty around where the responsibility for the implementation of the Single Use Plastics Directive lies. Only 34.92% of respondents stated they will be responsible for the implementation of the Directive. 41.27% stated they would not be responsible for this, with the remaining responses (23.81%) stating they did not know if they would be involved in implementation. It's clear in further comments that some organisations have had limited involvement so far. For example, providing comments on draft legislation, but further responsibility has not yet been decided. Some other organisations are clear that they will be responsible for inspections and enforcement in this area.
- 60% of respondents stated they had not yet received or taken part in any training around their role. Some respondents were provided with guidance from a national level authority (16.36%). However, across all remaining authority levels (European Commission, Regional level, local level, manager/team leader), little guidance has been provided (answers ranging from 1.82% to 9.09% of the responses selected one

of these options). 7.27% of respondents have shared guidance with peers in relation to their roles.

- The biggest challenge in relation to Single Use Plastics is expected to be insufficient levels of resourcing to enforce the regulations (51.06%). Additional answer options which were popular include establishing a monitoring system (40.43%) and the ability to disseminate information to those who are regulated (27.33%). Further uncertainty was also revealed, in that organisations are unclear about both the scope of the legislation (23.4%) and the role they will play (23.4%).
- Most respondents hope to collaborate on knowledge exchange with other regulators/authorities on single use plastics (53.19%). This is to ensure that experience and best practice can be shared. Some organisations have already planned or carried out knowledge exchange with others (19.15%).
- Again, on the topic of training, resources or guidance that could be provided by IMPEL, the majority of respondents said that this would be helpful (52.24%). A few respondents stated that this offer would not be helpful (5.08%), and the remaining responses stated they were not sure if material provided by IMPEL would help (42.37%). This could indicate a lack of knowledge or understanding of what IMPEL could provide, or an uncertainty about how it could be used by a range of organisations.

Climate Change

The issue of climate change, plus mitigating and adapting to the consequences of climate change are not new for environmental regulators. However, it appears that there has been an increased focus on this topic since the 2017 Implementation Challenge Survey. By collecting information on the experiences of regulators in recent years, further action can be taken to prepare and equip regulators for the future.

A summary of the information collected for this question area:

- This section was posed to everyone who responded to the survey. Surprisingly, only 87 respondents (55.76% of total respondents) answered the questions posed in this topic. It was expected that everyone would be able to answer part, or all of the questions in this section. Interestingly, a relatively large portion of respondents chose to skip this section. One reason discussed for this is that climate change strategies are set at an organisational level, and this is not communicated or implemented at other levels.

- Respondents were asked to identify the impact of climate change on the way they work. Most indicated that climate change impacts have been considered by their organisation at a strategic level (42.53%). Much fewer indicated that climate change impacts are considered in their own work (12.64%) or within projects that they are working on (17.24%). Some respondents did note that climate change impacts had been considered at all of these levels connected to their work (17.24%), but perhaps surprisingly 31.03% of answers indicated that climate change impacts were not considered in any of their work. Additional comments added some further perspective on these answers. Many stated that changes have happened at a national strategic level, but this had not yet filtered to their level of work. Some respondents indicated that within their roles, they routinely discuss impacts of climate change with operators. Some also provided information about how they work in a strategic way to inspect for specific environmental events e.g., droughts. There seems to be an awareness, that further focus is needed on reducing the negative environmental impacts of individual organisations actions.
- The main challenge in relation to climate change and the regulation of its causes or impacts, was highlighted as legislation not providing opportunities to regulate effectively to protect against the impacts of climate change. Legislative changes can take some time to respond to evidence of environmental damage, and until legislation accounts for factors related to climate change, authorities have little legal power to regulate. Other favoured answers included:
    - Inconsistent information, policies and procedures leading to confusion around responsibility of duties (36.92%).
    - The role of organisations is not clear and so it's difficult to plan and incorporate climate change and it's impacts into day-to-day work (23.08%).
    - Legislation is not relevant to the role of the respondent, so while there may be interventions available, these are not always appropriate for an individual's role (20.00%).
- Responses indicated there were several reasons behind these implementation challenges. The most common were significant gaps in current legislation which does not allow for an appropriate response to climate change (39.9%), insufficient capacity in appropriately trained staff to enable focus on climate change impacts (37.88%), and inadequate training, guidance or resources for staff (30.30%). Several additional comments for this question reinforced the difficulty of regulating for climate change impacts with legislation that was drafted many years ago. There is also recognition that creating a new legislative framework (which would explicitly include climate change) would take a significant amount of time and careful planning.

- Some respondents were able to give examples of how their organisations have already taken measures to overcome challenges in relation to reducing and mitigating the impacts of climate change. These include:
    - Taking extreme weather conditions and flood prevention into consideration when responding to planning consultations and when permitting activities.
    - Increasing water reserves to mitigate droughts (that will become more severe because of climate change).
    - A simplified screening risk assessment for sites of flood risk in the pre-application phase of applying for a new permit and conditions introduced in permits to require increased reporting for sites at risk of flooding.
    - Creation of cross functional teams within the organisation to consider climate change, including climate emissions, climate risks and circular economy.
    - Involvement in co-creation of strategies being launched on tackling drought & the issues related to drought events.
    - Increasing the level of knowledge on sustainability and climate change in formal and non-formal settings, including with those who are regulated.
    - Within the organisation increasing the use of electric vehicles, use of solar panels on buildings and equipment, development and implementation of a zero-waste strategy and campaigns to reduce the use of plastic within operations.
    - Participation in wider national climate plans whose aim is to promote a green transition and reduce the carbon footprint.
    - Establishment of regional groups to oversee and co-ordinate work in relation to climate change across various local authorities to ensure consistency in approach.
- The benefit of partnership working is recognised in the examples listed above. This was additionally cited in some of the survey responses, which state that partnership working has taken place with other regulators (and with non-regulators and with other partners). However, most responses stated that partnership working was not routine within their day-to-day work (68.42%).
- Improving the ability to implement legislation and regulations related to climate change will be key in meeting climate change targets in the coming years. This will create a significant difference to the role of regulators. Actions which could help in this pursuit include:
    - Providing clarity in the responsibilities of authorities in relation to climate change.
    - Providing information and guidance to the regulated community. This should include campaigns which target whole sectors.

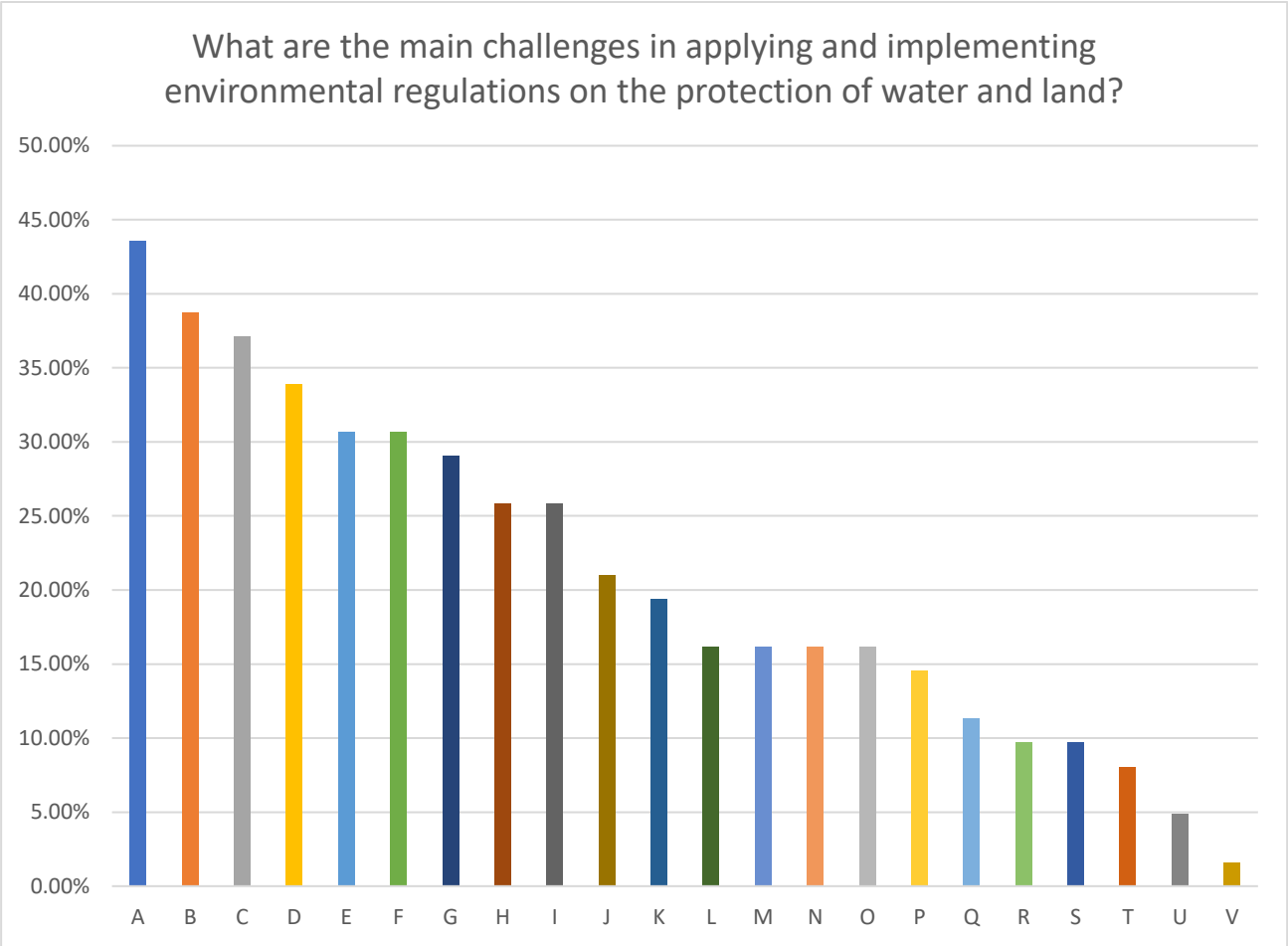
    - Providing information on the current state of the environment, and clearer information about targets and necessary action to reach these targets to the public.
    - Engaging with local communities and stakeholders in planning and decision-making processes
- A considerable number of responses indicated uncertainty that IMPEL provided training, resources or guidance would help with these challenges (57.33%), while approximately 30% stated these resources would help. Specific information on how legislation is being adapted to include climate change considerations, as well as case studies and sharing of best practice were highlighted as the most useful.

Protection of land and water

Water and land are some of the largest natural resources available on Earth and are vital to human health and a healthy environment; improving biodiversity, water quality and soil health. Many processes within industry have negative impacts on water and land, and so identifying challenges in implementation and potential solutions can have a wide-ranging impact on compliance and the environmental outcome.

A summary of the information collected for this question area:

- 50 responses indicated that they were responsible for the protection of water and land in their role (32.05% of the total responses).
- A large range of responses was provided with respect to the main challenges faced in implementing environmental regulations on the protection of water and land. Such a broad topic meant that many answers had relatively low levels of response (between 1 and 10 respondents choosing these), but there were 4 answers which received more than 20 votes as the biggest issues faced. These were; ensuring implementation of good agricultural practice (43.55%), reducing water pollution (38.71%), monitoring/assessing groundwater (37.10%) and monitoring/assessing surface waters (33.87%). The additional answers can be seen in Figure 12.



Letter	Corresponding answer option
A	Ensuring implementation of good agricultural practice
B	Reducing diffuse water pollution
C	Monitoring/assessing groundwater
D	Monitoring/assessing surface waters
E	Installing/maintaining urban wastewater treatment infrastructure
F	Monitoring and assessing soil contamination
G	Implementing soil protection measures
H	Assessing/preventing further soil contamination around installations
I	Tackling illegal abstraction
J	Advancing towards “good ecological status” or “good ecological potential”
K	Cooperation of different local and regional authorities
L	Lack of baseline studies
M	Keeping the rule of non-deterioration
N	Regular soil monitoring
O	Regular groundwater monitoring
P	Ensuring implementation of good aquaculture practices

Q	Mitigating effects of physical modification of water bodies
R	Management of transboundary pollution of surface waters
S	Monitoring and assessing of sediments from water bodies
T	Drawing up plans/programs on river basin management
U	Others (please specify)
V	Monitoring and assessing the minimum ecological flow

Figure 12. The full answer breakdown identifying the main challenges relating to the protection of water and land. There was a wide variety of answers, however ensuring the implementation of good agricultural practice was the most popular.

- The most challenging sector in dealing with the protection of water and land is agricultural pollution, with more than 66% of respondents choosing this. Given the wide range of processes and operations, including size of operations, the level and complex nature of pollution from agriculture presents difficult challenges. Following this, the most common challenges were from urban sewerage, illegal dumping of waste or other material, and sludge. The broad topic of protection of land and water is reflected in the range of answers; from agriculture, to algal blooms, to pollution from vehicles and roads.
- Overall compliance in relation to water and land is noted as generally broadly compliant (36.51%), but more than 20% of respondents did express concern that compliance levels were at risk. Given the many factors influencing the processes and operations, there was a substantial number of respondents who did not know the compliance picture (17.46%).
- There were two clear barriers to compliance highlighted by 45.61% and 43.86% of respondents respectively; staff capacity and lack of self-monitoring or reporting by the operator. The complex nature of the relevant legislation, as well as the overall lack of knowledge on this legislation were the next most common problems. Further comments indicated that there is not specific legislation or fit for purpose legislation that aligns with organisational, or national priorities including planning and development priorities.
- As with other sections, the biggest barrier to enforcement is a lack for resources for inspection, with a majority of respondents (53.57%) choosing this. The other barriers to enforcement were given as inadequate level of sanctions or fines, complex legal procedures and a lack of trained environmental prosecutors.
- A large number of responses (45.16%) indicated they would welcome training, resources or guidance on this area of work, specifically training for environmental prosecutors, guidance on good practice and harmonizing the approach across

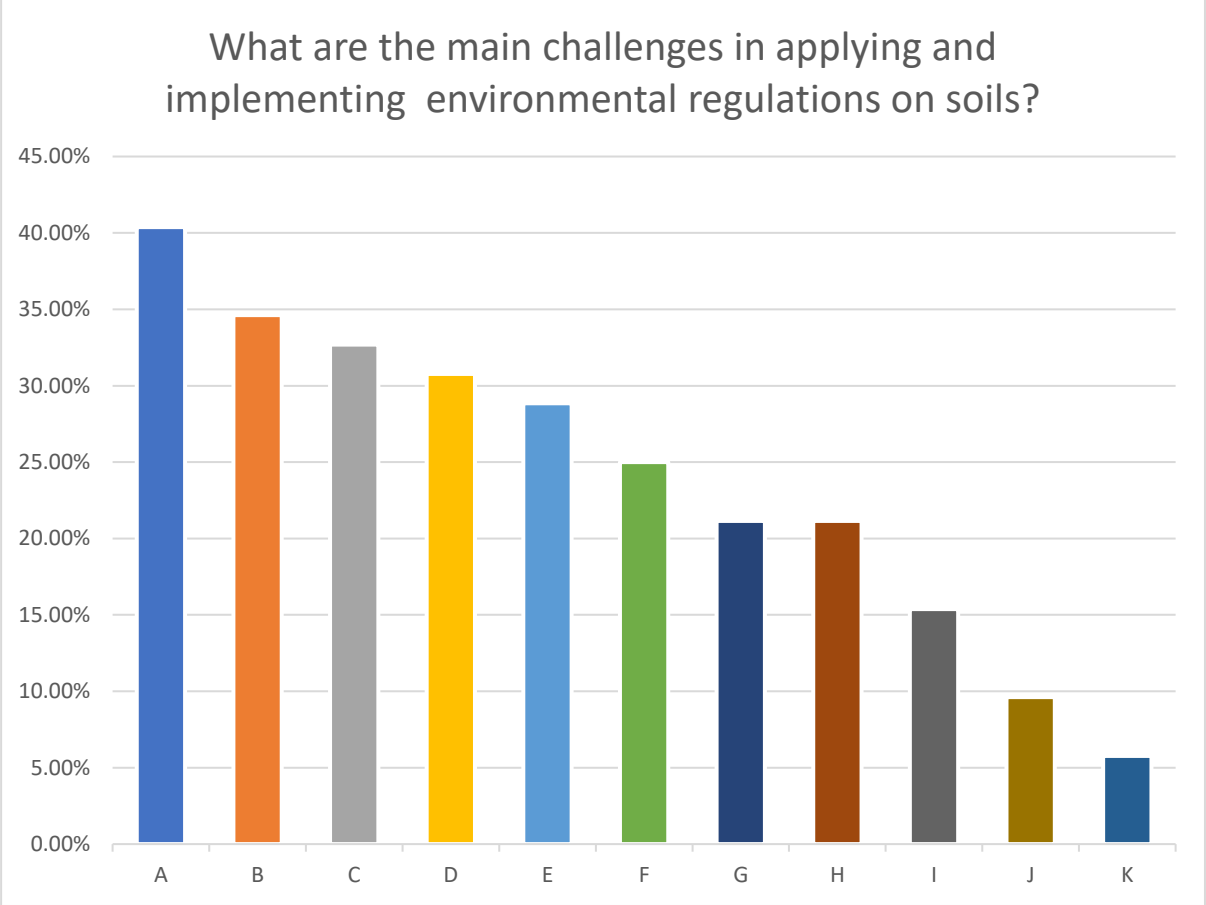
authority levels and exchange of experience between IMPEL members. A slightly larger number of responses indicated they weren't sure if this material would be useful (46.77%).

Soils

Soils are an essential ecosystem that delivers valuable services such as the provision of food, energy and raw materials, carbon sequestration, water purification, nutrient regulation, pest control, and support for biodiversity and recreation. Recent major global assessments have significantly increased awareness of the impact and economic cost of land degradation and the importance of healthy soils.

A summary of the information collected for this question area:

- 38 responses indicated that soils fell within their work remit (24.35% of total responses).
- A range of challenges were highlighted in respect of applying and implementing environmental regulations with regards to soils. The most popular choice was ensuring implementation of good agricultural practice, followed by monitoring, and assessing soil contamination, enforcement and co-operation of different authorities. Additional information provided in comments reported that difficulties in staffing were a factor which exacerbated the other challenges present. A full breakdown of answers for this question can be seen in Figure 13.



Letter	Corresponding answer option
A	Ensuring implementation of good agricultural practice
B	Monitoring and assessing soil contamination
C	Enforcement
D	Cooperation of different local and regional authorities
E	Regular soil and groundwater monitoring
F	Assessing/preventing further soil contamination around installations
G	Implementing soil protection measures
H	Keeping the rule of no-deterioration
I	Advancing towards “good ecological status” or “good ecological potential”
J	Other (please specify)
K	Assessing soil health in terms of compaction, erosion, organic matter levels

Figure 13. As a new addition to the 2021/22 survey, collecting a baseline of information on the challenges relating to soils will be useful in developing solutions to these problems, and in monitoring progress on this topic in the future.

- In accordance with views in the waste crime questions, illegal dumping of waste is the biggest problem sector for regulators, with 49.02% of respondents selecting this. This was closely followed by pollution from livestock agriculture (43.14%), industrial sites both in operation and after closure (41.18%) and landfills (in operation or after closure) (31.37%). The remaining answer options were still chosen by a number of respondents including sludge and identification and management of derelict contaminated land.
- The monitoring regimes which are used to check on the compliance of operators with soil legislation are typically not scheduled in a uniform way. Most happen as and when needed. Some regulators indicated there is no set monitoring or compliance schedule that is followed, which can leave space for non-compliance or deterioration of the environment.
- Most respondents indicated they did not know the overall compliance of the sector (31.48%), and the majority of other responses were spread through the 'at risk', 'poor' or 'very poor' choices. Combined with the information provided on monitoring schedules, it appears there is a lack of information and awareness of overall compliance. This is in part due to the as and when needed nature of inspections, which occur only when a problem has been identified.
- The most common barrier to compliance with regards to soils was an insufficient understanding of the importance of soil (46.81%). The next most common barrier was choices made without awareness of full consequences. This lack of understanding of subsequent consequences on soil leads people to not think about the impacts of their operations on the health of the soil. Other common answers were inadequate management and monitoring of waste, limited understanding of the social dimensions of pollution and treatment of ecosystems as waste dumps and sinks.
- A theme seen in other topics was the lack of staff capacity as a barrier to enforcement in this area, with 51.16% of respondents agreeing that staff capacity is the main barrier they face. Other barriers highlighted include inadequate levels of sanctions or fines (48.84%), inadequate capacities at all levels (including political will to change) (41.86%) and difficulties in gathering sufficient evidence (37.21%). Some respondents also noted that prosecution generally is a barrier to enforcement, with difficulty in gathering evidence, lack of trained specialist prosecutors and complex procedures meaning prosecution rates remain low, and do not act as a deterrent.
- Several respondents advised that the best way to encourage maintenance and improvement of organic matter within soils is to engage with farmers; encourage them to use good agricultural practices and offer resources for those within the

sector to increase their awareness of the importance of soil health, including organic matter.

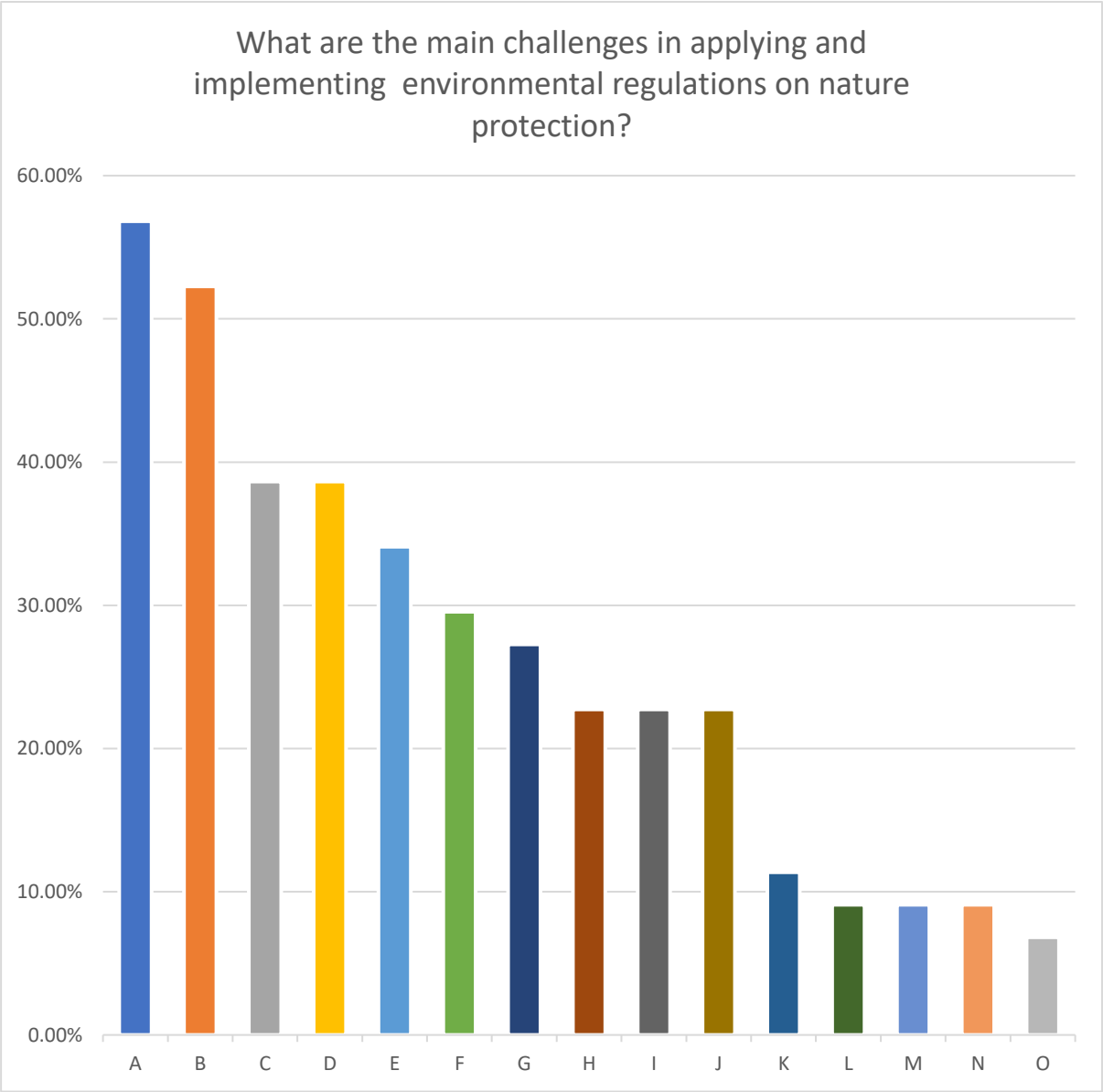
- Agricultural regulation is mostly carried out by other agencies, where this is their primary responsibility (67.92% said this was the case). Around a quarter of respondents did not know if another agency was responsible for agricultural regulation, showing a lack of clarity or awareness of responsibilities.
- Over half of respondents to this question were not sure if IMPEL provided training, resource or guidance would be useful (54.9%), with 37.25% advising this type of material would help in their day-to-day work. Some additional comments highlighted further the need to train prosecutors in the complex nature of environmental problems, as well as improving knowledge on current legislation and sharing best practice or case studies of successful campaigns on compliance.

Nature Protection (Biodiversity and Habitats)

Nature and biodiversity make life possible, provide health and social benefits and drive our economy. Healthy ecosystems can also help us cope with the impacts of climate change. However, natural ecosystems and their vital services are under pressure from urban sprawl, intensive agriculture, pollution, invasive species and climate change.

Summary of the information collected for this question area:

- 30 responses indicated that they were responsible for nature protection (19.23% of total responses)
- Responses indicated the most challenging issues in this sector are preserving or restoring vulnerable protected habitats, managing invasive species, managing the impacts from activities outside protected areas and detecting illegal change of land use. These were the most chosen answers, but it's clear that there are a lot of challenging issues that regulators must deal with in this area (Figure 14).



Letter	Corresponding answer option
A	Preserving/restoring vulnerable protected habitats
B	Management of invasive species
C	Assessing and reducing impacts from activities outside protected areas
D	Detecting illegal change of land use
E	Ensuring implementation of mitigation/compensation measures
F	Combating illegal trade in/trafficking of protected species
G	Drawing up habitat management plans
H	Designating protected areas
I	Creation and management of green spaces
J	Detecting illegal killing of protected species
K	Detecting poaching

L	Detecting illegal fishing
M	Detecting illegal logging
N	Detecting illegal ploughing up of grassland
O	Other

Figure 14. The challenges faced in regulating with regards to nature protection are shown. The two most popular answers in this section (relating to preserving or restoring protected habitats and managing invasive species) were notably more popular than the other answer options available.

- The sector posing the most challenges to protecting habitats and diversity is intensive farming (67.44%). This sector was considerably higher than other answers, including the potential pollution of water and/or land (46.51%), forestry (41.86%), problems associated with loss of green space (39.53%) and tourism (32.56%).
- The compliance of this sector was broadly compliant (31.71%). However, 21.95% of responses stated they did not know if there was compliance with Nature Protection regulations.
- Respondents gave varying answers to what the barriers to good levels of compliance with the regulations. Most said that a lack of knowledge of the legislation (46.15%) as well as staff capacity (46.15%) were the biggest issues. Lack of trained inspectors and appropriate equipment and tools for inspection, in addition to overly complex legislation were also highlighted as barriers.
- Barriers to enforcement followed a similar theme, with staff capacity and lack of equipment or tools for inspection being popular answers. But the most chosen answers were inadequate level of sanctions or fines (51.28%) and lack of training of environmental prosecutors (43.59%). This highlights the importance of proper training throughout the compliance chain, as well as the importance of sanctions or fines to act as deterrent.
- Almost half of respondents (42.22%) would like IMPEL to provide some form of training or guidance, with training for prosecutors and those involved in enforcement being requested. However, a majority of respondents (48.89%) were not sure if this material would be helpful.

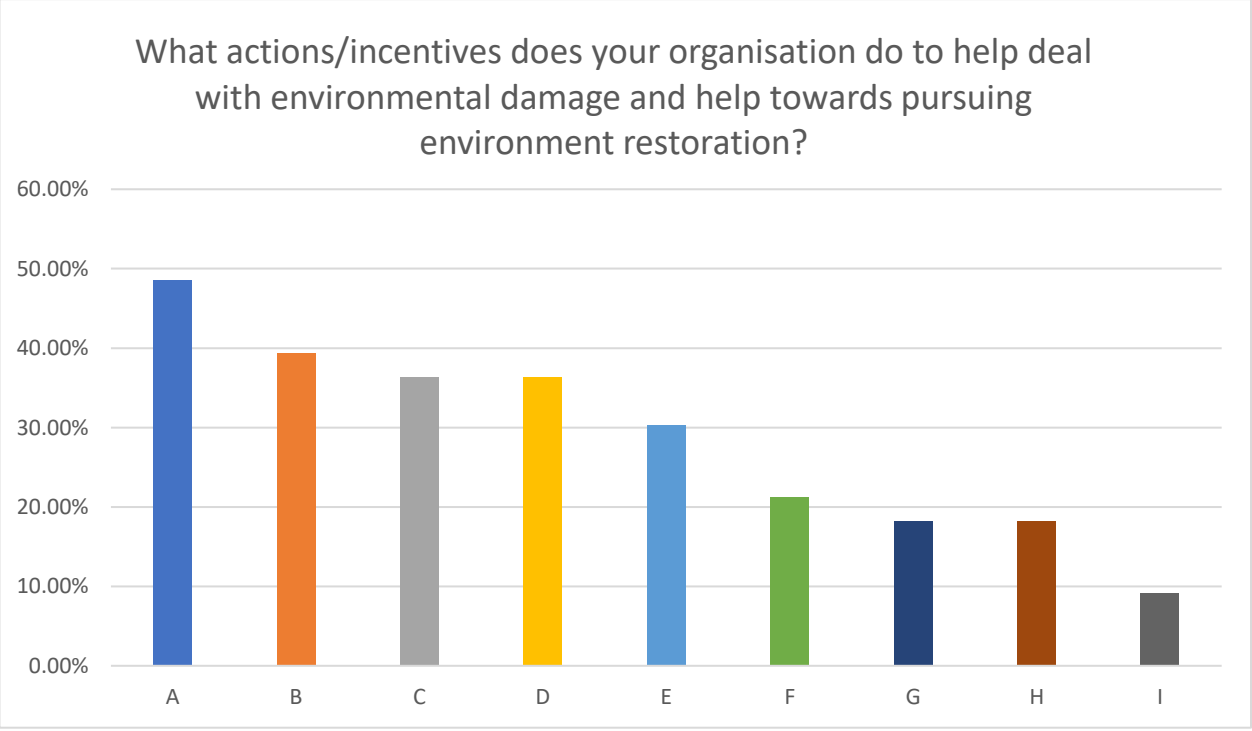
Environmental Damage and Restoration

In development of the survey questions, the topic of environmental restoration was raised, along with the use of tools like the Environmental Liability Directive (2004/35/EC). With

additional focus on identifying environmental damage, the party responsible for this damage and the process of environmental restoration by authorities, it's hoped this data will allow for further development in expertise and techniques to improve these processes.

Summary of the information collected for this question area:

- 27 responses stated that Environmental Damage and Restoration fell within the remit of their work. This represents 17.30% of the total number of responses for the survey.
- Respondents recorded a range of actions and incentives that their organisation deploys to help deal with environmental damage and help towards pursuing environmental restoration (Figure 15). A range of actions were popular among the respondents, including assessments to understand the extent of damage, use of EU Directives, and tracking down the party responsible for the damage.



Letter	Corresponding answer option
A	Environmental assessments to help understand the extent of damage
B	Active use of European Union directives (e.g., Environmental Liability Directive)
C	Communicating damage and progress being made to restore damage
D	Tracking back in the compliance chain to find the responsible party
E	Longer term environmental sampling to assess rate of environmental restoration

F	Organising and partaking in clean up campaigns (e.g., community led projects)
G	Use of a financial provision framework
H	Other (please specify)
I	Corporate Social Responsibility (CSR)

Figure 15. A range of answer options were available when looking at the actions or incentives in place to deal with environmental damage, with the most popular answer being the requirement of environmental assessments to help understand the extent of damage.

- While a lot of these suggestions appear popular, the respondents appear to not be sure if these are effective (52.78%). Around 30% of respondents stated these actions were effective, with 16.67% stating they were not. Further comments to this question highlighted a lack of tools to assess baseline environmental damage as a barrier to identifying damage accurately, and subsequently monitoring the progress of restoration.
- Most organisations do require regulated operators to have financial provisions specifically to deal with environmental restoration (46.34%), but a considerable number of respondents did not know if this is something that their organisation required (34.15%). The majority of respondents also indicated that they believe it should be a mandatory requirement for operators to have these provisions (67.50%). This measure is strongly supported as being an effective mechanism in dealing with environmental damage and restoration (67.5% agreed).
- When operators are not able to cover the costs associated with environmental restoration, it is agreed business partners or those associated with the business should then be responsible for financial provisions (55.26%). Following this, responsibility for financial provisions should go to company directors (39.47%), national government (39.47%), local government (36.84%) or environmental regulators (21.05%). Almost a fifth of respondents said no other party should be responsible for financial provisions (18.42%), but this then leaves the problem of environmental restoration not being funded.
- Most of those who answered were unsure if there are mechanisms in place to recover the costs of environmental restoration from operators (53.66%).
- To follow on from this, half of respondents stated it is not known if the costs of environmental restoration are successfully recovered from operators (50%). Over 35% of respondents stated that they could not recover the costs from operators or polluters. This indicates that there is further work to be done in this area to help regulators understand ways in which they can recover costs and share this knowledge with others.

- Most respondents answered 'I don't know' when asked if IMPEL training, resources or guidance would be useful (51.22%), but 39.02% would like training. Further information provided by respondents highlights the need for better understanding of the Environmental Liability Directive, with case studies to show the process which would help improve confidence of regulators to use this tool.

Question Group 2: Cross cutting themes

The topics covered in this section are overarching and bring together information and experiences provided in responses into broader groups, including the causes of implementation challenges, compliance and barriers to reaching compliance, and potential solutions to challenges identified in this survey.

Underlying causes of implementation challenges

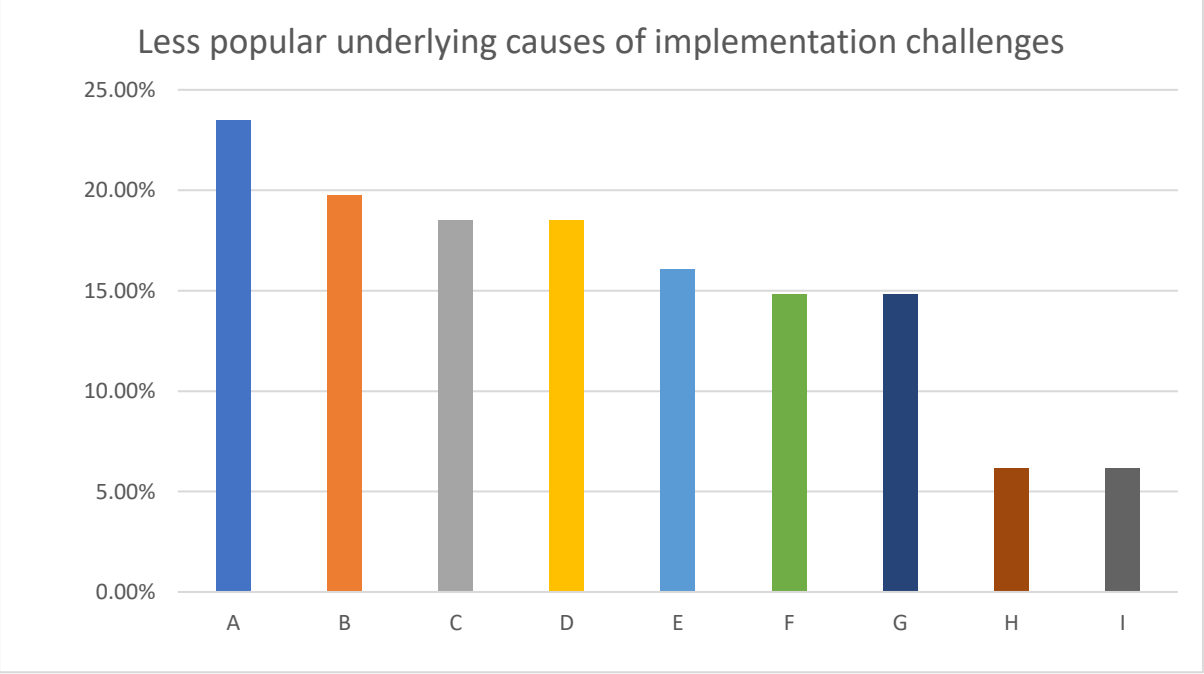
In this section we asked the respondents to think overall about the underlying causes of the challenges they face in their role, in their organisation and in the country they work. It's widely understood that there are usually numerous factors which lead to implementation challenges, but to identify the most prominent challenges, respondents were asked to prioritise the three main underlying causes of problems in their roles (and their areas of competence) in regulation. The top answers (ranging from 49.38% to 23.46%) were found to be:

- Insufficient capacity in competent authorities in human resources was the most favoured answer, with 49.38% of respondents choosing it. This answer was popular throughout the survey, and it's clear that having enough staff, who are trained appropriately for the role is a huge obstacle in an organisations ability to regulate. Further comments in the survey indicated that a high turnover of staff leads to gaps in knowledge and skills, which increases pressure on other staff and the workload that they are responsible for.
- Unclear, incomplete or overly complex legislation was chosen by 43.21% of respondents. Not all organisations have a large group of staff with many specialities who are able to review all aspects of environmental legislation, understand it in its totality and then apply this to their own area of work. This means that unclear or

complex legislation can be easily misunderstood, clarity on regulatory responsibilities is not confirmed and so the correct regulatory interventions are not taken.

- Insufficient evidence, data and information was chosen by 30.86% of respondents. If there is not an appropriate baseline, information to show negative impact on the environment, or evidence of non-compliance, there cannot be an adequate response or the correct interventions from a regulator.
- Unclear technical specification, terms or definitions provide further challenges to implementation. 25.93% of respondents indicated that the use of technical language, terms or definitions in legislation, without further context or supporting information provided can cause problems, especially when trying to use this at a domestic level.
- Complexity of prosecutions was identified as a challenge by 24.69% of respondents. It became clear throughout the survey that a barrier to effective enforcement was a lack of trained and knowledgeable prosecutors, as well as lengthy prosecution processes where there is most often a lenient penalty for the operator.
- Economic incentives not supporting regulations was selected by 23.46% of respondents as a serious challenge. National governments often set Programmes for Governments or strategic goals focusing on economic development for operators and businesses. This encouragement to develop does not always include environmental considerations, and so it can be at odds with the role of environmental regulators.

Additional answers given for causes of problems implementing regulations can be seen in Figure 16.



Letter	Corresponding answer option

A	Insufficient capacity in competent authorities in training/guidance
B	Inadequate urban and land use management and spatial planning
C	Inadequate range of professional qualifications for efficient implementation and enforcement
D	Insufficient capacity in competent authorities in technical knowledge
E	Lacking capacities of systems
F	Inadequate technical understanding and knowledge
G	Insufficient access to technical expertise
H	Inaccessible or unusable data (e.g., unprocessed raw data)
I	Issues with data security and protection

Figure 16. Some of the answer options for underlying causes were not selected by many respondents. Notably two of the answers not chosen as underlying causes but highlighted elsewhere in the survey as areas which could be improved were inadequate technical understanding and knowledge and insufficient access to technical expertise.

One of the most frequently chosen underlying cause of implementation challenges was unclear, incomplete, or complex legislation. Some organisations don't have capacity to spend time going into adequate detail of legislation and some legislation is not directly applicable to the remit or responsibilities of an organisation at a localised level. There is a need for time to be spent reviewing and aligning legislation with strategies and priorities.

Respondents were asked to name specific legislation that poses significant challenges, and answers included:

- Industrial Emissions Directive
- Waste Shipment Regulations, including a consistent use of waste codes
- Urban Waste Water Treatment Directive
- Single Use Plastics Directive
- Legislation applying to agriculture
- Waste Framework Directive
- Directive 2021/52/EU amending Directive 2011/92/EU on assessment of the effects of certain public and private projects on the environment
- Landfill Directive
- REACH Chemicals Directive

In addition, some responses indicated the intersection between different topic areas, such as the Industrial Emissions Directive, Medium Combustion Plant Directive, Energy Efficiency Directive, Waste Framework Directive and Emissions Trading Scheme or the linked nature of work areas such as nature protection and agriculture are the most challenging to understand and implement consistently.

Some examples of where the work of regulators has been particularly effective were provided:

- Improving regulatory knowledge and communication with the public and stakeholders.
- Clear regulatory regime with visible presence at site inspections and outside of planned inspections leading to higher levels of compliance and better outcomes.
- Creation of Clean Air Plans.
- Voluntary cooperation with operators and businesses to disseminate information and guidance.
- Ensuring a culture of compliance in the waste industry has forced significant waste criminals out of the sector. At a society level waste enforcement has ensured the implementation of Extended Producer Responsibly, including the Plastic Bag Levy and kerbside waste source segregation.
- BAT and BREF notes from The Habitats Directive have guided improvements in environmental standards.

Possible solutions to Overcome Implementation Challenges

For this topic area, participants were asked targeted questions on potential solutions to help overcome the challenges identified throughout the survey. Solutions were categorised based on improvements in the ability to access information and data, access to technology, exchange and cooperation internally and with other competent authorities, and complimentary approaches to help improve compliance. Participants were also asked if they had used any of the outlined solutions, and to comment on which ones have been most effective (if used). Lastly, participants were given the opportunity to provide comment on any other helpful measures that they have used to overcome implementation challenges.

Availability of information and data:

- Most answers were popular, with 5 out of 8 solutions being selected by >40% of participants.
- The most popular answer was data on environmental enforcement issues (51.95%).
- Other popular answers were more standardised and relevant information on environmental condition and management (48.05%), inspection reports (45.45%), geospatial data relevant for your geographical area of competence (according to INSPIRE) (42.86%), and data on environmental users (41.56%).

- Although data on environmental management schemes (31.17%) and spatial planning 23.38%) were less popular options, they were still selected in some number. This suggests that these solutions could still see some use.
- 7.79% of responses to this question stated that these solutions would not be helpful for overcoming issues focused on access to information and data. Comments revealed that further detail on how these solutions could help would be required before commenting on their usefulness. Additionally, another participant commented that data will only be helpful if it is up to date and quality stamped. The data that is currently available is often raw, and therefore requires processing in order to truly be helpful. There is already an apparent lack of resourcing for most contributing bodies, so it is likely that there would not be the capacity to process raw data. Complications in data protection laws and incompatibility of data sets were also cited as issues which prevent the outlined solutions from being immediately helpful.

Access to technology:

- Again, most solutions presented in this question proved to be popular with 4 out of 6 being selected by >40% of participants.
- The most popular answer was access to modern surveillance technology (65.33%). This was followed by integrated monitoring systems (57.33%), mobile technology (48%), and communication platforms (41.33%).
- Earth observation data (37.33%) was not as popular as the other solutions provided, but this may be because roles that require access to this type of data are perhaps more specialised in comparison to other roles.
- 17.33% of responses expressed that the solutions presented in this question would not be helpful for overcoming issues regarding access to technology. This was higher than what was expressed in the previous question, it isn't very clear why this was, as there were few additional participant comments for this question.

Exchange and cooperation within your authority and with other competent authorities:

- Most solutions provided in this question proved to be popular with participants. All solutions were chosen by over a third of participants, except for one answer. Furthermore, 5 out of eight answers were selected by >50% of participants.
- The solution which ranked highest for this question was sharing knowledge, skills and good practice between your and other competent authorities (80.77%). This perhaps indicates that most authorities are siloed and tend do work independently. If there was more peer-to-peer knowledge exchange and sharing of best practice (both internally and with external partners), workload would be lightened, as there would be access to a wider pool of people and expertise.

- Interestingly the second most popular answer was sharing knowledge, skills and good practice inside your authority (69.23%). Again, this suggests a generally siloed approach to working, even within an organisation.
- Further popular answers included establishment of and active participation in networks of environmental professionals to facilitate communication and best practice exchange (58.97%), cooperation of networks (51.28%), and co-ordinated communication and action with different inspection authorities (51.28%).
- Despite standing procedures to regularly inform policy makers about practical experiences and work results (35.90%), and revolving evaluations of the work of authorities with compliance assurance functions (20.51%) being less popular answers, it appears that these solutions could still see some use. The hesitancy to choose these answers may be attributed to the practicalities of implementing these solutions. There appears to be a recognition of the benefits to streamlining procedures (particularly those that either involve several parties at the same time or those which are passed across a chain of competent authorities) into standalone sets of guidance, that can be used by all relevant parties. While this approach would theoretically solve a lot of issues, the practicalities associated with this solution are highly complex. A 'one size fits all' approach is unfortunately not the current reality. However, exploration of this solution seems to be warranted in some capacity e.g., streamlining procedures/guidance where possible.
- No participants selected that the solutions presented for this question would not be helpful

Complimentary approaches to improve compliance:

- All solutions provided in this category were chosen to some degree (see Table 2). The top three answers were selected by >40% of participants. These were information for the public e.g., about the state of the (local) environment (59.72%), information/guidance/campaigns on compliance strategies for duty-holders (56.94%), inspection results and higher performers (43.06%).
- Favoured resolutions appear to broadly revolve around three key themes. These are simplification/streamlining of processes and documentation (where possible), having better access to information, and increasing the involvement and cooperation of relevant parties e.g., local communities, stakeholders, interested citizens and NGO's.

Table 2. Full overview of data provided by respondents for complimentary approaches which could be considered to improve compliance.

Complimentary Approaches	Responses	
Information for the public e.g., about the state of the (local) environment	59.72%	43

Information/guidance/campaigns on compliance strategies for duty-holders	56.94%	41
Inspection results and high performers	43.06%	31
Effective involvement of local communities and stakeholders in environmentally relevant planning and decision processes	38.89%	28
Support for dialogues between site management and their neighbors to reduce possible conflicts and complaints	37.50%	27
Installation of an online portal where everyone may file notices about infractions or environmental problems (without resulting in procedural rights)	34.72%	25
Low threshold- easy access complaint system (with a follow up including procedural rights)	31.94%	23
Integration of interested citizens or NGOs in surveillance and protection of sites or species (through sponsorship/guardianship of areas etc.)	29.17%	21
Additional incentives for duty-holders	27.78%	20
Use of environmental reports (under EMAS or other schemes like ISO 14001) for the compliance control of sites	23.61%	17
Integration of accredited external experts (including EMAS verifiers) into inspection or surveillance activities	22.22%	16
General simplifications or reduction of inspections for EMAS-certified sites	9.72%	7

When asked about which approaches have been used and which have been most effective, participants gave the following answers:

- Compliant management and application system.
- Information sharing including environmental reports, use of online portals, provision of information to the public, guidance to duty holders, inspection results and high performers.
- Integration of interested citizens or NGO's e.g., surveillance and protection of sites or species.
- Campaigns on compliance strategies.
- Effective involvement of local communities and stakeholders in environmentally relevant planning and decision processes.
- Support for dialogue between site management and neighbours to reduce possible conflicts and complaints.
- Guidance in conjunction with site visits/inspections.

Lastly, participants were asked to describe any other helpful measures to overcome implementation challenges. The following list of answers were provided:

- Providing useful equipment for inspections.
- More clear sanctioning laws for local administration.
- Greater awareness of responsibilities for industry.
- Public and more severe penalties for environmental damage.
- The streamlining of marking requirements for captive-bred birds in the EU, especially closed rings.
- The availability of online portals for monitoring the movement of live/dead birds to control movement of wild (e.g., hunting trophies) and captive-bred birds (trade of birds).
- Recruit more local authority Environmental inspectors - URGENTLY!
- Awareness of the practical challenges when applying legal requirements in regulatory work.
- Standardisation of compliance documentation to support due diligence requirements.
- Publicly available information on environmental compliance.
- No access to any kind of government financial support or incentives to non-compliers.
- Support and strengthen education for sustainability.

Non-regulatory goals/agreements/partnerships

There is increased recognition of the use of non-regulatory actions, such as voluntary goals and agreements, and the role they have in encouraging governments, businesses and society to reach ambitious targets.

One example is the Sustainable Development Goals; 17 interlinked global goals designed to be a "blueprint to achieve a better and more sustainable future for all". These goals are not legally binding meaning that no one is penalised for not enforcing them, but there is now widespread use of these goals in many countries.

The information collected in this section included:

- Most respondents indicated they did not use non regulatory tools in their work (39.24%). Those who have used non regulatory tools (30.38%) gave examples such as:
    - Green deals with business sectors, or with individual businesses.

    - Guidance and online training for industry and the wider public.
    - Accreditation schemes.
    - Inclusion of sustainable development and socio-economic considerations in planning and policy development.
- Most responses highlighted that working in partnership occurs in their day-to-day work (77.5%). This includes with other regulatory bodies, as well as non-regulatory bodies and third sector organisations.
- This partnership working most often takes the form of one or more of the following:
    - Knowledge sharing amongst other authorities and businesses or operators.
    - Collaboration on specific projects to achieve a shared positive environmental outcome.
    - Regular routine planned work.
- Most respondents felt that using non regulatory tools or approaches could improve their work and lead to positive outcomes via:
    - Improving communication with stakeholders, including the regulated sector and the wider public.
    - Providing networking opportunities to improve relationships within the sector and create opportunities with more unlikely organisations.
    - Improving implementation of legislation.
    - Creating a link to wider agenda or common goal such as the Sustainable Development Goals.

Compliance and Barriers to Compliance

For most sectors, participants cited compliance as being 'broadly compliant' (see Figure 17). The next most popular answers were generally 'I don't know' or 'at risk'. Very few respondents selected that compliance was 'excellent' or 'very poor'.

It's likely that most respondents have specific detail on compliance of the operators they regulate but this might not represent the overall compliance picture of the sector, so an answer of broadly compliant can capture a range of possibilities.

Of note is that a high number of respondents selected 'I don't know' for the compliance of the sector that they work in. This indicates that there is not enough information available to them about the sector that they work in to make a reasonable estimation of overall compliance.

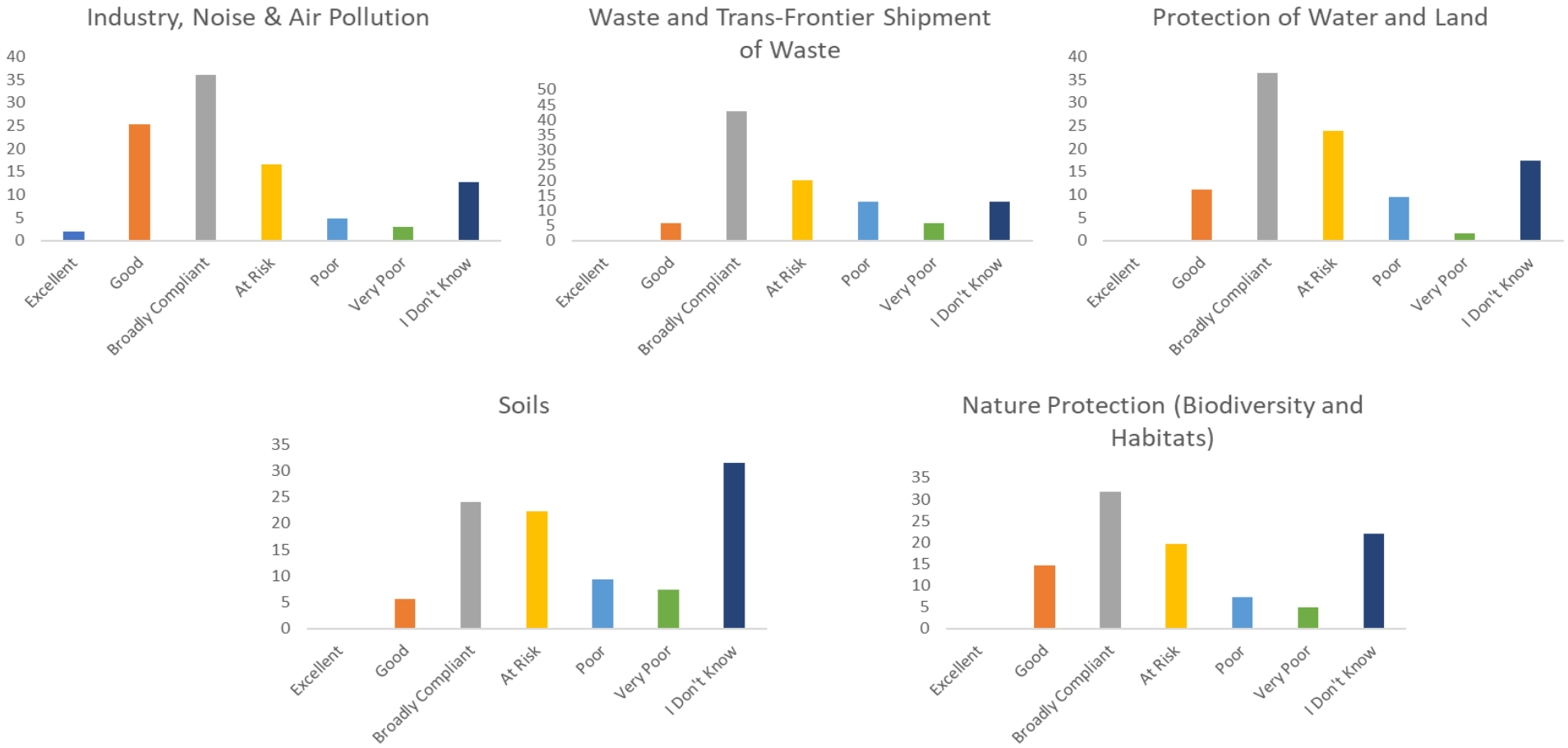


Figure 17. A summary of the responses to 'How compliant is this areas of work?'. Most often respondents stated their area was broadly compliant, there will be some outlier operators which are excellent and some which are very poor. Some respondents also indicated that there is simply not enough information to know the compliance picture of their work area.

Within each environmental topic section of the survey respondents identified specific barriers to compliance. This section will collate this information and offer an opportunity for comparison between topics. From the 11 topics covered in Group 1, six provided information on barriers to compliance: Industry, noise and air quality, Waste Crime, Waste and Trans-Frontier Shipment of Waste, Protection of Water and Land, Soils, and Nature Protection (Biodiversity and Habitats).

Trends observed in barriers to compliance responses:

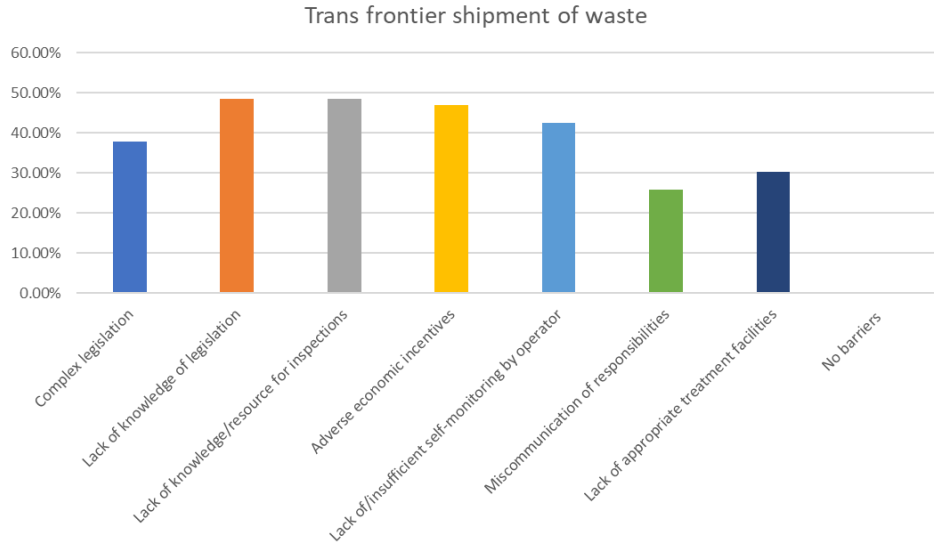
- Legislation; it's complex nature and a lack of knowledge in how to apply it were common answers throughout the survey. Individuals often do not have adequate time to spend on understanding and disseminating the key information required while they do their day-to-day work. In addition, many pieces of legislation are written at a high level and have many necessary requirements which at a local level, may not be applicable or there may not be capacity to resource this.
- Staff capacity was highlighted in all areas of work as a barrier to compliance. Staff in many organisations have had increasing workloads and are being asked to do more work in the same amount of time with the same resources. This is not a sustainable scenario and will result in further compliance issues, as well as low morale in staff.
- A number of respondents indicated a lack of inspections, knowledge for inspections, or equipment for inspections was a barrier in reaching compliance in their work. Fewer inspections, or a lack of an appropriate inspection schedule can result in both major and minor non-compliance. In addition to this, if appropriate training has not been designed and given to equip staff with the right skills for inspections, and they do not have the right equipment, they cannot carry out inspections.
- Communication and interaction with relevant parties were also highlighted as an issue in reaching compliance. Miscommunication of responsibilities with other authorities, miscommunication or lack of positive communication with the regulated community or the public can worsen already difficult relationships and lead to non-compliance and negative outcomes.

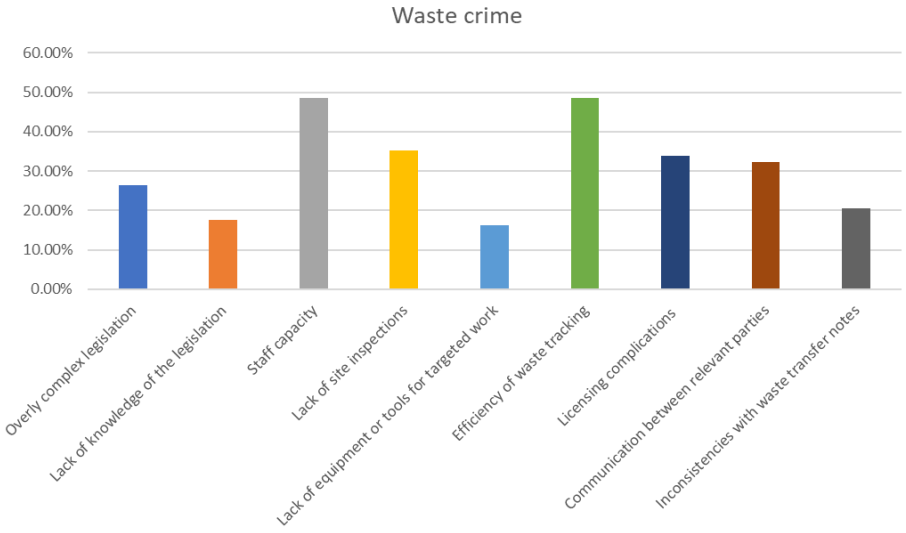
Figure 18 shows a comparison of the barriers to compliance from a range of sections in the survey. There were a number of barriers that were consistent across different topic areas, including difficulties with complex legislation, problems associated with staff capacity and having the right staff to do that job, and a lack of knowledge of the relevant legislation for the topic area.

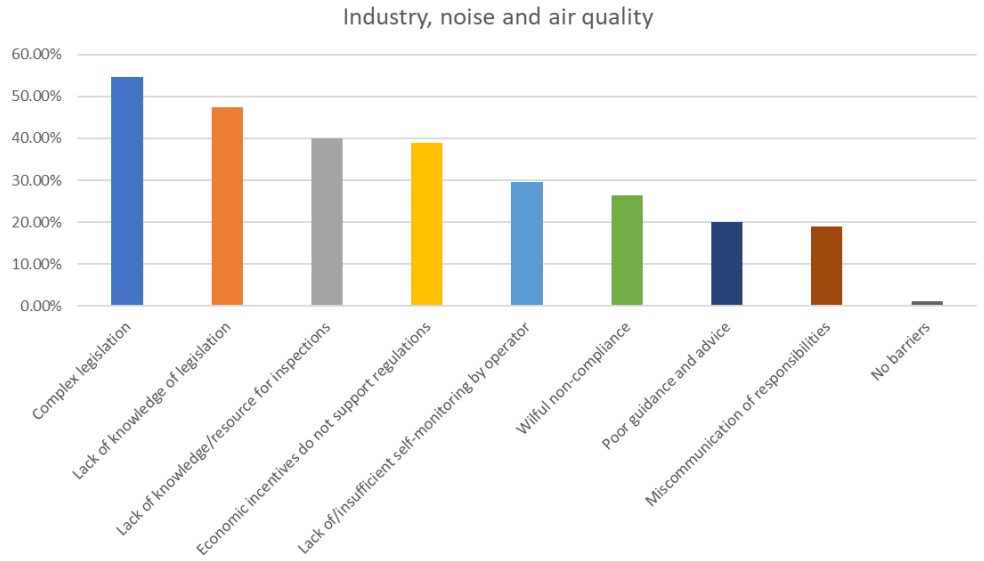
In addition to the direct question on compliance on some of the environmental topics in the survey, the theme of compliance was covered in other questions in an indirect way. For

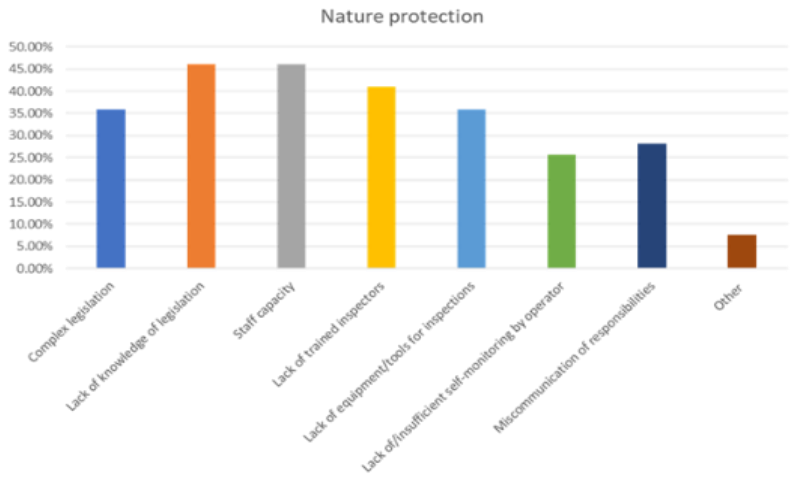
Single Use Plastics, Climate Change and Environmental damage and restoration, the following information was provided:

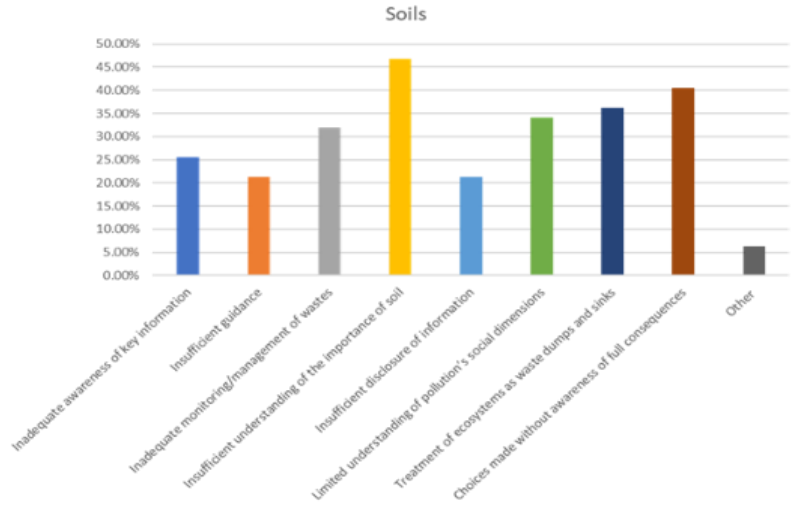
- The biggest challenge in relation to Single Use Plastics is expected to be insufficient levels of resourcing to enforce the regulations in addition to challenges from new legislation which is complex and will require some time to be implemented.
- The main challenge in relation to climate change was highlighted as legislation; the complex nature of legislation and the time-consuming process of updating legislation to effectively protect against the impacts of climate change.
- The respondents for the work area of environmental damage and restoration identified a lack of tools to assess a baseline to determine environmental damage, as well as the ability to monitor the progress of restoration as a barrier.


Trans frontier shipment of waste
60.00%
50.00%
40.00%
30.00%
20.00%
10.00%
0.00%
Complex legislation
Lack of knowledge of legislation
Lack of knowledge/resource for inspections
Adverse economic incentives
Lack of/insufficient self-monitoring by operator
Miscommunication of responsibilities
Lack of appropriate treatment facilities
No barriers


Waste crime
60.00%
50.00%
40.00%
30.00%
20.00%
10.00%
0.00%
Overly complex legislation
Lack of knowledge of the legislation
Staff capacity
Lack of site inspections
Lack of equipment or tools for targeted work
Efficiency of waste tracking
Licensing complications
Communication between relevant parties
Inconsistencies with waste transfer notes


Industry, noise and air quality
60.00%
50.00%
40.00%
30.00%
20.00%
10.00%
0.00%
Complex legislation
Lack of knowledge of legislation
Lack of knowledge/resource for inspections
Economic incentives do not support regulations
Lack of/insufficient self-monitoring by operator
Wilful non-compliance
Poor guidance and advice
Miscommunication of responsibilities
No barriers





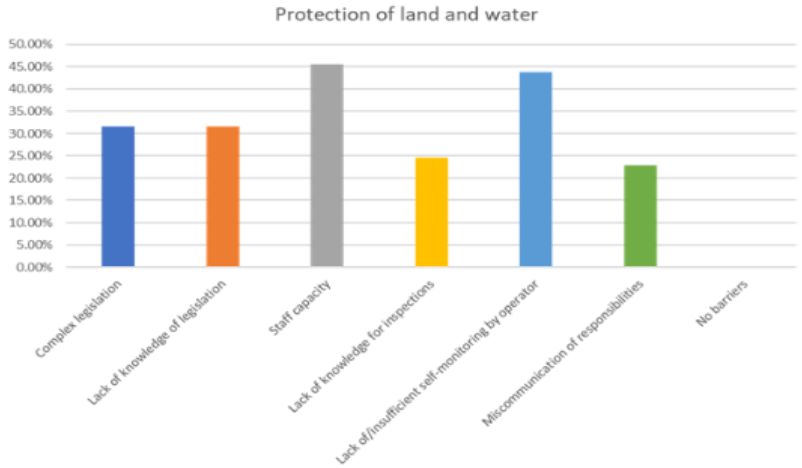


Figure 18. Summary of respondent answers, which provide detail on what causes barriers to compliance for key topic areas.

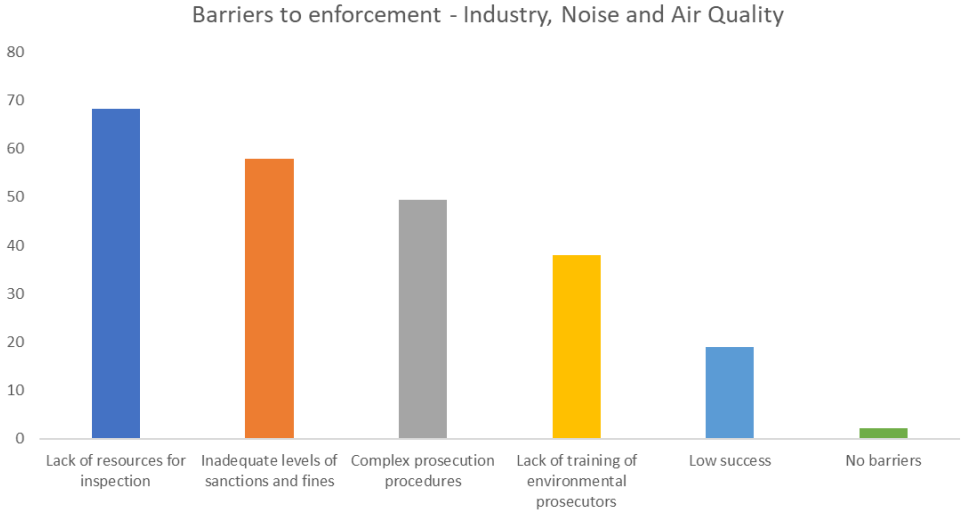
Barriers to enforcement

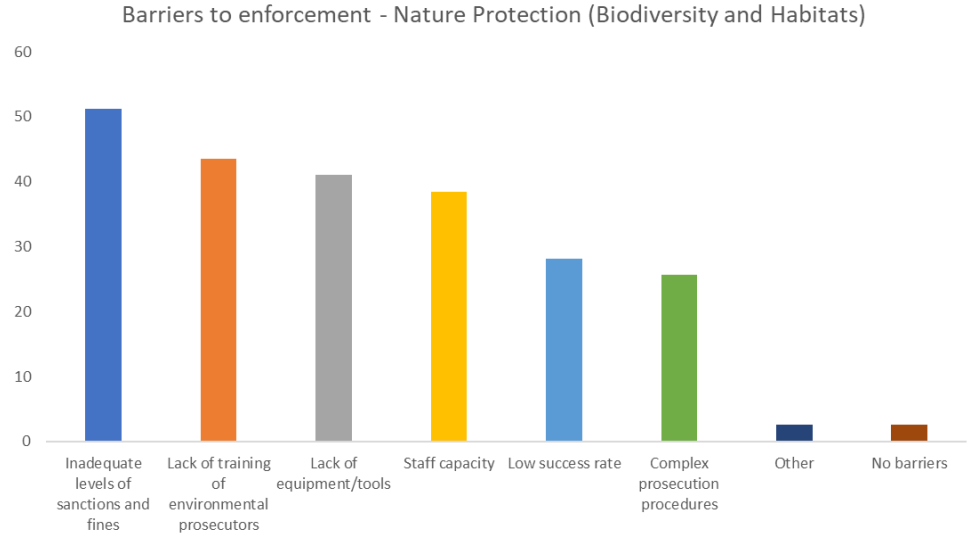
Within each environmental topic section of the survey, respondents identified specific barriers to enforcement (Figure 19). This section will collate this information and offer an opportunity for comparison between topics. From the 11 topics covered in Group 1, five provided information on barriers to enforcement: Industry, noise and air quality, Trans-Frontier Shipment of Waste, Protection of Water and Land, Soils, and Nature Protection (Biodiversity and Habitats).

Trends observed in barriers to enforcement responses:

- Inadequate levels of sanctions and fines was a consistently high answer across the topic areas, ranking at either the highest or second highest selected answer (see Figure 19). The lack of issuing fines, notices, warning letters, acceleration of cases to prosecution and further actions to deter illegality hinders the process of deterring non-compliance. If there are no appropriate punishments that are scaled in accordance with the seriousness of the crime, then the pattern of non-compliance will continue indefinitely. Current levels of sanctions and fines are not adequate. This creates and maintains a culture of non-compliance. For example, the monetary value of a fine should be scaled according to the responsible party's financial turnover. Fines that are currently issued are often not aligned with profit that is generated for a large portion of businesses. For this enforcement measure to become effective, the levels of issued sanctions and fines will need to be at a level which truly causes hinderance for non-compliers. If this is achieved, then there will be a reduction in the magnitude of non-compliance. This will create a more successful approach to enforcement.
- Where applicable, lack of resources for inspections also ranked high within relevant topics. Again, this answer was either the highest or second highest. Coincidently, staff capacity was also a generally popular answer given by participants, being the highest-ranking option for the soils category. If there isn’t enough resourcing dedicated to doing inspections, then actively non-complaint parties are detected at a much lower rate. Parties which are heading towards non-compliance will also be missed more frequently. This means that there are fewer opportunities to provide support and rectify behaviours which are unfavourably tipping the scales of compliance. A lack of resourcing for inspections also detrimentally impacts parties that are being compliant, as the already small portion of time and energy will be focused on parties that are actively known or suspected non-compliers. Having a general lack of staff capacity simply prevents more work from being achieved, as

staff are spread too thinly and are not getting the appropriate levels of support that are needed to practice effective enforcement.


Barriers to enforcement - Industry, Noise and Air Quality
80
70
60
50
40
30
20
10
0
Lack of resources for inspection
Inadequate levels of sanctions and fines
Complex prosecution procedures
Lack of training of environmental prosecutors
Low success
No barriers


Barriers to enforcement - Nature Protection (Biodiversity and Habitats)
60
50
40
30
20
10
0
Inadequate levels of sanctions and fines
Lack of training of environmental prosecutors
Lack of equipment/tools
Staff capacity
Low success rate
Complex prosecution procedures
Other
No barriers

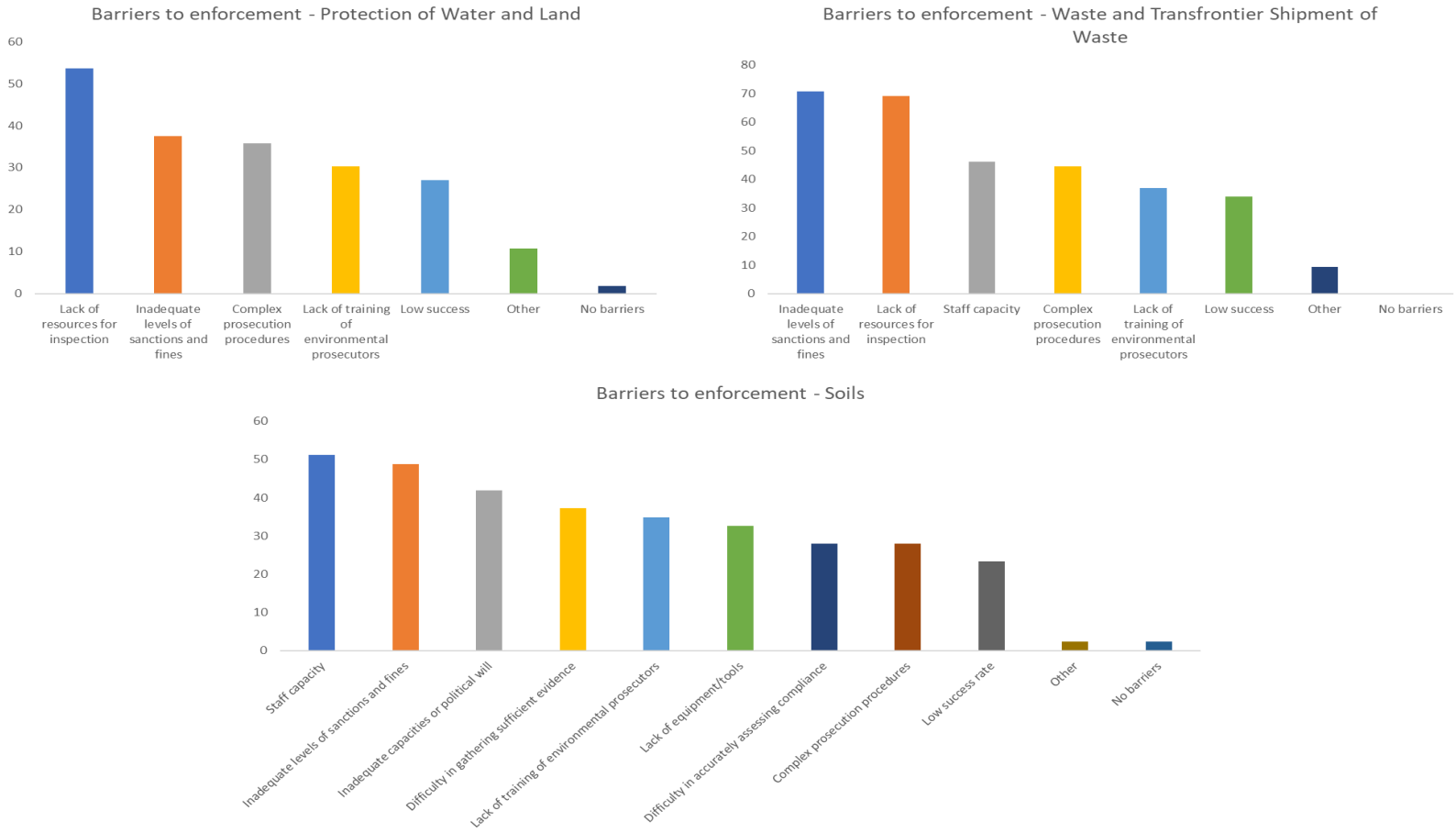


Figure 19. All respondents highlighted the lack of appropriate sanctions and lack of staff capacity (including for inspections) as the biggest barriers to enforcement. In addition, the complexity of prosecution procedures and lack of knowledge from professionals in this aspect of enforcement can also cause issues.

Question Group 3: Further Considerations

The topics covered in this section move away from the practical challenges associated with implementations and look at training, the level of responses per topic discussed in the survey and the impact of Covid-19 on day-to-day work since the pandemic started.

Capacity Building, Peer knowledge exchange and Training

In the development of the survey, it was clear that the topic of training, as well as building capacity within workforces and exchanging knowledge across the network, is crucial in improving the implementation of environmental regulation. Throughout nearly all of the sections of the survey, training, or lack of training was highlighted as the underlying reason behind many of the implementation challenges experienced. While job specific training and guidance is the responsibility of an organisation, the IMPEL network can facilitate best practice exchange, work to develop guidance that is beneficial to network members, and focus on topics that members have indicated are challenging.

62.65% of those who responded had attended training delivered by either IMPEL or a member of the IMPEL network, including their own organisation (or a mixture of both). This highlights the fact that while there has been scheduled IMPEL provided training opportunities, this has not fully catered to the training needs of all members.

Peer knowledge exchange has proven to be one of the most useful methods of hearing about best practice and the experiences of those in similar roles across the network. 63% of those asked confirmed there was effective knowledge exchange within their own organisations which helped them in their role. There was also confirmation of knowledge exchange with other organisations within countries (45.78% participated in this) and with other organisations in other countries (32.53% participate in this.) it's clear that exchanging information on day-to-day good practice, specific advice on challenging issues and new legislation or requirements is helpful to members of the network. Further comments indicated the most effective methods of knowledge exchange to be:

- Collaborative projects
- Expert exchanges
- Webinars
- National communication networks
- Joint inspections with other regulatory bodies

- Use of case studies

Some responses (37.5%) showed that there has been work completed to assess gaps in training, or the availability of training. Some areas that were identified include:

- Specific aspects of enforcement and prosecution, including lack of understanding of environmental issues when working with prosecutors
- The implementation of new legislation, and legislative changes
- Intelligence gathering and the building of legal cases
- Need for consistency and the ability to manage level of knowledge with staff turnover

Some further information indicated that staff don't have time to complete training, so despite it being available, they could not make use of it. And in addition, some respondents highlighted that the main type of 'training' that was beneficial in their role was through experience, so while providing materials was useful, this would not fully address training issues.

However, the majority of responses stated that any kind of assessment of training gaps had not been completed (62.5%). The main reason given for this was lack of time to carry out this research.

The main barriers to accessing appropriate training delivered by IMPEL were identified as:

- Language barrier. If materials were written in more than one language, or if there was the ability to translate materials into the target language, they would be more useful.
- Competing priorities, from organisation or from national government. It was also noted that often national requirements or frameworks do not align with training material, so there is not a clear link between the two.
- Financial barriers. Most organisations are balancing requirement for training with increasing workloads and reducing budgets.
- Time barriers. Both the lack of time due to workload, and the time required to undertake training (for example 3 or 5 day long courses) were cited as problems in accessing training.

The preferred training methods were also identified, with workshops, webinars and in person visits from experts being the most popular. It's clear there is a recognition of the value of in person connection, but responses indicate that with the increasing use of technology in work situations, online training such as webinars or interactive workshops should be utilised.

Responses per topic

The number of answers per section were collated and reviewed to give an indication of the interest from the network members on each topic.

For most of the topics in Group 1, the survey asked if this fell within the remit of the respondent or not. Responses indicating responsibility for these topics ranged from 76 positive responses (for Industry, Noise and Air Quality) to 27 positive responses (Environmental Damage and Restoration). The full range of responsibilities is shown in Figure 20.

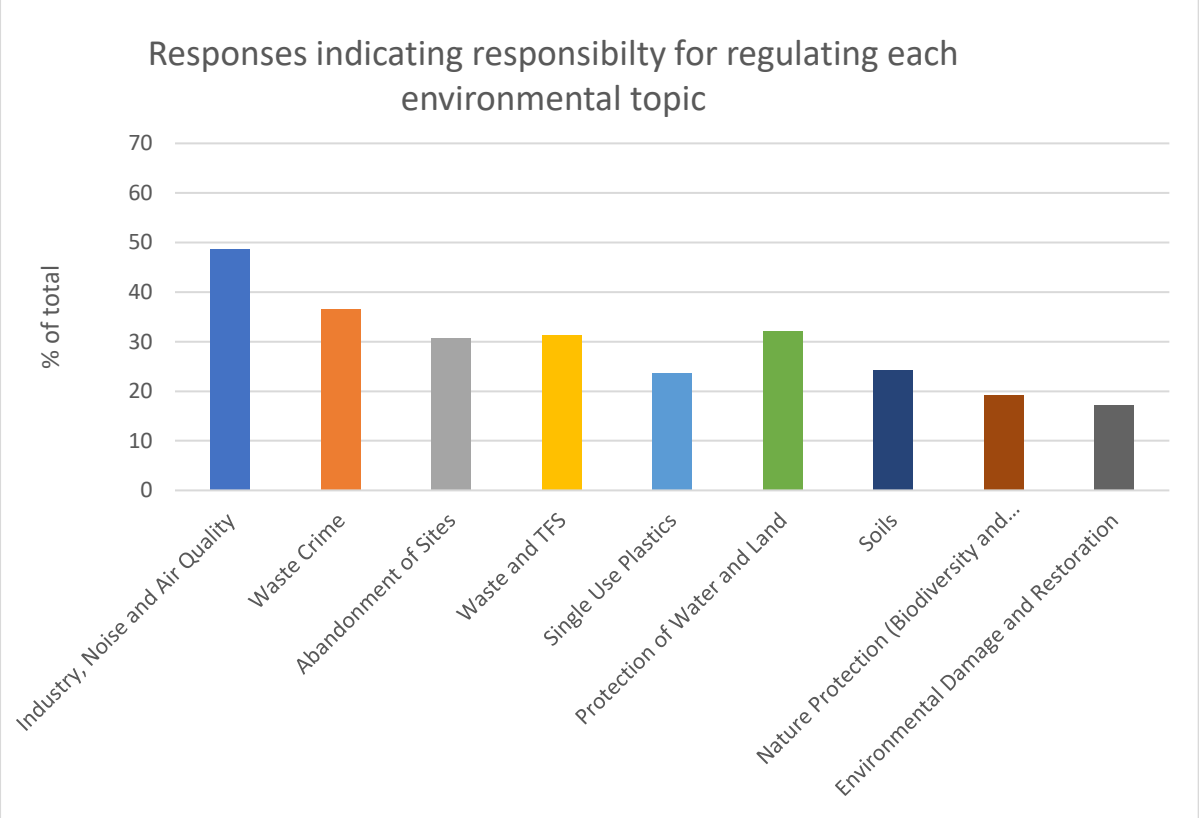


Figure 20. Individuals responded to the topic sections which they were responsible for. This gives an idea of the reach of future engagement for each topic.

For the other topics included in the survey, the respondent was not required to indicate if that had remit for the topic, and many of the topics could be answered by anyone who worked within environmental regulation (shown in Figure 21). These topics ranged in response totals from 103 (Enforcement) to 77 (Possible solutions to overcome implementation challenges). It was expected that the response totals for these questions would be high as these more general topics required less specific knowledge in answering.

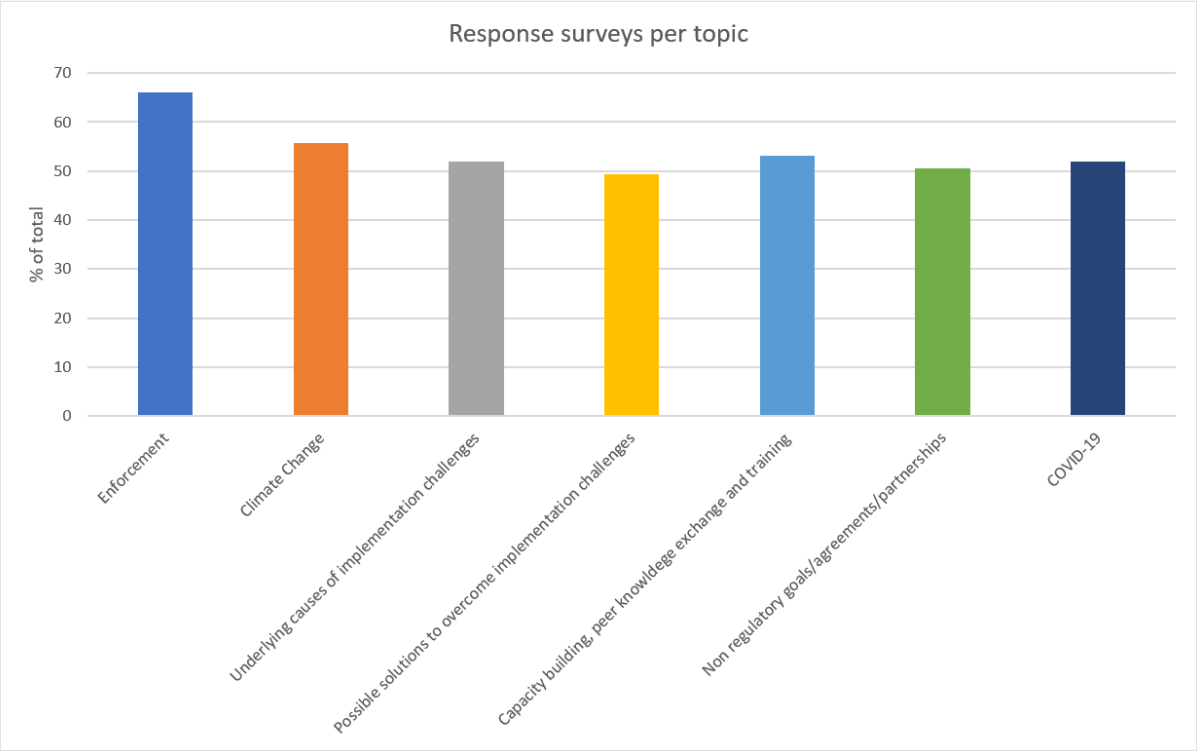


Figure 21. Broader topics within the survey could be answered by a larger percentage of the total respondents. The level of respondents for the enforcement section was the highest, indicating a large number of respondents have had some experience of wider enforcement within their work.

The topic of climate change received 87 responses, 55.77% of the total responses collected for the survey. This is a topic that is relevant to all work within regulation, so it's interesting to see that almost half of the respondents did not provide information. Additionally, the topic of non-regulatory goals/agreements/partnerships received 79 responses. Given these are relatively new tools for the regulation sphere, it's encouraging to see many responses here.

COVID 19

The coronavirus pandemic has impacted every aspect of leading a 'normal' life, including our ability to work towards managing and protecting the environment. Environmental organisations across Europe have adapted to this changing situation at different rates. Given the changes that have taken place, collecting information and experience from different organisations could help to improve planning and the design of more resilient processes for the future.

The impacts on the day-to-day operations of every organisation are different. A small number of responses stated that COVID-19 had no impact on their organisation or work (8.64%). Most responses stated the biggest impacts experienced were due to being unable to access regulated sites for inspections or enforcement action (62.96%) or being unable to access offices or the required equipment to do their job properly (59.26%). The next biggest impacts were in terms of communications, both with external bodies (41.98%) and within the organisation (33.33%). The speed of lockdown or restricted working conditions meant that many organisations needed to move quickly to set up both internal and external communication systems and make sure that staff had appropriate equipment for this. Further challenges were caused by the inability to carry out environmental sampling (19.75%), the inability to provide guidance and advice to operators (16.05%) and the inability to impose enforcement action, such as fixed monetary penalties or official notices (14.81%). The inability to be in the field, both sampling and engaging with the regulated community impacted the way in which regulators could do their job.

Most organisations developed strategies or new ways of working to accommodate the changes brought about by the pandemic. This included working from home (87.8%), increased use of online platforms internally and externally (79.21%), development of guidance for staff on adjusting to their new working environment (25.61%) and the creation of enforcement positions to aid operators in instances where compliance with typical requirements was not possible (15.85%). Some additional specific examples of techniques used to ensure continuation of active environmental regulation include:

- Development of remote inspection tool kits for inspectors.
- Digital inspections with the use of online video platforms.
- Enhanced risk assessments for staff to conduct site visits to non-compliant or high-risk sites.
- Remote site auditing.
- Designation of certain priority areas of work as essential to allow standard regulation to take place e.g., waste management.
- Increased document checks for operators.

These techniques enabled active regulation to continue using mainly digital technology to replace the usual in person aspects of regulation.

The impacts and knock-on effects of the pandemic ranged from office access and logistics in getting equipment to the people who need it, to wider societal shifts such as a growing awareness of the environment around us as we spend more time at home. Both positive and negative impacts have been felt, with a selection of answers provided showing the range:

- Improved quality of data and IT tools development.
- Reduced emissions from certain sources e.g., traffic, air travel.
- Greater flexibility in how to carry out inspections.
- Widespread use of technology and improvement of technology infrastructure.
- Online applications have reduced waiting times and increased efficiency in the process.
- Increased knowledge/awareness from the public of the environment and environmental issues, both locally and globally.
- Increased workload and issues in managing workload around homeworking.
- Lack of in person site inspections (which was the most mentioned impact).
- Increased illegal dumping of waste.
- Police focus on COVID-19 related work meant a decrease in their involvement in enforcement activities in the early part of the pandemic.
- Lack of income for businesses has caused some to fall into non-compliance, illegality or increased risk of insolvency.
- Increased medical waste/waste connected to use of masks and testing devices which is classed as contaminated or dangerous.

The response to the pandemic has in some ways made positive impacts to the work of regulators and shown the resilience and adaptability of organisations. Some of the changes made will continue in the longer term for the workplaces of some of those who responded (46.91%). The advantages of online application platforms and the use of technology to communicate are likely to remain after the pandemic, and the changes to regular ways of working have increased innovation in standard working practices.

Over a quarter (27.16%) of respondents thought there would be a change to their organisation and 9.88% expect some kind of change to their role. The experience from working during Covid-19 has shown that flexible ways of working can be possible and so 46.91% of respondents would expect to see changes in their workplace, with a much smaller number expecting changes to their role (9.88%).

Annexes

Annex 1: 2021 Implementation Challenge Survey

Below is a full copy of the survey, and answer options presented to respondents.

Survey data is held securely and accessed only by the team working on this project. Requests for access to this data should come via info@impel.eu and the project team will ensure that any information provided will not identify any individual respondents.

Survey

The IMPEL Implementation Challenge programme aims to identify implementation challenges faced by environmental authorities in its member countries. As part of the work programme, a series of surveys have gathered information from members about their experiences of the implementation of environmental law. This survey builds on ideas and topics gathered in previous surveys, and will allow IMPEL to gain greater clarity on the underlying causes of implementation problems.

Who is seeking this information?

You are receiving a questionnaire from IMPEL, the European Union Network for the Implementation and the Enforcement of Environmental Law, to which your country or environmental authority is a member. IMPEL is an international non-profit association of environmental authorities of the EU Member States, EEA countries, acceding countries and candidates. The Network's objective is to promote a more effective application of EU environmental legislation and policies and support the work of environmental authorities all over Europe. For more information see www.impel.eu.

What is this questionnaire for?

This survey aims to gather information on the obstacles and challenges that organisations within the EU are currently facing. It also seeks to collate information on innovative practices and solutions that have been developed to overcome these challenges.

Please complete this survey if you're directly responsible for any part of the application or enforcement of environmental legislation, or the surveillance/monitoring of the environment. We would also welcome input from others (those from a non-regulatory background, those who routinely work alongside enforcement/implementation organisations, businesses) and would encourage you to complete the survey and indicate which type of organisation you are from. In order to get a well-rounded and clearer picture of the many environmental issues at play in Europe, information gathered should be representative from all authority levels (local, regional, national).

We recognise that the magnitude and type of environmental challenges will likely be different depending on the experiences and authority level of practitioners. It is important that these

differences are captured so they can be considered during future strategy development. Following the unprecedented impacts of COVID-19 on all aspects of society, this survey will collect information about how this has impacted your work.

The information gathered will be analysed and summarized. Relevant conclusions will be used by IMPEL to identify or develop strategies, projects, capacity building and tools for better environmental compliance. A project report will summarise these findings and will be published. The usefulness of this survey depends on respondents being open and honest in their responses. We would highly appreciate information, illustrative cases and best-practice examples that can be shared but will not identify specific countries or organisations in our report.

The information that you provide will be used for analysis of this survey and in reporting the results of the survey. Your information will not be used for any other purposes. Your information will be stored securely and accessed only by those working on this project. If you have any further questions or do not wish for your answers in this survey to be used in the report, please contact us at implementationchallenge@impel.eu. If you require a copy of your responses, please contact us with your name, and we will endeavour to provide these to you. The survey is not intended as an audit or a benchmarking exercise. IMPEL will not use it for case-specific reporting.

If you receive this survey as a member of the IMPEL network, please consider distributing the survey directly to environmental authorities to encourage a multitude of experts' answers. The more individual answers IMPEL receives, the higher will be the value of the feedback. As a national authority, you could also use the survey to collect relevant information on environmental performance at local, regional or national level – this is highly encouraged.

If possible, please answer in English when asked for descriptions, explanations or specific examples.

1. General Questions

1.1. Please indicate your country

Drop down menu with list of countries/member states

1.2. What is the operational level of your organisation?

National | Regional | Local

1.3. What type of organisation are you from?

Regulator[1] (Permitting, Inspection, Enforcement) | Regulator[1] (Policy) | NGO[2] | Consultancy | Regulated Business[3] | Environmental Police or Prosecutor | Other

[1] A regulator is a public organization or government agency that is set up to exercise a regulatory function. This involves imposing requirements, conditions or restrictions, setting the standard for activities, and enforcing in these areas or obtaining compliance.

[2] An NGO (non-governmental organisation) is a non-profit group that functions independently of any government.

[3] A regulated business is a business that is required to meet the regulations set out by local, regional or national regulatory bodies.

1.4. What are the 3 most challenging environmental issues that your organisation is currently facing?

Free text

2. Industry, Noise and Air Quality Regulation

2.1. Does Industry, Noise and Air Quality fall within the remit of your work?

Yes | No

2.2. In your experience, what are the main challenges in applying and implementing environmental regulations on industry, noise and air quality? Please choose up to five.

Effect of industrial emission on air quality | Effect of traffic on air quality | Effect of traffic on noise pollution | Effect of domestic heating on air quality | Effect of agriculture on air quality | Drawing up air quality action plans | Drawing up noise action plans | Application of best available techniques in permits | Adapting permits in result to BAT/BREFs | Clarity of permit requirements | Application of emission limit values | Defining more stringent emission limit values | Planning/execution of risk-based inspections | Assessing/preventing further soil contamination around installations | Regular soil and groundwater monitoring | Improving public access to industrial emissions, noise and air quality information | Identification of pollution sources | Dust pollution from regulated sites | Insufficient flexibility in current regulations to respond to industrial changes driven by, for example, climate change, decarbonisation or circular economy | Other (please specify)

2.3. Are there specific industry sectors or processes that present greater challenges than others? Please choose up to four.

Energy production | Incineration | Refineries | Coal and steel | Chemicals production | Metals production and processing | Mineral industries | Waste management | Intensive livestock farming | Solvent emissions |Domestic heating with solid fuels | Motorised vehicles | Other (please specify)

2.4. What is the overall status of compliance in this sector?

Excellent | Good | Broadly compliant | At risk | Poor | Very Poor

2.5. What barriers to good levels of compliance do you think are most prevalent in this sector? Check all that apply.

Complex legislation | Lack of knowledge of legislation | Miscommunication of responsibilities | Lack of knowledge/resource for inspections | Lack of or insufficient self-monitoring or reporting by the operator | Poor guidance and advice | Wilful non-compliance | Economic incentives do not support environmental regulations | Other (please specify) | No barriers

2.6. What barriers to enforcement have you experienced? Check all that apply.

Inadequate level of sanctions or fines | Complex prosecution procedures | Lack of training of environmental prosecutors | Low success rate | Lack of resources for inspection | Other (please specify) | No barriers

2.7. Would it be useful if IMPEL provided training resources or guidance to address any of the challenges discussed in this section?

Yes (please specify) | No | I don't know

3. Enforcement

3.1. Do you have a good relationship with other authorities in your compliance chain?

Permitters | Inspectors | Police | Other national authorities competent for implementation and enforcement | Prosecutors | The judiciary | IMPEL and other Implementation and Enforcement Networks | NGOs | Other national competent authorities or regulators e.g., Health authorities or Safety regulators | Other (please specify)

3.2. Which enforcement interventions are most often used in your work?

Free text

3.3. Do you believe these interventions are effective?

Yes | Most of the time | Sometimes | No

3.4. Do you believe that the legal process of prosecuting environmental crimes in your country is too complex?

Yes | No | Unsure

3.5. Do you think that the legal sentencing for environmental crimes in your country is fair (too lenient/too harsh)?

Yes, it is fair | Sometimes | No it's too lenient | No it's too harsh | Unsure

3.6. How often do parties convicted of environmental crimes receive the maximum criminal penalty?

Almost always | Often | Sometimes | Not often | Never | Unsure

3.7. What are the main challenges which prevent environmental crimes from being prosecuted?

Heavy workload | Case presented to prosecution is not moved forward | Complexity in cases | Ability and expertise to build a robust case is not available | Not enough technical knowledge at prosecutor level | Focus on high profile cases so lower profile cases are not a priority | Difficult to build a case on potential future impacts | Hard for prosecutor/judge to identify 'victims' [4]

[4] Anyone or anything harmed by environmental disruptions may be seen as a victim. However, the extent that environmental harm is criminalized or sanctioned in law may have implications for who the authorities views as "victims. The victim, whether this is an individual, the "general public" or the "environment", is limited to the term applied in the specific context of the offence and how the offence is defined the statute which has been violated.

3.8. Would it be useful if IMPEL provided training resources or guidance to address any of the challenges discussed in this section?

Yes (please specify) | No | I don't know

4. Waste Crime

Waste crime is an ever-changing illegal practice that impacts Europe. The low risk, high reward nature of this crime is attractive for criminals. Profit is gained at the expense of the environment and legitimate operators. Waste crime is not clearly visible. Environmental regulators (plus partner bodies) have trouble dealing with waste crime and its related activities. There are several knowledge gaps which need to be addressed.

4.1. Does waste crime fall within the remit of your work?

Yes | No

4.2. What approaches/techniques does your organisation use to combat waste crime?

Free text

4.3. What are the biggest challenges associated with waste crime which your organisation experiences? Please choose up to three.

Detection of illegal activity | Prosecution | Impacts due to lack of capacity | Illegal storage of waste | Fly-tipping | Burning of waste | Illegal transportation within your country | Illegal transportation between countries | Improper classification of waste types | Lack of specialists to carry out inspections | Taking advantage of different management practices between local authorities | Taking advantage of different management practices between countries | Other (please specify)

4.4. Are there any barriers which prevent effective management of waste crime and waste crime related activities? Please choose up to three.

Licensing complications (e.g., Application of waste broker and waste carrier licenses) | Efficiency of waste tracking | Inconsistencies with waste transfer notes | Staff capacity | Lack of site inspections | Overly complex legislation | Lack of knowledge of the legislation | Communication between relevant parties | Lack of resources for targeted work | Other (please specify)

4.5. Would it be useful if IMPEL provided training resources or guidance to address any of the challenges discussed in this section?

Yes (please specify) | No | I don't know

5. Abandonment of Sites

Abandonment of sites can lead to a range of environmental issues. This in turn can cause societal conflict. Once a site becomes abandoned, the success of tracking down the owner of the business or activity that has caused damage is slim. Liability of abandoned sites (plus associated responsibilities) becomes ambiguous, which leads to tension between parties. There must be a change in this culture of abandonment. In this context, the term 'site' covers a variety of options (e.g., waste, mines and quarries, abandoned buildings, industry, derelict land, etc.).

5.1. Does abandonment of sites fall within the remit of your work?

Yes | No

5.2. What types of sites are left abandoned?

Waste | Mines and Quarrying | Buildings in urban settings | Buildings in rural settings| Abandoned industry | Other (please specify)

5.3. Which parties are left with the responsibility of cleaning up abandoned sites?

Government bodies (local) | Government bodies (regional) | Government bodies (national) | Landowners | NGOs | I don't know | Other (please specify)

5.4. Is there any conflict created between parties (e.g., environmental regulators & landowners) due to clean up responsibilities of abandoned sites being unclear?

Yes | No | I don't know

5.5. Does your organisation employ any innovative tools/techniques to pre-emptively detect sites which may be the subject of abandonment? If so, please specify.

Yes | No | I don't know

5.6. Does your organisation employ any innovative tools/techniques to track down owners of sites that have become abandoned? If so, please specify.

Yes | No | I don't know

5.7. Would it be useful if IMPEL provided training resources or guidance to address any of the challenges discussed in this section?

Yes (please specify) | No | I don't know

6. Waste and Trans-frontier Shipment of Waste (TFS)

6.1. Does Waste and Trans-Frontier Shipment of Waste (TFS) fall within the remit of your work?

Yes | No

6.2. In your experience, what are the main challenges in applying and implementing environmental regulations on waste and TFS? Please choose up to five

Classification of waste types | Establishing adequate waste treatment-infrastructure | Reaching recycling targets | Establishing inspection plans for TFS | Creating waste prevention plans | Creating waste management plans | Managing nuisance around waste treatment plants/landfills | Insufficient capacity to deal with waste legally | Promotion of waste pre-treatment | Overly complex procedures/forms | Tracking hazardous waste | Fighting organised waste crime | Surveillance of operating landfills | Surveillance of closure/after-care of landfills | Surveillance of illegal dumping/burning of waste | Others/examples (please specify)

6.3. Are there specific industry sectors or processes that present greater challenges than others? Please choose up to four.

Waste combustion for energy production | Trade in “used goods” | Electric or electronic waste | End of life-vehicles | End of life-ships | Organic waste | Mineral waste | Landfills | Recycling centres | Impacts due to lack of capacity | Plastic waste | Waste tyres | Hazardous/toxic waste | Problems with waste transport chain | Other (please specify)

6.4. Do you agree that illicit action and illegality are now common place within waste management?

Yes | No | I don’t know

6.5. What is the overall status of compliance in this sector?

Excellent | Good | Broadly compliant | At risk | Poor | Very Poor | I don’t know

6.6. What barriers to good levels of compliance do you think are most prevalent in this sector? Check all that apply.

Complex legislation | Lack of knowledge of legislation | Miscommunication of responsibilities | Lack of knowledge/resource for inspections | Lack of or insufficient self-monitoring or reporting by the operator | Adverse economic incentives | Lack of appropriate treatment facilities | Other (please specify) | No barriers

6.7. What barriers to enforcement have you experienced? Check all that apply.

Inadequate level of sanctions or fines | Complex prosecution procedures | Lack of training of environmental prosecutors | Low success rate | Staff Capacity | Lack of resources for inspection | Other (please specify) | No barriers

6.8. Would it be useful if IMPEL provided training resources or guidance to address any of the challenges discussed in this section?

Yes (please specify) | No | I don't know

7. Single Use Plastics (SUP)

7.1. Does single use Plastics fall within the remit of your work?

Yes | No

7.2. Until this point, have you dealt with any aspect of plastic pollution/single use plastic waste in your role?

Regulation | Policy development | Implementation | Pre-existing authority (from current/historic regulations) | Ad hoc (dealing with it as and when e.g., pollution event) | No | Other (please specify)

7.3. In your role, will you be responsible for dealing with the implementation of the SUP Directive?

Yes (please specify) | No | I don't know

7.4. What type of training have you received to support you in these new responsibilities?

Guidance provided by the European Commission | Guidance provided by National level authority | Guidance provided by regional level authority | Guidance provided by local level authority | Guidance provided by manager/team leader | Guidance from peers | Attended training session | No training

7.5. What do you anticipate will be the biggest challenge in implementing this directive on single use plastic waste? Check all that apply.

Disseminating information to those who you regulate | Unclear scope of the regulations | The role of my organisation has not been defined/is unclear| Establishing monitoring system for the SUP Directive | Insufficient resources to enforce regulations | Other (please specify)

7.6. Do you expect to exchange knowledge/good practice on plastics with other regulators/authorities?

Yes, we have already exchanged knowledge and good practice with others | Yes, we have planned to collaborate with other regulators/authorities| Yes, we are hoping to collaborate with other regulators/authorities | No

7.7. Would it be useful if IMPEL provided training resources or guidance to address any of the challenges discussed in this section?

Yes (please specify) | No | I don't know

8. Climate change

8.1. Has the changing climate impacted the way you regulate (choose the options which are most appropriate to you)?

Climate change impacts have been considered at a strategic level by my organisation | Climate change impacts have been considered in specific projects/workstreams | Climate change impacts have been considered in my own work | All of the above | No

Briefly outline the ways in which climate change has impacted the way you work (this can include work from all organisational levels)

Free text

8.2. What are the main challenges you have faced in your role relating to climate change and regulation of its causes/impacts? Check all that apply.

Misunderstanding legislation | Legislation is not relevant to my role | The role of my organisation is not clear | Inconsistent information/policies/procedures | Geographical boundaries | Unknown source of impacts | Legislation doesn't provide opportunities to regulate to protect against impacts of climate change | Other (please specify)

8.3. What are the main underlying reasons behind these challenges? Please choose up three.

Unclear, incomplete or overly complex legislation | Gaps in current legislation | Unclear technical specifications or terms or definitions | Confusion in responsible authority | Inadequate technical/ecological/taxonomical understanding and knowledge | Insufficient capacity in appropriately trained staff | Insufficient capacity in competent authorities in technical equipment | Inadequate training and guidance resources | Others (please specify):

8.4. Do you have any examples of where you overcame challenges in relation to reducing and mitigating the impacts of climate change?

Free text

8.5. Do you regularly work with partners to implement legislation related to climate change?

Yes, with regulators | Yes with non-regulators | Yes with other partners | Yes (with all options) | No

8.6. What measures would improve your ability to implement legislation related to climate change? Please choose up to three.

Clarity in responsibilities | Information/guidance/campaigns for those you regulate | Additional information and training for your organisation | Additional incentives (e.g. label/awards/promotion) for those you regulate | Information for the public e.g. about the state of the (local) environment | Inspection results and high performers | Effective involvement of local communities and stakeholders in environmentally relevant planning and decision processes | Integration of interested citizens or NGOs in surveillance and protection of sites or species (through sponsorship/guardianship of areas etc.) | Integration of accredited external experts (including EMAS verifiers) into inspection or surveillance activities | Others (please specify)

8.7. Would it be useful if IMPEL provided training resources or guidance to address any of the challenges discussed in this section?

Yes (please specify) | No | I don’t know

9. Protection of Water and Land

9.1. Does protection of water and land fall within the remit of your work?

Yes | No

9.2. In your experience, what are the main challenges in applying and implementing environmental regulations on the protection of water and land? Please choose up to six.

Installing/maintaining urban waste water treatment infrastructure | Drawing up plans/programs on river basin management | Monitoring/assessing surface waters | Monitoring/assessing groundwater | Mitigating effects of physical modification of water bodies | Implementing soil protection measures | Lack of baseline studies | Keeping the rule of no-deterioration | Advancing towards "good ecological status" or "good ecological potential" | Management of transboundary pollution of surface waters | Ensuring implementation of good agricultural practice | Ensuring implementation of good aquaculture practices | Monitoring and assessing soil contamination | Monitoring and assessing of sediments from water bodies | Cooperation of different local and regional authorities | Assessing/preventing further soil contamination around installations | Regular soil and groundwater monitoring | Tackling illegal abstraction | Reducing diffuse water pollution | Monitoring and assessing the minimum ecological flow | Others/examples (please specify)

9.3. Are there specific sectors, activities and processes that present greater challenges than others? Please choose up to three.

Agricultural pollution | Pollution from aquaculture | intensive Rearing | Urban sewerage | Industrial sites (in operation or restauration after closure) | Landfills (in operation or after closure) | Illegal dumping | Sludge[5] | Point source discharges from industry | Point source discharges from wastewater treatment plants | Harmful algal blooms | Identification/management of derelict contaminated brownfield land[6] | Initial status of land/soil | Pollution from vehicles and roads | Other (please specify)

[5] Sludge is any solid, semi-solid, or liquid waste generated from a municipal, commercial, or industrial wastewater treatment plant, water supply treatment plant, or air pollution control facility exclusive of the treated effluent from a wastewater treatment plant.

[6] Brownfield land is described as land that has previously undergone development but is currently no longer in use.

9.4. What is the overall status of compliance in this sector?

Excellent | Good | Broadly compliant | At risk | Poor | Very Poor | I don't know

9.5. What barriers to good levels of compliance do you think are most prevalent in this sector? Check all that apply.

Complex legislation | Lack of knowledge of legislation | Miscommunication of responsibilities | Lack of knowledge/resource for inspections | Staff capacity | Lack of or insufficient self-monitoring or reporting by the operator | Other (please specify) | No barriers

9.6. What barriers to enforcement have you experienced? Check all that apply.

Inadequate level of sanctions or fines | Complex prosecution procedures | Lack of training of environmental prosecutors | Low success rate | Lack of resources for inspection | Other (please specify) | No barriers

9.7. Would it be useful if IMPEL provided training resources or guidance to address any of the challenges discussed in this section?

Yes (please specify) | No | I don't know

10. Soils

Soils are a vital natural resource as they carry out a wide range of essential functions, such as growing food and timber, controlling the quality and quantity of water flow, supporting valuable habitats and species, and storing carbon. Soil damaged to such an extent that it can no longer carry out its functions, can have an effect on the wider environment as well as the economy and people.

10.1. Does protection of soil fall within the remit of your work?

Yes) | No

10.2. In your experience, what are the main challenges in applying and implementing environmental regulations, standards or requirements on soil? Please choose up to 3

Implementing soil protection measures | Keeping the rule of no-deterioration | Advancing towards "good ecological status" or "good ecological potential" | Ensuring implementation of good agricultural practice |Assessing soil health in terms of compaction, erosion, organic matter levels etc | Monitoring and assessing soil contamination | Cooperation of different local and regional authorities | Assessing/preventing further soil contamination around installations | Regular soil and groundwater monitoring | Enforcement | Other (please specify)

10.3. Are there specific sectors or processes that present greater challenges than others? Please choose up to 3.

Arable Agriculture pollution | Livestock Agriculture pollution | Industrial sites (in operation or restoration after closure) | Landfills (in operation or after closure) | Illegal dumping | Sludge | Identification/management of derelict contaminated brownfield land | Other (please specify)

10.4. What is the overall level of monitoring or compliance checking?

Monthly | Every few months | Twice annually | Once a year | As and when needed | No monitoring or compliance schedule | Other (please specify)

10.5. What is the overall status of compliance with regulations in this sector?

Excellent | Good | Broadly compliant | At risk | Poor | Very Poor | I don't know

10.6. What barriers to good levels of compliance do you think are most common in this sector? Check all that apply.

Insufficient guidance | Insufficient understanding of the importance of soil | Inadequate awareness of key information | Insufficient disclosure of information | Limited understanding of pollution's social dimensions | Inadequate monitoring and management of wastes | Treatment of ecosystems as waste dumps and sinks | Choices made without awareness of full consequences | Others (please specify)

10.7. What barriers to enforcement have you experienced? Check all that apply.

Difficulty in accurately assessing compliance | Difficulty in gathering sufficient evidence | Inadequate level of sanctions or fines | Complex prosecution procedures | Lack of training of environmental prosecutors | Low success rate |lack of resources| inadequate capacities or political will | No barriers | Others (please specify)

10.8. What ways do you encourage maintaining or improving the organic matter content of soils?

Free text

10.9. Is there a different agency with the primary responsibility for agricultural regulation?

Yes (please specify) | No | I don't know

10.10. Can IMPEL provide training resources or guidance that would help address any of the challenges discussed in this section?

Yes (please specify) | No | I don't know

11. Nature Protection (Biodiversity and Habitats)

11.1. Does Nature Protection (Biodiversity and Habitats) fall within the remit of your work?

Yes | No

11.2. In your experience, what are the main challenges in applying and implementing environmental regulations on nature protection? Please choose up to five.

Designating protected areas | Drawing up habitat management plans | Preserving/restoring vulnerable protected habitats | Creation and management of green spaces | Assessing and reducing impacts from activities outside protected areas | Ensuring implementation of mitigation/compensation measures | Combating and detecting illegal trafficking of protected species | Management of invasive species | Detecting illegal change of land use | Detecting poaching | Detecting illegal fishing | Detecting illegal logging | Detecting illegal killing of protected species | Detecting illegal ploughing up of grassland | Others/examples (please specify)

11.3. Are there specific sectors, activities and processes that present greater nature protection challenges than others? Please choose up to five.

Intensive farming | Intensive fishing (including dredging) | Aquaculture | Forestry | Hunting | Mining | Biogas | Tourism | Sports | Loss of green spaces | Potential of pollution of land and/or water | Other (please specify)

11.4. What is the overall status of compliance in this sector?

Excellent | Good | Broadly compliant | At risk | Poor | Very Poor | I don’t know

11.5. What barriers to good levels of compliance do you think are most prevalent in this sector? Check all that apply.

Complex legislation | Lack of knowledge of legislation | Miscommunication of responsibilities | Lack of equipment/tools for inspections | Staff capacity | Lack of trained inspectors | Lack of or insufficient self-monitoring or reporting by the operator | Other (please specify) | No barriers

11.6. What barriers to enforcement have you experienced? Check all that apply.

Inadequate level of sanctions or fines | Complex prosecution procedures | Lack of training of environmental prosecutors | Low success rate | Staff capacity | Lack of equipment/tools for inspection | Other (please specify) | No barriers

11.7. Can IMPEL provide training resources or guidance that would help address any of the challenges discussed in this section?

Yes (please specify) | No | I don't know

12. Environmental Damage and Restoration

Environmental restoration is the practice of renewing and restoring areas that have been damaged by human activities and interaction with nature. There are a number of key benefits to restoring habitats to their natural state utilizing plant species native to the affected areas, rather than traditional replanting and revegetating methods which often introduce foreign and non-native species to an area. These include; preservation or restoration of native species, habitat recovery, improves biodiversity and mitigation of impacts of climate change. A restored ecosystem is capable of reproducing the inherent species for continued ecological stability and is more resilient and adaptable to the local environment.

12.1. Does Environmental Damage and Restoration fall within the remit of your work?

Yes | No

12.2. What actions/incentives does your organisation do to help deal with environmental damage and help towards pursuing environment restoration?

Environmental assessments to help understand the extent of damage | Longer term environmental sampling to assess rate of environmental restoration | Communicating damage and progress being made to restore damage | Active use of European Union directives (e.g. Environmental Liability Directive) | Use of a financial provision framework | Organising and partaking in clean up campaigns (e.g. community led projects) | Tracking back in the compliance chain to find the responsible party | Corporate Social Responsibility (CSR)

12.3. Are these actions effective? If not, please state why these actions are not effective?

Yes | No | I don't know

12.4. Are regulated operators required to have financial provisions that are specifically used to deal with environmental restoration?

Yes | No | I don't know

12.5. Do you believe that it should be a mandatory for operators to have financial provisions?

Yes | No | I don't know

12.6. Do you believe that having a requirement to have financial provisions is an effective mechanism for environmental restoration?

Yes | No | I don't know

12.7. Which parties do you think should be responsible for providing further financial provisions (in cases where operators do not have enough money to deal with environmental restoration)?

Business partners | Company Directors | Local government | Wider government (national) | NGOs | Environmental Regulators | No other parties should be responsible for providing financial provisions

12.8. Are regulators able to cover the costs of environmental restoration from operators/polluters?

Yes | No | I don't know

12.9. Do regulators successfully recover the costs of environmental restoration from operators/polluters?

Yes | No | I don't know

12.10. Can IMPEL provide training resources or guidance that would help address any of the challenges discussed in this section?

Yes (please specify) | No | I don't know

13. Underlying Causes of Implementation Challenges

13.1. What are the main underlying reasons and causes of problems in your role in environmental regulation in your area(s) of competence? Please choose up to three.

Unclear, incomplete or overly complex legislation | Unclear technical specifications and/or terms or definitions | Inadequate urban and land use management and spatial planning | Insufficient evidence, data and information | Inaccessible or unusable data (e.g. unprocessed raw data) | Issues with data security and protection | Inadequate range of professional qualifications for efficient

implementation and enforcement | Inadequate technical understanding and knowledge | Insufficient access to technical expertise | Insufficient capacity in competent authorities in human resources | Insufficient capacity in competent authorities in technical equipment | Complexity of prosecutions | Economic incentives do not support regulations | Lacking capacities of systems | Insufficient capacity in competent authorities in training/guidance | Others/examples (please specify)

13.2. Is there unclear, incomplete or overly complex legislation that creates implementation challenges? Please name EU legislation and its specific requirements (if necessary) as transposed into your national legal system.

Yes (please specify) | No

13.3. Please state (if you can) specific areas where your work has been particularly effective in helping to improve environmental protection?

Free text

14. Possible Solutions to Overcome Implementation Challenges

The following questions ask you to evaluate different measures to overcome challenges in implementing environmental regulations. Please name further helpful measures and best practice examples.

14.1. Would an improved availability of information and data help you to address and overcome challenges in applying and enforcing environmental regulations? Check all that apply.

Geospatial data relevant for your geographical area of competence (according to INSPIRE) | Data on spatial planning | Data on environmental users | Data on environmental management schemes | Inspection reports | Data on environmental enforcement issues | More standardised and relevant information on environmental condition and management | Others/best practice examples (please specify) | No

14.2. Would improved access to technology help you to address and overcome challenges in applying and enforcing environmental regulations? Check all that apply

Modern surveillance technologies | Communication platforms |Mobile technology |Earth observation techniques | Integrated monitoring systems | Other (please specify) | No

14.3. Would exchange and cooperation within your authority and with other competent authorities help you to address and overcome challenges in applying and enforcing environmental regulations? Check all that apply.

Sharing knowledge, skills and good practice inside your authority | Sharing knowledge, skills and good practice between your and other competent authorities | Establishment of and active participation in networks of environmental professionals to facilitate communication and best practice exchange | Cooperation of networks | Standing procedures to regularly inform policy makers about practical experiences and work results | Establishing information exchange routines (trans-boundary and/or trans-sectoral) | Revolving evaluations of the work of authorities with compliance assurance functions | Co-ordinated communication and action with different inspection authorities | Others/best practice examples (please specify) | No

14.4. Which complementary approaches are or could be helpful to improve compliance with environmental regulations? Check all that apply.

Information/guidance/campaigns on compliance strategies for duty-holders | Additional incentives for duty-holders | Information for the public e.g. about the state of the (local) environment | Inspection results and high performers | Effective involvement of local communities and stakeholders in environmentally relevant planning and decision processes | Integration of interested citizens or NGOs in surveillance and protection of sites or species (through sponsorship/guardianship of areas etc.) | Low threshold- easy access complaint system (with a follow up including procedural rights) | Installation of an online portal where everyone may file notices about infractions or environmental problems (without resulting procedural rights) | Support for dialogues between site management and their neighbours to reduce possible conflicts and complaints | Integration of accredited external experts (including EMAS verifiers) into inspection or surveillance activities | Use of environmental reports (under EMAS or other schemes like ISO 14001) for the compliance control of sites | General simplifications or reduction of inspections for EMAS-certified sites | Others/best practice examples (please specify)

14.5. Which of these approaches have been used, and have been most effective?

Free text

14.6. Please describe any other helpful measures to overcome implementation challenges

Free text

15. Capacity Building and Training

Capacity building and training extend beyond the traditional in person training courses and includes availability of guidance, resources, opportunities for skills development, experiential learning, involvement in project work, and knowledge exchange

15.1. Have you attended/participated in training or development delivered/facilitated by IMPEL or a member of the IMPEL network?

Yes, delivered by IMPEL/a member of the IMPEL network | Yes, delivered by my own organisation | No

15.2. Do you take part in peer-to-peer knowledge exchange to improve your own knowledge?

Yes, within my organisation | Yes, with other organisations within my country | Yes, with other organisations outside my country | No

15.3. Have you identified gaps in your training, or availability of training to you, which causes problems in doing your job?

Yes (please specify) | No

15.4. Are there barriers for you and your colleagues to accessing the appropriate training delivered by IMPEL? Check all that apply.

Language barriers | Financial barriers | Competing priorities (within my organisation or set out by government) | Lack of relevance to my role | No | Other (please specify)

15.5. What is your preferred format of training? Check all that apply.

Lectures | Webinars | Workshops | Reading material | In person visit from expert | Other (please specify)

15.6. Have you attended specific training for your role which has resulted in an improved performance in your role (including training not delivered by IMPEL)? If so, please tell us about it.

Yes (please specify) | No

16. Non regulatory goals/agreements/partnerships

Legislation and regulations are not the only way to improve environmental performance. Voluntary goals and agreements can also have a role in encouraging governments, businesses and society to reach ambitious targets.

One example is the Sustainable Development Goals, 17 interlinked global goals designed to be a "blueprint to achieve a better and more sustainable future for all". These goals are not legally binding meaning that no one is penalised for not enforcing them, but there is now widespread use of these goals in many countries.

16.1. Does your organisation use non regulatory tools as part of your work implementing environmental regulations? If yes, please specify.

Yes (please specify) | No | I don't know

16.2. Do you routinely work in partnership with other bodies (regulatory or non-regulatory) in your work?

Yes | No | I don't know

16.3. If yes, what form does this partnership working take?

Regular planned work | Collaboration on specific projects | Sharing knowledge | Unplanned work | All of the above | I don't know | Other (please specify)

16.4. Do you think that non regulatory tools/approaches could help in specific areas of your work? If so, please let us know which ones.

Implementation | Communication with stakeholders | Networking | Connection to a wider agenda e.g., the SDGs are global goals that encourage organisations of different types and different sizes to work towards a common outcome| No | Other (please specify)

17. COVID-19

17.1. How has COVID impacted your role in your organisation? Check all that apply.

Access to offices or required equipment | Access to sites | Ability to carry out environmental sampling | Ability to give out advice | Ability to impose disciplinary action (e.g., fixed monetary

penalties, cease and desist notice) | Communication within your organisation | Communication with external bodies | Covid has not have an impact | Other (please specify)

17.2. Has your organisation developed any strategies to deal with the pandemic? Check all that apply.

Working from home | Developing guidance | Enforcement positions[7] |Increased use of online platforms | Other (please specify)

[7] Where compliance with the requirements is not possible for an individual site(s), a type of activity or for a sector, and where a regulated business requires something specific in addition to this overarching guidance, a regulator can temporarily take a specific regulatory position that any failure to comply with those requirements will not be treated as a non-compliance for compliance assessment or enforcement purposes. This will be where that non-compliance is unavoidable and solely as a direct result of the impact of COVID-19 and will not lead to significant environmental harm.

17.3. Has your organisation used any techniques/toolkits to allow for active environmental regulation under COVID imposed restrictions? If so, please provide detail.

Yes (please specify) |No | I don't know

17.4. What have been the biggest environmental impacts (positive and/or negative) which have developed during the COVID pandemic?

Free text

17.5. Are there likely to be long term changes in your organisation following the COVID pandemic?

Changes to my role | Changes to my workplace | Changes to the organisation | No | I don't know

18. Concluding Questions

18.1. Now that you have completed the survey, do you think the same challenges you highlighted earlier (Question 1.4) are the biggest obstacles for your organisation?

Yes | No (please specify)

18.2. Are there any future (next 5 years) areas which your organisation believes will cause the biggest and/or most environmental challenges?

Free text

18.3. What do you believe are the biggest environmental challenges that IMPEL should currently be focusing on?

Free text

18.4. What can IMPEL offer you to help in dealing with the issues raised in this survey?

Providing networking opportunities | Providing training opportunities | Providing guidance | Platforms/channels for communicating | Platforms/channels for distributing information | No further help is required | Other (please specify)