

# Annex III Part II - base for revision

The Contracting Parties agreed in the 2013 to review the Part 2 of the Annex III of Helsinki Convention: "Prevention of Pollution from Agriculture", the Regulation 2 „Plant nutrients"). This task was entrusted to HELCOM AGRI. The drafting work has been shared between countries, where Poland took charge of drafting the item 7 "Application rates for nutrients" and the item 3 "Manure Storage".

Despite very intense debate within drafting group of new Annex III (a number of meetings in person and online took place), unfortunately, the final drafts have not yet been agreed. Some issues and doubts remain. It requires, therefore, further discussion within the working group with the possible guidance from HODs.

The following slides illustrate the progress made so far for revision of Annex III Part 2 Regulation 2 in terms of the item 3 "Manure Storage", the item 7 "Application rates for nutrients", and also part of a new para on nutrient recycling (led by Finland) linked to the item 7, as well as provide description of the nature of some remaining problems.

### 3. Construction of manure storage

Manure storage must be of such a quality that prevents losses. The storage capacity shall be sufficiently large to ensure that manure only will be spread when the plants can utilize nutrients. The minimum level to be required should be 6 months' storage capacity.

Manure storage should be constructed to safeguard against unintentional spillages and be of such a quality that prevents losses. With regard to different types of manure, the following principles should be considered:

- solid manure should be stored in dung yards with watertight floor and side walls
- liquid manure and farm waste should be stored in containers that are made of strong material impermeable to moisture and resistant to impacts of manure handling operations.

Animal manure should be used in such a way that as high a utilisation efficiency as possible is promoted.

Co-operation between farmers in the use of manure has to be encouraged.

### 5. Agricultural wastewater and silage effluents

Waste water from animal housing should either be stored in urine or slurry stores or else be treated in some suitable manner to prevent pollution. Effluents from manure or from preparation and storage of silage should be collected and directed to storage units for urine or liquid manure.

### 6. Application of organic manures

Organic manures (slurry, solid manure, urine, sewage sludge, composts, etc) should be used in such a way that a high utilisation efficiency can be achieved. Organic manures shall be spread in a way that minimises the risk of loss of plant nutrients and should not be spread on soils that are frozen, water saturated or covered with snow. Organic manures should be incorporated as soon as possible after application on bare soils. Periods shall be defined when no application is accepted.

### 7. Application rates for nutrients

The application of nutrients in agricultural land shall be limited, based on a balance between the foreseeable nutrient requirements of the crops and the nutrient supply to the crops from the soil and the nutrients with a view to minimise eutrophication.

National guidelines should be developed with fertilising recommendations and they should make reference to:

- soil conditions, soil nutrient content, soil type and slope;
- climatic conditions and irrigation;
- land use and agricultural practices, including crop rotation systems;
- all external potential nutrient sources.

The amount of livestock manure applied to the land each year including by the animals themselves should not exceed the amount of manure containing:

- 170 kg/ha nitrogen
- 25 kg/ha phosphorus

with a view to avoiding nutrient surplus, taking soil characteristics, agricultural practices and crop types into account.

# item 7

The amount of livestock manure applied to the land each year including by the animals themselves should not exceed the amount of manure containing:

- 170 kg/ha nitrogen
- 25 kg/ha phosphorus

with a view to avoiding nutrient surplus, taking soil characteristics, agricultural practices and crop types into account.

*New working draft (not agreed)*

[...] The amount of nutrients in livestock manure applied to agricultural land, including excreta from grazing livestock, should as a general rule not exceed an amount containing:

- 170 kg **total** nitrogen per hectare per year
- 25 kg phosphorus per hectare per year on average over **a 5-year-period.**

Subject to the precondition of preventing nutrient losses to sensitive environment and avoiding nutrient surplus by taking soil characteristics, soil nutrient status, agricultural practices and crop types into account, more specific, national or regional rules **may derogate** from these general application rates.

[1] delete

[2] keep

[3] keep or replace with the sentence: „On soils with phosphorus deficit, higher rates can be applied in order to prevent soil mining, provided that the risk of nutrient losses is minimised”

[4] [1] [2] [3] are prerequisites for a new para on nutrient recycling (the 4th and the 5th bullet points)



## item 7

**[1]** delete „total” and reinstate the original version: „170 kg/ ha nitrogen”. The argument: the word „total” is confusing as it may refer, for example, either to the idea that all other nitrogen should be counted or to the definition of a chemical compound. It is important to make sure that this limit is coherent with the understanding laid down in the EU Nitrogen Directive, which is about limiting nitrogen from livestock manure. The calculation of the nitrogen application dose should be based on the following principle: when the general nitrogen content in manure is X than  $170 : X =$  permissible nitrogen application rate per year.

**[2]** keep „a 5-year-period” regarding P limitation together with the possibility for derogation. The argument: the limit for P is problematic and unrealistic – the limit imposes the situation when the application of N has to be far below the limit of 170 kg N/ year. If it is not possible to remove the limit for P altogether, than it is highly desirable to calculate it on the basis of few-year-period rather than 1-year-period, for example 5 years, which would give farmers some flexibility needed. At the same time, it is important to provide a farmer with the possibility for derogation in certain circumstances taking into account (respecting) plant needs, soil characteristics etc. (for example in case of P-poor soil). Such approach would also ease a move towards circular economy, facilitating utilisation of livestock manure produced by the farm within the farm (the limit for P, as it is now, limits livestock manure utilisation whereas mineral fertilisers can be applied without limitation).

**[3]** keep „may derogate”. The argument: it is important to provide a farmer with the possibility for derogation in certain circumstances taking into account (respecting) plant needs, soil characteristics etc. (for example in case of P-poor soil). Such approach would also ease a move towards circular economy, facilitating utilisation of livestock manure produced by the farm within the farm (the limit for P, as it is now, limits livestock manure utilisation whereas mineral fertilisers can be applied without limitation). It is important to interpret „national or regional rules” as not necessary legally-binding requirements.

**[4]** [1] [2] [3] are prerequisites for introducing a new para on nutrient recycling (the 4th and the 5th bullet points)

# Item 3

## 3. Construction of manure storage

Manure storage must be of such a quality that prevents losses. The storage capacity shall be sufficiently large to ensure that manure only will be spread when the plants can utilize nutrients. The minimum level to be required should be 6 months' storage capacity.

Manure storage should be constructed to safeguard against unintentional spillages and be of such a quality that prevents losses. With regard to different types of manure, the following principles should be considered:

- solid manure should be stored in dung yards with watertight floor and side walls
- liquid manure and farm waste should be stored in containers that are made of strong material impermeable to moisture and resistant to impacts of manure handling operations.

Animal manure should be used in such a way that as high a utilisation efficiency as possible is promoted.

Co-operation between farmers in the use of manure has to be encouraged.

*New draft*

### Construction of Livestock Manure Storage

Livestock manures must be stored in environmentally friendly way and should be handled in such a way that it promotes as high utilisation efficiency as possible. Co-operation among farmers in the use of livestock manures has to be encouraged.

Storage capacity shall be **at least 6 months** and sufficiently large to store livestock manures that accumulate during the longest period when land application is prohibited. Livestock manure processing, and/or transfer to other farms for immediate application or for sufficient storage when land application is prohibited, may be taken into account when required capacity is determined.

Livestock manure storage facilities should be constructed and regularly inspected to safeguard against spillages and be of such a quality that prevents losses. With regard to different types of livestock manures, the following principles should be considered:

- solid livestock manure should be stored in places with watertight floor and side walls;
- liquid livestock manure should be stored in containers whose bottoms and walls are made of material impermeable to moisture and resistant to impacts of livestock manure handling operations;
- manure storages should **preferably be covered** to prevent emissions.

It is possible to temporarily store solid livestock manure directly on utilised agricultural area, but it requires a set of coherent mitigation measures on site, which prevents nutrient losses under specific local conditions. The interim storage of livestock manure cannot be a part of required storage capacity of the farm.

**These storage requirements should preferably be considered also for other types organic fertilizers.**

[1] delete and add „in farms with livestock production”

[2] keep

[3] do not extend the scope or [1]



## Item 3

**[1]** as for storage capacity, delete „at least 6 months” and add „in farms with livestock production”. The argument: there is no need to impose storage capacity requirements on farmers with only plant production, who acquire livestock manure in small amounts and use it shortly without a necessity to storage them for 6 months.

**[2]** keep „preferably be covered” with reference to storages. It is essential to maintain understanding that livestock manure storage covering is voluntary. The argument: it is not a legal-binding on the national level at present and would be problematic to make it legally-binding.

**[3]** do not extent the scope of regulation regarding storage capacity to other types of organic fertilisers or delete „at least 6 months” **[1]**. It is essential to maintain understanding that storage of other types of organic fertilisers is voluntary. In order to avoid interpretation according to which voluntary storage of other types of organic fertilisers requires providing 6-month-storage capacity, wording „at least 6 months” should be removed. The argument: it is not a legal-binding on the national level at present and would be problematic to make it legally-binding. Imposing such requirements on producers and users of organic fertilisers would be problematic.

It turned out that, at least for Poland, the idea to introduce "organic fertilisers" into the text is undesirable, because it is far more general definition than manure. In PL, requirements differ according to a particular type. For example, requirements for storage condition is referring to livestock manures, and it doesn't extend to all organic fertilisers, like digestate. Digestate – understood as any liquid or organic substances produced in effect of agricultural biogas production - is a separate category.

# new – nutrient recycling

## Draft new paragraph on nutrient recycling

[1] delete

In order to reduce nutrient loss to the Baltic Sea and achieve nutrient saving, efficient use of nutrient resources in agriculture and recovery of nutrients from various flows in society back to agriculture, countries are encouraged to design nutrient recycling strategies, which should include:

- providing current region-specific information about production of nutrient rich biomasses, especially livestock manure and sewage sludge;
- providing current region-specific information of the nutrient status of fields, and national soil maps particularly in regard to phosphorus;
- encouraging close cooperation between livestock and crop producers to use nutrients efficiently and to secure soil fertility;
- [encouraging farmers to utilize all nutrients from livestock manure within their own farms in accordance with soil status and crop nutrient requirements and replacing mineral fertilisers within the given limits.
- [transporting nutrients from regions with high surplus in order to replace mineral fertilizers in other regions within the given application limits];
- developing actions for improved recycled fertilizer production, including information of product safety, production technologies and logistical solutions.

[2] add as a 5th bullet point „encouraging livestock manure processing with the view to transporting nutrients from areas with a high surplus to other areas”



*\*Note: Final acceptance of the draft can only be made after the terms of relevant definitions is worked out.*

*\*Note: Poland takes a study reservation on 4<sup>th</sup> and 5<sup>th</sup> bullet points in brackets.*

[3] delete „within the given limits”, „within the given application limits”/ or to replace with „according to the needs” or „regardless the limits specified in 2.7”

[4] add to the 4th bullet point „in line with the concept of circular economy and with the view to reducing dependence on imported nutrients”

[5] the 4th and the 5th bullet points are acceptable if the reservations to 2.7 can be accepted



## new – nutrient recycling

**[1]** delete „especially” as it suggests wrongly that livestock manure and sewage sludge is covered by the definition of biomass which is not the case - they are separate categories.

**[2]** add as a 5th bullet point „encouraging livestock manure processing with the view to transporting nutrients from areas with a high surplus to other areas”. The argument: The idea of transportation of livestock manure on larger distances requires processing. It is essential to encourage the processing clearly.

**[3]** delete „within the given limits”, „within the given application limits”/ replace with „according to the needs” or „regardless the limits specified in 2.7”. It is not clear what limits we refer to, those in 2.7 or other. Referring to limits is problematic itself and may compromise the principle of circular economy, of which one of the important elements is closing the nutrient cycle. The limits prevent using all „safe” livestock manure on the spot (all in the situation in which dose does not exceed plant requirements and soil content doesn't compromise water safety) whereas dose of P from mineral fertilisers, sewage sludge, waste, etc. is not limited.

**[4]** add to the 4th bullet point „in line with the concept of circular economy and with the view to reducing dependence on imported nutrients”. It is essential to refer to the principle of circular economy, one of the important elements of which is closing nutrient cycle. It would be economical to use all „safe” livestock manure within the farm reducing dependence from outer sources (import is costly). Nutrient recycling on a regional level should take into account („marry”) nutrient recycling on a farm level. It is important to use livestock manure as much as possible within the farm, and if there are areas with a high concentration of production nonetheless, transportation to other regions should be encouraged.

**[5]** the 4th and the 5th bullet points are acceptable only if reservations to 2.7 (above) can be accepted.

# new – nutrient recycling

## NUTRIENT RECYCLING DILEMMA

**Which of the following is behind the idea of the formulation of a new para on nutrient recycling (4th and 5th bullet points):**

**[X]** to use all livestock manure one has produced despite the limit of 25 kg P (taking into account [respecting] soil and plant requirements, etc.)

**[Y]** to use livestock manure up to 25 kg P and then, above that limit, use any amount from other sources

### Example

The ideal situation is when the farm produces 5 units of livestock manure. The farm needs to re-use 3 units out of 5. The rest is transported to other regions. (and vice versa: The farm produces 3 units of livestock manure. The farm needs to use 5 units. The farm re-uses 3. The rest is transported from other regions.)

The problem starts when the limitation of P is applied:

**[Situation A]** The farm produces 5 units of livestock manure. The farm needs to re-use 3 units out of 5. Because of the limits of P, the farm is able to use only 2. The rest (3 units) is transported to other regions. To replace 1 missing unit, the farmer uses mineral fertiliser.

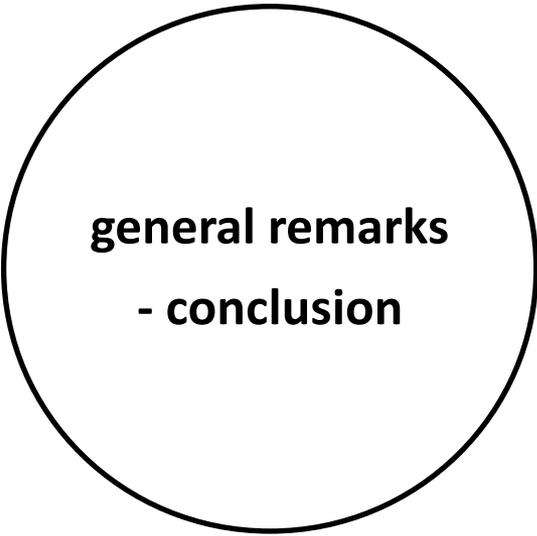
**[Situation B]** The farm produces 5 units of livestock manure. The farm needs to re-use 3 units out of 5. Because of the limits of P, the farm is able to use only 2. But despite the limit, the farmer uses 3 units, as it is better than using mineral fertiliser. [Situation B is most reasonable]

It seems like to have a conflict between 2 aims of nutrient recycling:

[1] to use all livestock manure within the farm (closing the cycle)

[2] to replace mineral fertilisers with manure

Anyway, the overarching aim of the nutrient recycling strategy is to reduce nutrient losses to the Baltic Sea.



**general remarks  
- conclusion**

**[1]** there is a need to build a glossary of terms used in the draft, and as such glossary of terms has not been ready yet, it is essential to make sure at each steps of drafting that meanings which are to be attached to those terms do not change the initially agreed/ discussed idea.

There is a need to specify what kind of manure we are talking about or should talk about, at least generally. It would be extremely hard to wait until the end of the debate to create the glossary. Bearing in mind the differences between countries, it would be best to refer to the definition laid out in the EU Directive concerning protection of waters against pollution caused by nitrates from agricultural sectors. And it says: livestock manure - waste products excreted by livestock or a mixture of litter and waste products excreted by livestock, even in processed form.

**[2]** One of the conclusions of the last meetings of the drafting group was the opinion that the Annex III should not be focused on the technical details but rather identify general requirements. More general approach should be applied with the avoidance of getting into much details and specific requirements in each countries. It is understood that we cannot create another codex of behaviour for farmers, but rather we should show the general direction or define a goal which they can pursuit. Otherwise, we can find ourselves in a deadlock unable to get on with it.

**[3]** The principle of the revision of the Annex III is not to weaken already existed provisions. However, some parts of the Annex III seem to be unrealistic and are needed to be updated in order to make the regulation usable and effective. It is not a good idea to keep unrealistic provisions for the sake of it. Particularly problematic are the limits for N and P applied simultaneously. It is a far away from agricultural practice, at least in Poland.

**[4]** reaching agreement on revised draft requires further discussion within the working group with the possible guidance from HODs