



PLATFORM ON
SUSTAINABLE FINANCE

EU-Taksonomi 2023

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Metode og landbrugsproduktion (Option C)

PLATFORM ON
SUSTAINABLE
FINANCE:
TECHNICAL
WORKING GROUP

Supplementary: Methodology
and Technical Screening
Criteria

October 2022

Husdyrproduktion

Animal Production: 3 Options for SC to Biodiversity & Ecosystems

Option	Headline	Additional requirements
1 <i>Submitted in March</i>	Extensive grazing where grazing is beneficial for biodiversity	<i>Rated in March</i> PLUS Range of safeguards to ensure ongoing sustainable management of the land to reduce or reverse pressures on ecosystems and biodiversity - to address: <ul style="list-style-type: none">• <u>minimising</u> habitat loss via conversion or deterioration of biodiversity rich landscapes• creation and maintenance of features & areas of high biodiversity value• grazing regime• wildlife persecution• supplementary feed <i>submitted in March</i> Plus: DNSH criteria for the other 5 environmental factors
or 2 <i>Submitted in March</i>	Farming of rare breeds (i.e. supporting genetic diversity)	
or 3 <i>Focus now</i>	Sustainable farm-gate nitrogen balance	

Hence the DNSH criteria for these criteria were also submitted in March 2022 and have not been repeated here

Planteproduktion

Crop Production: 3 Options for SC to Biodiversity & Ecosystems

Option	Headline	Additional requirements
1 <i>Submitted in March</i>	Incorporates large areas under high-biodiversity landscape features or otherwise biodiversity rich	PLUS <i>Submitted in March</i> Range of safeguards to ensure ongoing sustainable management of the land to reduce or reverse pressures on ecosystems and biodiversity - to address: <ul style="list-style-type: none">• <u>minimising</u> habitat loss via conversion or deterioration of biodiversity rich landscapes• creation and maintenance of features & areas of high biodiversity value• soil management• wildlife persecution• crop rotation <i>Submitted in March</i> PLUS: DNSH criteria for the other 5 environmental factors
or 2 <i>Submitted in March</i>	Abstains from the use of synthetic plant protection products and copper	
or 3 <i>Focus now</i>	Ensures sustainable farm-gate nitrogen balance	

Skovbrug og skovhugst

- The criteria for the contribution of the activity of ‘forestry and logging’ to the objective of **‘the protection and restoration of biodiversity and ecosystems’** is presented with the following notes. These are to recognise that there remain areas where the Technical Working Group (TWG) of the Platform has not found consensus on specific elements of the criteria, and that these should be recognised in the preparation of the Delegated Act. These elements have been discussed and debated in the process set out below and have been addressed iteratively throughout that process. Despite this, it has not been possible to satisfy all perspectives in finding a better or more appropriate way to develop the criteria. As such a dissenting view from two members of the TWG is included in Annex 1 to this report.
- **4. Which scientific evidence is relevant and should be used to establish the criteria and whether the full body of evidence relating to forest management and biodiversity has been considered.** In any evidence gathering process it is necessary to use and gather evidence about the question that is being tested - in this case how can a *substantial contribution* to biodiversity and ecosystems, be delivered through the *activity of forestry and logging*. The emphasis and focus of the scientific evidence shall necessarily be on what needs to be done in practice or what level of threshold needs to be reached so that a substantial contribution to the objective is delivered.
- **5. That the criteria are complex to implement in practice and present challenges for managed forests to deliver.** Further that **the approach taken does not follow that of the forestry activity in the Delegated Act on Climate** that recognizes the co-benefits of forest management.

Platformgruppens formål (generelt [mining])

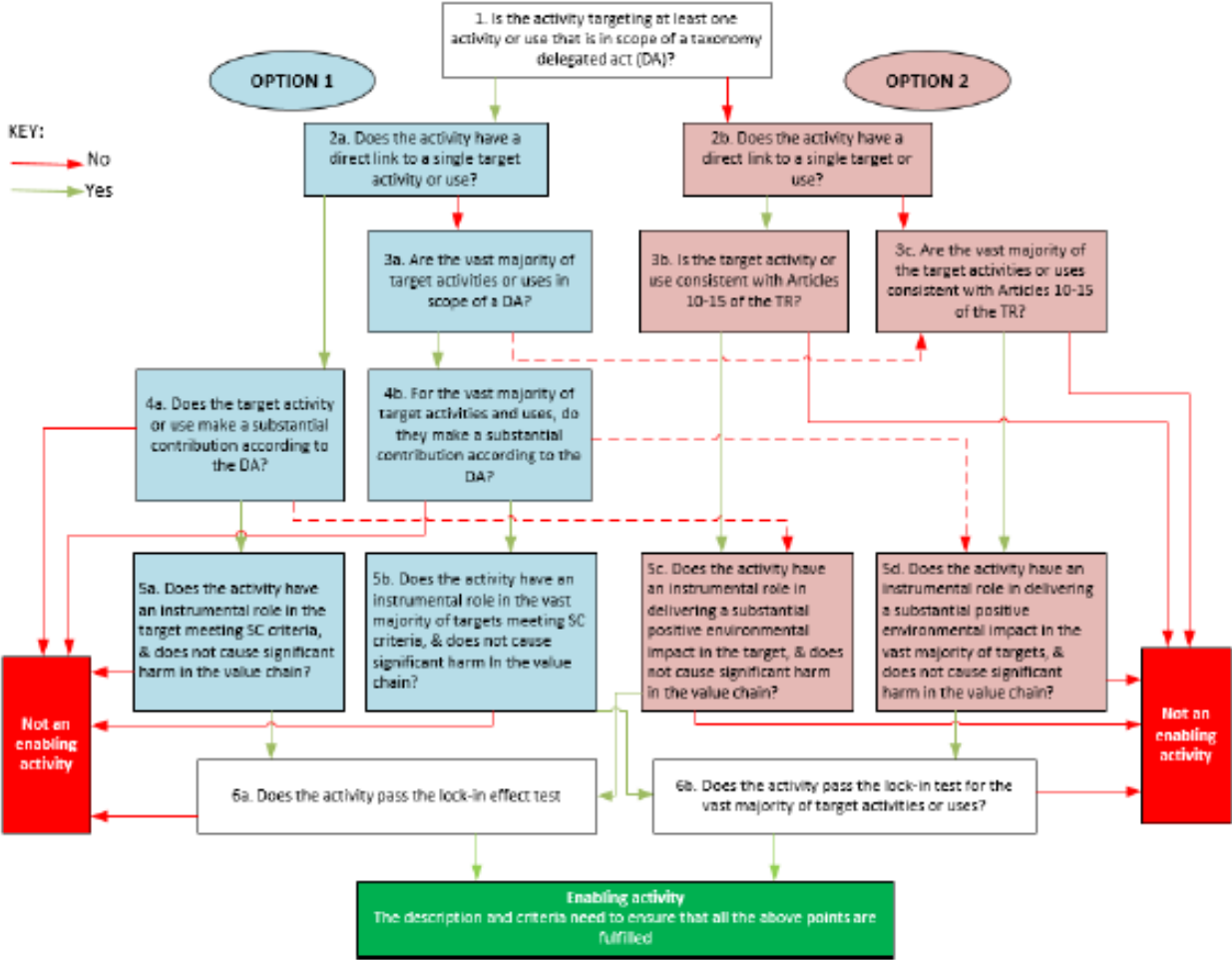
- Platformens formål er at identificere forureningskilder og reducere forurening i overensstemmelse med 2050 målet om nul emission.
- Det kræver forebyggelse, minimering, kontrol og eliminering af udledning (forurening) ved hjælp af forskning og logiske **slutninger**.

Definition af aktiviteter i Taksonomiforordningen (s19)

- Artikel 16
 - “An economic activity shall qualify as **contributing substantially** to one or more of the environmental objectives set out in Article 9 by directly enabling other activities to make a substantial contribution to one or more of those objectives, provided that such economic activity:
 - (a) does not lead to a lock-in of assets that undermine long-term environmental goals, considering the economic lifetime of those assets; and
 - (b) has a substantial positive environmental impact, on the basis of life-cycle considerations.”
 - It is interpreted that the enabled substantial positive environmental impact should relate to the objective for which a substantial contribution is targeted, rather than enabling a target activity to meet DNSH requirements for other objectives.

Beslutningstræ

FIGURE 1: DECISION TREE



Interpretation of a “direct” link (s23)

- Art. 16 requires that the enabling activity “directly” enables its target activities to make a substantial contribution. However, this does not mean that the enabling activity has to be *the* single decisive activity in enabling the target activity or use to make a substantial contribution. For many target activities or uses that make a substantial contribution to one or more environmental objectives, there will be more than one enabling activity causing the target activity or use to make this contribution.
- **Step 3a: Are the vast majority of target activities or uses in scope of a taxonomy delegated act?**
- Where there are multiple target activities or uses, if the vast majority of target activities or uses (with an estimated share of more than 95%) are included in Taxonomy delegated acts, the test can be assumed to be passed.
- The specification needs to be based either on characteristics of the enabling activity itself (such as product details) or based on market share data which can be assumed to be available/obtainable for entities performing the enabling activity. The way scope exclusions are to be proven has to be specified in the description or criteria and should be subject to third-party verification. (s24)
- If an enabling activity is more than one step removed from the target activity, the direct link has to be ensured for each step along the value chain. (s25)

Step 4a: Does the target activity or use make a substantial contribution according to the TR delegated act? (s25)

- There are different cases for which a substantial contribution of the target activity has to be assessed:
- 1. The target activity is included in a Taxonomy delegated act and there are no substantial contribution criteria defined, e.g., electricity generation from wind power. In this case, a substantial contribution can be assumed for the target activity.
- 2. The target activity is included in a Taxonomy delegated act and there are substantial contribution criteria defined. If the description and criteria of the enabling activity can ensure that the target activity fulfills the substantial contribution criteria, a substantial contribution can be assumed.
- 3. The target activity is included in a Taxonomy delegated act, substantial contribution criteria are defined, but the activity description and criteria of the enabling activity cannot ensure that substantial contribution is achieved for the vast majority of cases (>95%). In this case, a substantial contribution cannot be assumed. As an alternative, Option 2 may be considered for such cases.

- **Step 4b: For the vast majority of target activities and uses, do they make a substantial contribution according to the TR delegated act?**
- In determining whether an enabling activity should be included in the taxonomy, the analysis of step 4a must be performed for all identified target activities where there are multiple uses. If the description and criteria of the enabling activity can ensure a substantial contribution is achieved for the vast majority of target activities or uses, a substantial contribution can be assumed overall.
- **Step 5a: Does the activity have an instrumental role in the target activity or use meeting substantial contribution criteria, and does not cause significant harm in the remaining value chain?**
- Step 5 tests whether an enabling activity has a substantial positive environmental impact in the value chain in general, and when employed in the target activity in particular. This test encompasses a number of aspects presented below.
- Article 16 refers to both *substantial contribution* of target activity or use, and *substantial positive environmental impact* of the enabling activity. These two aspects should not be confused. *Substantial contribution* of target activities or uses refers to the SC criteria defined in a Delegated Act (see step 4). *Substantial positive environmental impact* on the basis of life-cycle considerations refers to the actual environmental impact of an enabling activity on the target activity or use, and on its wider life cycle impact. *Substantial positive environmental impact* also refers to all six environmental objectives rather than only the objective that is addressed by the substantial contribution of the target activity or use.

Ensuring the instrumental role of the enabling activity in the target activity or use meeting the substantial contribution criteria (s26)

- The instrumental role can be assumed if, for example,
 - - without the enabling activity the substantial contribution of the target activity or use cannot be reached for any but exceptional cases,
 - - without the enabling activity the substantial contribution of the target activity or use can be reached, but the target activity or use cannot be scaled while ensuring its substantial contribution (e.g., because the availability or applicability of alternatives is limited),
 - - without the enabling activity the substantial contribution of the target activity or use can be reached, but at a significantly higher cost than with the enabling activity, where the cost difference would impair market take-up of the SC target activity or use.
- **Note that the instrumental role refers to the substantial contribution of the target activity, not merely its general functioning.**
 - For instance, in the case of a wind turbine, the blades and the gearbox would be assumed to be instrumental for the functioning of the system performance (e.g. reliability of gearbox ⑦ uptime / energy gain of wind turbine). **In contrast, standard screws used to assemble the turbine or its cement base would not be assumed to be instrumental for the substantial contribution, although they are instrumental for the general functioning of energy generating installations.**
 - Where an activity has a direct link with the target activity but does not have an instrumental role in delivering a substantial positive environmental impact, then this should not be considered an enabling activity.

- **Step 5b: Does the activity have an instrumental role in the vast majority of target activities and uses meeting substantial contribution criteria, and does not cause significant harm along the remaining value chain?**
- The analysis of step 5a needs to be performed for all identified target activities and yield a positive result for the vast majority of target activities or uses. If scope exclusions are used, excluded target activities can be left out of the analysis if the conditions for scope exclusions outlined under step 3a are fulfilled.
- **Step 6a: Does the activity pass the lock-in test?**
- The enabling activity must not lead to a lock-in of assets that could be detrimental to environmental objectives. Lock-in can occur, for example, if the target activity has a level of performance that is unlikely to meet substantial contribution criteria in future: The target activity, although making a substantial contribution to one or more environmental objectives at the moment, does not have the potential to keep contributing to the environmental objective in future. Sometimes this inability is captured explicitly in the TR delegated acts by adding sunset clauses for the relevant activities.
 - Similarly, a plug-in hybrid vehicle may be able to reach initial emission criteria until 2025 but never zero-emissions. An activity enabling the hybrid technology would therefore lead to a lock-in after 2025, while an activity enabling the electric technology does not.

- **Step 6b: Does the activity pass the lock-in test for the vast majority of target activities or uses?**
- The analysis of step 6a needs to be performed for all identified target activities and yield a positive result for the vast majority of target activities or uses. If scope exclusions are used, excluded target activities can be excluded from the analysis if the conditions for scope exclusions outlined under step 3a are fulfilled.

Option 2: Assessment of activities enabling target activities or objectives that are not in scope of the Taxonomy or do not comply with the substantial contribution criteria of the respective target activities

- **Introductory comments:** Option 2 should be pursued for enabling activities that relate to target activities and objectives that are not included in a Taxonomy delegated act, or otherwise fail any of the test steps outlined under Option 1. Option 2 is aimed at activities that themselves have such a strong positive environmental impact that their enabling character should be acknowledged, although compliance with substantial contribution criteria of the target activity cannot be assumed.
- **Step 2b: Does the activity have a direct link to only one rather than several target activities or uses?**
 - See Step 2a above.
- **Step 3b: Is the target activity or use consistent with the provisions in Art. 10-15 of the TR?**
 - If the target activity is not included in a Taxonomy delegated act, it should be ensured that the target activity or use is consistent with one or more of the six environmental objectives in Article 10-15 of the Taxonomy Regulation.
- **Step 3c: Are the vast majority of target activities or uses consistent with the provisions in Art. 10-15 of the TR?**
 - The test in step 3b should be carried out for each target activity or use.
 - If one or more target activities or uses are identified which are not consistent with provisions of Article 10-15 of the Taxonomy Regulation, scope exclusion should be applied, where relevant (see point 3a for details).

Step 5c: Does the activity have an instrumental role in delivering a substantial positive environmental impact in the target activity or use, and does not cause significant harm in the remaining value chain?

- Step 5 tests whether an enabling activity has a substantial positive environmental impact in the value chain in general, and when employed in the target activity in particular. This test encompasses a number of aspects presented below.
- Under Option 2 the activity definition and SC criteria of the enabling activity are not directly linked to the SC criteria of a target activity or use. Therefore, the assessment of ‘substantial positive environmental impact’ is much more critical, to be able to justify inclusion of such enabling activities in the Taxonomy. To ensure a conservative approach, Option 2 will typically entail development of **closed lists of identified activities** where there is significant confidence in delivery of substantial environmental benefits.
- For target activities or uses that are in scope of a TR delegated act and SC criteria are defined, the instrumental role can be assumed if, for example
 - - without the enabling activity the substantial contribution of the target activity or use cannot be reached for any but exceptional cases,
 - - without the enabling activity the substantial contribution of the target activity or use can be reached, but the target activity or use cannot be scaled while ensuring its substantial contribution,
 - - without the enabling activity the substantial contribution of the target activity or use can be reached, but at a significantly higher cost than with the enabling activity, where the cost difference would impair market take-up of the SC target activity or use.
- **When the target activity is not in scope of the taxonomy, a conservative approach to selecting appropriate enabling activities and setting criteria must be applied.**

Step 5c: Does the activity have an instrumental role in delivering a substantial positive environmental impact in the target activity or use, and does not cause significant harm in the remaining value chain?

- For target activities or uses that are not in scope of a TR delegated act, the instrumental role can be assumed if, for example,
 - - without the enabling activity the target activity or use cannot reach a level of environmental performance in line with relevant ambition levels for any but exceptional cases,
 - - without the enabling activity the target activity or use can reach a level of environmental performance in line with the relevant ambition levels, but the target activity or use cannot be scaled while ensuring this performance level,
 - - without the enabling activity the target activity or use can reach a level of environmental performance in line with relevant ambition levels, but at a significantly higher cost than with the enabling activity, where the cost difference would impair market take-up of the target activity or use at this performance level.
- **Where an activity has a direct link with the target activity or use but does not have an instrumental role in delivering a substantial positive environmental impact, then this should not be considered an enabling activity.**
- Ensuring that the enabling activity doesn't cause significant harm in the remaining value chain
 - In addition to securing the instrumental role in the target activity reaching SC level, the enabling activity also has to be ensured not to cause significant harm in the remaining value chain and for all six environmental objectives. This should be obtained by designing criteria covering all relevant life cycle aspects, where aspects regarding the environmental objective addressed by the substantial contribution of the target activity have to be included under the enabling activity's description and SC criteria, and aspects regarding the other five objectives under the DNSH criteria.

- **Step 5d: Does the activity have an instrumental role in delivering a substantial positive environmental impact in the vast majority of target activities or uses, and does not cause significant harm in the remaining value chain?**
 - The analysis of step 5a needs to be performed for all identified target activities and yield a positive result for the vast majority of target activities or uses. If scope exclusions are used, excluded target activities can be left out of the analysis if the conditions for scope exclusions outlined under step 3a are fulfilled.
- **Step 6a: Does the activity pass the lock-in test?**
 - See Step 6a under Option 1 above.
- **Step 6b: Does the activity pass the lock-in test for the vast majority of target activities or uses?**
 - See Step 6b under Option 1 above.

KPI-reporting for Enabling Activities (s34)

- For enabling activities for which scope exclusions apply, - turnover should be reported as aligned for the share of sales that results from the uses that are not excluded (enabling uses);
- - capex and opex should be reported as aligned based on the share of turnover resulting from enabling uses. If the company can foresee that the share of turnover from enabling uses will drop in future, the share of capex and opex reported as aligned should be adjusted accordingly. An upward adjustment is only possible based on reliable documentation, e.g., long-term contracts with buyers that provide proof of the share of enabling uses/targets related to the relevant Capex increasing.
- Example: A company manufactures a product used in two target activities. Only the use in one target activity counts as enabling. If 40% of the sales result from the enabling use, then 40% of the overall turnover from that activity count as aligned. If there is no contradicting long-term perspective for the sales distribution, then also 40% of capex and opex count as aligned. If there is a long-term perspective that indicates a drop of the enabling use to 35%, e.g., from long-term contracts or an overall shift in the demand structure, then only 35% of capex and opex count as aligned.
- This approach is in line with what appears to be the market practice for Capex/Opex reporting in cases where the investment is used for both aligned and non-aligned activities. We nevertheless recommend to include a note specific to enabling activities in future revisions of the relevant legal documents (Art. 5,6,8 delegated acts, Green Bond Standard), Commission communications (Q and A), or regulatory technical documents (RTDs).

Skal dæk trækkes fra ved køb af ny elbil ved grønne lån?? (s38)

- Example 3: Vehicle tyres
- Step 1: - Target electric vehicles (Climate DA 3.3, 6.5), among others → follow Option 1
- Step 2a - There is a direct link from tyres to vehicles, but there are different kinds of vehicles → direct link to multiple target activities → follow Option 1 to step 3a
- Step 3a: - Scope exclusions may be applied to limit target activity to in-scope activities, i.e. means of transport included in the DA rather than out of scope activities, e.g. construction vehicles → test passed if scope exclusions are feasible based on commonly available data → follow Option 1 to step 4b
- Step 4b: - If scope exclusions can be applied to limit the target activity to EVs with zero tail-pipe emissions, substantial contribution can be assumed → follow Option 1 step 5a
- Step 5b - The tyres are not instrumental in generating a substantial positive environmental impact in the target activity → test not passed
- **Not an enabling activity**

Formål

- It is important to restate where this work began and its original purpose. The TWG of the PSF 1.0 had a clear mandate to develop for a first set of prioritized economic activities, the criteria to recognize their substantial contribution to at least one of the environmental objectives defined by the Taxonomy as well as the DNSH for the other five. The specific focus was on the other environmental objectives (3 - 6) beyond those related to climate mitigation and climate adaptation. A substantial contribution is defined by the headline ambition levels developed in the methodological work of the platform and deriving from the Taxonomy Regulation. This is always beyond what is required by the current European legislation and Norms. The goal with these criteria was to be able to identify those activities which are front runners and/or have environmental performance able to drive towards the objectives developed under the EU Green Deal. It is different for the DNSH criteria which have always been developed by including threshold and criteria established by the current norms and legislation at the EU level.

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Mangler

- DNSH kriterier for nogle objekter

1. Agriculture, Forestry and Fishing

Animal production

- These criteria cover the raising (farming) and breeding of all animals, except aquatic animals. These activities are classified under the following NACE code 1.4 which includes raising of:
- 01.41 - dairy cattle;
- 01.42 - other cattle and buffaloes;
- 01.43 - horses and other equines;
- 01.44 - camels and camelids;
- 01.45 - sheep and goats;
- 01.46 - swine/pigs;
- 01.47 - poultry;

Mixed farming (NACE code 01.50)

1. Agriculture, Forestry and Fishing

Crop production

These criteria cover the growing of crops in open fields. At this time, they do not cover growing of crops in greenhouses or other indoor settings. These activities are classified under the following NACE codes

Growing of non-perennial crops:

- o 01.11 - cereals (except rice), leguminous crops and oil seeds;
- o 01.12 – rice;
- o 01.13 - vegetables and melons, roots and tubers;
- o 01.14 - sugar cane;
- o 01.15 – tobacco;
- o 01.16 - fibre crops;
- o 01.19 - other non-perennial crops
- o 01.28 - spices, aromatic, drug and pharmaceutical crops;

1.2 Growing of perennial crops:

- o 01.21 - grapes;
- o 01.22 - tropical and subtropical fruits;
- o 01.23 - citrus fruits;
- o 01.24 - pome fruits and stone fruits;
- o 01.25 - other tree and bush fruits and nuts;
- o 01.26 - oleaginous fruits
- o 01.27 - beverage crops;
- o 01.28 - spices, aromatic, drug and pharmaceutical crops;
- o 01.29 - other perennial crops

Kvælstof

- A note for further application: This proposal is put forward for substantial contribution to biodiversity and ecosystems but is equally applicable to substantial contribution of sustainable use and protection for water and marine resources and substantial contribution to pollution prevention and control – as balanced nitrogen fertilization tackles the overall reduction of nitrogen emissions
- The holding must comply with :
 - 1.1 Regional and farm-specific farm-gate nitrogen balance limit; AND
 - 1.2 Maximum farm-gate nitrogen limit; AND
 - 1.3 Minimum nitrogen use efficiency (NUE) AND
 - 1.4 Application limit for organic fertiliser
- Der kommer en app til de 3 første kriterier ->
 - The values for the first three criteria above will be provided to the farmer by a virtual WebApplication (App). The App re calculates the criteria based on farm-data as well as regional and supra-regional data provided by EU, national and regional authorities.

Kvælstof

- The agricultural holding must show annually that over a **rolling average of three years** its farmgate balance does not exceed the permissible regional- and farm specific farm-gate balance limit.

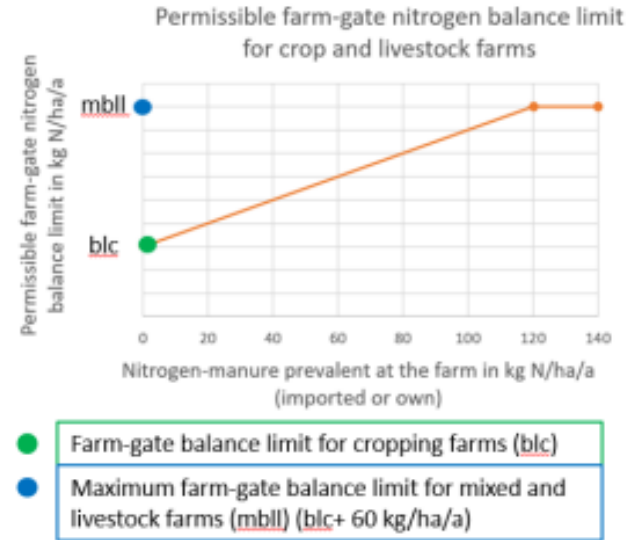


Figure 1: Defining the permissible farm-gate nitrogen balance limit depending on manure-nitrogen prevalent on the farm (imported or own, excluding exported) and regional critical surpluses/ nitrogen sensitivities of ecosystems measured in kg N/ha/a. The slope of the curve depends on the livestock-type (different NUEs, for different manure)

The farm-gate nitrogen balance (equivalent to the farm N surplus defined by EUNEP – see right column) is the difference between nitrogen inputs and nitrogen outputs to and from the farm.⁸ (see Table 1).

b) Inputs and outputs that must be accounted for in the farm-gate nitrogen balance

Table 1: List of in- and outputs in the balance

a) Calculating the farm-gate nitrogen balance

Nitrogen input	Nitrogen output
– Mineral fertilizers	– Crop products
– Imported feed	– Exported animals
– Biological nitrogen fixation	– Animal products
– Seed and planting material	– Exported feed
– Bedding material (straw, saw dust)	– Exported compost and sewage sludge and other organic fertilizer
– Atmospheric N deposition	– Exported animal manure
– Imported animals	– Exported digestates *
– Irrigation water	<i>For calculation of nitrogen content of exported fertilizers see below</i>
– Imported compost and sewage sludge and other organic fertilizer	
– Imported animal manure ⁹	
– Imported digestates *	
<i>For calculation of nitrogen content of imported feed and fertilizers see below</i>	

c) Determining the nitrogen content of in- and outputs

- **d) Calculation of nitrogen content of imported feed**
 - In the case of livestock production we comprise with the farm-gate balance approach two systems with different boundaries. A farm which imports all or part of its feed has a comparatively lower N-input in the balance than a farm that would produce the same feed completely or partly on its own land. In order to take account of the required N for the production of this feed and not to disadvantage mixed livestock farms over landless livestock farms, nitrogen imported via feed must be multiplied by the inverse nitrogen unit efficiency (NUE) of the feed production if known (preferable) OR with a factor of 2 (this means a conservative NUE of 50%, taking into account potential losses).
- **e) Calculation for nitrogen manure im- or exported**
 - In case that manure is imported to a farm or exported from a farm, the losses that occur during management (storage or housing) of the manure are attributed to the exporting farm and losses that occur during field application are attributed to the importing farm. In case that these losses cannot be calculated the losses are distributed evenly between storage and housing on the one hand and field application on the other.
- **f) Calculation of nitrogen content in anaerobic digestates**
 - Anaerobic digestates are not included in the EUNEP document but can contribute substantially to nitrogen surpluses and need therefore be integrated. Factors of N-content in digestates need to be obtained from the fertilizer plan by taking into account the amount of feedstock and its nitrogen content. If this is not possible, we recommend for calculation for digestates from energy plants a nitrogen content of 0,85% and for digestates from organic manure and energy plants (50/50) a nitrogen content of 0,71%
- **g) Livestock farms with little utilized agricultural area (UAA)**
 - If a livestock farm imports feed, to either completely or partly feed its animals and requires therefore additional cropping area for manure application in order to comply with the nitrogenbalance criteria, it must prove that the exported manure is applied according to the rules defined in these criteria. This applies also when the farm exports manure in form of digestates. Ideally this is done in such a way that the importing farm and exporting farm create their nitrogen farm-gate balance together. Treatment of manure is allowed as long as the farm using the treated manure can prove that in the treatment process no N was lost to the environment.
- **h) No data available for three consecutive years**
 - If this is the case, the agricultural holding can also rely on farm-gate nitrogen balance calculations of the last two years, or if not available over the last year. This criterion is only valid for the farm at the beginning of the accounting period. In extreme cases such as droughts or unexpected yield losses, the year can be exempted from the rule.

1.2 Maximum farm-gate nitrogen balance limit

Table 2: Maximum nitrogen farm-gate balance limit for different fertilizer types and animal categories

Animal category	Fertilizer type	Maximum permissible balance limit in N kg/ha/a
Cattle	Liquid manure	64
Cattle	Solid manure	106
Pigs	Liquid manure	52
Pigs	Solid manure	100
Poultry		64
Other livestock		100
	Biogas digestate	64
	Mineral fertilizer	35

• 1.3 Minimum Nitrogen Use Efficiency

The following values are proposed (see 14 Defining minimum NUE limits):

- NUE crops: 70%
- NUE mixed crop-livestock systems granivores: 40%
- NUE mixed crop livestock systems ruminants: 30%

• 1.4 Application limit for organic fertilizer

The agricultural holding must show that the yearly quantity of organic fertilizer applied does not exceed:

- 120 kg N/ha for cropping land
- 140 kg N/ha for grassland land

This application limit applies for each ha and is not averaged over the UAA of the holding.

Integrated farming

- Whereas Proposal 1 provides a route to compliance that is data driven and neutral regarding type of farming, this proposal is focussed on reducing “new” reactive nitrogen from the creation of mineral fertilisers, through farming that fixes and efficiently cycles its own nitrogen primarily on site.
 - Integrations of animal and plant production systems can result in nitrogen fixation that is tied to the productivity of the land area being farmed, reduce overall fluxes of N, and encourage tighter loops of nitrogen cycling and therefore require less import of reactive nitrogen and result in less excess as either gaseous or liquid N pollutants.
 - However, improved pastures are less biodiverse than those focussed upon in Option A. Therefore, safeguards are in place in this option to ensure this route to compliance is not used as a means to reduce biodiverse pasture whilst remaining taxonomy compliant.
- **Co-benefits of integrated farming**
 - Mixed farms can be expected to provide more niches for biodiversity than specialised farms due to greater variety in crops, livestock, their spatial structure and interactions and the many niches such interconnectivity generates (see Benton et al, 2003; Fahrig et al, 2011; Sirami et al, 2017). Integrated systems can also have improved resilience to economic and environmental shocks due to reduced dependence on external inputs of N and increased diversity of on-farm production systems and resources (see Hendrickson et al, 2008)

The criteria at a glance

- Keep within organic / mineral fertiliser totals
- Ensure at least 80% of N fertilisers are organic fertilisers produced on-holding
- Grow at least 75% of any livestock feed on-holding and get the rest locally / from certified sources
- Recycle all livestock excreta on-holding
- Have sufficient vegetated buffer zones of freshwater bodies to remove majority of N from soil run-off and through-flow
- Adopt certain practices on cropping, outdoors livestock, indoors livestock and manure storage, and choose from a menu of others.
- Observe safeguards such as ensuring at least 15% non-productive high biodiversity landscape features, no decline in quantity or biodiversity value of permanent pastures, free-ranging of livestock, and protection of nitrogen sensitive sites.

How this option differs from organics (Option B)

- These criteria have some similarities to organic certification but go further in defining robust on-farm N cycle criteria through the application limits of manure; the % of that N that must come from onsite; the necessity to utilize all livestock manures onsite; and the extent of riparian buffer zones to tackle leachate. However, organics does prohibit all imported synthetic N, which these criteria refrain from in the interests of allowing some flexibility. Organics does not, however, prohibit import of organic fertilizer, which itself may be the result of systems using mineral fertilizer. Also, because of the N focus of these criteria, wider aspects of organic certification are not mandated such as using only organics-approved plant protection products. However, these criteria do borrow from free-range stipulations in organics

Specific criteria for proposal 2

- **1 Fertiliser N inputs**
- **1.1 Total organic fertiliser input** The yearly quantity of organic N fertilisers applied (i.e. manure/slurry/ urine/biosolids²⁶/composts) **does not exceed:**
 - 120 kg N/ha for cropping land
 - 140 kg N/ha for grassland land*
- *This total may be exceeded only in the case of grazing pasture when 100% of the feed is from the grazing of pasture and no feed or fertiliser is imported. In such cases, the stocking densities in Table 4 may also be exceeded provided all other criteria are met, and provided manures from any housing units are distributed to land in such a way as to avoid peak loads to particular areas (10% more per Ha than average).
- **1.2 Ratio of organic to mineral fertilisers, and on-site to off-site**
- **1.2.1 80% of fertiliser needs must be met by on-site produced sources of N,**
- such as manure, slurry or other sources of N such as compost and mulch. This means a maximum of 20% mineral fertiliser in addition to the totals in 1.1. are permitted (max. 24 kg / Ha on crops, max 28 kg / Ha on improved pastures²⁷)
- The above application limits apply both to the average per Ha over the entire UAA, and to the average per Ha for each field (see field size limits in Table 4). I.e. These limits should not be exceeded either at field or holding scale.

Specific criteria for proposal 2

- **2. Onsite nitrogen cycling**
- **2.1.N output from manure**
- All livestock excreta produced onsite must be reutilised onsite OR treated through naturebased solutions (NBS, such as constructed wetlands) such that less than 2.5 mg N / L is emitted (this latter must be supported by theoretical and annual sampling data).
- Caveat: Where N outputs cannot efficiently be treated by NBS, such as very concentrated N streams such as digestates (that cannot be applied to land due to exceeding land application limits), other efficient and reliable treatments may be used, and off-site, provided the N is converted into another type of fertiliser/product.
- **3. Animal feed (and the N therein)**
- **3.1 The following dry matter feed %s are adhered to** (unless extreme circumstances necessitate time-limited emergency measures, e.g., due to local drought):
- At least 75% of annual feed requirement is from on-holding – 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.
- Max of 25% can come from off-holding
- o Up to 25% (of total) can be produced in cooperation with other farms primarily in the same region, or come from CE outputs
- o A maximum of 10% (of total) feed (dry mass of) can be from other sources (i.e. imported feed, cakes, etc), which must comply with the “all livestock” criteria in Table 3 (already submitted) - i.e. no deforestation/conversion certification, no fish except bycatch)

Specific criteria for proposal 2 (s69)

4. Practices The following practices tables cover:

- i. Generally applicable practices (i.e. to crops and livestock)
- ii. Cropping practices
- iii. Indoor livestock
- iv. Outdoor livestock
- v. Manure storage & transformations

- The practices marked with double asterisk * * must be deployed, AND
- At least 3 practices must be deployed from each of the following combination of practices tables
 - o For cropping activities: At least 3 practices from the Cropping Practices Table and/ or Generally Applicable Practices Table
 - o For indoor livestock activities: At least 3 practices from the Indoor Livestock Practices Table and/ or Generally Applicable Practices Table
 - o For outdoor livestock activities: At least 3 practices from the Outdoor Livestock Practices Table and/ or Generally Applicable Practices Table
 - o For manure storage and transformations: At least 3 practices from the Manure Storage and Transformations Table

(NB. The compulsory practices count towards this requirement for “at least 3 practices”

The SFMP must keep annual records of the practices observed.

The practices here are not exhaustive but give a good overview of some of the commonly deployed measures likely to be compatible with these criteria.

The operator can fulfil the requirements of the optional practices by deploying other proven practices listed in these documents provided they are consistent with all other criteria herein:

- Price 2011
- UNECE 2014

s74ff

- **5. Riparian buffer zones of native, perennial, permanent vegetation**
- See Table 3 (already submitted), 2.3.4., for definitions of riparian buffer zones
- **ONE of the following buffer zones options must be complied with:**
- **Option i. 30m buffer zones***
- • 30m buffer zones on all water courses³⁴
- **Option ii. 30m staggered buffer zones***
- **Option iii. Constructed wetland treatment**
-
- **6. Biodiverse habitats**
- At least 15% of the holding area is non-productive high biodiversity landscape features (npHBLF)³⁷.
- The practices already listed above and marked with ^^, provided they meet the definition of npHBLF, contribute to the 15% area of npHBLF: i.e. buffer zones, wetland habitats, constructed wetlands, tree shelter belts, tree and shrub lines, scattered trees, hedges, grass strips).
- If above criteria require more than 15% npHBLF, the higher amount is met (for instance, if buffer zone criteria exceed the minimum requirement).

- **7. Additional safeguards**
- **7.1 Quantity and biodiversity quality of pastures**
- **7.1.1. No reductions in quantity (i.e. area) of permanent grasslands**
- **7.1.2. The biodiversity *quality* of existing permanent grasslands cannot be reduced through intensification measures**
- **7.1.3. Pasture access³⁸**
- 1. All herbivore and poultry species are given permanent access to pasture, unless the following circumstances temporarily prevent this: a) the health or welfare of the animal b) the weather conditions and the state of the ground, or c) community or national requirements or restrictions relating to specific animal or human health problems.
- 2. Breeding bulls over one year old must have access to pasture or an open air run of at least 30 m² .
- 3. Pigs must have permanent access to pasture or vegetated range, unless the circumstances listed above prevent this.

- **7.2 Sensitive habitats**

- 7.2.1. No activities (e.g. cropping or pasture) utilising manure or mineral fertilisers (see section 1) can be within **0.5 km** of a Natura 2000 site or Nitrate Vulnerable Zone (or local equivalents if outside the EU)³⁹ *
- 7.2.2. No livestock housing or manure storage facilities may be in, or within **1km of a Natura 2000 site** or Nitrate Vulnerable Zone (or local equivalents if outside the EU), unless permissions are acquired*. However, this distance threshold can be reduced if the facility has an acid or bio-scrubber based on a calculation of

- **7.3 Other safeguards**

- **7.3.1. No use of herbicides in field transitions: herbicides cannot be used to kill temporary pasture (ley) or catch crops in transition to arable.**

Rationale (s78)

- This rationale is divided into three parts. First a general introductory rationale for the inclusion of option C into the already submitted set of criteria. Then the two rationales for the two proposals provided above.
- **Introductory rationale for Option C: Substantial Contribution to Biodiversity and Ecosystems via ‘Ensuring a farm-gate nitrogen balance respecting regionally specific biodiversity limits’**
- “Nitrogen is essential for plant growth. In crop production, it is often the most limiting nutrient, and therefore must be available in sufficient amount and in a plant-available form in soil to achieve optimum crop yields. (UNECE 2014, pp65-66)
- Excessive nitrogen losses caused by agricultural production have significant negative effects on biodiversity and ecosystems.
-

Detailed rationale for proposal 1 (s80)

- *The farm-gate nitrogen balance*
- The here proposed criteria for farm gate nitrogen balance are designed in a way that they can be applied by crop farms without animals, mixed farms or animal farms without cropping area when the farms can prove a virtual cooperation with a cropping farm.
- For local biodiversity not the single farm, but the nitrogen output in the entire region is decisive.

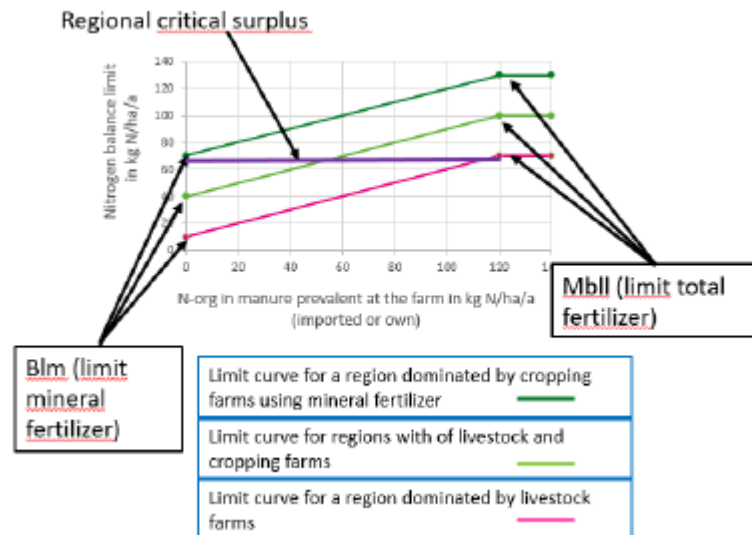


Figure 2: Showing exemplary for three regions with identical critical surpluses but differing distributions of farming types the resulting farm-gate nitrogen balance limit curves (cropping farm-gate balance limit depicted at x-axis 0, maximum farm-gate balance limit at x-axis 120 kg N/ha). The purple line signifies the regional critical surplus value.

App

- The proposed approach for assessing farm-gate nitrogen balance limits (cropping and livestock farms) is therefore the integration of relevant algorithms and data sets from different sources into the App:
 - Farm-specific data on agricultural production (such as manure, animals, feed) is necessary to determine the nitrogen paths of the farm and comes directly from the farmer and is in the context of the fertilizer plan and the nutrient balance already available
 - Locally verified data on soil-type, precipitation surplus and slope of the UAA64 is necessary to determine denitrification rate, runoff etc. and comes either from local authorities or from the farmer
 - The relevant data on regional thresholds on air and water (as described above) as well as a) the deposition of NH₃ and NO_x determining the existing buffer for additional pollution, b) the share of agricultural land determining how much buffer there is for additional nitrogen pollution, c) N-concentration in run-off towards surface water and N-concentration in leaching towards ground water determining the buffer for additional pollution necessary for determining how much additional nitrogen can be accepted in the region comes from DeVries et al. (2021)
 - Data on the regional farm types needed to determine the final level of the nitrogen farm-gate balance limit curve (see Figure 3 for a schematic depiction) comes from local authorities.

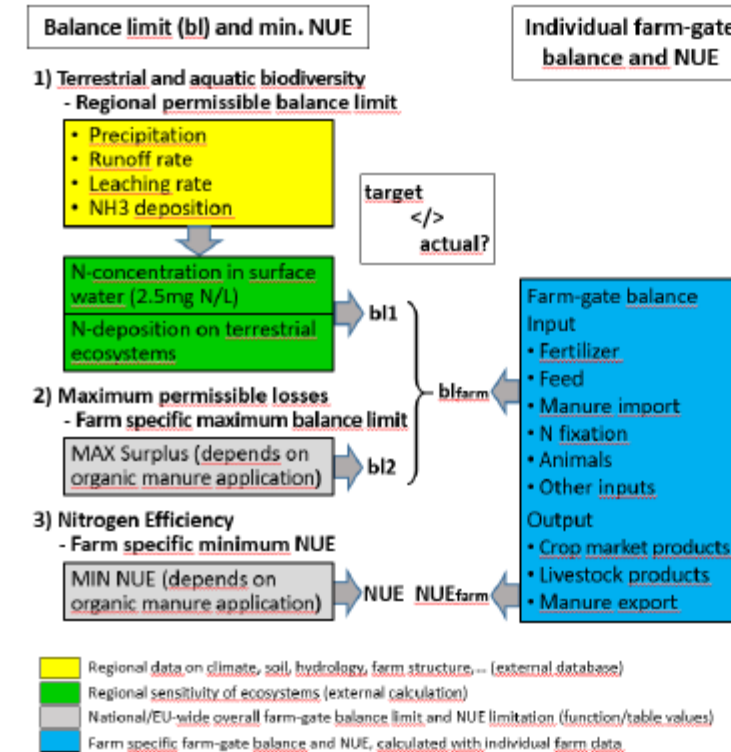


Figure 3: Scheme showing how different data sources must be combined in the App for calculating regional farm-gate nitrogen balance limits, maximum farm-gate balance limits and minimum NUE and how they are set in relation to farm-gate balance limits and farm-NUEs

- Setting a maximum general farm-gate nitrogen limit
- Defining minimum NUE limits

The application limit

Nitrogen from manure cannot be taken up by plants well when applied in very large amounts. Starting from an application rate of 120 kg N/ha the efficiency of the nitrogen use decreases over proportionally and the risk of leaching increases⁶⁸. The German Environment Agency proposes therefore a manure application limit of 120 kg N/ha/ from cropland and of 140 kg N/ha/a for grassland⁶⁹. Also, the EU-Commission states that "The definition of fertilizer application standards that ensures balanced fertilisation remains one of the most important and challenging measures"⁷⁰.

A digital tool to estimate farm-gate nitrogen balance limits, Min NUE as well as actual NUE and farm-gate balances

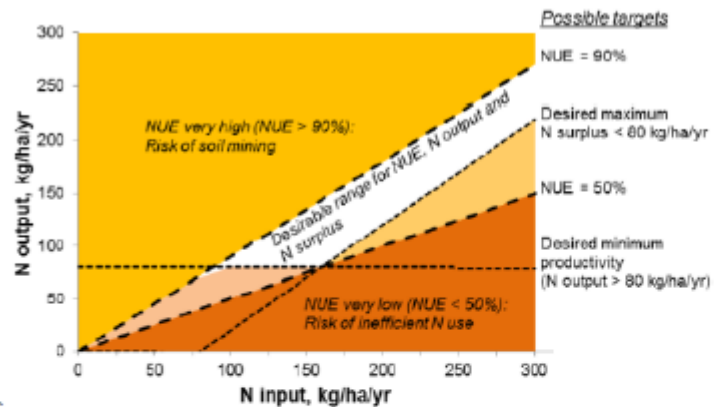


Figure 4: The NUE-Approach developed by the EUNEP. Lower and upper bounds for NUE values, a minimum N yield level and a limit for N surplus are defined to find the optimal values for N-input and N-output (white area). We are not including the productivity in our approach as the range for N-yield levels is too wide to find a general value. Source:

<http://www.eunep.com/reports/>

Detailed rationale for proposal 2 (s91)

- Fertiliser N inputs
- Onsite nitrogen cycling
- Animal feed (and the N therein)
- Practices
- Further practices could potentially be added, for instance by further reviewing the documents utilised in selecting the DNSH measures, for practices likely compatible with proposal 2, i.e:
 - TFRN's Guidance document on integrated sustainable nitrogen management⁸²
 - HELCOM's Revised Palette of measures for reducing phosphorus and nitrogen losses⁸³
 - JRC (2017) B Best Available Techniques (BAT) Reference Document for the Intensive Rearing of Poultry or Pigs⁸⁴.
- **General practices (s94ff)**
- **Practices specific to cropping (s98ff)**
- **Practices specific to indoor livestock (s99ff)**
- **Practices specific to outdoor livestock (s102ff)**
- **Manure storage and transformations (s104ff)**
- **Riparian buffer zones of native, perennial, permanent vegetation (s105ff)**
- **Biodiverse habitats (s107ff)**
- **Additional safeguards (s108ff)**
- **Sensitive habitats (s109ff)**

Sammenfatning (1/2)

A taxonomy compliance route for mixed farming is not a niche preoccupation, but rather encourages tried and tested sustainable farming techniques with great utility globally. (s63)

- Rapporten indeholder beskrivelser, best practice og kriterier (s65, s67ff) på Kvælstof og gødning.
- Foruden det er ingen helt specifikke henvisninger til andre EU Miljømålene med kriterier andet biodiversitet bliver nævnt. Der er diskussion om økologi (s65)
- Der er ikke DNSH tabeller, som der er på skovbrug (lidt på s76 på biodiversitet for C). De findes i marts rapporten (PSF TWG) under option A og B

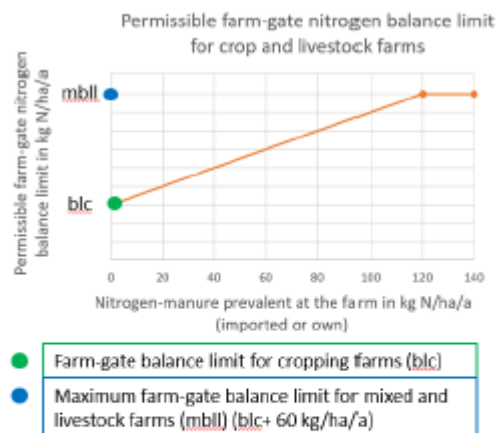


Figure 1: Defining the permissible farm-gate nitrogen balance limit depending on manure-nitrogen prevalent on the farm (imported or own, excluding exported) and regional critical surpluses/ nitrogen sensitivities of ecosystems measured in kg N/ha/a. The slope of the curve depends on the livestock-type (different NUEs, for different manure)

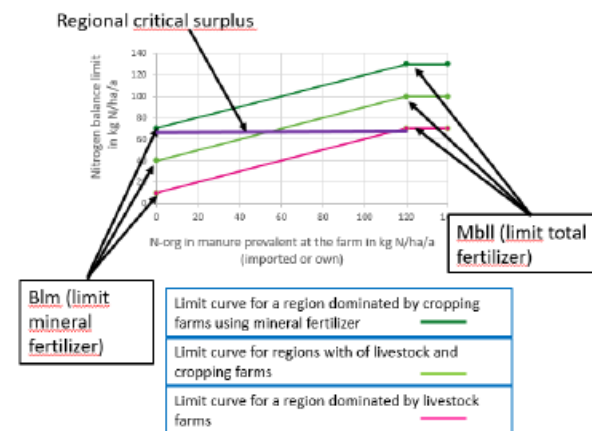


Figure 2: Showing exemplary for three regions with identical critical surpluses but differing distributions of farming types the resulting farm-gate nitrogen balance limit curves (cropping farm-gate balance limit depicted at x-axis 0, maximum farm-gate balance limit at x-axis 120 kg N/ha/a). The purple line signifies the regional critical surplus value.

Sammenfatning (2/2)

- Der kommer en app 😊 til at beregne grænser (på regional niveau!)

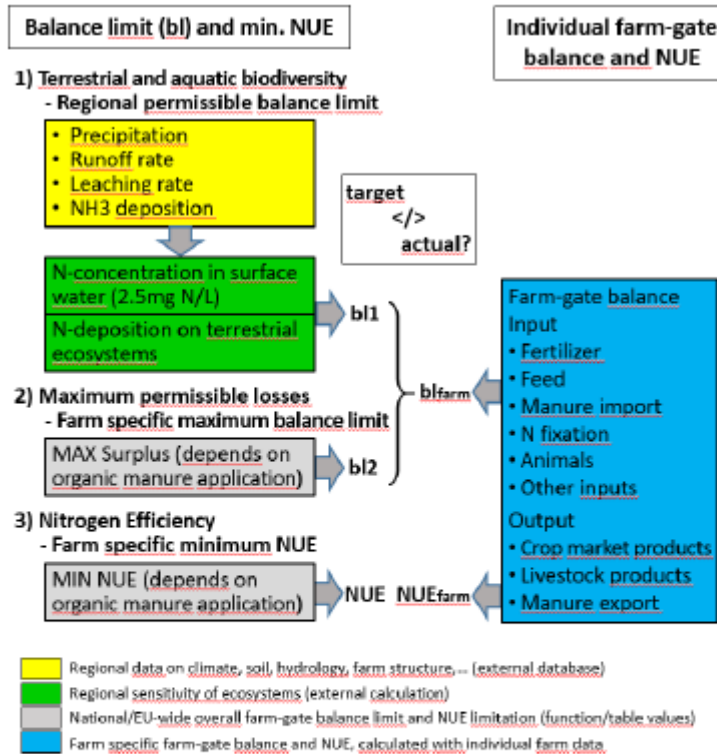


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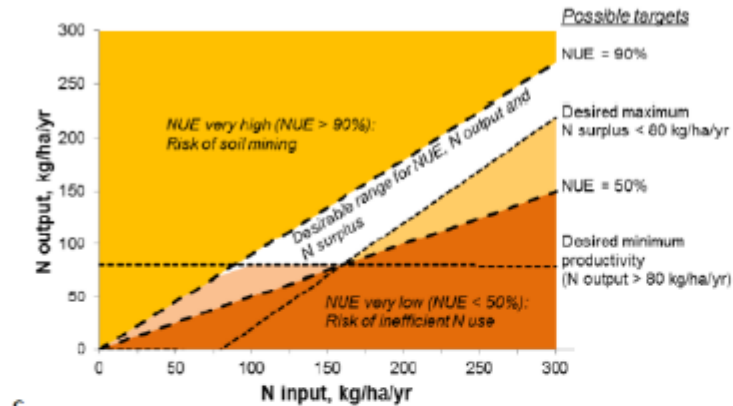


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