Email Answer Template
Consultation on the regulatory framework for sludge applied to agriculture (Jan-Mar 2026)

Department for Environment Food & Rural Affairs

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Wildlife and Countryside Link (Link) is the largest environment and wildlife coalition in England, bringing together 94 organisations to use their strong joint voice for the protection of nature.

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Evaluation questions

Q17. To what extent do you agree or disagree with our assessment of the benefits and risks of moving sludge spreading into the Environmental Permitting Regulations 2016 (EPR) framework? *(required)*

Please check one below

☐Strongly agree
☒Agree
☐Neither agree nor disagree
☐Disagree
☐Strongly disagree
☐Don't know

Q18. Please provide a reason for your answer.

Introduction

Sewage sludge (also known as biosolids) is a byproduct of wastewater treatment, which is sold, or sometimes given, to farmers to use as fertiliser. It is a source of nutrients for crop production and organic matter that can benefit soil health. Organic fertilisers like biosolids are a circular alternative to chemical fertilisers derived from fossil fuels that have a higher carbon footprint.

Biosolids contain a cocktail of harmful chemicals, as set out in the water industry's own data – including dioxins, furans and polycyclic aromatic hydrocarbons, pharmaceuticals including antibiotics that can exacerbate antimicrobial resistance, fungicides, flame retardants, microplastics, PFAS and bisphenols.

Fidra provides more information about these contaminants and their impacts in this blog, and research commissioned by the James Hutton Institute. Industrial wastewater effluents such as landfill leachate (the liquid that drains from landfill containing a cocktail of chemicals), are sometimes combined with domestic wastewater at treatment plants, meaning harmful chemicals from industrial processes can contaminate sewage sludge.

Contaminants become concentrated in the treated sewage sludge byproduct that is then applied onto the farm soils that grow our food. Contaminants can leach through or run off farm soils into rivers and groundwaters. Biosolids (and other waste materials) applied to farmland are therefore sources of contaminants that can have detrimental impacts on our soils and the terrestrial ecosystem, crops that raises implications for human health and waterways, impacting upon aquatic life and contributing to contamination of bathing waters and raw drinking water sources.

A 2017 report commissioned by the Environment Agency (EA) found that the contamination of English crops was at "levels that may present a risk to human health" and could result in "soils becoming unsuitable for agriculture". An academic study has estimated that the UK has some of the highest rates of soil microplastic contamination in Europe (which contain harmful chemical additives which can leach into the soil over time). These findings underscore the urgent need for stronger upstream controls and a more precautionary regulatory approach to prevent further accumulation in agricultural soils.

The complex mixture of pollutants in sewage sludge is harmful to terrestrial and aquatic organisms and ecosystems, both directly through toxic effects, and indirectly through nutrient run-off, eutrophication and de-oxygenation of water bodies. Both cause biodiversity loss, reduced growth rates, and physical harm from sludge accumulation. Species abundance is thus reduced through long term population declines contrary to the legally binding target in the Environment Act to halt the decline in species by 2030.

Around 87% of biosolids produced in the UK each year is spread on agricultural land. The consultation links to a 2024 survey which estimates that sludge is used on approximately 1.9% of farms in Great Britain (although this is a larger area than agricultural land which this statistic is used for in the consultation). CIWEM observes that: "this provides important perspective on the prevalence of biosolids use in agriculture compared to other organic waste materials, but **this does not negate the importance of understanding and mitigating any associated risks from biosolids**."

Polling by River Action found that 92% of people in the UK say water companies must ensure sewage sludge on UK farmland is not contaminated, and 87% support increasing regulation on monitoring of treated sewage sludge for contaminants.

Regulatory options

Regulation of sludge use on farmland is outdated. The Sludge (Use in Agriculture) Regulations 1989 outlines a list of potentially toxic elements (PTEs) such as lead and cadmium that must be tested by biosolids producers to ensure that sludge is not applied to farmland if any of these limits are breached. Since this time, as the consultation acknowledges, the complexity of the sludge supply chain has evolved considerably, and scientific knowledge of harms caused by unrestricted contaminants and their presence in sludge has grown. These regulations apply to only a limited set of PTEs, excluding many harmful chemicals and microplastics that are found in unsafe levels in sludge applied to UK soils.

In the consultation, the 3 potential options are:

- **Option 1: Revoking the Sludge (Use in Agriculture) Regulations 1989, in whole or in part, and moving the regulation of sludge (its treatment, storage and use) into the Environmental Permitting Regime – which was recommended by Sir Jon Cunliffe as part of the Independent Water Commission.**
- Option 2: Amending and updating the Sludge Regulations 1989 and improving regulatory oversight through the introduction of a charging scheme.
- Option 3 is a voluntary approach without changes to regulations.

Our recommendations

Option 1 proposes a stronger regime which would allow easier regulation of what can and can't be spread on farmland, backed by better monitoring. However, given the complex contaminant mixtures present in biosolids, the options don't go far enough to address unregulated contaminants and support alternatives to land application.

Option 1 should therefore be actioned, but with additional measures that implement a phase-out of the application of sewage sludge on farmland until quality improvements are achieved and sludge can be proven safe. This restates the joint consensus position set out by Fidra and EIA in 2024 to which 16 organisations signed-up, including many Wildlife and Countryside Link members. Furthermore, Government must ensure that the Environment Agency has the necessary funding, resource and capacity in order to implement Option 1 and these additional measures effectively and efficiently.

The following measures should be taken forward in the upcoming Water Bill, a unique opportunity to put in place the measures that are urgently needed:

1. **Phase out the use of biosolids on land until proved safe**.

The application of biosolids to farmland must be phased out and alternative uses for it put in place until contaminant levels allow spreading on farmland to resume. This could include incineration and advanced thermal conversion technologies for extracting nutrients / resources and removing contaminants. It is notable that several of our European neighbours have either banned the agricultural use of sewage sludge or have put in place limits for additional contaminants that, if exceeded, prevent application to agricultural land, including for additional heavy metals, PAHs, PCBs and pathogens.

We also back Fidra's call for further research into other short-term solutions such as incorporating biosolids into construction materials/bricks and use of sewage sludge derived biochar in contaminant removal from wastewater treatment. These interim uses should be taken forward while the measures set out below in 2-4 are put in place.

We acknowledge that these alternative uses, in particular incineration, may come with their own unintended consequences such as air pollution and associated health impacts, greenhouse gas emissions, and ash disposal risks. These potential consequences will need to be carefully assessed and where possible, mitigation measures will be needed to limit any detrimental impacts. For example, efficient incineration should destroy or irreversibly transform organic contaminants with monitoring of air emissions and contaminant mass balances providing confirmation. We note that these alternatives are no worse than the current practice of applying contaminated biosolids on land. This also further reinforces why bans and restrictions on harmful chemicals at source must be prioritised (see point 3 below) A report commissioned by the government considered reduced sludge application as a cost-effective interim strategy.

The risks of switching to alternative disposal methods and alternative fertilisers should not be used as an excuse for not effectively regulating the spreading of sewage sludge containing harmful mixtures of contaminants. Rather it is an argument for effective source control policies to reduce use of harmful chemicals and upgrading wastewater and sludge treatment to allow this circular resource to be used safely. We are supportive of the circular use of nutrients, but only where this does not entail significant risks to human and environmental health. This also points to the need to pursue joined-up policy making: to consider processes such as energy from waste, recycling, and controlling emissions of PFAS via a universal restriction, alongside changes to sludge regulations.

Nutrient management support for farmers would be needed during the phase out to incentivise better alternatives than switching to other contaminated organic fertilisers (e.g. some food waste composts or digestates) or chemical fertilisers. These must support nutrient circularity to avoid reliance on imported mineral fertilisers and could include investment in nature-friendly farming through increased ELMS support. Excessive and improper use of fertilisers can contribute to nutrient pollution of natural habitats. This is the largest source of nitrous oxide (N2O) emissions, which is the third most important

greenhouse gas (responsible for ~10% of warming so far) and the most significant ozone depleting substance.

Fidra are working with stakeholders to review viable solutions and alternative uses for contaminated biosolids to inform policy decisions and actions for tackling sewage sludge challenges.

The safety of sludge allowing for a return to farmland spreading would be demonstrated by a comprehensive monitoring programme covering known and emerging contaminants and legal limits on contaminants of concern (as set out under point 2). Testing would be needed to demonstrate sludge is safe and does not contain harmful contaminants above safety thresholds. These requirements on monitoring and limits could then underpin a properly enforced sludge quality certification scheme, such as the Swedish REVAQ system.

Biosolids produced from wastewater from lower risk areas could meet these legal quality standards for use on farmland depending on where it is collected, e.g. in more rural and less populated areas, by contrast with water catchments that have higher levels of urban infrastructure and industrial activity/hospitals etc. The consultation highlights the nutrient content of sewage sludge is variable and dependent upon the source material, treatment processes and resultant product type. For example, in Germany the operators of large sewage plants (population equivalent > 50,000) will be required to recover phosphorus from sewage sludge incinerator ash, and to end the use of sewage sludge on agricultural land, with requirements progressively coming into force from 2029. The agricultural use of biosolids in Germany is therefore more restricted (12.3% of total sludge produced) due to stronger environmental protection measureshttps://fidra.org.uk/sewage-free-soils-faq/. The REVAQ certification scheme in Sweden was introduced to ensure that the application of biosolids on farmland only happens if there is confidence that the biosolids are of a high enough quality; sewage sludge which does not meet the required standards must have an alternative use (e.g., thermal treatment and energy and nutrient recovery).

2. **Strengthen contaminant monitoring** to include all harmful substances (potentially toxic elements, pathogens, pharmaceuticals, microplastics, PFAS and bisphenols) and set legal thresholds based on the best available science.

Sludge spreading to agricultural land should be regulated within the Environmental Permitting Regulations 2016. Simultaneously, the permit criteria should be updated to restrict the spreading of sludge containing all harmful substances (potentially toxic elements, pathogens, pharmaceuticals, microplastics, PFAS and bisphenols) above thresholds based on best available science. The consultation does not commit to adding to the contaminant list, only to considering it as evidence emerges. Strong evidence already exists of harms from contaminants in sludge, as set out above, and where risks are known restrictions should be brought in swiftly. The updates to the regulation should ensure that further scientific evidence triggers an update within a clear legal timeframe (tackling the counter-arguments

raised by some stakeholders suggesting that inclusion within the EPR regime could limit environmental effectiveness by resulting in a system which is slow to respond to new threats). This would ensure a system which is both protective and responsive. A 'wait and see' approach on emerging contaminants is not good enough. In line with the precautionary principle, regulation must anticipate risks and act before scientific certainty is established.

3. **Upstream source control:**

This should give top priority to preventing harmful chemicals entering wastewater in the first place; for example, via restrictions on PFAS. This should also include upstream measures for preventing microplastics from entering wastewater, such as using washing machine microfibre filters and restrictions in the use of intentionally added microplastics.

Stronger controls on industrial effluents, improved oversight of chemical use, and product-based restrictions are essential to ensure that contaminants are intercepted at source rather than dispersed across wastewater systems. These measures are more effective and more proportionate than relying on end-of-pipe solutions, which are often technologically limited, energy-intensive, and unable to remove complex mixtures of chemicals and microplastics from sludge. By addressing contaminants before they enter the wastewater stream, upstream interventions not only reduce environmental and food-chain risks but also support a more sustainable and precautionary approach to nutrient recycling in the long term.

4. **Upgrading wastewater treatment technologies.**

This should be funded by an Extended Producer Responsibility scheme so that producers of existing pollutants for which source control is not a viable option, contribute to the additional wastewater quaternary treatment costs for removing micropollutant contaminants from wastewater. For example, the EU's Urban Wastewater Treatment Directive will produce cleaner wastewater from enforced quaternary treatment with 80% of the costs covered by the polluters.

There is a risk that cleaner wastewater could come at the expense of the sewage sludge byproduct which is often a sink for the contaminants removed from wastewater. Partly this can be avoided by ensuring that measures along the lines of the EU's Extended Producer Responsibility scheme improve the quality of biosolids by effectively driving and incentivising better source control. However, where source control is not possible, wastewater and sewage sludge management and treatment methods should ensure that they do not compromise the safety of sewage sludge byproducts, or that where they do, the onward use of these products is carefully controlled in order to limit environmental harm, and effective monitoring as above will be required to ensure ongoing safety.

Sources

Fidra: Environmental Risks from Sewage Sludge

Fidra and EIA: Joint NGO Position Paper on the Agricultural Use of Sewage Sludge

This response is supported by the following organisations:

Angling Trust
Environmental Investigation Agency
Fidra
Institute of Fisheries Management
Marine Conservation Society
National Trust
Planet Patrol
River Action UK
RSPB
Soil Association
The Rivers Trust
The Wildlife Trusts
WWF-UK
ZSL