GLOBAL RESEARCH ALLIANCE

ON AGRICULTURAL GREENHOUSE GASES

CROPLANDS RESEARCH GROUP: Germany Country Update

CRG representative:
Prof. Dr. Heinz Flessa (Thünen Institute of Climate-Smart Agriculture)

Activities/Accomplishment since last meeting

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General political development in Germany:

- Revision of the federal climate change act 5/2021. More ambitious emission reduction targets. For agriculture emissions have to be reduced from 70 mio t CO2-Äq in 2020 to 56 mio t CO2-Äq in 2030.

- New government in Germany: Ministers from the green party in the Federal Ministry of Food and Agriculture and in the Federal Ministry for the Environment, Nature Conservation, Nuclear Safety and Consumer Protection. → joint transformation of agriculture production and human nutrition towards more sustainability

Research and Capability Priorities I

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- New N2O emission factors for nitrogen fertilizer inputs (synthetic and organic) to agricultural soils:
  Mathivanan GP, Eysholdt M, Zinnbauer M, Rösemann C, Fuß R (2021) New N2O emission factors for crop residues and fertiliser inputs to agricultural soils in Germany. Agric Ecosyst Environ 322:107640, DOI:10.1016/j.agee.2021.107640

- New project: German peatland monitoring program for climate protection (Thünen Institute, running until 2025, large project with a team of 15 persons).

- The Thünen Institute will be involved in projects related to (1) carbon farming (EJP-Soil: "Road4Schemes") and (2) Biochar as negative emission technology (contact: Leonardo Amthauer Gallardo)

Research and Capability Priorities II

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- Recent research call supported by the German Federal Ministry of Food and Agriculture (7/2021): “Climate friendly nitrogen management in crop production” → The call is closed and the proposals and all applicants are waiting for the decision:
  - Key topics: i) reduction of NH_3 and N_2O emission in crop production, ii) effect of nitrification inhibitors on annual N2O emission and ecotoxicological effects of long-term application of inhibitors, iii) Reducing nitrogen losses by denitrification.
- German researchers have shown their interest to participate in the proposed GRA flagship project “Optimising the use of nitrogen fertiliser, more production and less environmental impact (N4R)”

Research and Capability Priorities III

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- Dr. Andreas Meyer-Aurich (Leibniz Institute for Agricultural Engineering and Bioeconomy (ATB), Germany) is the guest editor of the Special Issue on “Greenhouse Gas Mitigation in Agriculture” in the journal “Agriculture” → GRA researchers are invited to submit their papers to the journal with a 15% discount of the regular publication fee:
  - Submission deadline: 20 May 2022
  - If you are interested, please contact the journal office (Ms. Miguel Zhou <miguel.zhou@mdpi.com>) to ensure that you will get the mentioned discount
  - More information on the Special Issue: https://www.mdpi.com/journal/agriculture/special_issues/agriculture_greenhouse_gas_mitigation