

Global DNDC Network Meeting Minutes

September 16, 2013

Beijing, China

Attendees

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Purpose of Network

The Global DNDC Network is an international network of researchers and model developers using the process-based Denitrification Decomposition model (DNDC). The purpose of the network is to:

1. Facilitate the exchange of information and ideas between the widely dispersed users of the DNDC model - different research groups will frequently encounter similar issues, so it makes sense to pool information to avoid duplication of effort
2. Stimulate additional improvements to the model
3. Enhance coordination of research activities and facilitate new collaborative research programmes in greenhouse gases measurements and modelling
4. Promote the synthesis and integration at various scales
5. Keep researchers informed of other international work that may relate to their own interests through formal workshops.

Over 100 members around the world

Membership is through email contact and put on network contact list

Comments Regarding Needs of Members

- **Comprehensive list of publications** – some publications are on the DNDC website and on the Network website. GRAMP will also house literature lists
- **Which version of DNDC to use** – Currently there are large numbers of versions of DNDC adapted by researchers for their country specific and agroecosystems specific conditions. However, there are only three official versions of DNDC [DNDC95, Forest-DNDC and Manure-DNDC]. Other versions are not supported by Dr. Li as these have been modified by other researchers and modellers for their specific situations because:
 - Difficult to determine if version changes are coding or input alterations – acknowledged
 - Not clear what changes and capabilities are of the previous and current DNDC95 – This could be improved
- **Can DNDC be made to encompass spatial variation in fields** – it can by running different simulations for areas of fields or using Monte Carlo simulation
- **Can DNDC be more adapted to evaluate the source, rate, timing, placement of N?** – DNDC does contain some elements of management such as timing, nitrification inhibitors etc. Not clear if the surface and subsurface banding and polymer coated products are covered in model simulations.
- **Lack of multiyear ability in Manure-DNDC** – acknowledged.
- **Can a guideline document or journal article be published to help in quality control for authors?** – It was felt that the peer review process will weed out bad use of the model. Most quality control needs are common sense. Dr. Li covered this in his workshop presentations. Validation

sequence plant growth, soil climate, carbon dynamics, nitrogen dynamics, and gas emissions. Evaluation using Thiel's Inequality, correlation and RMSE.

Outcomes

- Global DNDC Network to continue to focus on the five points listed under the heading Purpose of the Network.
- GRAMP to house recent literature as well.
- Consideration of a discussion group on the Network website.
- Dr. Li to send information through the Global DNDC Network about future changes to models
- Newsletter to inform Network members was proposed.