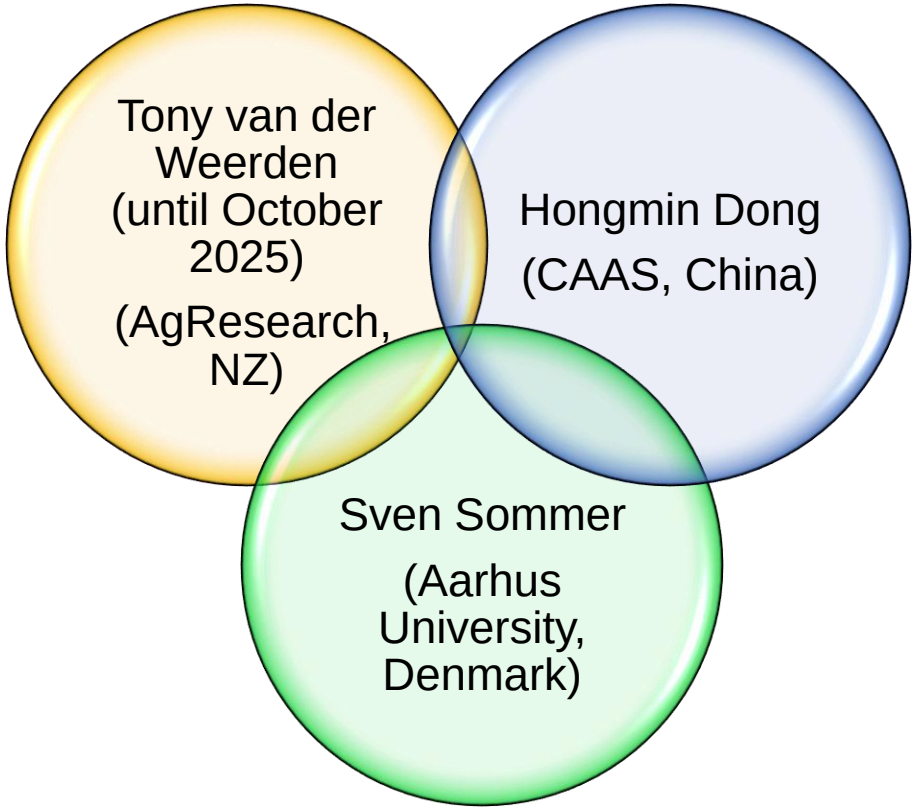
Manure Management Network – Research Update 2024

Focused on reducing GHG emissions from livestock production and increasing the nutrient use efficiency of manures and soil organic matter by the improvement of excreta management.

Tony van der Weerden

(co-chair of Manure Management Network)

Co-leads of MMN



DATAMAN database Version 2 recently released

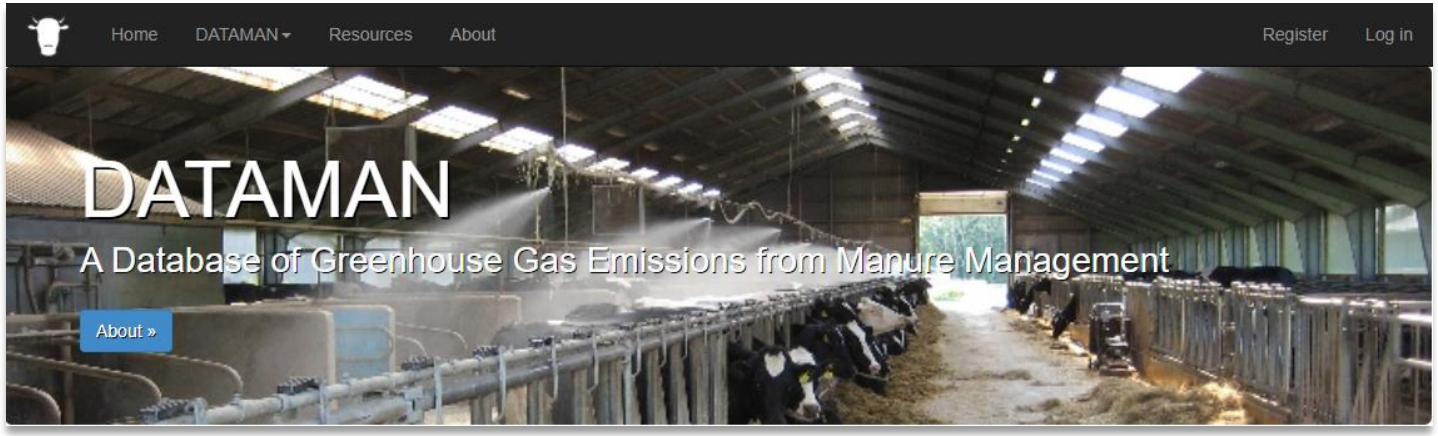
What's changed?

Clean up of the databases

- Corrections to Housing types
- Addition of missing citations from ELFE database

Addition of Storage and Field data

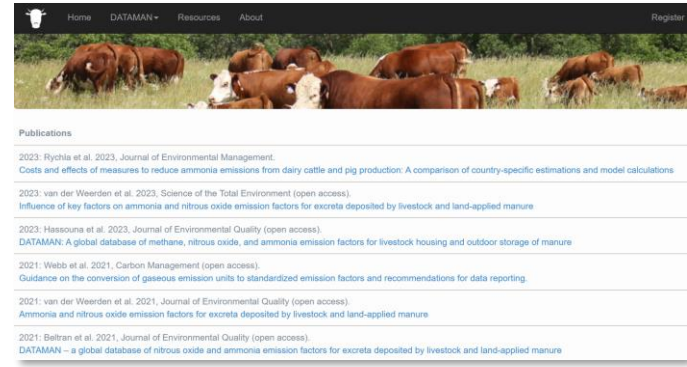
Removal of 2-3 duplicate studies



Field	Storage	Housing
184 papers	239 papers	263 papers
~ 5700 EF values	~ 1300 EF values	~ 2000 EF values

For database descriptions, see Beltran et al. (2021) & Hassouna et al. (2023)

www.dataman.co.nz



Data analysis and publications from DATAMAN-related projects

Since last LRG meeting (September 2023):

Çinar et al. 2023 (Waste Management)
Effects of environmental and housing system factors on ammonia and greenhouse gas emissions from cattle barns: A meta-analysis of a global data collation

Anestis et al. submitted (Biosystems Engineering)
Mitigation of Greenhouse Gas and Ammonia Emissions due to Livestock Housing Management Practices: Analysis of the DATAMAN Database

Umar et al. **(1)** *in preparation*
Effect of European and U.S. poultry housing design and management on ammonia emission factors

Lombardi et al. *in preparation*
Review of greenhouse gas and ammonia emission factors of stored and land-applied digestates following anaerobic digestion of cattle manure

Hassouna et al. *in preparation*
Data reporting requirements for studies on GHG and NH_3 emissions from housing and storage

EmiLi 2024 conference
International Symposium on Gas and Dust Emissions from Livestock

Umar et al. (2) *in discussion*
Effect of swine housing systems and manure storage on greenhouse gas and ammonia emission factors

Manure Management-related activities

Co-fund on Sustainable Crop Production 2021 Joint Call

→ involved four ERA-NETs SusAn (Sustainable Animal Production Systems), FACCE ERA-GAS (Monitoring and Mitigation of Greenhouse Gases from Agriculture and Silviculture), ICT-AGRI-FOOD and SusCrop (Sustainable Crop Production)

Focus of call: to **enhance circularity between crop and livestock farming systems**.

9 projects funded – many include a manure management focus (e.g. ReLive, Circ Agric-GHG).

Currently no connection between projects (but was explored by several people)

Opportunity to share learnings at end-of-project-life:

- Improved circularity – methods, results & interpretation
- Manure management - better utilisation? reduced synthetic fertiliser use? reduced emissions/C-footprint?
- Impact at farm system-level/circularity indicators
- Benefits & challenges to farmers, industry

Potential workshop (requires funding)

Where to from here for the MMN?

- MMN maintains a **manure management-focus**: avoid re-labelling/realigning with ‘circularity’ – dilutes key research area

- Continue development/expansion of **DATAMAN database** (tangible):
  - contributing data from experimental studies (include as funded activity within research projects),
  - unbalanced database → specific application in key data-poor regions e.g. African manure management (connect with ILRI, others)
  - other ideas?

Get in touch!

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