

# Getting involved in the European Centre of the International Nitrogen Initiative



## Introducing INI

### *What is INI?*

The International Nitrogen Initiative (INI) is a joint global project of the International Geosphere-Biosphere Programme (IGBP) and the Scientific Committee on Problems of the Environment (SCOPE).

The overall goal of the INI is to optimize nitrogen's beneficial role in sustainable food production and minimize nitrogen's negative effects on human health and the environment resulting from food and energy production.

INI is a 15 year programme (2003-2018), which is planned in three phases working toward this overall goal:

- Phase I: Assessment of knowledge on N flows and problems.
- Phase II: Development of region-specific solutions.
- Phase III: Implementation of scientific, engineering and policy tools to solve problems.

### *Who is INI?*

INI is an activity developed by the international scientific community that seeks to engage with relevant stakeholders at local to global scales. Scientists and stakeholders contribute to INI through a range of conferences, workshops, projects and networking activities.

INI is organized on a regional basis through five Regional Centres, under the overall coordination of the INI Steering Committee (SC), together with the support of the Science Advisory Committee (SAC). Regional Centres are already established for Africa, East Asia, Europe, Latin America, North America and a new centre is under development in South Asia. Members of the SC are shown in Box 1. A full list of the SAC members is provided on the INI website <http://www.initrogen.org>.

### **Box 1: Steering Committee of the International Nitrogen Initiative (Feb 2009)**

**Cheryl Palm** Columbia University, USA (Chair)

**Luis Martinelli** University of Sao Paulo, Brazil (IGBP Representative)

**John Freney** CSIRO Plant Industry, Australia (SCOPE Representative)

**James N. Galloway** University of Virginia, USA (Past Chair)

**Mateete Bekunda** Makerere University, Uganda (Coordinator of the African Regional Center)

**Cai Zucong** Institute of Soil Science, P. R. China (Director of the East Asian Regional Center)

**Mark Sutton** NERC Centre for Ecology and Hydrology, Penicuik, UK (Director of the European Regional Centre)

**Reynaldo Victoria** Centro de Energia Nuclear na Agricultura (CENA), Brazil (Director of the Latin American Regional Center)

**Alan Townsend** INSTAAR and Dept. of Ecology and Evolutionary Biology, University of Colorado, USA (Director of the North American Regional Center)

**Manbir Sachdev** Indian Agriculture Research Institute, India (Director of the South Asian Regional Center)

### ***How does INI work?***

The Steering Committee coordinates the INI activities at the global level. They direct the organisation of the tri-annual International Nitrogen Conferences, as well as targeted topic workshops. These develop the scientific basis for assessing the role and fate of reactive nitrogen, as well as engage with industry, policy makers and community stakeholders. The INI SC also maintains an overview of global scale nitrogen related activities.

INI itself receives basic core financial support from SCOPE and IGBP. However, to implement its objectives, it is essential to work with a wide range of funding partners, including the United Nations, governments and industry. The wide range of financing organizations involved highlights the fact that INI is an independent scientific activity ready to consider all evidence and encourage scientific debate.

# The European Centre of INI

## *How the European Centre of INI works*

The European Centre of INI draws on a wide range of contributions from different funding partners. For 2003-2006 the Director of the Centre was Jan Willem Erisman of the Netherlands. The current Director of the European Centre (2007-2010) is Mark Sutton of the United Kingdom.

The main task of the Director of the INI European Centre is to develop an overview of relevant European activities and to foster better coordination of these in support of the INI goals. The Director maintains the INI European Centre Office, which coordinates several collaboration activities and promotes the dissemination of relevant findings.

The Project Office of the INI European Centre is based at the Edinburgh Research Station of the NERC Centre for Ecology and Hydrology (CEH). The Office is managed by Stefan Reis, with input from Clare Britton (University of Edinburgh) and Albert Bleeker (Energy research Centre of the Netherlands), together with the technical support of Bill Bealey and David Leaver of CEH. Information can be found at <http://www.ini-europe.org/>

The European Centre of INI should not be thought of as a place or formal institution. Rather, Europe represents one of the centres of INI concern, being a region with clear challenges to understand and manage the nitrogen cycle. The European Centre of INI thus aims to encourage a better Europe-wide analysis and assessment.

## *Core elements of the INI European Centre*

The European Centre of INI is currently supported by the following core collaborative activities:

**NitroEurope Integrated Project** The NitroEurope IP – or NEU for short – is a major collaborative project financed by the European Commission jointly with national funding partners. The overall effort includes over 60 partner institutions working together for 5 years to assess the influence of reactive nitrogen on the European greenhouse gas balance. The work includes a tiered network of long term flux observations, ecosystem manipulation experiments, process scale modelling, landscape analysis, European upscaling and independent verification activities. While NEU is a directed project of funded partners, all are welcome to contribute to the open science conferences ([www.nitroeuropa.eu](http://www.nitroeuropa.eu)). NEU is coordinated by Mark Sutton and managed by Stefan Reis (contact: [neu@ceh.ac.uk](mailto:neu@ceh.ac.uk)).

**Nitrogen in Europe (NinE)** is a framework networking programme of the European Science Foundation (ESF), which is funded by national scientific research councils. The aim of NinE is to develop the wider scientific understanding of nitrogen in the environment, linking previously-separated scientific communities and interests. It thus aims to address the nine major environmental issues affected by management of

reactive nitrogen in the environment. NinE manages a networking budget which aims to support integration of European nitrogen science, particularly through the development of workshops, travel exchanges, other missions and on-line resources. NinE is central to the delivery of INI in Europe, with outputs including the European Nitrogen Assessment (ENA) and the ‘Who is Who in Nitrogen’ (see below). NinE (<http://www.nine-esf.org>) is chaired by Jan Willem Erisman, and the Programme Coordinator is Albert Bleeker ([info@nine-esf.org](mailto:info@nine-esf.org)).

**COST 729: Assessing and managing nitrogen fluxes in the atmosphere-biosphere system in Europe.** The main objective of the COST Action 729 is to advance the understanding of atmosphere-biosphere nitrogen fluxes in Europe in relation to the main economic sectors, interactions with the natural environment and current policies. Specifically, it aims to establish a sound scientific basis for strategies to reduce the environmental impacts of nitrogen. COST 729 links different interests at the science-policy interface, particularly fostering the development of better assessment methods, including integrated assessment modelling for nitrogen. The Action contributes to the INI European Centre by promoting European workshops and funding short term missions. COST 729 is chaired by Jan Willem Erisman, with Albert Bleeker providing the Secretariat. (<http://cost729.ceh.ac.uk>).



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**ENA**  
**European**  
**Nitrogen**  
**Assessment**



UNECE-CLRTAP Task Force  
on Reactive Nitrogen



*The European Centre of the INI integrates a network of activities that supports the European Nitrogen Assessment and underpins the work of the UNECE-CLRTAP Task Force on Reactive Nitrogen.*

## ***Key individuals in the European Centre of the INI***

The work of the European Centre of the INI is organized by the Coordination Team, who are key individuals managing the component activities. The Coordination Team is supported by the Advisory Group of the INI European Centre, which consists of the managers and advisors of each of the core activities.

### **INI European Centre – Coordination Team**

Gilles Billen, FR	NinE-MC/ACT
Albert Bleeker, NL	NinE programme coordinator/ACT, COST 729-MC
Clare Britton, UK	NinE-ACT, TFRN Office
Jan Willem Erisman, NL	Chair-NinE/ACT; Chair-COST729
Peringe Grennfelt, SE	Chair NEU-EAG, Vice Chair-COST 729, NinE-ACT
Hans van Grinsven, NL	NinE-ACT
Bruna Grizzetti, JRC, IT	NinE-ACT
Oene Oenema, NL	Co-chair TFRN, NinE-ENA
Stefan Reis, UK	NEU Manager, INI-European Centre Office
Mark Sutton, UK	NEU Coordinator, Vice Chair-NinE/ACT, Co-chair TFRN

**Key:** NinE = Nitrogen in Europe programme (European Science Foundation); ENA = Advisory Group member of the European Nitrogen Assessment; ACT = Assessment Coordination Team. COST 729 = ‘Assessing and managing nitrogen fluxes in the atmosphere-biosphere system in Europe’ (European CO-operation in the field of Scientific and Technical research); MC = Management Committee; NEU = NitroEurope IP (European Commission); SSC = Scientific Steering Committee; EAG = External Advisory Group; TFRN = UNECE-CLRTAP Task Force on Reactive Nitrogen.

## **Outputs of the European Centre of INI**

### ***Coordination and Dissemination***

The European Centre of INI promotes better coordination of European research on nitrogen in relation to both optimizing its benefits and managing the threats. This is encouraged by workshops supported by NinE, COST729 and NitroEurope. At the same time, the Centre encourages European INI involvement in a wide range of other regional and global review activities (e.g. Fertilizer Best Management Practice, Steamlining European Biodiversity Indicators – SEBI2010, UN Conventions etc).

The European Centre of the INI in collaboration with the NinE programme has established a ‘who is who’ in nitrogen research ([www.nine.esf.org](http://www.nine.esf.org)), as a contribution to improving communication between nitrogen related scientific disciplines. The Centre also encourages public understanding of the global nitrogen challenge. For example, in collaboration between NinE and BBC ‘Green Room’, it has established the on-line ‘NitroNet Poll’ ([http://www.nine-esf.org/?q=nitronet\\_poll](http://www.nine-esf.org/?q=nitronet_poll)).

### INI European Centre – Advisory Group (current March 2009)

Marcus Amann, IIASA, AT	NinE-MC
Samantha Baker, UK	NEU-EAG
Claus Beier, DK	NEU-SSC
Klaus Butterbach Bahl, DE	NEU, COST729-MC, NinE-ENA
Pierre Cellier, FR	NEU-SSC
Oswald van Cleemput, BE	NinE-MC
Bill Collins, UK	COST729-MC
Ulrich Daemmgen, DE	NEU-EAG, COST729-MC
Alec Estlander, FI	COST279-MC
Despo Fatta, CY	NinE-MC
Hilde Fagerli, NO	COST279-MC
Janina Fudala, PO	COST729-MC
Laszlo Horvath, HU	COST729-MC
Nick Hutchings, DK	COST279-MC
Liana Kalognomou, GR	NinE-ENA
Tor Bjorn Larsson, EEA, DK	NEU-EAG
Tuomas Laurila, FI	COST729-MC
Michalis Lazaridis, GR	COST729-MC
Anke Lukewille, EEA, DK	NEU-EAG, NinE-ENA
Luc Maene, IFA, FR	NEU-EAG, NinE-ENA
Maria Amélia Martins-Louçao, PT	COST279-MC, NinE-ENA
Arvin Mosier, USA	NEU-EAG
Ulo Niinemets, ET	NinE-MC
Jørgen E. Olesen, DK	COST729-MC
Benjamin Sanchez Gimeno, ES	NinE-MC
Till Spranger, DE	NEU-EAG, COST729-MC
Janet Sprent, UK	NEU-EAG
Kjetil Torseth, NO	COST729-MC
Maren Voss, DE	NinE-MC
Wim de Vries, NL	NEU-SSC, NinE-ENA
Sofie Zechmeister-Baltensstern, AT	NEU-SSC

**Key:** NinE = Nitrogen in Europe programme (European Science Foundation); ENA = Advisory Group member of the European Nitrogen Assessment; ACT = Assessment Coordination Team. COST 729 = ‘Assessing and managing nitrogen fluxes in the atmosphere-biosphere system in Europe’ (European CO-operation in the field of Scientific and Technical research); MC = Management Committee; NEU = NitroEurope IP (European Commission); SSC = Scientific Steering Committee; EAG = External Advisory Group; TFRN = UNECE-CLRTAP Task Force on Reactive Nitrogen.

## ***European Nitrogen Assessment***

One of the central outputs of the European Centre of the INI will be the European Nitrogen Assessment (ENA). This is the first major scientific review of nitrogen at a European scale. The aim is to review current scientific understanding of nitrogen sources, impacts and interactions across Europe, taking account of current policies and the economic costs and benefits, as a basis to inform the development of future policies at local to global scales. The ENA process is supported financially through the ESF NinE programme, and draws on the findings of NitroEurope, COST729 and other research activities (see <http://www.nine-esf.org/?q=node/151>).

The ENA process started during 2007, and is based around a series of five major workshops through 2008-2009. The ENA will be subject to both targeted and open peer review through 2010 for publication early in 2011. The ENA represents a scientific contribution to the work of the UNECE-CLRTAP Task Force on Reactive Nitrogen (see below), which will provide a platform to disseminate the results to other UN frameworks.

## ***UNECE-CLRTAP Task Force on Reactive Nitrogen***

The European Centre of INI has been closely involved with the establishment of the new Task Force on Reactive Nitrogen (TFRN), under the 1979 Geneva Convention on Long Range Transboundary Air Pollution (CLRTAP) of the United Nations Economic Commission for Europe (UNECE). The TFRN was established in December 2007 by decision of the Executive Body of the convention, reporting to the its Working Group on Strategies and Review (WGSR) (<http://www.unece.org/env/lrtap/TaskForce/tfrn/>).

The establishment of the Task Force was a recognition of the need to develop a more holistic approach to management of nitrogen in the environment, bearing in mind the multiple interactions between reactive nitrogen influences on transboundary air pollution (ammonia, nitrogen oxides, particulate matter, ozone) and those on other issues such as global radiative forcing (nitrous oxide, carbon dioxide, methane, particulate matter, ozone etc) and water quality (nitrates in freshwater and marine systems). The first meeting of the Task Force was held in Wageningen in May 2008 (<http://www.clrtap-tfrn.org/?q=node/3>).

The Convention on LRTAP now has 51 Parties, including most European countries, plus Canada and the United States ([www.unece.org/env/lrtap/status/lrtap\\_st.htm](http://www.unece.org/env/lrtap/status/lrtap_st.htm)). The TFRN therefore provides an important forum for comparison of the issues faced between Europe and North America.

## Getting involved in the European Centre of INI

There are several ways that you can get involved in the INI and its European Centre:

**International Nitrogen Conferences:** Building on the success of the first four conferences, the 5<sup>th</sup> International Nitrogen Conference will be held in New Dehli in 2010. (see [www.initrogen.org](http://www.initrogen.org)).

**Nitrogen in Europe ‘Who is Who’:** Sign up to the NinE who is who and register for the newsletter. Express your interest in the European nitrogen activities. (<http://www.nine-esf.org>)

**NitroNet Poll:** Give your vote, and register your opinion on how to set priorities in managing nitrogen in the environment. ([http://www.nine-esf.org/?q=nitronet\\_poll](http://www.nine-esf.org/?q=nitronet_poll))

**European Nitrogen Assessment** is being prepared through 2008-2010. Due to space restrictions at the workshops, attendance is by invitation. However, we welcome expressions of interest from relevant scientists and stakeholders to contribute to the process ([info@nine-esf.org](mailto:info@nine-esf.org)). The ENA itself will be subject to both targeted and open peer review (<http://www.nine-esf.org/?q=node/151>).

**NitroEurope Open Science Conferences:** Guest contributions in the form of posters and presentations are welcome at the annual NitroEurope conferences. Further information on future Open Science Conferences and other workshops can be found on the NitroEurope web site ([www.nitroeuropa.eu](http://www.nitroeuropa.eu)).

**Adoption of new collaborative projects:** New collaborative projects may apply to become associated activities of the European Regional Centre of INI. The key criteria are that the projects should a) contribute to the objectives of the European Centre of INI, b) involve international collaboration of at least three countries), c) be of sound scientific standing (demonstrated through peer review), d) not be subject to interests that conflict with the scientific independence of the work. Projects meeting these criteria are encouraged to complete a short application form (available from the Office of the INI European Centre and its website, [www.ini-europe.org](http://www.ini-europe.org)) for review by the INI European Centre Coordination Team.

### Contact Points

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Jan Willem Erisman, Chair NinE / COST 729 ([info@nine-esf.org](mailto:info@nine-esf.org))

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