Title	**Improving national GHG inventories for manure management (DataMan)**
Project Timeframe	Jun 2018 – Jun 2020
Countries Involved	New Zealand (AgResearch)
Aim	To provide access to the most up-to-date knowledge on nitrous oxide, ammonia, and methane emission factors for all relevant activity and ancillary data relating to manure management.
Research Highlights	• A database on ammonia (NH_3) and nitrous oxide (N_2O) emissions from manure applied to land, and dung and urine deposition, has been constructed and is now freely available online at https://dataman.azurewebsites.net/. • This data allows an assessment of key variables influencing emission factors, which may help to identify potential mitigation strategies. • The project included a GRA-funded LEARN post-doc fellowship for Dr Ignacio Beltran of INIA, Chile.
Future Work	• Collation of the Housing and Storage database is currently underway, with online release of this data due by June 2021. • The work initiated in DataMan will continue under the title Mitigating Emissions from Livestock Systems (MELS), with European funding via ERANET. • Revised emission factors will be submitted to IPCC's Emission Factor Database (EFDB)
Key Research Output(s)	Journal article(s) Beltran, I., van der Weerden, T.J., Alfaro, M.A., Amon, B., de Klein, C.A.M., Grace, P., Hafner, S., Hassouna, M., Hutchings, N., Krol, D.J., Leytem, A.B., Noble, A., Salazar, F., Thorman, R.E., Velthof, G.L. (Under Review) DataMan: A Global Database of Nitrous Oxide and Ammonia Emission Factors for Excreta Deposited by Livestock and Land-applied Manure. *Journal of Environmental Quality*. Conference presentation(s) van der Weerden, T. DATAMAN: Improving national GHG inventories for manure management. *COP25 Side Event*, Madrid. 2-10 December 2019. Beltran, I., Salazar, F., Alfaro, M., Noble, S., van der Weerden, T. Nitrous oxide and ammonia emission factor from different livestock manure management systems in developing countries. *SOCHIPA 2019, Chilean 44th Agricultural Congress*, Santiago. 6-8 November 2019.

Beltran, I., Alfaro, M., Salazar, F., Noble, S., van der Weerden, T. Nitrous oxide emission factors following land application of manure and livestock grazing in developing countries. *7th Greenhouse Gas and Animal Agriculture Conference*, Foz do Iguaçu. 4-10 August 2019.

van der Weerden, T.J., Alfaro, M.A., Amon, B., Beltran, I., de Klein, C., Grace, P., Hafner, S., Hassouna, M., Hutchings, N., Krol, D.J., Luo, J., Loyon, L., Noble, A., Salazar, F., Thorman, R.E. Initial analysis of greenhouse gas emissions from manure management. *NCGG8 - 8th International Symposium on Non-CO_2 Greenhouse Gases, Global Challenges and Local Solutions*, Amsterdam. 12-14 June 2019.

Beltran, I., Alfaro, M., Salazar, F., van der Weerden, T. DATAMAN: Creating a database of greenhouse gases and ammonia emitted from livestock animals for refinement of national inventories in developing countries. *SIGERA 2019. Biotechnologies Applied to the Treatment and Reuse of Wastes*, Florianopolis. 7-9 May 2019.

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van der Weerden, T., Alfaro, M., Amon, B., Anthony, S., de Klein, C., Grace, P., Hafner, S., Hassouna, M., Hutchings, N., Krol, D., Luo, J., Loyon, L., Misselbrook, T., Noble, A., Salazar, F., Thorman, R. DATAMAN: Establishment of a database of greenhouse gas & ammonia emissions from manures for refinement of national inventories. *AgrGHG 2018 Conference*, Berlin. 10-12 September 2018.

<u>Others including workshops</u>

van der Weerden, T., Luo, J., de Klein, C. (2020). Recommendations for Improving Greenhouse Gas Inventory Methodologies for Manure Management: New Zealand as a Case Study. Prepared for GRA website.

Beltran, I., Salazar, F., Alfaro, M., van der Weerden, T. (2020). Chile national inventory - Manure management effects on GHG estimates. Prepared for GRA website.

van der Weerden, T., de Klein, C., Luo, J. (2020). Generic guidelines for improving national inventories in relation to greenhouse gas emissions from manure management. Prepared for GRA website.