Minutes, Thursday, February 18th, 2016

Melbourne, AU – GGAA meeting

Network on Feed and Nutrition in Relation to GHG emissions (FNN)

Chair: Alex Hristov; **Co-chairs**: Jan Dijkstra and Andre Bannink

There were 26 attendees, with Martin Scholten and Harry Clark (LRG co-Chairs) attending briefly the meeting

New country representatives: Alexandre Brandt will be representing Brazil in FNN; Christopher Antwi will be representing Ghana

The meeting proceeded according to the following agenda:

MEETING AGENDA

Time, h	Topic	Presenter/Contact
16:00-16:15	Welcome and introductions	Hristov
16:15-16:45	Update on FNN and the GLOBAL NETWORK project activities in 2015	Hristov & others
16:45-18:00	Research presentations (15 min each)	
	1. A brief review of USDA-ARS beef cattle GHG research	Cole
	2. Modeling methane emissions and tradeoff between methane and nitrogen excretion	Kebreab
	3. Variation in feed efficiency and methane emission in lactating cows	Bannink
	4. Are new molecular strategies emerging to mitigate ruminal methane emissions?	McAllister
	5. Enteric methane mitigation database – update	Arndt
18:00-18:15	Break	
18:15-18:30	FACCE-JPI ERA calls for proposals	Eugene
18:30-19:20	Moderated group discussions – opening remarks: **1. FNN priorities for 2016-2017** 2. Collaboration – regional, by interests 3. Collaborative submission of grant proposals	Dijkstra
19:20-20:00	Moderators summarize discussion points and proposals 1. Summary of FNN priorities for 2016-2017	TBD
20:00	FNN meeting adjourned	

Discussions took place around the following topics:

1. **Opportunities for joint applications for funding:**

- ERA-NET Sustainable Animal Production (SusAn)
  Deadline for pre-proposal submission 29.03.2016 - 12:00 CET
- FACCE ERA-GAS call for proposals
  Deadline for pre-proposal submission 29.04.2016 - 14:00 CET

--> The group decided to focus on the ERA-GAS proposal because of the later deadline

Other possible funding opportunities

- It was proposed that there may be an opportunity for collaborations between China and US
  - Ministry of Science and Technology in Beijing announced a special grants program for support of research collaborations between Chinese and US researchers.
    ttp://www.most.gov.cn/mostinfo/xinxifenlei/fgzc/gfxwj/gfxwj2015/201512/t20151210_122803.htm

FACCE ERA-GAS call for proposals - Summary

The scientific scope of the present call for proposals addresses collaborative projects in the following four research areas:

1) Improving national GHG inventories and monitoring, reporting and verification of emissions
2) Refining and facilitating the implementation of GHG mitigation technologies
3) State of the art production systems that are profitable and improve food and for biomass production while reducing GHG emissions
4) Assessment of policy and economic measures to support emissions reductions across the farm-to-fork and forest-to consumer chain.

INRA presented their request to use the individual animal database for a separate analysis under the clauses of the GLOBAL NETWORK Consortium Agreement. It was decided that parties willing to provide their data to INRA will be contacted directly.

The indicative total budget amounts to 14,5 M €, subject to the successful negotiation of the ERA-GAS ERA-NET Co-fund with the European Commission. It was pointed out that each participating country provides funding for their researchers.

Additional notes:

- Only 8 countries can be partners
- Need to investigate if partners without funding can participate in the proposal
- Switzerland and Spain cannot participate

It was decided that FNN will submit a proposal to ERA-GAS in collaboration with other networks, particularly the Manure Network. The following members agreed to lead this effort and coordinate the proposal submission:

- Andre Bannink, NL
- Kristy Hammond, NZ

--> They are going to summarize the call for the network in the coming two weeks and will contact members with points to discuss. The Manure Network coordinator, Jonathan Levin (levin@supagro.inra.fr) will also be contacted and asked to circulate the discussion points to Manure Network members.

Suggested ERA-GAS proposal topics

- Inventory approach – it has to be a joint effort with the Manure Network
    - In case the manure network does not organize themselves we will approach individual researcher working in the area of manure mitigation
- Fiber and N interaction (feed composition --> manure composition)
- Nitrogen, methane, and carbon cycling

Individual Animal Database (GLOBAL NETWORK Project)

- UC Davis presented the current state of the analysis. At this point, data are being sorted and cleaned; some preliminary analyses have been done. It was suggested that that UC Davis contacts the data providers to clarify some discrepancies in the data. This project requires close collaboration and continuous discussions within the GLOBAL NETWORK Project.

Future Objectives of the FNN

- Complete the publication of the 2 review papers
- Complete the analysis of the individual animal and treatment mean databases; publish prediction models and mitigation recommendations
- Discussed ways to keep the individual animal database alive instead of destroying it (after expiration of the GLOBAL NETWORK Project)
    - The cleaned-up data could be sent back to the organizations that provided the database. This way the partners who provided data will have the data and could possibly provide them again in future to be used in different projects

New projects that FNN could work on

- Everybody is working on adaptation, maybe we should start working on adaptation, too

- Need to become holistic because reducing emission on an animal level might lead to greater emissions at other levels, such as manure
- This will fit well in the ERA-GAS proposal (with the Manure Network)

Possibilities to address adaptation by FNN

- Heat adaptation:
    - Diets that produce less fermentation energy
- Decrease in water use:
    - Different diets lead to different water intake
- Focus on different species
- Different systems
- The core FNN group has a strong focus on intensive systems, but should start working on extensive systems as well
    - Possible collaboration with the grassland networks
        - The grassland network changed and is part of the new Integrated Research Group (IRG)
- Work on providing mitigation options for other countries such as South America by using work from Columbia and other countries, which are currently doing a lot of research

Gaps in knowledge – this discussion also integrates future directions for FNN

- Put economic values on emissions to make sound mitigation recommendations
- In Australian Inventories diet composition does not seem to matter while in Europe it does --> explore possible reasons for these conflicting results
- Discrepancies in Top-down and Bottom-Up inventories in the U.S.; also other countries are questioning the Top-down estimates
- What are the tradeoff between enteric and manure emissions in different countries?
- What are the environmental costs of enteric mitigation practices?
- Ideas of society: we should not use human edible resource to produce animal products --> how can, and should we address that?
- Water footprint: putting more irrigation to get more digestible feeds is good for methane mitigation, but not water scarcity
- Precision of estimating intake or predicting feed intake (pasture and intensive systems)
- Proposed methods paper - How do we evaluate the N balance in a cow? What are the methods and their pros and what are the cons --> Method paper on different methods/tools of determining N balance for practical and experimental settings
- Practical, concise GHG and ammonia mitigation guidelines – posted on FNN's website

Date for next FNN meeting still needs to be determined – suggestions are welcomed.