

Analysis of the criteria on livestock production in the Platform on Sustainable Finance's two 2022 reports

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The Commission has not adopted a Delegated Act on agriculture. This document proposes technical screening criteria for livestock based in part on the [Platform on Sustainable Finance Technical Screening Criteria Annex](#) published in March 2022, as well as [option C for agriculture from PSF Technical Screening Criteria from October 2022](#).

Note: Most of the environmental implications of livestock production stem from the upstream production of feed including soy and cereals such as wheat, maize, barley and oats.

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Part One: Substantial contributions to the Taxonomy Regulation's environmental objectives

Climate mitigation objective

Bearing in mind that:

- The March 2022 PSF report sets out Technical Screening Criteria (TSC) for the climate mitigation objective. The main one that relates to livestock production is “Permanent grassland is maintained”.
- In March 2020 a different body, the EU Technical Expert Group on Sustainable Finance [published a Technical Annex](#)(1). This included TSC for substantial contribution by livestock to climate change mitigation. The Technical Annex is helpful as regards permanent grassland. It provides that livestock production should “Maintain existing sinks and increase sequestration (up to saturation point) of carbon in permanent grassland”. It states that the farm in question must:

“Maintain and increase existing carbon stocks for a period equal to or greater than 20 years through the application of appropriate management practices.

This can be demonstrated in either of the following ways:

- The essential management practices are consistently deployed over the applicable permanent grassland area each year

OR

- Above and below ground carbon stocks shall increase progressively over a 20-year period”.

- However, as regards livestock operations that are not based on permanent grassland (which are mainly likely to be intensive landless systems), the Technical Annex simply proposes a range of technical management practices in areas such as animal feed additives, precision feeding and manure management. The Annex states that to show “the application of appropriate management practices over the 10 year period of 2020-2030, a 20% reduction in GHG emissions would be required. Over the 20 year period of 2020-2040, a 30% reduction in GHG emissions would be required.”
- These reductions are insufficient to comply with the European Climate Law, which sets a goal of reducing emissions by at least 55% by 2030 and a target of climate neutrality by 2050. Of particular relevance for agriculture is the recently revised reduction target under the Effort Sharing Regulation of -40% by 2030 for sectors not covered under the EU ETS, which includes agriculture.
- Harwatt *et al* (2024) identified a potential Paris-compliant emissions trajectory for the livestock sector by surveying over 200 climate scientists and sustainable food/agriculture experts(2).¹ The survey indicates that:
 - o There are no credible pathways to meeting the Paris Agreement that allow the livestock sector to continue current trends
 - o Global emissions from the livestock sector should peak by 2025. Emissions should then drop rapidly, by 50% in 2030, and by 61% in 2036.
- Similarly the reductions that can be achieved by technical management practices are insufficient to satisfy Article 10.1 of the Taxonomy Regulation which provides: “An economic activity shall qualify as contributing substantially to climate change mitigation where that

¹ Harwatt *et al*, 2024. Options for a Paris-compliant livestock sector. Timeframes, targets and trajectories for livestock sector emissions from a survey of climate scientists. Research report, Brooks McCormick Jr. Animal Law & Policy Program, Harvard Law School. March 2024. <https://animal.law.harvard.edu/wp-content/uploads/Paris-compliant-livestock-report.pdf>

activity contributes substantially to the stabilisation of greenhouse gas concentrations in the atmosphere at a level which prevents dangerous anthropogenic interference with the climate system consistent with the long-term temperature goal of the Paris Agreement". The reduction of GHG emissions of 20% by 2030 referred to by the 2020 Technical Annex as being achievable by management practices are much lower than the reductions by 2030 deemed necessary by the European Climate Law and the Effort Sharing Regulation to meet the Paris Agreement.

- Not only are the reductions achievable through management practices insufficient but it is also necessary, when considering substantial contribution to climate mitigation, to take into account the GHG emissions that arise from the upstream production of (i) soy and (ii) cereals as feed. The EU is a major importer of soy for animal feed.
- Moreover, the Commission states that almost two thirds of EU cereals are used as feed. The Dutch bank ING shows that feed production is responsible for 77% and 63% respectively of the EU pig and chicken sectors' GHG emissions. Feed production is responsible for 41% of EU beef production's GHG emissions.
- The contribution of feed production to the emissions from pork and poultry production was studied in a 2022 report by Blonk Consultants(3).² This examined the composition of broiler compound feed in The Netherlands (which it took as a proxy for the EU). It found that soybean meal provides 25% of broiler compound feed, with wheat and maize providing 68%. It calculated that 81% of broiler production's GHG emissions come from feed production and the associated land use change.
- The Blonk study also examined pork production. It reported that soybean meal provides 6.8% of pig compound feed, with wheat, maize and barley providing 81.8% of pig compound feed in The Netherlands. It calculated that around 50% of pig production's GHG emissions come from feed production and the associated land use change.
- The demand for cereals and soy as feed for intensive livestock entails the following GHG emissions:
 - The manufacture of the fertilisers used to grow cereals entails the emission of large amounts of CO₂(4);³
 - The application of these fertilisers to the land involves substantial emissions of nitrous oxide,(5)⁴ the most aggressive greenhouse gas;
 - Soy production leads to deforestation which results in the release of huge quantities of stored carbon(6,7).^{5 6}

ISBT recommends:

The technical screening criteria should include:

² Blonk Consultants, 2022. Environmental implications of alternative pork and broiler production systems in the US, China, Brazil and the EU

³ Gerber, P.J., Steinfeld, H., Henderson, B., Mottet, A., Opio, C., Dijkman, J., Falcucci, A. & Tempio, G. 2013. Tackling climate change through livestock – A global assessment of emissions and mitigation opportunities. Food and Agriculture Organization of the United Nations (FAO), Rome.

⁴ Tian, H., Xu, R., Canadell, J.G. *et al.*, 2020. A comprehensive quantification of global nitrous oxide sources and sinks. *Nature* 586, 248–256. <https://doi.org/10.1038/s41586-020-2780-0>.

⁵ Escobar, N., Tizado, E.J. *et al.*, 2020. Spatially-explicit footprints of agricultural commodities: Mapping carbon emissions embodied in Brazil's soy exports, *Global Environmental Change* 62. <https://doi.org/10.1016/j.gloenvcha.2020.102067>

⁶ Sandström, V. *et al.*: The role of trade in the greenhouse gas footprints of EU diets, 2018, p. 51.

1. **“Permanent grassland is maintained. Livestock production should maintain existing sinks and increase sequestration (up to saturation point) of carbon in permanent grassland.”**
2. **“Synthetic fertilisers may only be used on grassland when nutrient management planning indicates a need that cannot be met by composts, manures, or green manures.”**

Justification:

As indicated above, the manufacture of synthetic fertilisers entails the emission of large amounts of CO₂ while the application of such fertilisers to land involves substantial emissions of nitrous oxide.

3. The technical screening criteria should include:

“No more than 20% of the farm’s feed comprises cereals and soy brought into the farm other than from near-by farms.”

Justification:

- Livestock farms where a substantial proportion of the feed comprises cereals and soy brought into the farm cannot be viewed as making a substantial contribution to climate mitigation as, as indicated earlier, most GHGs emitted in livestock production arise during the production of feed.
- Farmers are unlikely to know whether the soy in the compound feed that they buy has involved deforestation. We have serious doubts as to whether soy certification schemes are able to prevent deforestation and the encroachment of cropland into other important ecosystems and wildlife habitats. For example, [WWF Netherlands now says that the Round Table for Responsible Soy \(RTRS\) has failed to stop deforestation](#); WWF was one of the founders of the RTRS.
- Farmers are also unlikely to know whether the cereals - such as wheat, maize, barley and oats - in the compound feed that they buy have been produced with synthetic nitrogen fertilisers, the production and application of which involve substantial GHG emissions. However, most cereals produced for animal feed are likely to have been grown intensively with high use of synthetic nitrogen fertilisers.

Sustainable use and protection of water objective

The PSF October 2022 report states that its proposal on substantial contribution to biodiversity and ecosystems is equally applicable to assessing whether livestock operations make a substantial contribution to the sustainable use and protection of water objective.

ISBT recommends:

- **ISBT welcomes the PSF October 2022 report’s proposed TSC for biodiversity and ecosystems and is content for these TSC to also apply to the water objective.**
(page 53 of PSF October 2022 report)

Transition to a circular economy objective

Bearing in mind that:

- At present EU agriculture is largely linear in its structure. It uses unnecessarily high levels of inputs such as synthetic nitrogen fertilisers and compound animal feeds - a large proportion of which are not converted into edible products but instead result in wasteful and damaging discharges to the environment.
- The 2nd European Nitrogen Assessment Special Report on Nitrogen & Food, published in December 2023, states: “If existing sustainability goals are to be achieved (such as a long-term goal to avoid air pollution effects), the currently practiced linear model of extract-produce-consume-discard must be transformed into a circular food system.”⁷
- Rather than using high external inputs, circular agriculture strives to obtain inputs such as nutrients from within farming, for example through the use of legumes and rotations. It works with the grain of nature. It ensures that its wastes are recycled into productive agricultural use rather than being allowed to escape and pollute the environment.
- The PSF October 2022 report’s emphasis on the value of on-farm feed production and on-farm nutrient creation and cycling is highly relevant to the transition to a circular economy.
- The PSF report describes how in an integrated crop-livestock system the nitrogen (N) needed as nutrients for crops is primarily produced on the farm through animal manure and biological fixation e.g. the inclusion of legumes in rotations. It states that the animals act as “onsite nutrient recyclers”. They are mainly fed on crops and grass grown on the farm, with the N in their excretions being used to fertilise the holding’s crops and pasture.
- However, there is one element of the animals’ feed that can come from outside the farm and that is the use of by-products and unavoidable food waste as feed. Van Zanten *et al* (2019) point out that by consuming such materials - and grass - animals “recycle nutrients into the food system that would otherwise be lost to food production”.⁸ They add: “we can make most effective use of farm animals by using them to unlock biomass inedible for humans into valuable food, manure and other ecosystem services”.
- The October 2022 PSF report states that In a well-run integrated farm, synthetic fertilisers comprise no more than 20% of total fertilisers and the number of animals raised does not exceed the farm’s capacity to use their manure to fertilise crops or pasture. As a result there is much reduced pollution of water and air. Such farms are truly circular and can make a substantial contribution to the Regulation’s circular economy objective.

ISBT recommends that the technical screening criteria should be:

- 1. No more than 20% of a farm’s nutrients should be supplied by synthetic chemical fertilisers. At least 80% must be generated on the farm, for example through the use of manure from animals raised on the farm or adjacent farms and legumes grown on the farm.**
- 2. The amount of manure produced on the farm must be no greater than can be productively utilised on the farm or adjacent farms, for example to fertilise crops.**

⁷ European Nitrogen Assessment Special Report on Nitrogen & Food, 2023. Appetite for Change <https://www.clrtap-tfrn.org/sites/clrtap-tfrn.org/files/Appetite%20for%20Change%20full%20report.pdf>

⁸ Van Zanten *et al*, 2019. The role of farm animals in a circular food system. Global Food Security 21 (2019) 18-22. <https://doi.org/10.1016/j.gfs.2019.06.003>

3. **A minimum 75% of total feed must consist of (i) feed produced on-farm or adjacent farms and (ii) by-products or properly treated food waste. A maximum of 25% can be produced off-holding, for example in cooperation with other farms primarily in the same region. Only 10% of the feed can be cereals and soy brought into the farm.**

Pollution prevention and control objective

The PSF October 2022 report states that its proposal on substantial contribution to biodiversity and ecosystems is equally applicable to assessing whether livestock operations make a substantial contribution to the pollution prevention and control objective. ISBT welcomes the PSF October 2022 report's proposed TSC for biodiversity and ecosystems and is content for these TSC to also apply to the pollution objective.

ISBT recommends:

- **ISBT welcomes the PSF October 2022 report's proposed TSC for biodiversity and ecosystems and is content for these TSC to also apply to the pollution objective.**
(page 53 of PSF October 2022 report)

Biodiversity and ecosystems objective

Bearing in mind that:

- The PSF reports published in March and October 2022 identify three ways in which animal production can make a substantial contribution to the biodiversity objective. These are:
 - Extensive grazing in habitats where grazing is beneficial for biodiversity (March 2022 report)
 - Farming of rare breeds (March 2022 report)
 - Integrated crop-livestock systems (the PSF refers to this as 'mixed farming'; Proposal 2 in the PSF October 2022 report is very helpful on this.

ISBT recommends that the technical screening criteria should be those set out in the PSF March 2022 report and Proposal 2 of the October 2022 report i.e.

As regards extensive grazing

The criteria set out in Tables 1 and 3 of the March 2022 report.

As regards farming of rare breeds

The criteria set out in Tables 2 and 3 of the March 2022 report.

As regards integrated crop-livestock farms (mixed farming):

The criteria set out in Proposal 2 of the October 2022 report i.e.

:

1. No more than 20% of a farm's nutrients should be supplied by synthetic chemical fertilisers. At least 80% must be generated on the farm, for example through the use of manure from animals raised on the farm or adjacent farms and legumes grown on the farm.
2. The amount of manure produced on the farm must be no greater than can be productively utilised on the farm or adjacent farms, for example to fertilise crops.

3. A maximum of 10% of total feed (dry mass of) can be feed brought into the farm, such as cereals and soy and this feed must have certification of no deforestation/conversion and must include no fish except by-catch. At least 75% of feed must be produced on-farm or adjacent farms – either grazed or cut from grasslands, or as agroecology outputs such as catch crops, cover crops, forage cut from living trees and shrubs, vegetation from NBS water treatments such as algae, duckweed, etc. A maximum of 25% can be produced off-holding, for example in cooperation with other farms primarily in the same region. ISBT recommends that by-products or properly treated food waste may be included in the 75% of feed that must be produced on-farm.

The PSF's October 2022 report adds that its proposal on substantial contribution to biodiversity and ecosystems is equally applicable to assessing whether livestock operations make a substantial contribution to two of the other objectives of the Taxonomy Regulation i.e. (i) sustainable use and protection of water and (ii) pollution prevention and control.

Part Two: Do No Significant Harm to the Taxonomy Regulation's environmental objectives

The March 2022 PSF report sets out some criteria for assessing whether an economic activity significantly harms the Taxonomy Regulation's environmental objectives. However, ISBT believes that these 'Do No Significant Harm' (DNSH) criteria need to be strengthened as described below.

DNSH to climate mitigation objective

The March 2022 PSF report sets out the following DNSH criteria:

1. Permanent grassland is maintained.
2. Wetland and peatland are appropriately protected.
3. Arable stubble is not burnt, except where an exemption has been granted for plant health reasons.
4. Minimum land management under tillage, including on slopes.
5. Continuously forested areas, namely land spanning more than one hectare with trees higher than five meter and a canopy cover of at least 10% or able to reach those thresholds in situ³, are not converted.
6. No use of peat or peat containing product or material e.g., as growing medium, fertilizer, animal bedding, etc.

The Farm Sustainability Management Plan must identify the management practices or other measures that ensure compliance with these criteria.

ISBT recommends that, in addition, the following technical screening criteria must be used in assessing whether an activity DNSH to the climate mitigation objective:

1. **Loss of sequestered soil organic carbon is minimised.**
2. **A maximum of 10% of animals' feed is soy or cereals other than those produced by agroecological practices on the farm or adjacent farms.**

Justification:

- Imported soy produced in South America is likely to involve direct or indirect deforestation which releases stored carbon into the atmosphere.
- Soy and cereals brought into the farm (for example in concentrate feeds) are likely to have been grown in monocultures with chemical pesticides and synthetic fertilisers. The manufacture of these fertilisers entails the emission of large amounts of CO₂.⁹ The application of these fertilisers to the land involves substantial emissions of nitrous oxide.¹⁰
- The intensive production of feed crops is likely to undermine the health of the soil; for example, the use of pesticides negatively impacts soil biodiversity, application of fertilisers can lead to soil acidification, while monocultures overuse certain nutrients and degrade the soil. Healthy soils are a key element in mitigating climate change as they can absorb and store carbon.

3. Any new farm or expansion of an existing farm does not involve any increase in livestock numbers except in the case of very small farms or farms that will operate to high environmental and animal welfare standards.

Justification:

- The Technical Annex published in 2020 by the EU Technical Expert Group on Sustainable Finance makes it clear that the technical management practices that they proposed in areas such as animal feed additives, precision feeding and manure management will not on their own be sufficient to meet the EU's net-zero target.[i] It states: "it is important to note that for absolute emissions from agriculture to continue decreasing beyond a certain point and to move towards net-zero targets by mid-century, reduced emissions intensity will need to be coupled as soon as possible with commensurate changes in consumption patterns and overall reduced per-capita consumption of livestock products".
- Similarly, in its 2019 report on Climate Change and Land Use, the Intergovernmental Panel on Climate Change stated: "Producing animal-sourced food (e.g. meat and dairy) emits larger amount of GHGs than growing crops, especially in intensive, industrial livestock systems. ... Changing diets towards a lower share of animal-sourced food, once implemented at scale, reduces the need to raise livestock and changes crop production from animal feed to human food. This reduces the need for agricultural land compared to present and thus generates changes in the current food system. From field to consumer this would reduce overall GHG emissions."¹¹ (emphasis added)
- Accordingly, it is clear that any expansion of livestock numbers would cause significant harm to the climate mitigation objective as Article 17.1 of the Taxonomy Regulation provides that an "economic activity shall be considered to significantly harm climate change mitigation, where that activity leads to significant greenhouse gas emissions".

⁹ Gerber, P.J., Steinfeld, H., Henderson, B., Mottet, A., Opio, C., Dijkman, J., Faluccci, A. & Tempio, G. 2013. Tackling climate change through livestock – A global assessment of emissions and mitigation opportunities. Food and Agriculture Organization of the United Nations (FAO), Rome.

¹⁰ Tian, H., Xu, R., Canadell, J.G. *et al.*, 2020. A comprehensive quantification of global nitrous oxide sources and sinks. *Nature* 586, 248–256. <https://doi.org/10.1038/s41586-020-2780-0>.

¹¹ IPCC, 2019. Climate change and land

<https://www.ipcc.ch/site/assets/uploads/2019/11/SRCCL-Full-Report-Compiled-191128.pdf>

[i]

https://ec.europa.eu/info/sites/info/files/business_economy_euro/banking_and_finance/documents/200309-sustainable-finance-teg-final-report-taxonomy-annexes_en.pdf

DNSH to climate adaptation objective

Generic criteria for DNSH to Climate Change Adaptation are set out in [Appendix A of Annex I to the Commission Delegated Regulation](#) (EU) .../...supplementing Regulation (EU) 2020/852.

ISBT recommends that, in addition the following technical screening criteria must be used in assessing whether an activity DNSH to the climate adaptation objective:

1. A maximum of 10% of animals' feed is soy or cereals other than those produced by agroecological practices on the farm or adjacent farms.

Justification:

- The Explanatory Memorandum to the Commission's proposed Directive on Soil Monitoring and Resilience states that healthy soils increase our resilience to climate change and to extreme weather events, as well as to drought and floods. Healthy soils store carbon, and have more capacity to absorb and store water.
- The Explanatory Memorandum states that about 60 to 70% of soils in the EU are currently in an unhealthy state and that degradation processes are continuing and worsening, reducing the soil's capacity to provide the above vital services throughout the EU. It points out this creates risks for human health, the environment, climate, economy and society, including risks for food security, water quality, increased impacts from flooding and droughts, biomass production, carbon emissions and loss of biodiversity. It states that it is estimated that between 61% and 73% of agricultural soils in the EU are affected by erosion, loss of organic carbon and the nutrient (nitrogen) exceedances that contribute to nitrous oxide emissions.
- Intensive livestock production is dependent on feeding cereals to animals. The European Commission states that almost two thirds of EU cereals are used as animal feed. Production of cereals for feed is nearly always carried out intensively in monocultures and with abundant use of agro-chemicals. This leads to soil degradation,^{12 13} biodiversity loss,¹⁴ overuse and pollution of water,¹⁵ and air pollution¹⁶, so doing significant harm to several of the Taxonomy Regulation's objectives and, in particular, through soil degradation undermining the ability of soils to bolster climate adaptation by storing carbon and water.

¹² Edmondson *et al.*, 2014. Urban cultivation in allotments maintains soil qualities adversely affected by conventional agriculture. *Journal of Applied Ecology* 2014, 51, 880–889.

¹³ Tsiafouli *et al.*, 2015. Intensive agriculture reduces soil biodiversity across Europe. *Global Change Biology*: 21, p973–985.

¹⁴ World Health Organization and Secretariat of the Convention on Biological Diversity. 2015. Connecting global priorities: biodiversity and human health.

¹⁵ Mekonnen M and Hoekstra A, 2012. A global assessment of the water footprint of farm animal products. *Ecosystems*.: DOI: 10.1007/s10021-011-9517-8.

¹⁶ Lelieveld *et al.*, 2015. The contribution of outdoor air pollution sources to premature mortality on a global scale. *Nature*, Vol 525.

- Any increase in intensive livestock production will lead to increased demand for cereals; this is likely to further degrade soil quality, thus further undermining the ability of soils to support climate adaptation and resilience. However, the farming of livestock on extensive permanent grassland can improve soil quality (however, intensification of grassland management negatively affects carbon sequestration¹⁷).
- Improving soil's ability to store carbon and absorb and store water are going to be vital to reduce the impacts of floods and droughts, both of which are likely to become more frequent and extreme as climate changes worsens.
- Accordingly, any livestock farm that uses more than a small amount of brought-in cereals in its feed is likely to be causing significant harm to climate adaptation. Article 17.1 of the Taxonomy Regulation provides that an “economic activity shall be considered to significantly harm climate change adaptation, where that activity leads to an increased adverse impact of the current climate and the expected future climate, on the activity itself or on people, nature and assets”. The detrimental impact on soils resulting from livestock operations that use intensively produced cereals as feed clearly involves doing significant harm to climate adaptation under Article 17.

DNSH to sustainable use and protection of water

Generic criteria for DNSH to Sustainable Use and Protection of Water are set out in [Appendix B of Annex I to the Commission Delegated Regulation \(EU\) .../...supplementing Regulation \(EU\) 2020/852](#).

The March 2022 PSF report sets out the following DNSH criteria:

1. Where the activity involves water abstraction, a permit for water abstraction, where such is required, has been granted by the relevant authority for the activity. Where the permit specifies conditions to avoid significant impact on water bodies, these are followed.
2. If the holding is located in a WEI+[Water Exploitation Index plus] river basin area 20% or above (or equivalent), no other water abstraction than water harvesting is considered. Additionally, any rainwater harvesting system must be authorised by the relevant authority, specifying conditions to avoid significant impact on water bodies.
3. No livestock direct access to any natural watercourse, unless the specific grazing regime can be shown to be beneficial for threatened species or to control of invasive vegetation, on the basis of explicit guidance by a competent conservation authority.
4. No physical modification of water bodies, e.g., straitening of rivers, lining ditches, removal of riparian vegetation, etc.

The Farm Sustainability Management Plan identifies the management practices or other measures that ensure compliance with these criteria.

ISBT recommends that, in addition, the following technical screening criteria must be used in assessing whether an activity DNSH to the water objective:

¹⁷ Peyraud & MacLeod, 2020. Future of EU livestock: How to contribute to a sustainable agricultural sector?

1. **The amount of manure and slurry spread on land (often from landless livestock operations) and the way it is handled minimises the risk of nitrogen and phosphorus leaching into groundwater or running off into rivers, lakes, wetlands or marine environments. Crucially, regard must be had to the cumulative effect of other livestock farms in the area.**
2. **The number of dairy cows and beef cattle on grassland together with the use of synthetic fertilisers is such that they do not result in nutrient pollution of rivers, lakes or groundwater.**
3. **Soil compaction on grassland is prevented as this results in poorer infiltration of water into the soil and increases the chance of pollutant run-off.**
4. **Where grassland is used for grazing, (i) a riparian buffer zone of at least 30 metres is in place and (ii) no feeding stations are placed within 10 metres of a riparian verge; these requirements are included in the PSF October 2022 report.**
5. **Synthetic fertilisers are only be used on grassland when nutrient management planning indicates a need that cannot be met by composts, manures, or green manures.**
6. **A maximum of 10% of animals' feed is soy or cereals other than those produced by agroecological practices on the farm or adjacent farms.**

Justification:

- Most water use and pollution in the intensive livestock sector arises in the production of animal feed. Hoekstra (2020) states “The water footprint of feed contributes 98 per cent to the water footprint of meat and dairy.”¹⁸
- Research on water footprints examines three aspects: the green, blue and grey water footprint. The blue water footprint refers to the volume of surface and groundwater consumed as a result of the production of the product; the green water footprint refers to the rainwater consumed. The grey water footprint refers to water pollution generated by the production of the product. Intensive livestock are mainly fed on concentrates which contain high proportions of cereals and soy, while extensive ruminants mainly consume roughage. Hoekstra (2020) states: “As roughages are mainly rain-fed and crops for concentrates are often irrigated and fertilised, the blue and grey water footprint of concentrates are even 43 and 61 times that of roughages, respectively”.¹⁹
- The FAO states: “Often, over 90 percent of the water consumption in livestock and poultry production is associated with feed production”.²⁰ The FAO also states: “identifying the origin, type and quantity of feedstuff used for livestock feeding and determining the water use associated with feed production is of paramount importance in livestock water use assessments”.²¹
- The World Bank report *Detox Development* is very clear in highlighting the detrimental impact on water of the use of nitrogen fertilisers which are intensively used in the

¹⁸ Hoekstra, A.J., 2020. *The water footprint of modern consumer society*. Routledge
<https://www.routledge.com/The-Water-Footprint-of-Modern-Consumer-Society/Hoekstra/p/book/9781138354784>

¹⁹ *Ibid*

²⁰ FAO. 2019. *Water use in livestock production systems and supply chains – Guidelines for assessment* (Version 1). Livestock Environmental Assessment and Performance (LEAP) Partnership. Rome.
<http://www.fao.org/partnerships/leap/publications/en/>

²¹ *Ibid* Accessed 2 February 2024

production of cereals and soy for animal feed. The report highlights the low efficiency use of nitrogen fertilisers. It states that less than half of the nitrogen applied to agricultural crops, reaches the harvested crop. The report points out that the nitrogen that is not unabsorbed by crops “gets lost to the surrounding environment in its multiple chemical forms [for example]—as nitrites and nitrates, polluting the waterways”.

- In a section headed ‘Ailing waters’ the World Bank report states: “The massive increase in nitrogen fertilisers has left a scar across many of the world’s water bodies. ... Runoff of excess nitrogen increases concentrations of nitrate and nitrite in the waters. These concentrations can lead to cyanobacteria-related algal blooms. ... Large algal blooms can devastate ecosystems, often resulting in hypoxia or dead zones, a condition that arises when water bodies lack sufficient oxygen. The legacy effects of nitrogen pollution on the environment can also endure decades after nitrogen inputs have ceased, with long time lags between the adoption of conservation measures and any measurable improvements in water quality”.

DNSH to the circular economy objective

The March 2022 PSF report sets out the following DNSH criteria:

1. Activities should use residues and by-products and take any other measures to minimize primary raw material use per unit of output, including energy.
2. Anaerobic digestion of organic material (excl. organic waste) is eligible provided that: (i) It is produced from the biomass feedstock listed in Part A of Annex IX of Directive (EU) 2018/2001, (ii) methane leakage from relevant facilities (e.g., for biogas production and storage, energy generation, digestate storage) is minimized in line with industry practice and is controlled by a monitoring plan, (iii) the digestate produced is used as fertilizer/soil improver – directly or after composting or any other treatment.

The Farm Sustainability Management Plan identifies the management practices or other measures that ensure compliance with these criteria.

ISBT recommends that, in addition, the following technical screening criteria must be used in assessing whether an activity DNSH to the circular economy objective:

1. **No more than 20% of a farm’s nutrients is supplied by synthetic chemical fertilisers. At least 80% is generated on the farm, for example through the use of manure from animals raised on the farm or adjacent farms and legumes grown on the farm.**

Justification:

- The production of phosphorus fertilisers involves the use of phosphate rock, which is a limited resource globally, while the manufacture of nitrogen fertilisers is an energy-intensive process. As crops absorb limited amounts of these synthetic fertilisers, the use of large amounts of such fertilisers is inconsistent with Article 17.1 of the Taxonomy Regulation which provides that an “economic activity shall be considered to significantly harm the circular economy where that activity leads to significant inefficiencies in the use of materials or in the direct or indirect use of natural resources such as non-renewable

energy sources, raw materials, water and land at one or more stages of the life cycle of products”.

2. **Article 13 of the Taxonomy Regulation makes it clear that reuse and recycling are important components of the circular economy. Accordingly, the amount of manure produced on the farm must be no greater than can be productively utilised on the farm or adjacent farms, for example to fertilise crops.**

3. **A maximum of 10% of total feed is cereals and soy brought into the farm and this feed must have certification of no deforestation/conversion and must include no fish except by-catch. At least 75% of feed must be produced on-farm or adjacent farms – either grazed or cut from grasslands, or as agroecology outputs such as catch crops, cover crops, forage cut from living trees and shrubs, vegetation from NBS water treatments such as algae, duckweed, etc. By-products and unavoidable food waste can be included in this 75%. A maximum of 25% can be produced off-holding in cooperation with other farms primarily in the same region.**

Justification:

Farms where more than 10% of total feed consists of cereals and soy brought into the farm DSH to the circular economy objective as, as indicated above, Article 17.1 of the Taxonomy Regulation provides that an “economic activity shall be considered to significantly harm the circular economy where that activity leads to significant inefficiencies in the use of materials or in the direct or indirect use of natural resources such as non-renewable energy sources, raw materials, water and land at one or more stages of the life cycle of products”. Because farm animals convert cereals and soy very inefficiently into meat and milk, the use of these crops as feed represent significant inefficiencies in the use of these crops and the land and water used in their production.

DNSH to the pollution prevention and control objective

Generic criteria for DNSH to Pollution Prevention and Control are set out in [Appendix C of Annex I to the Commission Delegated Regulation \(EU\) .../...supplementing Regulation \(EU\) 2020/852](#).

The March 2022 PSF report sets out the following DNSH criteria:

1. Farm holdings falling under Annex I of [IED Directive 2010/75/EU](#) on industrial emissions (IED), specifically for Intensive Rearing of Poultry or Pigs, shall operate in accordance with the emission levels set out in [best available techniques](#).

2. On the use of Active Pharmaceutical Ingredients (API):

- 2.1. Active Pharmaceutical Ingredients (API) used are registered, both for therapeutic and sub-therapeutic uses.

- 2.2. A pharmaceutical and antimicrobial management plan includes (1) prioritisation of APIs that has confirmed low impact on the environment; (2) reduction of the total use of API quantity to at least 25% in ten years.

2.3. Any API where the risk for the environment has been confirmed has been substituted for an available equivalent in pharmaceuticals properties that has a significantly lower impact on the water bodies and wildlife. Particularly, the non-steroidal anti-inflammatory Diclofenac must not be used.⁹

The Farm Sustainability Management Plan identifies the management practices or other measures that ensure compliance with these criteria.

ISBT recommends that, in addition, the following technical screening criteria must be used in assessing plans whether an activity DNSH to the pollution objective:

- 1. Leakage of microbiological organisms and pathogens from livestock farms, and the discharge of liquid effluent is minimised.**
- 2. Contingency plans are in place in the event of failure of any part of the farm system, for example the ability of the farm to operate without polluting water in the event of damage to the underground pipelines that carry liquid effluent or reduced effluent storage capacity should a lagoon lining fail.**
- 3. Stocking densities for outdoor cattle are such as to minimise the risk of manure and urine polluting groundwater, rivers and other water bodies.**
- 4. A maximum of 10% of total feed is cereals and soy brought into the farm.**

Justification:

- The 2023 2nd European Nitrogen Assessment Special Report on Nitrogen & Food highlights the pollution to air, water and soils that arises from unabsorbed reactive nitrogen in agriculture. The report stresses that livestock are the most nitrogen-inefficient part of the EU food system. This is because nitrogen is lost to the environment at two stages. First, much of the nitrogen in synthetic nitrogen fertilisers is not absorbed by the crops that are grown as animal feed. Second, much of the nitrogen in the feed provided for industrially raised livestock is not absorbed by the animals but is instead excreted in their manure. This unabsorbed nitrogen leaches into groundwater, runs off into rivers, ends up in the atmosphere where it is a key cause of air pollution as it contributes to the formation of fine particulate matter that adversely affects human health, and can lead to soil acidification which can result in a decrease in crop growth.
- The 2023 Special Report on Nitrogen & Food makes it clear that to minimise the problems arising from unabsorbed nitrogen, livestock should mainly be fed on grass, by-products, food waste and crop residues. Accordingly, to DNSH to the pollution prevention objective, the use as feed of crops produced with high levels of synthetic fertilisers should be minimised.
- The Special Report states that the maximum reduction in nitrogen losses that can be achieved by improved management is 37%. The report therefore stresses that a reduction in livestock production and consumption is essential to sufficiently reduce the detrimental impact of excess nitrogen on the environment and human health. Moreover, the European Environment Agency states that “widespread pesticide use is a major source of pollution — contaminating water, soil and air”.²² Pesticides are widely used in the production of crops for feed. Accordingly, any new or expanded livestock operation where crops grown with synthetic nitrogen fertilisers and/or pesticides form a substantial proportion of the feed is likely to do significant harm to the pollution prevention objective.

²² European Environment Agency, 2024. Agriculture and food system.
<https://www.eea.europa.eu/en/topics/in-depth/agriculture-and-food>

- Article 17.1 of the Taxonomy Regulation provides that an “economic activity shall be considered to significantly harm pollution prevention and control, where that activity leads to a significant increase in the emissions of pollutants into air, water or land, as compared with the situation before the activity started”. The detrimental environmental impacts arising from the significant quantity of nitrogen losses and pesticide use that are inherent in industrial livestock production clearly do significant harm to the pollution prevention objective.

DNSH to the protection and restoration of biodiversity and ecosystems objective

Generic criteria for DNSH to Biodiversity and Ecosystems are set out in [Appendix D of Annex I to the Commission Delegated Regulation \(EU\) .../...supplementing Regulation \(EU\) 2020/852](#).

ISBT recommends that, in addition, the following technical screening criteria must be used in assessing whether an activity DNSH to the biodiversity and ecosystems objective:

Biodiversity and ecosystems can be undermined when new livestock farms are established or there is expansion of existing farms as they can encroach onto important ecosystems or land that is home to significant animal, insect or plant species.

1. A maximum of 10% of a farm’s feed consists of cereals and soy except for those produced by agroecological practices on the farm or adjacent farms.

Justification:

- Threats to biodiversity and ecosystems arise from the production of soy and cereals as livestock feed. The EU imports huge amounts of soy as animal feed. This contributes to the expansion of cropland into forests and savannahs in South America; this leads to biodiversity loss and destruction of wildlife habitats which is driving many species – including jaguars – towards extinction. As indicated earlier, the Commission states that nearly two-thirds of EU cereals are used as animal feed.²³ Industrial livestock’s huge demand for cereals for feed has fuelled the intensification of crop production. This, with its use of monocultures, chemical pesticides and synthetic fertilisers, has led to biodiversity loss.²⁴
- The European Environment Agency states that the use of pesticides reduces insect populations including pollinators and diminishes seed production by plants.²⁵ Decreased availability of insects and seeds reduces the food available for birds. The nitrogen deposition that results from the use of nitrogen fertilisers enables plants favouring more acidic

²³ https://ec.europa.eu/info/food-farming-fisheries/plants-and-plant-products/plant-products/cereals_en Accessed 2 February 2024

²⁴ World Health Organization and Secretariat of the Convention on Biological Diversity. 2015. Connecting global priorities: biodiversity and human health.

²⁵ European Environment Agency. The European environment —state and outlook 2020

conditions to out-compete a large number of sensitive species, threatening biodiversity across Europe.²⁶ Monocultures result in reduced biodiversity.²⁷

- Farms that use substantial amounts of cereals and soy as feed DSH to biodiversity as such feed is usually produced intensively in monocultures with significant use of pesticides and fertilisers. Accordingly, the use of cereals and soy as animal feed should be much reduced.

Note: Preventing the conversion of natural habitats, complying with specific biodiversity legislation including the Habitats Directive, the Birds Directive and the Nature Restoration law and adhering to management plans of protected areas are important aspects of DNSH to biodiversity. However, consideration of whether a farm DSH to biodiversity should not be confined to considering areas of special value. The European Court of Auditors 2020 report on *Biodiversity on farmland* states: “Since 1990 EU populations of farmland birds and grassland butterflies have declined by more than 30%.” This sharp decline is not limited to high value areas; it has occurred across EU farmland as a whole. Similarly, the 2020 report by the European Environment Agency (EEA) on the state and outlook of the environment found major declines in farmland birds and grassland butterflies. The report states that Europe has experienced a major decline in biodiversity and that “this has been primarily due to the loss, fragmentation and degradation of natural and semi-natural ecosystems, mainly caused by agricultural intensification”. The EEA report did not suggest this problem was confined to just specific high-value areas. It is vital that good levels of biodiversity - including soil biodiversity - are achieved in all farmland as poor biodiversity results in reduced numbers of pollinators and diminished soil fertility as well as reduced capacity for soils to store carbon and water.

²⁶ Sutton *et al*, 2011. European Nitrogen Assessment

²⁷ European Commission, 2021. The rise and fall of monoculture farming. Horizon Magazine

<https://projects.research-and-innovation.ec.europa.eu/en/horizon-magazine/rise-and-fall-monoculture-farming>