

# Improvements made to the agriculture sector in Hungary

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# Background

## Institutional arrangements

*Hungarian Meteorological Service* is responsible for the compilation of emission inventories

2006- GHG-inventory

2012- air pollutant emissions inventory

The institutional arrangements exploit the *synergy* between the compilation of both emission inventories (comon input data, N-flow approach, etc.)

## Environmental Policy

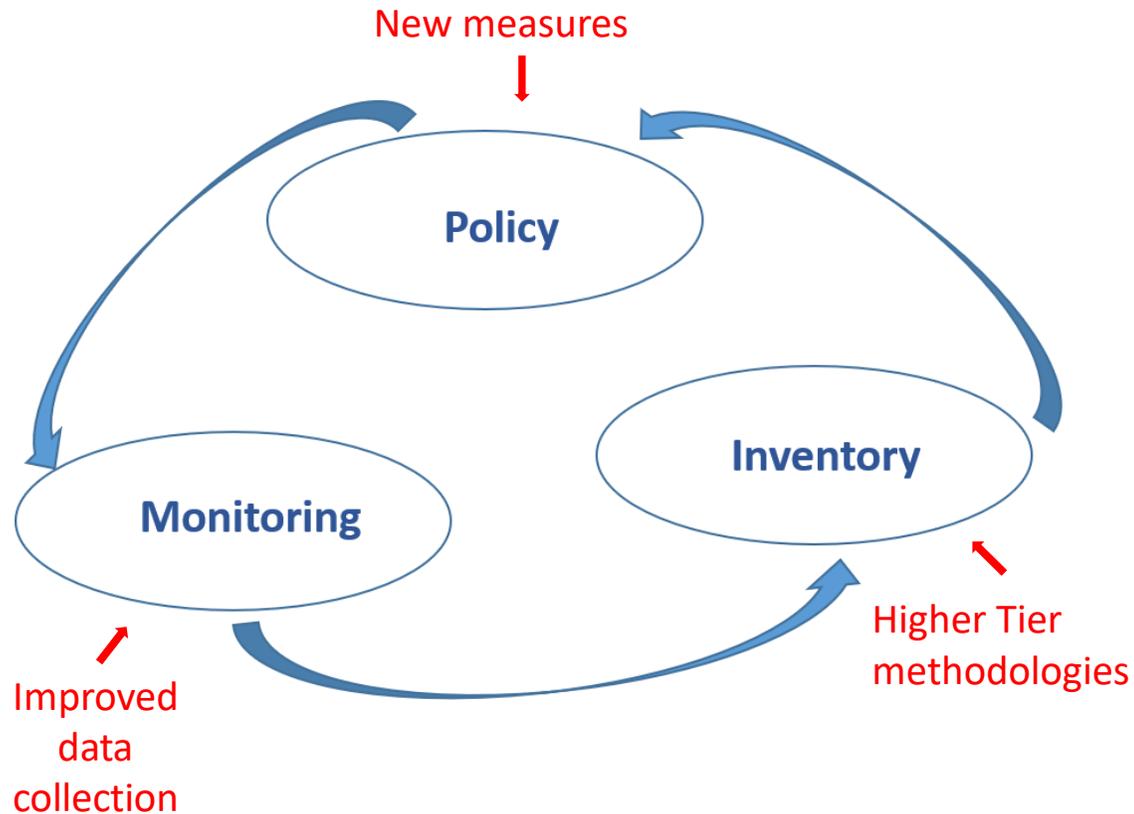
National Emissions Ceilings (NEC) Directive (2016/2284/EU)

Hungary has an impressive emission reduction commitments for  $\text{NH}_3$  (-32% for the year 2030).

– The highest in the EU.

This high emission reduction target is a strong motivation to improve the agricultural emission inventories.

# Implementation of the NECD



To meet our commitments we had to improve our environmental **policy**, the emission **inventory** as well as the **monitoring**.

**Emission inventories** are essential tools to identify areas where actions are needed. On the other hand the emission inventory is used to monitor the progress towards meeting the targets. We need high quality inventory using higher Tier methodologies and detailed activity data, which requires the **monitoring improvement**.

*In Hungary a special Annex to the NAPCP (National Air Pollution Control Program) on the agricultural actions was issued.*

Among the planned actions one is relating to the improvements to the **monitoring** and the **agricultural emission inventories**.

# Monitoring improvements

The *first step* was to improve the data collection.

**Default values are inappropriate to reflect the improvement of the applied technologies!**

We prioritized the key categories and those areas where we are expecting the most significant changes – monitoring is improved in line with the abatement measures

Animal feeding:

- New animal feeding monitoring program has started since 2016, with retrospective data collection for the year 2005.
  - We focused on the key categories – Cattle, Swine and Poultry.
  - We collect data to derive country-specific values of the **N-intake**.
  - Parallely, data collection on animal production to derive country-specific values of the **N-retention**.
  - **We are planning the continuous up-date of N-excretion rates** (every four years) reflecting improvements of animal feeding as well as the animal production.

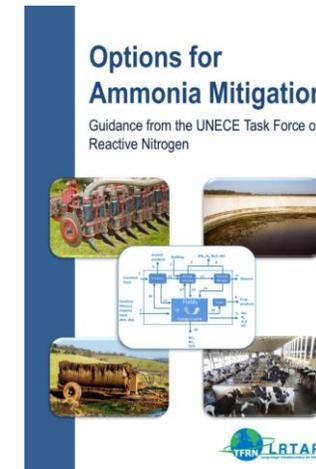
# Monitoring improvements

- We started a new annual data collection on **NH<sub>3</sub> abatement measures** in 2015. (Proportion of the source to which the abatement technique is applied ( $P_{\text{abate}}$ ) is collected.) Regarding
  - covers of manure stores;
  - manure application technologies;
  - agricultural wastes used in anaerobic digesters.
- Survey on grazing (proportion of grazing animals and length of grazing period for Cattle) in the frame of the Farm Structure Survey, 2016
- We also processed existing data sources (e.g. data on tied and untied cattle housing).

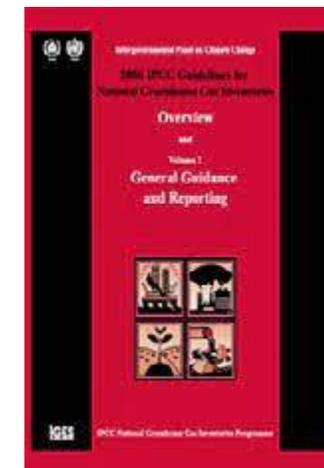
Some background information:

- For gap filling splicing techniques provided in the Ch. 5. Vol. 1 of the 2006 IPCC GIs. were applied.
- To develop country-specific values on the N-retention – Equations from the 2019 Refinement was used.
- Data on emission reduction factors are taken from the ammonia abatement Gb.

Reducing Factors:



methodological issues:



# Inventory improvements - results

## Activity Data

We use the same/consistent data in both emission inventories.

E.g. data on animal feeding, manure management system usage and synthetic fertilizer use for both inventories are taken from the same databases.

(Table 10.A10 of the 2019 Refinement helps in the comparison of definitions of manure storage system in the IPCC GIs. and the EMEP Gb.)

## Methodology and Emission Factors

- We switched to higher tier methodologies in the key categories;
- we use the N-flow approach to calculate 3B and 3D emissions.

The new **N-flow** tool is really helpful. Although it does not allow the tier 3 calculations. We modified the EFs according to the abatement measures. We hope that the tool will be developed furtherly with the NH<sub>3</sub> abatement techniques.

Thank you for the attention!

