



# AGRICULTURE AND AIR QUALITY

## *Minimising ammonia*

*Cutting agriculture's ammonia emissions and nitrogen losses improves the air we breathe and benefits our health and environment, as well as water quality, biodiversity and climate.*

*Europe's farms play a crucial role in providing healthy, high-quality food for millions. But the agricultural sector is also the EU's main source of harmful ammonia emissions from **manure and inorganic fertilisers**. Well-tested measures could be **applied more widely** to reduce these emissions.*



Over **400 000 premature deaths** in the EU every year are linked to air pollution. Air pollution also causes EUR 3 billion worth of lost crops and EUR 1 billion in building damage annually.

Agriculture is among the main sources of air pollutant emissions in the EU.



Ammonia in the air combines with other chemicals to form up to **58%** of airborne particulate matter in cities.



**95%** of ammonia emissions come from agriculture: 75% from manure and 20% from **inorganic fertilisers**.



**80%** of manures in the EU-28 originate from **4% of the farms** (the largest ones).

An ammonia molecule is made up of **nitrogen and hydrogen atoms**. Nitrogen atoms from ammonia can be used for the growth of crops, but if ammonia ends up in the wrong place it creates problems.

Burying manure under soil instead of just spreading it on fields is one way to **reduce emissions into the air**.

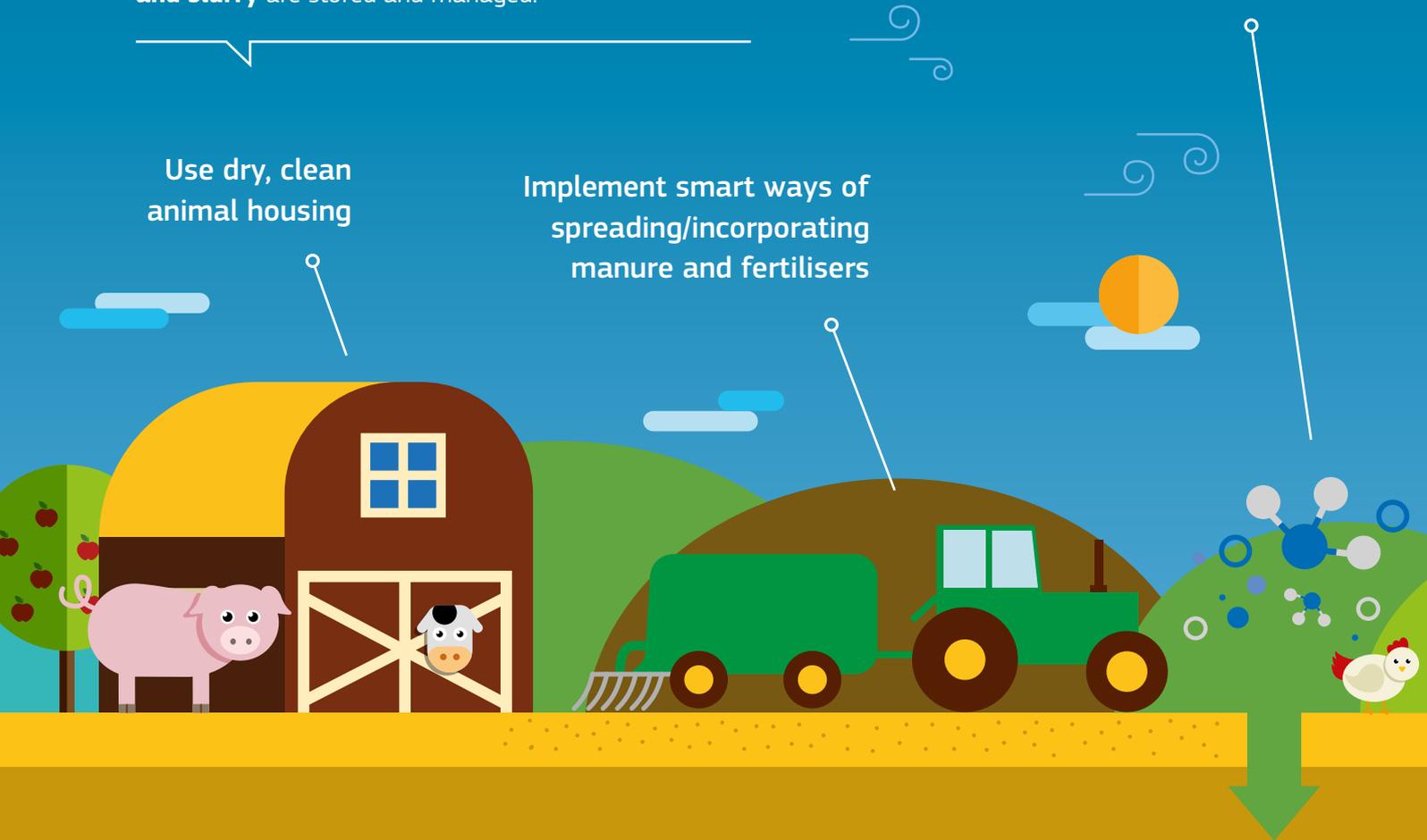
There are also good farming practices that can be used to reduce ammonia emissions by considering the **food and housing of farm animals** and the way **manure and slurry** are stored and managed.

## Good practice agriculture's ammonia

Apply integrated, sustainable nitrogen management for the entire nitrogen cycle

Use dry, clean animal housing

Implement smart ways of spreading/incorporating manure and fertilisers



### LIFE support for low-ammonia agriculture

The EU LIFE programme funds environment and climate action, with a budget of **EUR 3.4 billion** budget for **2014-2020**. LIFE-funded projects are helping farmers reduce ammonia emissions.



### Closing the mineral cycle in dairy farming in the EU (CMCD)

Ammonia from dairy farming includes emissions produced by the chemical reaction when cow manure and urine mix. In the Netherlands, the CMCD project is developing a robot system that keeps the two from mixing, potentially reducing ammonia from dairy cattle by **60%**.

The project is testing the system at some farms. It is also developing technology to use **recovered plant fibres** from manure for animal bedding and recovered **liquids** for low-pollution fertilisers.

<https://bit.ly/2o05wJd>

## Measures to cut ammonia emissions

Improve livestock-feeding strategies

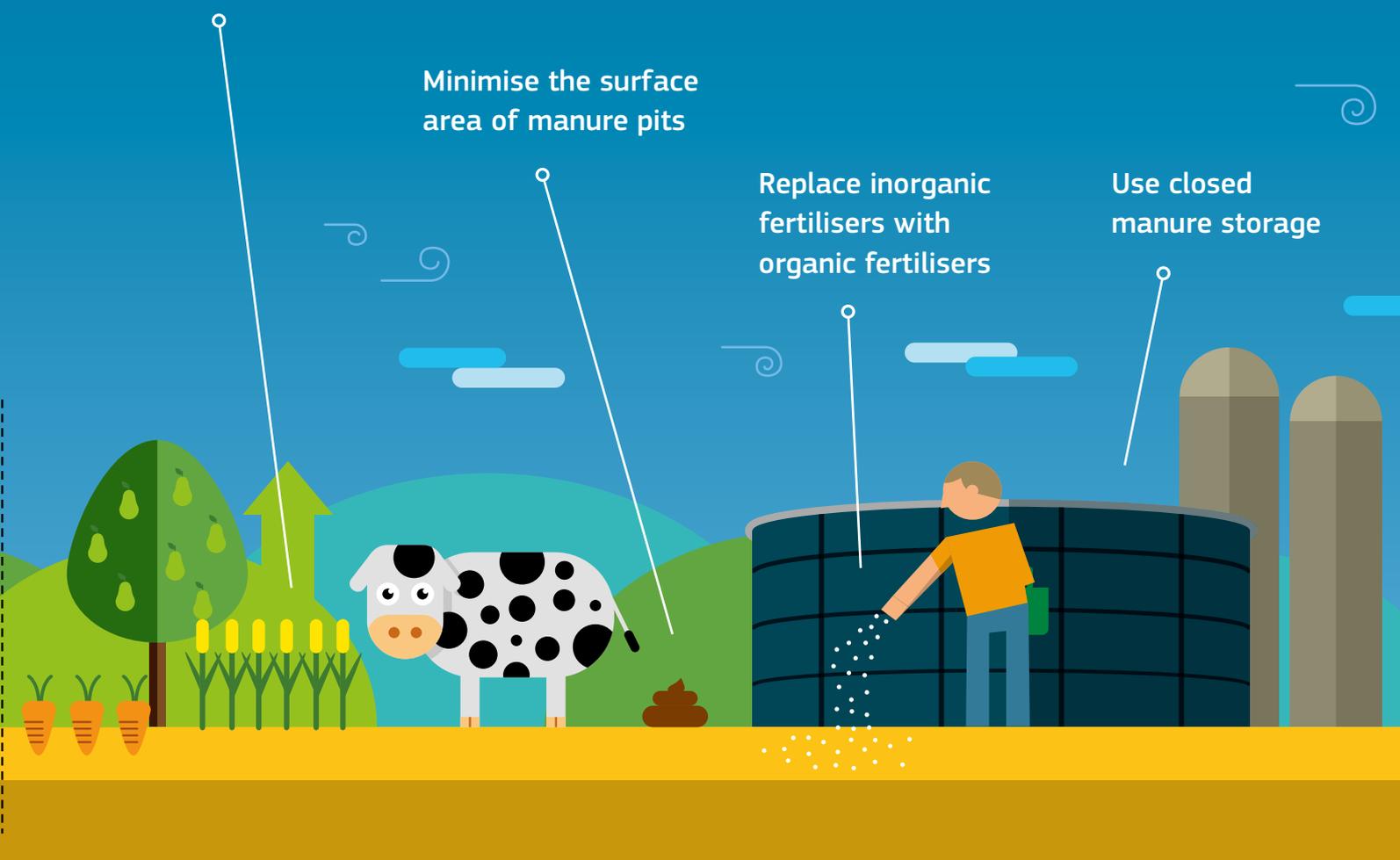
Minimise the surface area of manure pits

Replace inorganic fertilisers with organic fertilisers

Use closed manure storage

By reducing nitrogen losses through better nutrient management, European farmers can save money as they **lower their costs for fertilisers**.

Good nitrogen and ammonia management also benefits **water quality, biodiversity and the climate**.



### LIFE air and agriculture — clean air farming

Agriculture is responsible for 95% of ammonia and about half of anthropogenic methane emissions in the EU. The project focuses on capacity-building measures, improving the implementation of legislation such as the national emission ceilings directive and incorporation of the knowledge in the legislative process and in practice, promoting knowledge and techniques that can reduce ammonia and methane emissions while encouraging the appreciation of quality food.

<https://www.clean-air-farming.eu/en/start>



## National emission ceilings directive

EU rules set commitments for reducing emissions of pollutants, including ammonia, by 2020-2029 and from 2030 and beyond. For ammonia, the goal is to reduce overall EU emissions by **19%** below 2005 levels by 2030. National reduction commitments are set for each Member State.

Rules on agriculture emissions require Member States to establish national good farming codes, and to establish national air pollution control programmes with measures to achieve emission reductions, based on scientific data. Member States may also consider exempting small and micro farms from certain measures and should ensure that pollution is not just shifted from air to water but is reduced in total. Farmers also have access to EU funding to help them cut ammonia emissions.



## EU initiatives

EU initiatives to protect Europe's air include the following.

**EU Clean Air Forum.** Launched in 2017, this event gathers decision-makers, stakeholders and experts to reflect on effective European, national and local air policies, projects and programmes. Themes for 2019 include health, energy, agriculture and funding.

**Dialogues with Member States.** The Commission regularly speaks with Member States on air quality and since 2017 has organised clean air dialogues with seven Member States.

**Environmental implementation review.** This 2-year cycle of analysis and dialogue helps the Commission support Member States in implementing EU environmental law and policy, including air-quality rules.

## #CleanAirEU

### EU funding and actions for cleaner air:

 [https://ec.europa.eu/agriculture/envir\\_en](https://ec.europa.eu/agriculture/envir_en)

 <https://ec.europa.eu/easme/en/life>

 [https://twitter.com/EU\\_ENV](https://twitter.com/EU_ENV)

 <https://www.facebook.com/EUEnvironment>



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