



Minutes from the INMS Demonstration Regions Management Meeting

27th March 2015, The BASF Studienhaus in Albersweiler, Germany

Attendees:

Barbara Nave (BN)	BASF, Germany
Cargele Masso (CM)	International Institute of Tropical Agriculture (IITA) , Kenya
Clare Howard (CH)	Centre of Ecology and Hydrology, Edinburgh, UK
Claudia Cordovil (CC)	Lisbon University, Portugal
Deli Cehn (DC)	The University of Melbourne, Australia
Hayashi Kentaro (HK)	National Institute for Agro-Environmental Sciences, Japan
Jean Ometto (JO)	The Earth System Science Center, Brazilian National Institute for Space Research (CCST/INPE), Brazil
Lidiya Moklyachuck (LM)	Institute of Agro-ecology and Environmental Management of NAAS, Ukraine
Mark Sutton (MS)	Centre of Ecology and Hydrology, Edinburgh, UK
N Raghuram (NR)	GGs Indraprastha University, India
Natalia Buchkina (NB)	Agrophysical Research Institute, Russian Academy of Agricultural Sciences, St Petersburg, Russia
Oene Oenema (OO)	Wageningen UR, Netherlands
Sergei Medinets (SM)	Regional Centre for Integrated Environmental Monitoring, Odessa Mechnikov National University, Ukraine
Sergey Lukin (SL)	All-Russian scientific, production engineering Institute of organic fertilizers and peat RAAS, Russia.
Tom Misselbrooke (TM)	Rothamsted Institute, UK
Wolfram Zerulla (WZ)	BASF, Germany
Wilfried Winiwarter (WW)	International Institute for Applied Systems Analysis, Austria
Will Brownlie (WB)	Centre of Ecology and Hydrology, Edinburgh, UK
Xiaoyan Yan (XY)	Institute of Soil Science, Chinese Academy of Sciences, China
Xuejun Liu (XL)	China Agricultural University, Beijing City, China



1. Welcome and Outline of INMS

Welcome and introduction from MS. MS Defined INMS as a scientific process which can inform policy development. IPCC can be considered to be one example of this kind of activity, (providing scientific evidence for policy makers), however there is a disconnect between IPCC and its overarching policy body (UNFCCC), which is not ideal. In the example of the UNECE and its Convention on Long Range Transboundary Pollution, scientists and policymakers are able to engage directly, which has shown to be advantageous on many occasions.

An open question in INMS is then which policy process INMS should report to, and how should INMS best support policy.

MS highlighted that the Lisbon INMS meeting is an opportunity to engage stakeholders from all countries to think about these emerging questions, and suggested that the answers may well differ between regions. MS also provided a distinction between an eventual INMS process and the “Towards INMS” project.

2. Background document given to delegates outlining Towards INMS

MS provided an 8 page document on INMS background to all attendees (available at www.inms.international/documents/briefing-note-on-2018towards-inms2019-and-its-regional-demonstration-activities/). OO (with others in agreement) asked MS to clarify further what INMS wants to achieve. MS highlighted the following key points:

- Building capability in the science community to deliver scientific evidence in support of global and regional nitrogen policy development.
- Coordination of science evidence streams on nitrogen including better communication between the science and policy communities and the public.
- An emphasis on linking modelling tools to support integrated assessment of nitrogen threats and benefits, at global and regional scales.
- Characterization of the sources and threats, basis to assess indicators, analysis of measures for better N management, incorporation of flows, measures and benefits of improved N management in integrated models, providing the basis to support scenario analysis and cost-benefit analysis.
- Establishment of regional demonstration actions drawing together more specific evidence for each region including identification and sharing of success stories and analysis of the barriers to change.
- Demonstration of an overall INMS philosophy that joined up management across the N cycle will demonstrate significant co-benefits to address N pollution threats (water, air, greenhouse, ecosystems, soils), while fostering innovation in the green economy.

MS emphasized that while the PIF document (Project Initiation Form) describes the overall project design, the tuning of this design is an open process that must work in both directions, where a) international processes, governments and other stakeholders identify their priority needs for nitrogen science support to policy and b) we make sure that these emerging requests build to an achievable whole within the resources available.

MS asked everyone to consider what kind of policy development and evidence streams are currently available. What are the benefits and threats of nitrogen in each region? MS stated that cost-benefit analysis is critical to show better N management and to identify outcomes that are a net benefit to society.

Furthermore indicators are very important and need to be agreed upon. Work on relevant N indicators has begun in many groups, including the OECD, GPNM, and the EU Nitrogen Expert Panel. The discussion identified the need to identify the delivery partners in each region that can provide access to key information sources. It was agreed that scenario's are an effective method to communicate to policy makers; although caution must be taken with what we can promise in each scenario.

3. Discussion on Effective Communication Methods

MS emphasized the importance of finding a balance between a) making the message simple enough to capture attention, whilst b) ensuring the complexities of the systems involved are not lost. Furthermore messages should be tailored to the audience. For many external audiences, documents should be short and simple to be effective.

It was suggested that one single target is needed to translate a message - NUE is a possible option, for example with a single 'target increase in NUE' that all politicians can agree on. (Publicity in 2013 for 'Our Nutrient World' emphasized such an approach).

DC pointed out the need for a scientifically objective indicator to support public decision making (i.e. some sort of NUE star rating to be displayed on products/ processes so consumers can make informed decisions).

NR raised the point that climate change is not as politically sensitive as food security and health risks, which have immediate societal impacts; the immediacy of this message can carry weight when communicating with agricultural ministers/politicians.

LM provided a list of 9 criteria used in an assessment from her region in a cost-benefit analysis of pollution reduction.

4. With which audiences should we be engaging?

MS noted that we had engaged with officials of many governments through several intergovernmental processes and international partnerships. However, he suggested we should also be pitching our message to reach high level civil servants and ministers; 2016 offers some opportunities to do that through high level meetings.

JO suggests we may want to make contact with the IPBES process (Intergovernmental Platform on Biodiversity and Ecosystem Services) which is starting to develop a global assessment and regional assessment (8 regions). MS reported a previous meeting on this topic on London (July 2012), and reported contact with David Cooper and David Coates of CBD who would speak more to this issue in the Lisbon workshop.

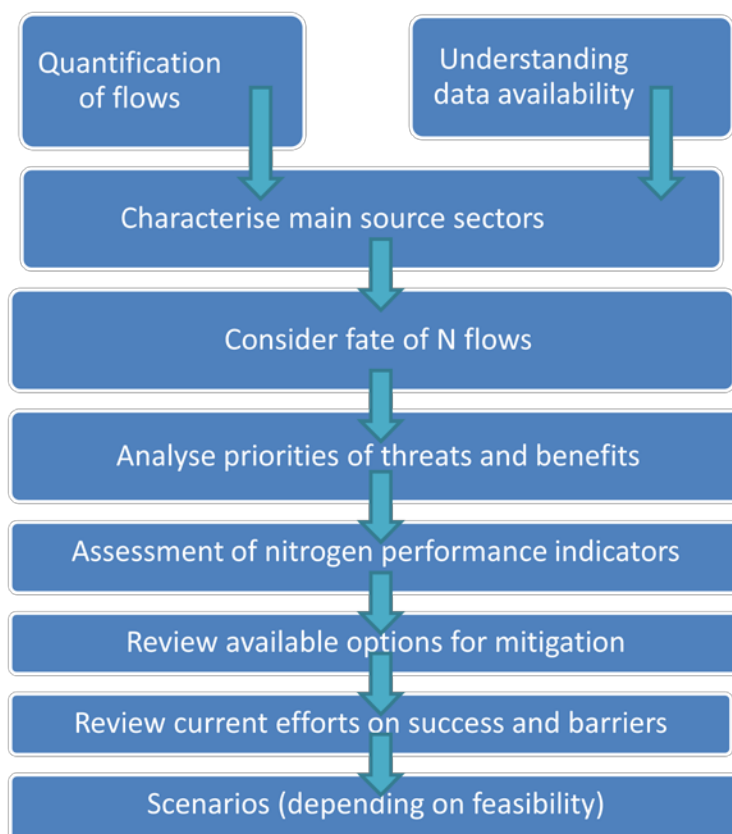
MS suggested we must engage with several international processes. These include the Convention on Biological Diversity (CBD), the Framework Convention on Climate Change (UNFCCC), the Global Programme of Action for the Protection of the Marine Environment from Land-based Activities (GPA), the UNECE transboundary Air and Water conventions, and other regional agreements. The discussions in Lisbon would make a start in engaging with these processes.

5. Developing the concept of Regional Demonstrations within INMS

Following the background, the discussion moved to the main task of better understanding the role and tasks for Regional Demonstration in Towards INMS. MS highlighted that the word “demonstration” can be confusing, especially when it is placed in the context of a “targeted research project”. In the context of Towards INMS, the regional studies should be seen as *demonstrating on a regional scale how combining evidence streams for nitrogen management across the nitrogen cycle can provide a stronger gravity to support actions of change.*

In the 8 page background document provided, the following steps were suggested for each demonstration area. These steps are summarized in the figure below, which was presented to the meeting to encourage discussion.





WZ suggested the word ‘priority’ should be used carefully, since setting priorities is a task for policy makers. The ensuing discussion highlighted the need for iteration between science and policy communities.

NR raised the point that ranking threats by magnitude may be different to ranking order of which threats can be most easily reduced.

6. Emerging challenges of the different proposed INMS regions.

The discussion built on the presentations from several of the regions in the immediately preceding BASF Fireside Chat workshop.

a. South Asia

The currently developing INMS regional demonstration focuses on India, Bangladesh, Sri Lanka and Nepal. NR noted that additional knowledge exchange with Pakistan may not be easy at a government level, but that the scientific dialogue could be productive. Additional funding sources beyond GEF would likely be needed if Myanmar were to be in some way

involved. DC noted that there may be other funding opportunities that he is aware of which could support this.

In terms of N input information, NR noted that the available data sources were variable. For example, total fertiliser sales data are possible to obtain, but crop wise usage data is not easily available.

NR and colleagues have completed a literature review of nutrient pollution in South Asia (**Action:** WB to request NR for this report).

The South Asia region is extremely large with 1.2 billion people, providing multiple problems with data collection. OO suggested pick two or three areas/case studies. NR understood the resolution may be challenging but was confident a full region assessment can be achieved. MS suggested to all that we must be careful to ensure that resources are not entirely used up assessing the first parts of the flow chart shown above. He also suggested that whilst an entire regional assessment may be possible, data collection is a long term effort, and analysis is needed on the data to hand. NR suggested in the case of this region the process of data collection will also build important and needed communication pathways.

b. East Asia

XL showed how N losses are increasing in agricultural production, while NUE decreased by 50% between 1950 and 2000. Eutrophication is the major issue of nutrient loss in the region

Areas to be included in the regional demonstration area are the East China Sea, China, Japan and South Korea. Further discussion is currently needed on the extent to which the Philippines are involved (see below).

Currently there are scattered assessments across this region, with lots of gaps, and there is a need to increase integration of models and datasets. MS highlighted that harmonisation of data units between fields is also an issue. There are also issues with availability of water quality data, with lots of data inaccessible in government offices.

MS brought up the point that the Philippines has not been mentioned yet – PEMSEA (Partnerships in Environmental Management for the Seas of East Asia) could be an important part of this demonstration activity and UNEP encourages their input. **Action:** Albert Bleeker has been working with the East Asian partners on behalf of the Executing Agency and will try to contact PEMSEA before the Lisbon meeting.

c. East Africa

CM stated that the main challenge in Africa is infrastructure. Lake Victoria catchment should be the focus area of this region and is the key to influence national government. To sell the

idea of better nitrogen management within the surrounding countries the message must focus on food security, water borne diseases, human health and income.

CM also highlighted that the community needs to be enabled to do scientific research. Job creation and circular economy models are a better way of promoting change in a region where policy is 'optional' and often bypassed by industry. Following discussions during the BASF Fireside Chat workshop, CM will meet up with Omari Mwinjaka of the Lake Victoria Commission in Africa to discuss further, before the Lisbon meeting. **Action:** CM.

Currently it is an open question what are the relative contributions of municipal pollution and waste water versus agriculture to nitrogen pollution of Lake Victoria, in relation to other threats (e.g. erosion). While the regional demonstration requires data gathering and quantification based on information from several countries (Kenya, Uganda, Tanzania, Burundi, Rwanda), there is also interest to pilot actions that can be implemented at a village scale. Potentially, certain villages may be selected as 'champions' to show the benefits of better N management in support of the regional demonstration.

d. Latin America

JO proposed a regional demonstration area that covered the La Plata river catchment. This includes parts of Brazil, Paraguay, Uruguay, Argentina, Bolivia. This proposal is based on the fact that INMS would build on an existing network in this area. Potential users of INMS would be the Brazilian Environmental Ministry, The Climate Change Department within the ministry and also The Ministry of Agriculture, and similar bodies in the other countries. The needs between the different areas with this region are similar and are driven by sugar cane and cattle production and large fires within the area. The La Plata River Basin Commission, becomes a key point for international policy engagement for this demonstration region.

e. East Europe

LM provided some background on the catchments of the Dneiper, Dneister and Western Bug catchments of the Ukraine and surrounding countries. There had previously been an assessment on the Dneiper catchment. **Action:** CH to request the file from LM. It was also discussed that potentially the River Siret (part of the Danube may also be included). Relevant policy arena for this demonstration activity are the Black Sea Commission, the Danube Commission and the UNECE Transboundary Air and Water Conventions. This demonstration particularly builds on the existing establishment of the UNECE Expert Panel on Nitrogen in EECCA countries (EPN-EECCA), where EECCA is Eastern Europe, Caucasus and Central Asia. Parties of the UNECE air convention had given a clear mandate to TFRN to prioritize work in

this region. **Action:** SM has some contacts with the Black Sea Commission and will try to speak with them before the Lisbon meeting.

f. West Europe

It was noted that GEF funding rules would not allow specific funding of a demonstration in western Europe, and for this reason a specific discussion was not held on this area during the meeting. However, prior discussions during the INMS preparatory workshop in Madrid (March 2014), had indicated interest to conduct a demonstration supported by external funds relating to catchments that run towards the Atlantic Coast of S and W Europe. The potential opportunity to include such a study in Towards INMS was welcomed by MS on behalf of the Executing Agency (CEH) and further discussion during Lisbon would address the mechanisms by which this could be included in Towards INMS. **Action:** CH to request update from the West Europe partnership prior to Lisbon.

General Action Points

1. Each demonstration area to prepare a short (i.e. 2 page document) on their demonstration activity, as background information for the Lisbon meeting. CH and WB will share a template for this in advance of the Lisbon meeting. **(Action:** regional partners)
2. Before the final proposal is submitted, each demonstration area will need to submit a 'baseline' (similar to a 'state of the art' section in other proposals), which provides details on the current level of information, data and assessments available for their region, at the start of the project. This will then form the basis of a framework against which to measure progress during the project in the demonstration activities. Guidance and templates will be provided by CH to achieve this and further information will be given at the Lisbon meeting (last week of April). Demonstration partners should prepare a first draft of their baseline information around 30 May. **(Action:** regional partners)
3. Further information on the demonstration activities will also appear on the INMS website and in future newsletters on the demonstration activities, to inform other stakeholders. **(Action:** CH and WB).