

Grasslands Network

Impact on net GHG balance (CH₄, N₂O, SOC) of different grassland management practises and processes

- Biological (plant and soil) nitrous oxide inhibition – Japan, CIAT, gene transfer from tropical to temperate species, Di and Cameron work, plants adapted to low nitrogen conditions should have BNI, also some work in France.
- Biological nitrogen fixation – data on how much N fixation – country specific – better activity data – fixation rates by species – assessment of overall N₂O mitigation – review of BNF in grassland systems, emissions (including SOC links),
- Fertilizer use – effect of fertilizer formulations on N₂O emission, global survey from IFA, need to understand better information on rate of application, type of fertilizer, carbon footprint of manufacturing?, non-nitrogen fertilizers (P, K, S, other nutrients).

Identification and compilation of existing datasets

- Long term experiments
- Grassland type (monoculture, mixed)
- Annual yield
- Pasture characteristics
- Soil properties (physical and chemical)
- Carbon estimates?
- Frequency of SOC determination
- Animal information (grazed or not, stocking rate, production statistics)
- Fertilizer and other
- Impacts of CO₂ and temperature on grasslands
- Metaanalysis on soil, climate, net emissions

Characterisation of grasslands in global and regional climate change models

- Identify data gaps and weaknesses of models:
 - Animal, plant, soil interaction well characterised?
- Link this to dataset acquisition (e.g. previous slide).
- Coupling models? To simulate plant and animal interactions.
- RUMINANT model evaluation taking place now (CIAT – talk to Jacobo for more information).

Technologies and practices in grasslands to improve forage quality and availability

- Assessment of the 'trade-offs' that might actually occur or might be achieved among different ecosystem services (i.e. grass productivity, forage quality, soil C sequestration, soil nutrient and water regulation etc.) under different management practices and across different livestock production systems.
- Research to show the benefits or the limits of grassland/rangeland management for delivering multiple services. How to identify or estimate trade-offs.

Research collaboration – building on existing

- Horizons 2020 – “grazing for carbon” – Agnes Van der Pol (Netherlands) coordinates this focus group – will identify topics that will end up in future calls of the EU Research Area.
- Incorporation of legumes in pasture – PROCISUR/FONTAGRO – 8 countries of Sth America.
- Synthesis paper – people involved get something out of it. Targeted at IPCC. (could check scoping of the land sector special report for ideas).
- Others?

Opportunities to network

- Eurasian Grassland Conference 2017 4-11 July, Latvia.
- 2018 European Grasslands Federation - Ireland. Sustainable Meat and Milk Production from Grasslands - opportunity for network meeting – 17-21 September, 2018.
- Greenhouse Gas Emissions in Animal Agriculture Production Systems of Latin America – 4-6 October, 2017 – Colonia, Uruguay.
- International Grassland Congress – 25-30 October, 2020 – Nairobi.
- International Rangeland Congress – 2016 held in Canada, next one?
- Others?

Building a network

- Two network coordinators (Ireland, Uruguay + Netherlands)
- Six members.....(Argentina, Ghana, UK).