Sewage sludge Directive

Evaluation of Directive 86/278/EEC

27 September 2021

DG Environment, Unit B3

The Sewage Sludge Directive (SSD)

Objective: to encourage the correct use of sewage sludge in agriculture and regulate its use in order to prevent harmful effects on soil, vegetation, animals and humans

Rules

How farmers can use sewage sludge as a fertiliser

To ensure **nutrient requirements** of plants and the **quality** of the soil and of the surface and groundwater

Sampling & analysis

Sets concentration limits of 6 heavy metals allowed in soil and sludge

Bans the use of sewage sludge that results in concentrations of these heavy metals in soil **exceeding these limit values**

Recording & reporting

Sludge quantities and characteristics, type of treatment

Triennial reporting

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Political context

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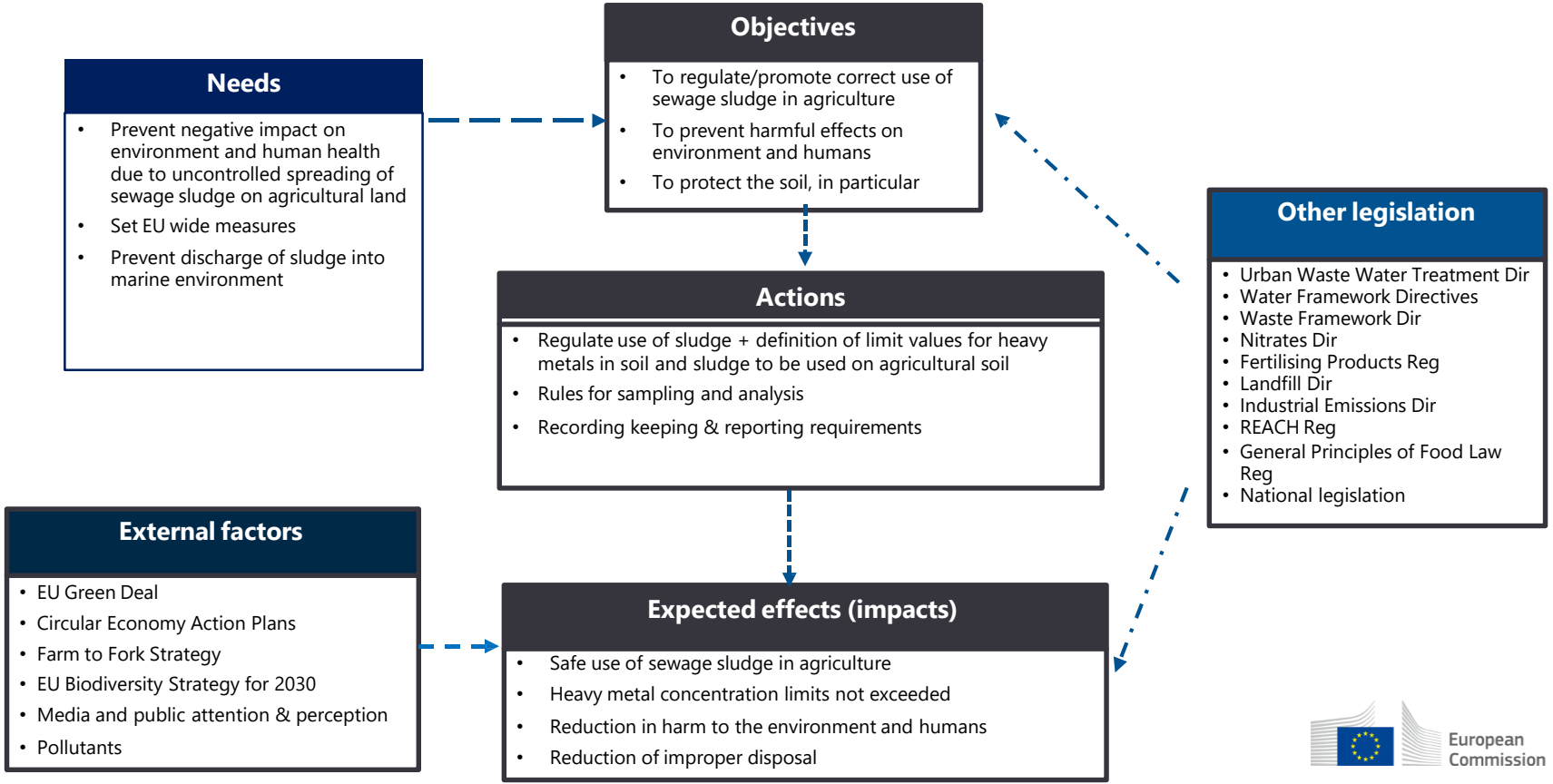
Intervention Logic



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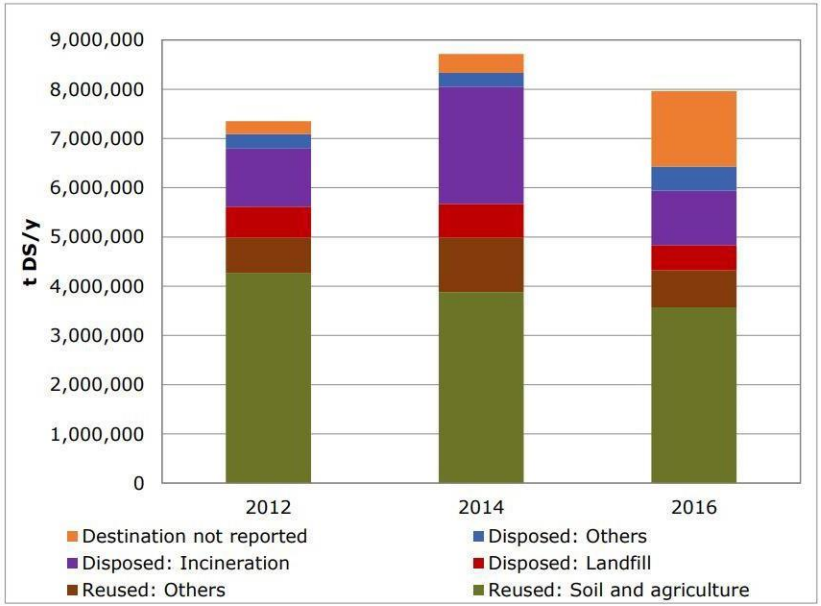
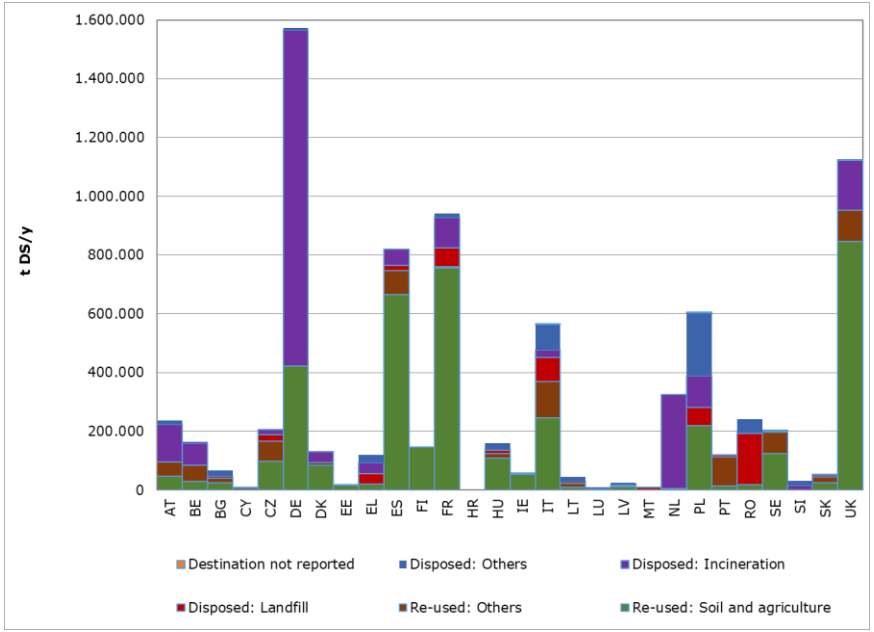
Generation and re-use of Sewage sludge (1/2)



Sewage sludge re-use by destination for period 2012-2016



Sewage sludge re-use per MS in 2016 [% sewage sludge reused in soil and agriculture]

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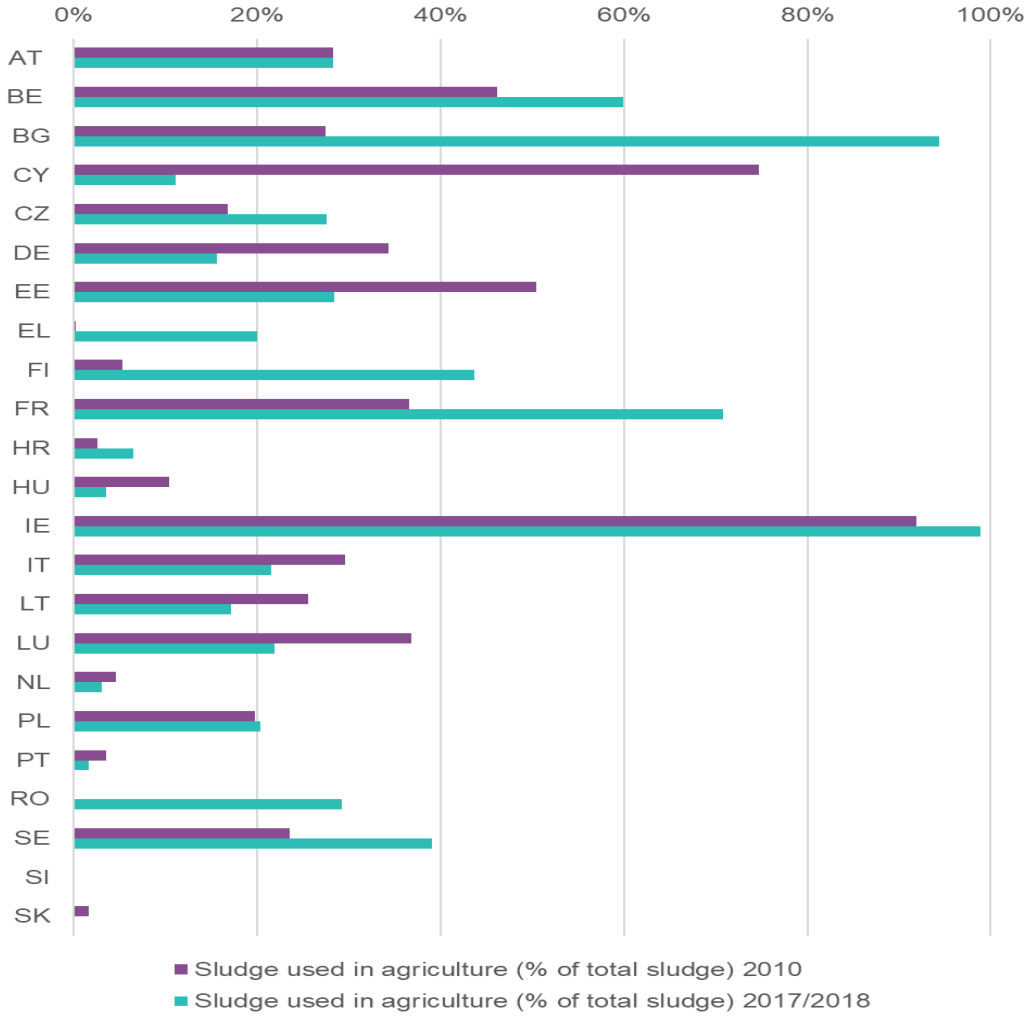
Generation and re-use of Sewage sludge (2/2)

- More sludge produced
- More sludge used in agriculture
- More sludge used in agriculture as a proportion of total sludge produced



Findings from 2014 Evaluation of the SSD (1/2)

- ✓ Fit for purpose and effective in achieving its objectives
- ✓ Induced technological development
- ✓ Discouraged disposal
- ✓ Increased soil organic matter and water retention

* Ex-post evaluation of certain waste stream Directives BioIntelligence Service et al, (2014) https://ec.europa.eu/environment/waste/pdf/target_review/Final%20Report%20Ex-Post.pdf

Findings from 2014 Evaluation of the SSD

- SSD did not fully match the needs and expectations:
  - EU circular economy ambitions
  - The potential need to regulate other uses of (treated) sewage sludge
  - Regulation of pollutants in sludge
  - Coherence with the Urban Waste Water Treatment Directive 91/271/EEC (UWWTD)

- Variation of rules among Member States
  - Stricter heavy metal limits than those in the SSD.
  - Limits for other pollutants.
  - Ban of sludge use in agriculture.

Calls for regulation of pollutants in sewage sludge

- ECA recommendation (2015): Propose an adaptation to the SSD or any directives dealing with waste water or soil quality issues and require MS to ensure a robust monitoring of pollutants for any kind of re-use of sludge.
- Strategic approach to Pharmaceuticals in the Environment (COM, 2019): Spreading of polluted sewage sludge is a source of contamination of the environment
  - EP Resolution of 17 Sep 2020 on this strategy, called on the COM to present a legislative proposal to review the SSD by no later than the end of 2021.

Our Approach for the Evaluation

Phase 1: Planning

- Roadmap
- Methodology:
  - External Study: Evaluation matrix
  - Modelling of pollutants – JRC

Phase 2: data and evidence collection

- Gather and review evidence
- Stakeholder consultation

Phase 3: analyse, evaluate

- Assessing and comparing evidence
- Triangulation of different evidence
- Analysis from modelling of pollutants – with JRC
- Testing of conclusions
- Drafting of SWD

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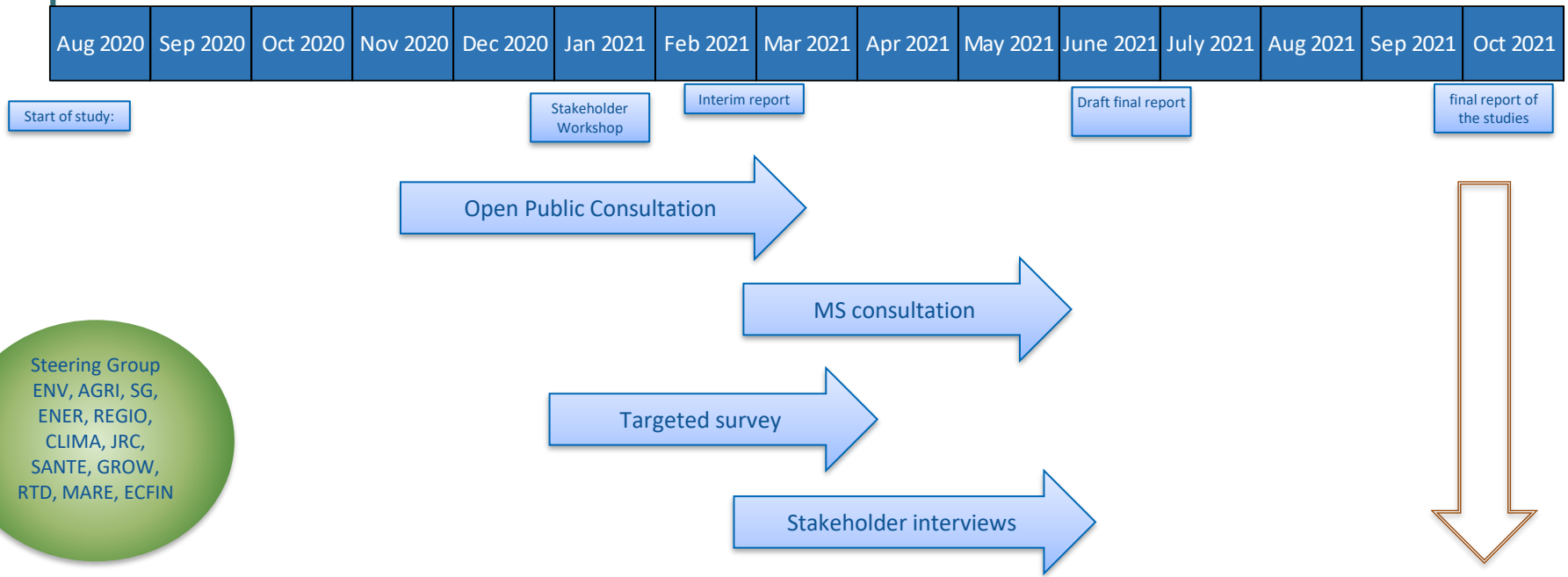
Timeline



Staff working document and adoption of the Evaluation expected Q2 2022

Evaluation of the Sewage Sludge Directive

- Geographical scope: EU-28 Member States.
- The time period covered: lifetime
- In-depth analysis of the findings of the 2014 evaluation will:
  - confirm validity, where applicable
  - build on/complement on the results and
  - ensure that they are proportionally reflected in this evaluation
- Covers all required Better Regulation evaluation criteria
- Study close to finalisation

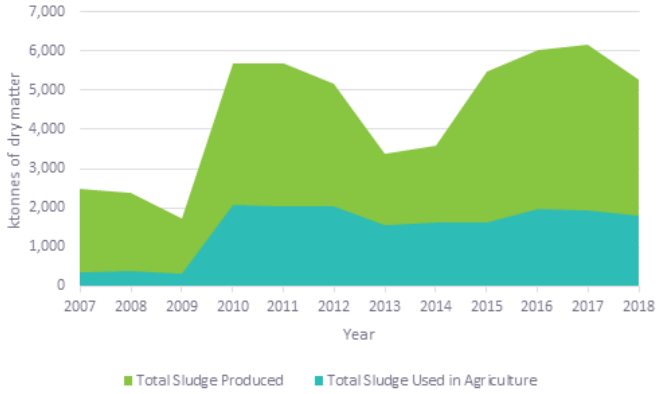
Better Regulation evaluation criteria

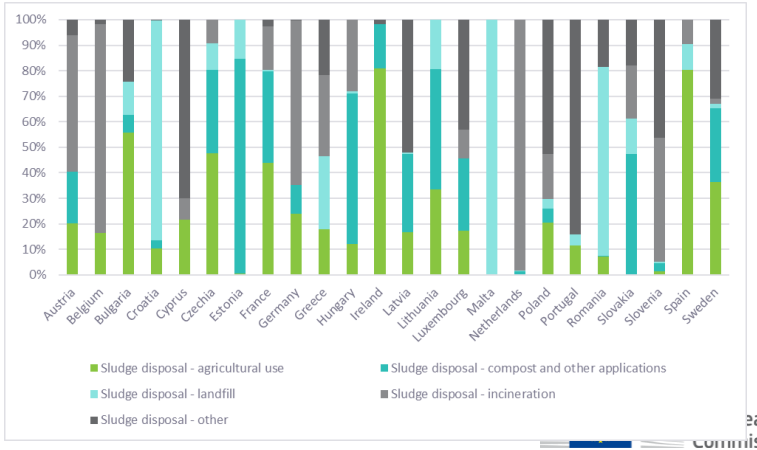
The Directive is being evaluated in terms of:

- Effectiveness
- Efficiency
- Coherence
- Relevance
- EU added-value

Effectiveness

- Continued use of sewage sludge in agriculture
- Changes in trends, many factors in use of sewage sludge, e.g.
  - Adoption of voluntary quality scheme, waste hierarchy, flexibility of the SSD
  - Uncertainties on end of waste criteria, public perception
- Differing national requirements
- Distinguishing routes for use of sludge
  - Spreading sludge on land
  - Sewage sludge as input material in fertilisers (compost/digestate)
  - Sewages sludge as material for recovery of nutrients
  - Sewages sludge as material for recovery of energy and nutrients through thermal treatment techniques
  - Landfilling





Efficiency

- Costs considered include:
  - Sludge management stage or method
  - Thermal drying
  - Mechanical and air drying
  - Pre-pasteurisation plus digestion
  - Composting
  - Lime treatment
  - Stabilisation storage
  - Transport
  - Testing
  - Spreading

Limitations:

Old data
Limited data identified in Eastern and Central European MS
Steep changes in unit cost (mainly linked to drying) when moving from small volumes used in areas adjacent to WWTPs to fields farther away.
Limited discussion around cost of metal avoidance in the sludge in the first place
Limited information on costs of metal removal from sludge

Coherence

- EU legislation
  - UWWTD
  - Fertilisers Regulation
  - Waste Framework Directive
  - Water Framework Directive
  - + Landfill Directive, the Nitrates Directive, the Renewable Energy Directive, air quality legislation, industrial emissions legislation and REACH.

- Political context and major initiatives

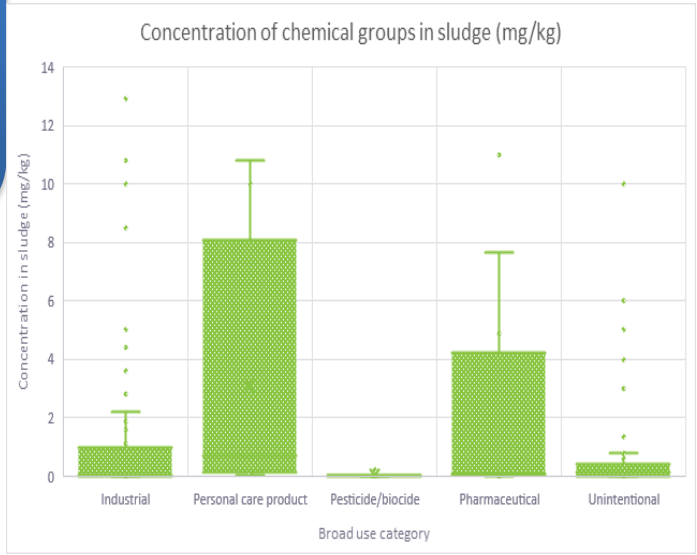
Links with the Urban Waste Water Treatment Directive (UWWTD)

- SSD is very dependent on the UWWTD since sludge is one of its outputs of the treatment plants
- Higher treatment of waste water may transfer more contaminants to the sludge, which might consequently not be adequate for re-use.
- UWWTD Evaluation (2019) highlighted:
  - The increased need to tackle contaminants of emerging concern in sewage sludge
  - Although the UWWTD contains some provisions on water and sludge re-use, the potential for aligning the UWWTD with the circular economy has not been fully exploited, e.g. recovery of valuable components from sewage sludge.

Relevance

Evolution of societal needs, scientific knowledge, e.g.

- Micropollutants
  - Resource recovery, energy efficiency and circulatory ambitions
    - e.g., phosphorus, biofuel, heat.



EU added value

- Higher environmental protection
- Internal market

Exploratory study on prospective elements

Areas of investigation

- Identify and prioritise pollutants (and their source) that pose risks;
- Assess and compare the benefits, efficiency, cost-effectiveness of the various recycling/recovery uses and disposal routes of sludge in the EU;
- Assess impact of (potential changes in) the UWWTD on the SSD;
- Baseline scenario and business as usual projection;

The findings from both studies will inform the Commission on whether to progress with an Impact Assessment for a proposal to revise the SSD.

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THANK YOU!

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Back-up slides

Evaluation questions - Effectiveness

1. What progress has been made over time towards achieving the objectives and targets set out in the SSD in the various Member States? To what extent have the objectives been met?
2. What factors have contributed to or hindered their achievement?
3. How effective has the implementation and enforcement of the SSD been in the 27 Member States and to what extent has this safeguarded agricultural soils from pollution?
4. What have been the (quantitative and qualitative) effects of the SSD?
5. What have been the unintended/unexpected effects of the SSD?

Evaluation questions - Efficiency

1. To what extent has the SSD been cost-effective? Are the costs related to the Directive proportionate to the benefits?
2. To what extent do the requirements of the SSD influence the efficiency with which the observed achievements have been attained? What other factors influence the costs and benefits?
3. Are there opportunities to simplify the legislation or reduce unnecessary regulatory costs without undermining the intended objectives of the intervention?
4. Are there significant differences in costs (or benefits) between Member States, and if so, what are the underlying causes? How do these differences link to the SSD?
5. How timely and efficient is the process for reporting and monitoring?

Evaluation questions - Coherence

1. To what extent is the SSD internally consistent and coherent?
2. To what extent is the SSD coherent with other EU legislation such as the Urban Waste Water Treatment Directive, the Fertilising Products Regulation, Waste Framework Directive, the Water Framework Directive (and its daughter directives), Marine Strategy Framework Directive, the Landfill Directive, the Nitrates Directive, Renewable Energy Directive, the Energy Efficiency Directive, Air Quality Directive, National Emissions Ceiling Directive, Industrial Emissions Directive, the REACH Regulation, General Principles of Food Law Regulation?
3. To what extent is the SSD coherent with wider EU policy?

Evaluation questions - Relevance

1. To what extent is the SSD still relevant and does it correspond to the needs within the EU, in particular as regards the stated policy ambitions in the European Green Deal, (which include the Farm-to-Fork strategy, the upcoming Environmental Action Plan, the new Circular economy Action Plan, the upcoming zero-pollution initiatives, the Biodiversity Strategy and newly proposed EU Climate Law) as well as national ambitions as reflected in the observed changes in the national legislation and management of sewage sludge?
2. To what extent are the pollutants and their respective threshold values set in the Directive still appropriate? Does the set of pollutants covered in the SSD still cover the most important pollutants in sewage sludge? If not, what are the missing pollutants in the Directive or pollutants that no longer need to covered and why?
3. Has the initiative been flexible enough to respond to new issues and emerging risks (e.g. contaminants of emerging concern)? Does the SSD contain moot or redundant stipulations?

Evaluation questions - EU Added-Value

1. Are the results of the 2014 evaluation still valid with respect to the European added value of the SSD? What has changed and which new risks have emerged?
2. Have the various rules regulating sewage sludge set up by MS led to an unequal protection of human health and the environment across the EU, and if so to what extent?