

'Grassland sensitivity to climate change' Workshop

Soil Carbon & Nitrogen Cycling Cross-Cutting Group of the GRA & Grasslands and Livestock group of AgMIP

Hotel Miguel Angel, Madrid, Spain

21 May 2014

Overview & Workshop summary

A workshop on *"Grassland sensitivity to climate change"* took place on the 21st May 2014 in Madrid (Spain), as a side event of the Livestock, Climate change and Food security Conference (19-20 May). The event was organized in the frame of the Soil Carbon & Nitrogen cycling cross cutting group of the GRA and the Grassland and Livestock group of AgMIP (The Agricultural Model Intercomparison and Improvement Project).

The workshop was attended by 22 participants from 13 countries (9 GRA member countries: Argentina, Australia, Brazil, France, Germany, the Netherlands, UK, Uruguay and USA + 4 non-GRA members: Austria, Hungary, Lebanese Republic and Portugal). The workshop was chaired by France (Dr Jean-François Soussana, INRA, France) as Co-Chair of the Soil C&N cycling cc group of the GRA and of the Grassland & Livestock group of AgMIP.

It gathered scientists interested in modelling grassland responses to climate change in terms of greenhouse gas emissions and yields. The main objective of the workshop was to present and discuss the first results of the sensitivity tests for grasslands responses to climatic drivers in terms of production and GHG emissions. This activity is part of AgMIP and is an adaptation of the C3MP protocol first developed for croplands in this international program (see <http://www.agmip.org/c3mp/>).

Moreover, the Grassland Research Network (GRN) from GRA Livestock group took the opportunity of the meeting to introduce the network to all participants, and to open discussions on complementary work and synergies that could be developed with the Grassland & Livestock group from AgMIP.

MEETING OUTCOMES

The meeting achieved the following outcomes:

- Presentation of the C3MP protocol adapted to grassland used to run sensitivity tests focused on grassland yields and GHG emissions.
- Presentation and discussion of the first results of C3MP exercise adapted to grasslands.

- Protocol improvement with the expertise of modellers contributing to the exercise, especially regarding grassland management.
- Agreement on workplan regarding further steps of the sensitivity exercise:
 - Successive timelines for grassland types:
 - 1/ Temperate grasslands, 2/ Tropical grasslands, 3/ Rangelands: the management for rangeland simulations needs to be approved.
 - Coupling models 'vegetation/animal': next generation.
 - Discussion on results representation (integration of combined drivers, climate projections and *in-situ* climate variability), emulators use (site specific mean emulator / model specific mean emulator / meta-emulator?).
 - Discussion on multiplying models for simulations at a specific site: it was not the initial aim which was to focus on using model already calibrated at a given site. We suggest first to ask for site/model pairs, then to have a restricted panel of global models (i.e. LPJmL) that could expand the number of models for a given site.
- Proposition for a structuration of the exercise regarding the vegetation type (C3, C4 or C3/C4).
- Agreement for a fully analysed ensemble of temperate grasslands in October 2014. Start of tropical grasslands analysis in November 2014.
- Identification of possible contacts to enlarge the number and the repartition of grassland contributing sites worldwide.
- Presentation of the Grassland Research Network (GRN) from Virginia Pravia (INIA, Uruguay), as the global coordinator of the network.
- Discussion with the GRN to detect synergies and coordinate complementary work.

The next Annual Meeting of the Soil C&N cycling cc Group of the GRA is planned in Wageningen (the Netherlands) on 14th June 2014, prior to the Council Meeting of the GRA.

The Grassland and Livestock group of AgMIP will meet in October in Long Beach, at the time of the General Assembly of AgMIP in Long Beach (CA, USA).

For more information or to find out who your in-country Alliance Soil C&N cycling cross-cutting Group representative is, please contact the Alliance Secretariat (secretariat@globalresearchalliance.org) or visit www.globalresearchalliance.org