



# **Evaluation of Directive 2002/49/EC relating to the assessment and management of environmental noise**

## **Executive Summary**

Second Implementation Review and Evaluation of the  
Environmental Noise Directive



**EUROPEAN COMMISSION**

Directorate-General for Environment  
Directorate F  
Unit ENV F.3  
Knowledge, Risks and Urban Environment

*E-mail: ENV-END-REVIEW@ec.europa.eu*

*European Commission  
B-1049 Brussels*

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## 1. INTRODUCTION

**This Executive Summary sets out the findings and conclusions from the second implementation review and evaluation of the Environmental Noise Directive (the “END”). The study was undertaken by the Centre for Strategy & Evaluation Services and ACCON, supported by AECOM.**

### 1.1 Directive 2002/49/EC

Directive 2002/49/EC (the Environmental Noise Directive, “END”) is the EU legislative instrument for the assessment and management of environmental noise<sup>1</sup>. The Directive was adopted on 25 June 2002, and came into force on 18 July 2002. The END has two objectives:

- Art. 1(1) - Achieve a **common European approach** to **avoid, prevent** or **reduce** the effects of exposure to environmental noise harmful for health, which includes annoyance; and
- Art. 1(2) – to provide a basis for developing **Community measures to reduce noise emitted by major sources**, in particular road and rail vehicles and infrastructure, aircraft, outdoor and industrial equipment and mobile machinery.

The END is being implemented over 5-yearly cycles (rounds). Round 1 took place from 2007-2012 and Round 2 is taking place between 2012-2017.

### 1.2 Objectives of the second implementation review

Under Article 11(1), a review of the Directive’s implementation is required once every five years. A technical study<sup>2</sup> to inform the first implementation review of the END was undertaken in 2010 and the European Commission (“EC”) published a Report outlining the findings from the first implementation review in 2011<sup>3</sup>. The second implementation review assessed progress over the most recent five-year implementation period, taking into account the evolution in implementation (and any changes in administrative approaches and in national transposition legislation) between R1 and R2. The objectives of the second implementation review of the END were to:

- Assess the legal and administrative implementation of the Directive and its key provisions across EU28 and by Member State (“MS”); and
- Identify difficulties experienced by competent authorities in implementing these provisions.

The extent to which challenges and outstanding issues identified in the first implementation review have remained or been addressed in R2 through remedial actions was examined. The research also assessed how far any new challenges or implementation issues have emerged during R2.

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<sup>1</sup> Environmental noise is defined in the Directive as “unwanted or harmful outdoor sound created by human activities, including noise emitted by transport, road traffic, rail traffic, air traffic and from sites of industrial activity”.

<sup>2</sup> Final Report on Task 1, Review of the Implementation of Directive 2002/49/EC on Environmental Noise, May 2010, Milieu

<sup>3</sup> COM (2011) 321 final of 1st June 2011, <http://eur-lex.europa.eu/legal-content/EN/TXT/DOC/?uri=CELEX:52011DC0321&from=EN>

### 1.3 Objectives and scope of the evaluation

The European Commission ("EC") announced in 2013 in its Communication on Regulatory Fitness and Performance (REFIT)<sup>4</sup> that an evaluation of the END would be undertaken, an evidence-based assessment as to whether EU actions are proportionate and delivering on defined policy objectives. The objective was to evaluate the Directive within the REFIT programme framework<sup>5</sup>. The evaluation was undertaken drawing on methodological guidance on evaluation<sup>6</sup> and a detailed set of evaluation questions were assessed, based on the criteria of *relevance, coherence, effectiveness, efficiency* and *European Added Value*. In a REFIT context, checking whether the END is 'fit for purpose' and provides a "*simple, clear, stable and predictable regulatory framework*" is an issue cutting across each of these evaluation criteria. The evaluation scope covered the period from the Directive's adoption in 2002 until late 2015.

### 1.4 Methodology

The study methodology was structured over three phases, an inception phase, a core data collection phase and an analysis and reporting phase. The research methods used to collect and analyse the data are summarised in the following table:

**Table 1 Research methods for data collection – Second implementation review and evaluation of the END**

**Interview programme** – interviews with 104 END stakeholders (e.g. competent authorities, EU industry associations, acoustics consultants, NGOs and community organisations).

**Online survey** - three online surveys were carried out between March-May 2015 with (i) public authorities (ii) NGOs/ community groups and (iii) acoustics consultancies.

**Validation workshop** – three working papers were presented and discussed at the workshop on (1) the second implementation review (2) the REFIT evaluation of the END and 3) on the proposed methodology for the cost-benefit assessment ("CBA"). Input was collected from stakeholders participating in and following the workshop.

**Desk research** – literature from the EU and national sources was examined such as the Directive's legal text, good practice guidance documents (e.g. on quiet areas, noise mapping) a review of a sample of Strategic Noise Maps ("SNMs") and Noise Action Plans ("NAPs") was undertaken, and an assessment of 'state of the art' methodologies to quantify the costs and benefits of environmental noise and their health effects.

**Case studies** – for the assessment of costs and benefits (which informed the CBA), 19 case studies examining noise reduction measures were undertaken for airports (5), major railways (2) and major roads (2). Less data was available for agglomerations (10). The purpose was to identify the costs/ benefits.

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<sup>4</sup> COM(2013)685 final

<sup>5</sup> [http://ec.europa.eu/smart-regulation/refit/index\\_en.htm](http://ec.europa.eu/smart-regulation/refit/index_en.htm)

<sup>6</sup> See [http://ec.europa.eu/smart-regulation/evaluation/docs/20131111\\_guidelines\\_pc\\_part\\_i\\_ii\\_clean.pdf](http://ec.europa.eu/smart-regulation/evaluation/docs/20131111_guidelines_pc_part_i_ii_clean.pdf) and *Evaluating EU Activities: A practical guide for Commission services (2004)*

## **2. KEY FINDINGS - SECOND IMPLEMENTATION REVIEW**

The main findings from the Second Implementation Review of the END are now summarised.

### **2.1 The overall approach to END implementation and legislative transposition**

- Considerable differences between “MS” were identified in respect of END implementation approaches, such as more centralised and decentralised approaches. The administrative level at which implementation takes place (i.e. national, regional and local) was found to vary between agglomerations, roads, railways and airports. This reflects the fact that the END is implemented under the subsidiarity principle.
- The transition to the definitive thresholds of the END between R1 and R2 has increased the scope of END coverage, with a significant increase in the volume of km’s (major roads, major railways) and in the number of agglomerations and airports covered.
- There have continued to be considerable delays in END implementation in R2 in ensuring that all EU MS submit SNMs and NAPs by the dates stipulated in the Directive (c.f. Art. 7, Art. 8). However, similar difficulties were also encountered in R1.
- The END and its definitions have generally been correctly transposed into national legislation, either through the adoption of new implementing regulations or through adjustments to existing legislation.
- However, in some EU MS, there have been problems in ensuring that national legislation transposing the END correctly transposes all the definitions of key terms and that the terminology used is sufficiently close to the concepts described in the END (e.g. quiet areas in an agglomeration).

### **2.2 Designation and delimitation of agglomerations, major roads, major railways and airports**

- No significant problems were identified in the designation of major roads, major railways, airports and agglomerations that fall within the scope of the END, since the definitions of thresholds were regarded as being clear.
- However, in some MS, there remain practical challenges within agglomerations, relating to the delimitation of administrative responsibilities between national bodies and local authorities for the purposes of producing SNMs. This is especially the case for major railways and major roads situated within agglomerations.

### **2.3 Noise limits and targets**

- Although the END does not set any source-specific limit values (“LVs”) at an EU level, establishing national LVs was viewed as being helpful by national Competent Authorities (“CAs”) in many EU MS, since exceedance was often used as the basis for prioritising noise mitigation measures.
- Whilst mandatory noise LVs have been set in 21 EU MS, and non-binding targets in a further 4 EU MS<sup>7</sup>, there was limited evidence of their effective enforcement either in R1 or R2. However, since national LVs are a MS responsibility, this is outside the END’s scope.

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<sup>7</sup> Denmark has both binding and indicative values in place, depending on noise source.

## 2.4 Quiet areas

- Although many MS have made progress in developing definitions of quiet areas (in agglomerations and open country) and in defining selection criteria to designate quiet areas, less than half of all EU MS (13) have yet designated any quiet areas.
- Nevertheless, in those EU MS that have formally designated or identified quiet areas, their number has increased considerably between R1 and R2.
- There remains a perceived need among stakeholders for the EC to develop further practical guidance on quiet areas, regarding their initial designation, the types of measures that could be implemented to ensure their subsequent protection and how to preserve areas of 'relative quiet' within urban areas.
- A reluctance was identified in some MS to designate quiet areas due to uncertainty with regard to whether the process could be reversed in future and also whether a designated quiet area could be subject to legal challenges (e.g. by developers, local authorities etc.).

## 2.5 Strategic Noise Maps (SNMs)

- Across EU-28, good progress has been made in undertaking strategic noise mapping and in collecting data on population exposure to high levels of environmental noise, defined as  $L_{den} > 55$  dB(A) and  $L_{night} > 50$  dB(A).
- The  $L_{den}$  and  $L_{night}$  indicators are being used by CAs responsible for noise mapping across the EU and these indicators, sometimes complemented by additional national noise indicators.
- There have been significant delays in some EU MS in both R1 and R2 in the submission of SNMs to the EC (and also instances of non-submission). It is difficult to compare data completeness between rounds however, since this would be dependent on having comparable data with a similar cut-off date.
- Problems remain with regard to the late submission of SNMs in respect of aircraft noise within agglomerations (only 52% complete) and major railways and airports in general. Major delays in carrying out strategic noise mapping and in reporting SNMs to the EC were generally recognised as a problem by CAs in those MS concerned.
- Ongoing barriers to producing SNMs on a more timely basis identified are: a lack of human and financial resources within CAs in EU MS with a highly decentralised implementation structure, overly complex administrative arrangements leading to difficulties in ensuring effective coordination and a lack of political will at local level to allocate resources, especially where no central government funding was available.
- In both R1 and R2, most CAs outsourced noise mapping to acoustics consultants. Nevertheless, CAs gained experience in coordinating the production of SNMs in R1 and in better defining their procurement needs.
- In some EU MS, evidence was identified that there were cost reductions in R2 implementation as a result of the strengthening capacity to procure such services.
- Over half of MS attested to discernible improvements in R2 in the quality and availability of input data in R2 compared with R1. In other MS, difficulties remain in respect of the lack of input data in both rounds.
- Examples were identified of delays in the procurement of noise mapping services in R2 due to delays in the political approval of budgets for noise mapping due to the economic and financial crisis, and delays in the timely availability of input data (especially population census data).

*Common assessment methods and data comparability*

- Ensuring adequate continuity and consistency between rounds in input data collection was identified as being important to ensure comparability of output data during strategic noise mapping. Some stakeholders argued that input data needs to become more standardised to strengthen its comparability. However, other stakeholders questioned whether this was realistic, since the required data is context-specific.
- There was broad recognition that the development of common noise assessment methods through the development of the CNOSSOS-EU methodology between 2009 and 2015 was a major achievement. The replacement of Annex II of the Directive with Commission Directive (EU) 2015/996 should, over time, lead to more comparable data which is a pre-requisite in order to better inform the development / revision of source legislation by transport source.
- Ensuring data comparability between rounds for the same source and between EU MS will remain a challenge until Commission Directive (EU) 2015/996 has been implemented on a mandatory basis from R4 onwards. Currently, there are differences in the noise modelling software and computation methods used for mapping the same source between rounds in some EU MS, such that consistent comparability cannot yet be ensured across EU-28.

## **2.6 Noise Action Plans and Public Consultations**

### *The completeness of reporting data and information - NAPs*

- There have been delays in the submission of R2 NAPs in several MS (for instance, in CZ, EL, ES, FR, LU, MT, PT and RO). The most recent reporting information on data completeness shows that more than 2 years after the formal reporting deadline for R2, NAP submission completeness is below 50% across all sources<sup>8</sup>, with pronounced gaps for major railways and airports.
- However, it should be emphasised that the delays encountered in reporting to the EC are not unique to R2. Delays were also encountered in R1 NAP submissions in several MS (including several that have also experienced delays in R2).
- Delays in the finalisation of R2 SNMs in several MS have had a knock-on effect in terms of the timeframe for the drawing up and submission of NAPs to the EC.
- The timeframe of 12 months between the formal reporting deadline to the EC for the submission of SNMs and NAPs was viewed by the majority of stakeholders as being too short to allow sufficient time for NAP finalisation.
- Stakeholders pointed to the need to allow adequate time to organise public consultation processes, to review consultation submissions and to give adequate consideration to the integration of feedback into the finalisation of NAPs.
- A particular problem was identified in respect of the timeliness of the completion of NAPs in agglomerations. In MS that have adopted a decentralised approach to END implementation, it was found that when many different actors are involved, it can be difficult to coordinate the development and finalisation of NAPs in an efficient and timely manner.
- There are divergent approaches to action planning between MS due to the fact that the END is implemented under subsidiarity. This is reflected in the types of noise mitigation, abatement and reduction measures identified, the balance between expenditure/ non-expenditure measures<sup>9</sup> and the extent to which there is a strategic or operational focus.

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<sup>8</sup> However, this depends on what is meant by data completeness, since some competent authorities have understood that they should only formally submit a summary of the NAP, as opposed to the complete NAP.

<sup>9</sup> Soft measures that do not require expenditure, such as encouraging greater use of public transport and promoting walking and cycling are a feature of some NAPs.

- Although some R2 NAPs include cost-benefit information, others include no data at all, or only partial data, for instance, on the estimated costs but nothing on the anticipated benefits, required under the 'financial information' section in Annex V (*minimum requirements for NAPs*).
- There was not found to be a major improvement in the quality of cost-benefit information and data between rounds. Stakeholders attributed this to the complexity of assessing costs and benefits at measure level.

#### *Public Consultations of NAPs*

- The quality of consultation responses to the publication of draft NAPs was found to vary. Whilst some CAs were satisfied with the quantity and quality of feedback received, others had received little input from relevant stakeholders, despite informing on the consultation in advance.
- NGOs that have participated in consultations stated that although NAPs often include a summary of the consultation responses, it is often unclear how these responses have been taken into account in NAP finalisation.
- Examples of good practices in carrying out consultations were identified, such as ensuring that the draft version of the NAP is published at the outset of the consultation process (and/ or before it is launched), and running the consultation for a minimum period of 2 months to allow sufficient time for stakeholders to review the draft NAP and to develop a considered response. Proper assessment of responses lengthens the time for the preparation, development and finalisation of NAPs, which is not currently taken into account in EU reporting timelines.

#### *The implementation of NAPs*

- A difficulty in respect of measure implementation within agglomerations was that the CAs responsible for developing the NAP (often local authorities) do not have strategic or budgetary decision-making powers to determine whether measures included within NAPs are realistic, feasible and can be funded. This was less of a problem for other sources, such as major railways and major roads, where the responsible CA for action planning sometimes also has budgetary or decision-making powers.
- NAPs are meant to report on the previous 5 year period of implementation, but many NAPs do not report systematically on the achievements of the previous 5 year cycle in terms of which measures have gone ahead in full, partially or not at all.

#### *Information accessibility of SNMs and NAPs*

- Almost all EU MS have made SNMs available and accessible to the public online. Noise maps have been made available through different website information portals at national, city and municipal levels. From a citizen's perspective, it is important to have access to SNMs covering a given locality at a local level of governance.
- However, continued delays in the submission of reporting data and information for noise mapping and action planning in R2 mean that in some EU MS, SNMs and NAPs are still not being made accessible online until several years after they were meant to be completed and publicised.
- It would also be useful from the point of view of monitoring the overall implementation position at an EU level (and also for policy makers) to provide in addition access to SNMs and NAPs prepared at national level (e.g. especially for major railways and major roads) through a single information portal to avoid the over-fragmentation of information.

### **3. EVALUATION FRAMEWORK AND KEY FINDINGS**

#### **3.1 Key Evaluation Findings**

The evaluation findings are now presented grouped under the key evaluation criteria.

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### 3.1.1 Relevance

Art 1(1) of the END, of "defining a common approach to **avoid, prevent or reduce** the effects of exposure to environmental noise harmful for health", remains highly relevant. Collecting comparable data/ information based on a common, EU-wide approach to assessing the extent of population exposure at specific dB(A) thresholds is a pre-requisite to achieving the END's second objective, informing the development of noise measures through EU source legislation. Stakeholders also recognised that the Directive's second objective remains highly relevant since EU policy makers responsible for the revision of existing environmental noise-at-source legislation are dependent on the availability of EU-wide, reliable population exposure data at receptor, for instance, to help set appropriate Limit Values in source legislation.

Whilst the Directive's two core objectives remain relevant, Art. 1(1) sets out an intermediate objective of defining a "common approach", but lacks a more strategic objective pertaining to what the Directive's implementation should ultimately lead to, such as setting a target for reducing environmental noise exposure in Europe by a particular percentage relating to the number of people exposed to high noise levels. The ultimate goal, alleviating the adverse impacts on public health, is presently implicit in the recitals, rather than explicit in the objectives. This makes it difficult to directly attribute measure implementation and the resulting level of noise reduction to the END itself.

### 3.1.2 Coherence

In relation to '**internal coherence**', the Directive was found to be generally **consistent and coherent**. However, there remain minor inconsistencies in the legal text. In addition, some of the definitions provided in Art. 3 (e.g. *agglomeration, quiet area in an agglomeration and quiet area in open country*) were regarded as being in need of revision or further clarification to strengthen the internal coherence of the text.

With regard to '**external coherence**', the END was found to be strongly coherent with EU noise-at-source legislation. No major inconsistencies or duplications were identified in the assessment of different legal texts. However, since the END was adopted 14 years ago, when the legal text is reviewed at some point in future and updated to ensure consistency with changes to primary legislation (e.g. the entry into force of the Lisbon Treaty in December 2009).

National noise control legislation has been transposed in a way that is coherent with the END, although in the early stages of the Directive's transposition, there were practical challenges in the 13 countries that already had such legislation in place prior to the Directive's adoption to update and ensure consistency with national legislation.

### 3.1.3 Effectiveness and Impacts

There has been **significant progress in defining a 'common approach'** (Art 1(1)). In particular, the development of common noise assessment methods through CNOSSOS-EU<sup>10</sup> and the replacement of Annex II of the END with Commission Directive (EU) 2015/996 is a major achievement and was acknowledged as such by END stakeholders. The study found evidence that **scientific and technical progress in noise measurement** had been taken into account in the phased development of

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<sup>10</sup> [https://ec.europa.eu/jrc/sites/default/files/cnossos-eu%2520jrc%2520reference%2520report\\_final\\_on%2520line%2520version\\_10%2520august%25202012.pdf](https://ec.europa.eu/jrc/sites/default/files/cnossos-eu%2520jrc%2520reference%2520report_final_on%2520line%2520version_10%2520august%25202012.pdf)

CNOSSOS-EU (2009-2015). A long timeframe was required, reflecting its technical complexity and the need to allow sufficient time for MS to make the transition from the use of interim and national approaches to common assessment methods.

However, the full implementation of a common approach is dependent on the implementation of Commission Directive (EU) 2015/996 from R4, when SNMs will be produced on a common basis. Population exposure data was found to be not yet fully comparable across EU-28 between rounds. The data should become comparable in future however. In terms of progress towards a common approach in measuring the **harmful effects of noise**, the EC has commenced work to develop assessment methods on dose-response relationships for Annex III. However, finalising Annex III is dependent on the WHO finalising their own guidance on dose-response relationships, expected in 2017.

The late submission of **SNM and population exposure data and of the submission of action plans to the EC** through reporting processes in at least some EU MS in R1 and R2 has undermined the effectiveness of implementation. A lack of timely data and information completeness across EU-28 makes it more difficult to utilise MS submissions, for instance, for the EC, to report on the situation across the EU (Art. 11) and to inform source legislation (Art. 1(2)).

In relation to the **second objective**, the research identified evidence that the END has already played an important role in informing the development of source legislation. The END provides a strategic reference point, and has been referred to in the recitals of other EU noise-related legislation and in relevant impact assessments. Source legislation revised in the past three years has made explicit reference to linkages between source legislation and the END. However, exposure data collected through the END has not yet been directly used by EU source policy makers.

The research found that activities relating to the first objective of the END have had a number of **positive impacts**, such as promoting a more strategic approach to environmental noise management, mitigation and reduction through action planning, strengthening the visibility of environmental noise and the adverse health effects of high levels of noise (at receptor) for EU citizens, and increasing policy attention at MS level.

Awareness has been heightened among policy makers not specialising in environmental noise (e.g. transport planning, infrastructure development, urban development and planning) about the importance of building in environmental noise mitigation and abatement from the outset of the legislative development, policy-making and the programme design process, with evidence of more “joined-up” working between different stakeholder organisations that have different roles and responsibilities.

Enforcement was an aspect of END implementation where weaknesses were identified. Although the EC could potentially take action against EU MS for the late submission of legally-required reporting information and data to the EC through infringement procedures, according to MS CAs interviewed in 2015, the EC has not yet done so.

### **3.1.4 Efficiency**

The **administrative costs** of implementing the END were found to have remained stable between rounds in absolute terms with at least €75.8m each spent by 23 EU MS who provided data. When extrapolated to EU28 aggregate level, the total costs would be €80.3m in R1 and €107.4m in R2. Given the increased volume of noise mapping and action planning requirements in R2, which has approximately doubled due to the transition to the definitive END thresholds, this points to a reduction in the costs of procuring external noise mapping services and the absence of one-off regulatory

implementation costs (such as familiarisation with the legislative requirements and information obligations) in R2. The median costs per inhabitant (out of the **total population** of 11 EU MS who provided the necessary data) for noise mapping – circa €0.15 – and for action planning – €0.03 – were low. The estimated costs per **affected inhabitant** estimated by acoustics consultancies were €0.50 – €1.00 (noise mapping only) and €1.50 – €2.00 (noise mapping, action planning and the organisation of public consultations, but only in instances where external technical support was procured to assist competent authorities).

Given that END implementation costs are borne by public administration, and ultimately by the taxpayers in each country, it seems more appropriate to use the competent authority data of €0.15 and €0.03 figures as a benchmark for the administrative costs of END implementation, since this applies to the total population, not only the exposed population. However, even the estimate of €1.50–€2.00 per affected inhabitant shows that when looking at the affected population in isolation, the administrative costs were found to be proportionate relative to the benefits (for a quantitative assessment of benefits, see CBA below, for a qualitative assessment, see effectiveness section in main report).

A **cost-benefit analysis (CBA)** was conducted to quantify (in monetary terms) the cost-effectiveness of the END. The benefits are mainly gained by the population affected by excessive noise. It was not possible to quantify some of the strategic benefits of the END, such as its role in stimulating awareness of noise as an issue, facilitating the generation of large and consistent spatial datasets on noise exposure and supporting actions in other areas (e.g. development of technical standards). The CBA is therefore based primarily on an assessment of the contribution made by measures identified in R1 NAPs to reducing exposure to harmful levels of noise.

The analysis revealed that the END has made a positive contribution to reducing population exposure to high levels of environmental noise. Whilst the **magnitude of costs and benefits** of noise mitigation measures was found to vary between countries and sources, a positive cost-benefit relationship was identified under a range of scenarios, where the scenarios reflect both differences in the underlying assumptions regarding the extent to which costs and benefits can be attributed to the END and the range of uncertainty in relation to the value of impacts on human health. The base case scenario results in a favourable cost-benefit ratio (of 1:29) overall, although the ratios vary substantially between measures. The benefits are likely to be understated, since the analysis only considered the effects of noise reduction on the 'highly annoyed' and 'highly sleep disturbed' populations. It should be noted that whilst the CBA is an important element of assessing efficiency, measure-level data only provides a proxy, since NAP measure implementation is not compulsory and does not take into account the strategic, qualitative benefits of the END (see impacts under "effectiveness").

The END has already made a **positive contribution to reducing noise through the implementation of (voluntary) measures in NAPs** that have either been fully or partially implemented. These estimates suggest that the benefits from efforts to reduce noise from all sources across the EU-28 are substantial, even if only a proportion of the total benefits can be attributed to the END (since other policy drivers can explain why some measures not directly targeting noise reduction go ahead e.g. air quality, planned transport infrastructure development). Less positively, fewer R1 measures went ahead than expected due to the global economic and financial crisis, which affected the budget available for noise mitigation in many EU MS.

The END Reporting Mechanism ("ENDRM") was found to be **generally efficient in collecting SNMs (and population exposure data) and NAPs from EU MS** since competent authorities that are members of EIONET can already access Reportnet for broader environmental reporting purposes. However, there is scope to simplify

reporting processes and to make Reportnet more user-friendly for national competent authorities and the ease of data extraction at EU level could be improved. Further clarification is also needed as to which types of data within, and outside agglomerations should be submitted under each source, since presently, there are some areas where the lack of clarity as to what information is meant to be reported could lead to inconsistencies in data comparability.

### **3.1.5 European Added Value ("EAV")**

Overall, the END demonstrates strong EAV, by providing an **EU-wide regulatory framework to collect noise mapping data on population exposure on environmental noise at receptor on a common basis**. There was found to be a clear EAV for EU policy makers responsible for source legislation since they need complete and comparable population exposure data at EU level to inform the development of source legislation. The END has also added value through the collection of population exposure data across EU-28 so as to better monitor and assess the impact of environmental noise at receptor on health (previously, at national level, population exposure data was not generally available to the public).

The research identified differences among END stakeholders in perceptions of EAV between EU MS where national legislation on noise was already in place prior to the END (13), and MS where there was previously no legislative framework (15). In MS without any prior environmental noise legislation, the END has helped to enhance the visibility of environmental noise domestically and has made environmental noise issues more prominent in national policy-making and made noise mitigation more visible in national and regional public expenditure programmes (e.g. road building and transport infrastructure development, urban planning and land use). Where national legislation on noise was already in place prior to the END, there was still perceived to be strong added value, since it was recognised that a European approach had facilitated data collection across the EU and promoted the exchange of experiences and benchmarking.

Putting in place a five-yearly noise action planning process through the END has added value by **promoting a more strategic approach to environmental noise management and mitigation** across the EU than existed previously in most countries, including those that already had a national regulatory framework. MS were positive about the usefulness of action planning and appreciated the considerable flexibility in national implementation approaches that the END allows, reflecting subsidiarity. Even though END stakeholders recognised that there are still various ways in which the END might be improved in future, they were strongly against the "counterfactual scenario" of the Directive's possible repeal, examined in the context of the Fitness Check.

### **3.1.6 Overall conclusions**

The evaluation has involved a detailed assessment of key evaluation issues relating to the END's implementation to date. The conclusions are that:

- The END is fit for purpose overall, although there are a number of ways in which its effectiveness and impacts might be improved in future, as detailed in the "future perspectives" section of the final report.
- The longer-term objective as to what the END is ultimately trying to achieve (reducing the incidence of high levels of environmental noise) across different transport sources needs to be made more explicit.
- The Directive overall and the specific requirements relating to the achievement of the first objective of the END (noise mapping and action planning under Article 1(1)), are widely accepted by stakeholders.

- Whilst significant progress has been made towards the first objective of the END of a “common approach” (under Article 1(1)), especially in respect of the use of common assessment methods, the lack of time availability of a complete reporting information dataset on SNMs and NAPs in both R1 and R2 continues to undermine the END’s full and effective implementation.
- Although the use of public consultation is effective in some countries, the role of public consultation could be strengthened in others.

- The lack of EU-level enforcement actions to date to ensure the timely delivery of reporting information in respect of SNMs and NAPs has arguably hindered achieving the END's full impact. However, in the view of the evaluators, launching infringement proceedings may not always be an appropriate mechanism when delays occur, given that national CAs in some EU MS face resource constraints to implement the END, and some stakeholders pointed to cumbersome data entry reporting procedures for submission to the EC.
- Without the existence of the END, there would be less attention to tackling the problem of high levels of environmental noise across EU-28 as a whole, some EU MS would not have introduced any legislation and only minimum numbers of noise maps and population exposure data would have been made publicly available.
- The measure-level assessment has identified positive cost-benefit relationships for investing in noise mitigation, abatement and reduction measures across all transport sources – major railways, major roads and airports.
- Overall, the END was found to be cost-effective, although its full potential has not yet been reached, but this will be strengthened once the data is fully comparable, and is being actively used by EU policy makers responsible for source legislation.