Contribution to conclusions and recommendations on environmental crime: Data and information management

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List of Abbreviations

CITES	Convention on Trade in Endangered Species
DG ENV	Environment Directorate General (of European Commission)
DNA	Deoxyribonucleic Acid
EEA	European Environment Agency
EU	European Union
IMPEL	European Network for the Implementation and Enforcement of Environmental Law
IT	Information technology
SIIF	Structured Implementation and Information Frameworks
MS	Member States
SWOT	Strengths, Weaknesses, Opportunities, Threats
TFS	Transfrontier shipment (of waste)

1 Introduction

The EU itself, although setting the regulatory framework on environmental crime, does not have the authority to enforce the provisions aimed at fighting environmental crime. This competence lies with the authorities of the Member States. The focus of this report is therefore on the functioning of the enforcement institutions, i.e. the police, prosecutor's offices and criminal courts, the cooperation between them on the national and trans-boundary level, and the potential role of the EU in facilitating the task of these institutions.

The importance of good data and information to contribute to the understanding and tackling environmental crime has been stressed across a number of areas of the work of EFFACE – particularly within WP3 on the costs and impacts of environmental crime (Iles et al., 2015), studies on the efforts to tackle environmental crime in WP2 (Faure, et al. 2015), several case studies within WP4 (Farmer, et al. 2015) and as part of the SWOT analysis of WP6 (EFFACE, unpublished).

WP6 brought together the evidence on data and information and concluded that good information and data on environmental crime is important in order to understand the extent of environmental crime, its impacts and where and in what way action to tackle that crime may be most effective. Good data and information are central to evidence-based enforcement – delivering the objectives of smart enforcement. At a broader level, information is needed for evaluation of policies (at Member State, EU and international level). Evaluation of policies asks -does the law deliver what was intended? What is not working? What good practice can be built upon?

Good data are needed to deliver smart enforcement. Smart enforcement embodies concepts of risk-based enforcement, intelligence led approaches and these rely on information. Research within EFFACE (2014) has noted the pressures on enforcement institutions for various reasons, but lack of data preventing intelligence-led policing is a specific identified problem. Such information enables good planning and directing of resources, such as to determine what to inspect, where to inspect and when to inspect. Further, good data are not only needed for planning and directing enforcement actions, they are needed for follow-up actions, such as providing the basis for sufficient evidence for enforcement responses (fines, prosecutions, etc.).

Alongside the obvious needs for good data, it is also important to note the context of development of smarter methods for data collection and analysis. IT developments, for example, allow for collecting data, analysis of large data sets, transfer of data and deporting by the public. There are improved tracking facilities (e.g. of marine activities by satellites) and new techniques such as DNA tracking for wildlife crime. New mechanisms allow the delivery of new information, they may provide it more quickly (including in real time) and they may also make information cheaper. However, there is also a need to avoid information overload.

2 Opportunities

The SWOT analysis summarised its conclusions in the following table 1.

Table 1: Overview of Opportunities, Weaknesses and Strengths

Strengths	Weaknesses
• The importance of data and information is well understood by enforcement authorities • There are some examples of good data for crime levels and some impacts • There are precedents for working EU level data bases on environmental crime and its impacts	• There are major data gaps in most areas of environmental crime • Data on many aspects of impacts are often lacking • Shared data systems at EU level are not available for many areas of environmental crime • For most areas there is no legal obligation for transmission of data on environmental crime to the EU level
Opportunities	**Threats**
• Developments in IT software and hardware will improve efficiency, ability to share data, etc. • Current review of EU information and reporting may allow for greater emphasis on data for environmental crime.	• Reductions in public budgets threaten data gathering, investment in information systems, etc. • Occasions where analyses of events are not made publicly available •

The following sections explore how to build upon the opportunities identified, examining different options to do this.

There is no coherent, overarching single opportunity to improve data and information in relation to environmental crime. However, there are a number of specific and cross-cutting opportunities that could deliver significant improvements and so help in the fight against this type of crime and deliver protection of health, environment and social and economic interests.

Alongside specific legal and policy initiatives, a key opportunity relating to data and information are the developments in information systems. Recent software and hardware developments enable far better tracking of objects, real-time data transmission and extremely rapid exchange of information across the globe. Further, data management systems increasingly allow the processes of vast and complex amounts of data. Within the EU, developments in IT opportunities are leading to new ideas for information exchange.

These developments can help overcome barriers to effective control of environmental crime, such as:

- Rapidly moving information from detection to enforcement.
- Exchange of information between developing and developed countries
- Being able rapidly to analyses large databases to seek out identifiers of criminal organisations, activities, etc. (e.g. shipping manifests).
- Changing enforcement strategies and deployment of resources quickly in response to changing criminal patterns.
- Providing information for businesses and consumers to help avoid activities and products sourced from criminal activity.

The EUTR CITES and money laundering EFFACE case study (Saunders and Hein, 2015) illustrates the opportunities from data systems. Where EU Member States have statistically significant CITES imports, there are relatively well managed flows of information/ activities between relevant enforcement departments. The case illustrates it is the establishment of databases in Member States that can be shared with enforcement bodies in other Member States that presents a major opportunity to share timely data on companies, etc., operating in those countries and importing to the EU, thus providing the basis for tracking and monitoring.

The lessons of, for example, the last decade are that it is very hard to predict where information systems development might lead even in the near future. However, opportunities to address weaknesses in data and information through such developments are very likely to arise.

The opportunities at a policy level do not seem to be particularly around legal change, but about implementation decisions and support systems. For example, the forthcoming review of Directive 2008/99/EC on the protection of the environment through criminal law (Environmental Crime Directive, ECD) is focused on the scope of the directive, role and harmonisation of sanctions, etc. It is not about the detail and coherence of data collection and reporting.

The European Commission DG ENV is taking a serious look at the nature of reporting across the environmental acquis, alongside the European Environment Agency. This is not specific to environmental crime, but will encompass at least some key environmental crime issues. Over many years initiatives have taken place to enhance data collection and management to help ensure implementation of EU environmental law. This goes back as far as 1992 with the Standardised Reporting Directive, as well as later developments on INSPIRE (2007) and the Shared Environmental Information System (2008). However, recent strategic policy statements have shown systems to still be inadequate.

Thus the 2012 Implementation Communication stated that the European Commission would work to improve knowledge on implementation, included objectives to engage with Member States to put in place more effective information systems on implementation, improve EU-level information, help ensure confidence in the information generated at national, regional and local levels and close important information gaps on compliance promotion and enforcement. The 7th Environmental Action Programme (2013) had objectives to improve the knowledge base for EU policies, including simplifying, streamlining and modernising environmental and climate change data and information collection, management, sharing and re-use.

Finally, the Commission's May 2015 Better Regulation Communication stated that it would launch a broad review of reporting requirements to see how burdens can be alleviated. This review will have a particularly strong focus on areas where stakeholders have recently indicated their concerns, including on environment. In October 2015 the Commission, therefore, launched a Fitness Check on reporting for EU environmental law, with the aim to conclude this is 2017. Thus there is a major opportunity to re-examine and focus data collection and use requirements to address shortcomings in relation to tackling environmental crime.

A key issue is what information is to be required by EU law on state of environment and on pressures. This is of importance for environmental crime as an incorrect balance of data collection can lead to an understanding of crime levels, but not their impact, or evidence of environmental damage with poor understanding of the criminal activities driving this.

3 Options

In this context it is not useful to set out every possible option for all types of potential data needs for all of the environmental acquis. Rather, it is better to consider alternative approaches and weigh up the pros and cons of these as a guide to potential ways forward. However, in any specific context (e.g. for a particular

directive), those pros and cons would need to be evaluated in that context and the conclusions reached might well vary across the environmental acquis.

However, it is important to note that data and information obligations are established in EU environmental law in several ways, including:

- Specific obligations set out within the text of a directive or regulation.
- Obligations set out in secondary legislation in Commission directives, regulations or decisions adopted through the Comitology procedure.
- Provisions agreed through an EU level process involving MS experts in a non-legal context (e.g. through a working/expert group).
- Provisions developed at MS level (e.g. to be undertaken by businesses) in order to ensure a particular obligation in EU law is met.

Therefore, options need to take account of these different approaches (the section on harmonisation below will consider the issues of prescription and flexibility and the context of which instrument provisions for data and information are set out in more detail).

The options to be considered are:

1. To set out detailed requirements for data collection for specified purposes in directives and regulations at EU level.
2. To set out detailed provisions for data collection for specified purposes through Comitology and/or through expert/working group agreements.
3. To provide facilities at EU level for data provision, acquisition, analysis, use and sharing.
4. To support data collection and use through capacity building (funding, sharing best practice, training, etc.).

4 Critical analysis of options

This section analyses the four options in more detail in turn.

4.1 Detailed requirements for data collection in EU directives and regulations

Most EU environmental law includes some provisions for data collection and use in the text of the directive or regulation. At a minimum there may simply be a statement for a periodic report on compliance. It is far less common for a directive or regulation to contain more detailed data requirements. Indeed, more detailed requirements usually occur where businesses are required by a regulation to provide information to users or authorities (e.g. under the Waste Shipment Regulation). The fact that there are detailed requirements reflects both the need for uniformity of approach across the EU and that the legal context is a regulation (with direct effect) rather than a directive.

If detailed provisions are included in a directive or regulation, these have the major advantage of being clear to all legislators, authorities, stakeholders, etc., and are a primary focus for compliance checking by the Commission.

However, provisions set out in directives and regulations have a major disadvantage in that they are not able to be amended quickly. Data requirements do change. Non-compliant activities change and data collection may need to respond to these. Further, IT systems change and opportunities arise for data collection and sharing that were not previously possible. Out of date provisions set in law could, therefore, be a barrier rather than a guarantee of action.

This problem is more evident today than previously as there is concern about maintaining EU environmental law and protecting it from deregulatory pressures. An opportunity to weaken EU law comes when proposals are made for its revision. Therefore, proposals may be delayed even when a reasonable case for amendment may be made to address a problem, simply to avoid 'opening' up the rest of the legislative text to possible revision.

4.2 Detail provisions for data collection for specified purposes through Comitology and/or through expert/working group agreements

Detailed provisions for data collection can be set out through Comitology (and so are legally binding) or through agreement in a non-legal context in an expert group or working group. The latter would still have the agreement of the Member States, but would not have the force of law.

Provisions set out through these mechanisms can afford to be much more detailed than those set out in directives and regulations. They can, firstly, be very extensive, e.g. setting out very detailed requirements for different aspects of the implementation of EU law. They can also define particular formats or IT tools to use. All of this is possible as it is relatively straightforward to change the provisions through the relevant decision making process. Thus the provisions can respond to rapidly changing circumstances.

However, care needs to be taken that the harmonisation of provisions which such a route inevitably delivers does not negatively impact on Member States. Possible negative impacts may include:

- Compromise agreements on detailed provisions which do not reflect best practice and which potentially undermine that best practice in selected Member States.
- A focus on attempting to harmonise to the highest possible practice which only results in a failure to deliver across those Member States that do not have the capacity to do so.
- Provisions which attempt to cover all possible issues and which result in information overload for those collecting and using the data.
- Collection of so much information and its delivery to EU institutions that themselves are unable to use it (hence raising questions as to why data are being reported).

4.3 Provide facilities at EU level for data provision, acquisition, analysis, use and sharing

This option is an enabling option. It does not establish any new requirements on the Member States. Rather, EU level initiatives (e.g. by the Commission, EEA, Horizon 2020, etc.) are undertaken to provide facilities to the Member States that enable or encourage more and/or better data collection for enforcement. Examples could include:

- Development of databases for sharing information between Member States (e.g. for tracking transboundary activities, including criminal activities).
- Using European satellites for tracking activities (e.g. as with fishing, oil discharges at sea, etc.) or for examining land cover information to identify illegal activities (e.g. as with water abstraction).
- The development of software to model pressures, behaviours and environmental state and so help pinpoint potential implementation problems.
- Sharing of data analysed at EU level to enable Member States to compare their performance, identify data needs and problems, etc.

This option is totally non-binding. However, the pooling of resources and experience at EU level can deliver tools and facilities that are very hard for Member States alone to provide. The most obvious example of this

is satellite remote sensing. However, any cases where Member States do need to work together, and where this requires some common systems, can be facilitated by EU level action.

4.4 Support data collection and use through capacity building

This option aims to address the problems for data collection at Member State level through enhancing the capacity of the institutions collecting and using the data. This option includes:

- The use of EU funds, e.g. for development of information systems, equipment purchase, etc. The particular funds (e.g. Structural Funds, Horizon 2020, etc.) each have their own limitations for use (fund size, eligibility criteria, etc.), so that funding is not able to address all resource constraints.
- Sharing of best practice, e.g. in collection methods, prioritization, etc.
- Sharing of IT tools for collection, analysis and sharing of data.
- Training.

The sharing of best practice and training could, for example, build upon the work of the IMPEL network. Under the IMPEL TFS Cluster, for example, IMPEL organises joint inspections where inspectors from different Member States learn from each other and this includes the use of intelligence, gathering of evidence, etc. IMPEL also organises peer reviews and the use of information by enforcement authorities to prioritise their work and deliver smarter enforcement is central to much of the peer review work.

In all cases this option needs to be implemented in a smart way. There are limited resources for capacity building and it would be important to target these resources to where they are most needed. This, therefore, itself requires a certain level of information about the needs for data collection and its use for enforcement in specific cases.

5 Alternatives

The options above are not presented as alternatives – indeed in the right context action may be appropriate using all of the options. Further, for the subject of data collection and use, the options do not consider what is, or is not, appropriate in a criminal law context. Whatever the legal setting, the options apply. However, it is worth noting the wider context of data and information use and this will affect the development and application of the options.

The collection and use of data and information has different purposes, including:

- It is used to demonstrate compliance with a legal obligation.
- It is used to help inform the understanding of an issue and so help to improve decision making and inform policy evaluation.
- It provides specific information to the public.

Information for compliance checking will relate to the direct legal obligation being considered, such as compliance with a permit or prohibition of an activity. Where Member States are required to show compliance the type of information would relate to the specific legal obligation in EU law, such as meeting an environmental standard. Information to inform decision making and policy review/development can be of different types. For some types of decision making and for understanding policy effectiveness, the information needs may be quite precise. Part of such information for evaluation would be to reflect on the extent and causes of non-compliance/illegal activity. Information for the public will also be of various types depending on the specific needs, such as local environmental quality. However, the provision of

information to the public can also be used to stimulate engagement in the compliance checking process, such as getting the public to report on incidents and so help to detect illegal activities.

In conclusion, the broad context of data and information collection and use (which would be part of any forthcoming review by the European Commission) needs to be taken into account in developing appropriate options for improving data and information collection in relation to tackling environmental crime. This will ensure synergies are built upon and inconsistencies and gaps are avoided.

6 Harmonization/coordination/MS

The options considered above are all focused on harmonisation to different degrees. There are many different possible aspects to harmonisation. EU level provisions may seek to deliver harmonisation for different aspects of data collection, such as rules on Member States concerning data:

- To be required to measure/monitor an issue
- To collect information in a particular way
- To collect information at a particular frequency
- To analyse information in a common way
- To present information in a common/compatible system, e.g. for sharing between MS

In contrast, Member States might have reasons for not harmonising data collection and data management rules. These might include:

- Different priorities (environmental, social, crime levels) between Member States leading to differing emphases on what data are important.
- A desire for flexibility to collect data for smart enforcement – at least not wanting harmonized rules that reduce the flexibility of enforcement bodies to change data collection in response to perceived non-compliance/criminal activities.
- There may be different ways of communicating with public, so affecting how to present data. This is clearly an area for responding to bottom-up needs.

With respect to the options, it is not possible to provide a specific comment on the appropriate level of harmonisation. This would only be apparent with respect to the detail of specific provisions for specific laws. Instead, it is possible to note the tension between the need for consistency and comparability of information across Member States (especially if they have to share information, e.g. for transboundary crime), which requires harmonisation, and flexibility for Member States to choose information needs to deliver local smart enforcement. This balance has to be worked out on a case by case basis.

7 Effectiveness

The extent to which the options address the weaknesses identified depends on the detail of the option and where weaknesses occur. The following figure illustrates how data are used in relation to a single type of incident (e.g. an illegal landfill) by bodies of different governance scales. Local bodies need site specific information for enforcement actions. EU level bodies need collated information on these activities. In an ideal situation there would be a clear flow of information from local, to national, to EU level and that any one body would report once and the data would be used many times. However, the tension between needs at different governance levels noted above under 'harmonisation' can occur in this ideal data flow. For example, who decides what information is needed? Is it simply, for example, the local regulator asking industry to monitor. In which case does the sum total of information from these sources meet EU needs?

Getting the balance right is, therefore, critical in the framing of any provisions and, therefore, in determining whether the results will be effective.

All of the data are related, but weaknesses occur at different points and represent different types of problems that the options address. For example, capacity building may enhance local collection of data, but harmonised rules through Comitology help to provide a coherent framework for collating data for EU institutions to use.

Figure 1 Illustration of how data are used in relation to specific types of incidents at different governance scales
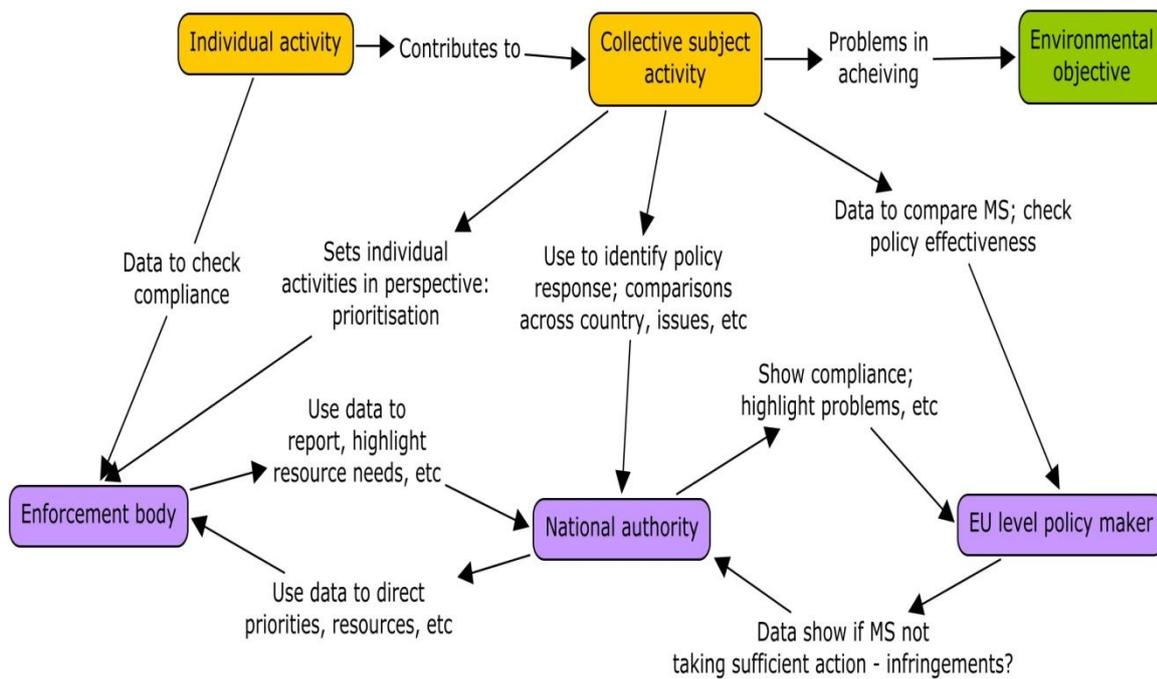
Addressing the weaknesses identified requires provisions on data and information to be well formulated. In doing this it is critical to follow clear principles. At EU level there have been several attempts to set out such principles. The most recent was the 2015 Better Regulation Communication and Guidelines[1] which set out five principles relating to reporting of information:

- *Comprehensive*: the system put in place must cover the objectives of the intervention (i.e. cover the *scope of a directive or regulation).*
- *Proportionate*: the system put in place needs to reflect the importance placed on different aspects of the intervention.
- *Minimise overlap*: The EU, Member States, Agencies, international organisations collect a lot of evidence. Duplication should be avoided.
- *Timeliness*: Not all evidence needs to be collected at the same time – sometimes it is better to collect evidence as it happens, other times it can be done later.
- *Accessibility*: in principle, all evidence gathered should be made available to the general public.

Principles had also been developed for EU environmental information specifically. Not all are relevant in this discussion on environmental crime, but some are important to highlight. Those from the 2008

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[1] COM (2015) 215 and SWD (2015) 111

Commission Communication2 on a Shared Environmental Information System (SEIS) worth highlighting include:

- Managed as close as possible to its source.
- Collected once and shared with others for many purposes.
- Readily accessible to end-users at all levels for the design of new policies.
- Accessible to enable comparisons of the environment at the appropriate geographic scale.
- Fully available to the general public, to enable citizen participation.

Further, relevant principles set out in the Structured Implementation and Information Frameworks (SIIF) concept introduced3 in 2012 include:

- Focus on compliance.
- Be easy to access and focus on user's need.
- Be up-to-date, accurate and comparable.
- Share automatically.
- Increase efficiency and reduce administrative burden.

These are broad principles, but working through each in applying and developing the options will enhance the effectiveness and acceptability of the measures and so address the weaknesses in data and information collection in relation to environmental crime.

8 Conclusions

The forthcoming review of reporting requirements at EU level is an opportunity to examine what data are needed for what purpose and the role of requirements set at EU level. This should be used to address data and information needs, such as the need to encourage greater collection of information to deliver smarter enforcement. However, care needs to be taken to ensure any provisions at EU level deliver 'harmonisation' where needed and flexibility where needed – this tension/balance might vary across different areas of law.

In setting requirements at EU level, different types of provisions that harmonise approaches across Member States may be appropriate. This may include techniques for data collection, storage and movement. This would ensure comparability and enable information from different systems to be readily brought together. Such harmonisation would ensure quality, comparability and trust between Member States. Further EU environmental law could require basic information requirements to be collected by MS, e.g. levels of non-compliances, risks, etc. This would not only provide basic data on environmental crime, it would also provide stakeholders with information to encourage authorities to take action.

In collection and reporting on data for delivering effective enforcement is a complex issue as there is not a single measure nor a common measure across different areas of environmental crime. The types of information that should be collected include (where relevant to specific issues):

- Compliance levels. While all non-compliance information should be collected, it is important to distinguish major non-compliance, such as high risk illegal activity. This could either be presented as direct numbers (e.g. tones of ivory) or in a categorization system (good, poor, bad, etc.) for emissions exceeding permit conditions, etc.
- Enforcement activities. Inspections, etc., are not a direct measure of enforcement and its effects. Indeed, the more inspections, the more non-compliance is likely to be detected. However, activity levels are important to compare with the compliance information and to provide an understanding

2 COM (2008) 46

3 COM (2012) 95

of where enforcement activity is being effective. This would then feedback into planning within enforcement strategies to improve targeting of limited resources.

- Data on outcomes. This could include quantities of waste illegally shipped (or legally entering the MS recycling systems); environmental quality (e.g. water pollution); numbers/quantities of fly-tipped waste; number of wildlife poisoning incidents, etc. Such information is important to compare with the non-compliance information as it quantifies the overall extent of a problem. If there is a mis-match with trends on outcomes with non-compliance and enforcement activity data, it would suggest that illegal activity might be taking place in ways that are not understood (or at least adequately being monitored).

It is important to note that it is understanding changes (trends) to these indicators, as it is this that provides a good interpretation of progress or not. As a result, continuity in data collection is needed.

EU law could also require information to be collected where problems are identified (as with 'investigative monitoring' under the Water Framework Directive). This would be a response to incidents, rather than a blanket provision. However, in all cases, the principles set out earlier should be followed and the right option of the four described here used, so as to avoid collection of unnecessary information, to avoid provisions becoming out of date and to ensure sufficient correct information is collected to tackle the growing problem of environmental crime.

Table 2: Summary of the options

Level	Option		Recom-mended	Political feasibility	Priority
EU	• Provide facilities at EU level for data provision, acquisition, analysis, use and sharing:		Yes	high	+
		o Development of databases for sharing information between Member States (e.g. for tracking transboundary activities, including criminal activities).	Yes	medium	+
		o Using European satellites for tracking activities (e.g. as with fishing, oil discharges at sea, etc.) or for examining land cover information to identify illegal activities (e.g. as with water abstraction).	Yes	high	+
		o The development of software to model pressures, behaviours and environmental state and so help pinpoint potential implementation problems.	Yes	medium	+/-
		o Sharing of data analysed at EU level to enable Member States to compare their performance, identify data needs and problems, etc.	Yes	medium	+/-
	• Support data collection and use at MS level through capacity building:		Yes	high	+
		o The use of EU funds, e.g. for development of information systems, equipment purchase, etc..	Yes	high	+/-
		o Sharing of best practice, e.g. in collection methods, prioritization, etc.	Yes	medium	+/-
		o Sharing of IT tools for collection, analysis and sharing of data.	Yes	high	+/-
		o Training	Yes	medium	+/-
Member States	• Support data collection and use at MS level through capacity building:		Yes	medium	+
		o Sharing of best practice, e.g. in collection methods, prioritization, etc.	Yes	medium	+/-
		o Sharing of IT tools for collection, analysis and sharing of data.	Yes	high	+/-

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