



International Nitrogen Initiative

Nitrogen School
São Paulo, Brazil
August, 2016

History of the International Nitrogen Initiative

- **March 1998** - The concept for the INI had its initial beginnings at the [First International Nitrogen Conference](#), held in The Netherlands.
- **October 2001** - The need for such an organization was further articulated at the [Second International Nitrogen Conference](#), in Maryland, USA three years latter. The unanimous view of the 400 participants was that some type of international program was required to optimize the benefits of nitrogen, and minimize associated problems.
- **August 2002** - Over the following months, an outline of an international effort was developed. It was introduced in Johannesburg at the workshop on Nitrogen Management for Food Security and Ecosystem Security Workshop (associated with the World Summit on Sustainable Development).

History of the International Nitrogen Initiative

- **December 2002** - Scientific Committee on Problems of the Environment (SCOPE) agreed to be the founding sponsor of INI.
- **January 2003** - International Geosphere-Biosphere Program (IGBP) agreed to sponsor INI as a Fast-Track Project.
- **February 2003** - The formation of the INI was formally announced at the Symposium, Meeting the Nitrogen Management Challenge: Breaking the Links in the Nitrogen Cascade (associated with the American Association for the Advancement of Science Annual Meeting).

Mission

- To review the current understanding of the nitrogen cycle
- To interact with decision makers and practitioners in order to
 - identify management options that optimize the use of nitrogen fertilizers
 - while minimizing the negative effects of nitrogen on human health and the environment as a result of food and energy production.
- INI is a global network of scientists, created and sponsored by SCOPE and the International Geosphere-Biosphere Programme (IGBP), with regional centres in Europe, North America, Latin America, Africa, South and East Asia.

Regional Centres



INI regional centres:

Africa: africa@initrogen.org

Europe: europe@initrogen.org

East Asia: e-asia@initrogen.org

South Asia: s-asia@initrogen.org

North America:

n-america@initrogen.org

Latin America:

l-america@initrogen.org

LEIF A. MARTINELLI AND ROBERT W. HOWARTH (Eds.)

NITROGEN CYCLING IN THE AMERICAS: NATURAL AND ANTHROPOGENIC INFLUENCES AND CONTROLS



Center for Global Change Science
and Earth System Science
International Nitrogen Initiative

Springer

The European Nitrogen Assessment

Sources, Effects
and Policy Perspectives

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CAMBRIDGE

Our Nutrient World

The challenge to produce more food
and energy with less pollution



Global Overview on Nutrient Management

Prepared by the Global Partnership on Nutrient Management
in collaboration with the International Nitrogen Initiative

7th International Nitrogen Conference (December 4-8, 2016)

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7th International Nitrogen Initiative Conference (INI 2016)

4-8 DECEMBER 2016

MELBOURNE CRICKET GROUND | VICTORIA | AUSTRALIA

'SOLUTIONS TO IMPROVE NITROGEN USE EFFICIENCY FOR THE WORLD'



26 August 2016

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closes 26 August 2016.
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Towards INMS

the International Nitrogen Management System

Mark Sutton



Convention on
Biological Diversity



OECD-TFRN Workshop
Melville Castle,
July 2016



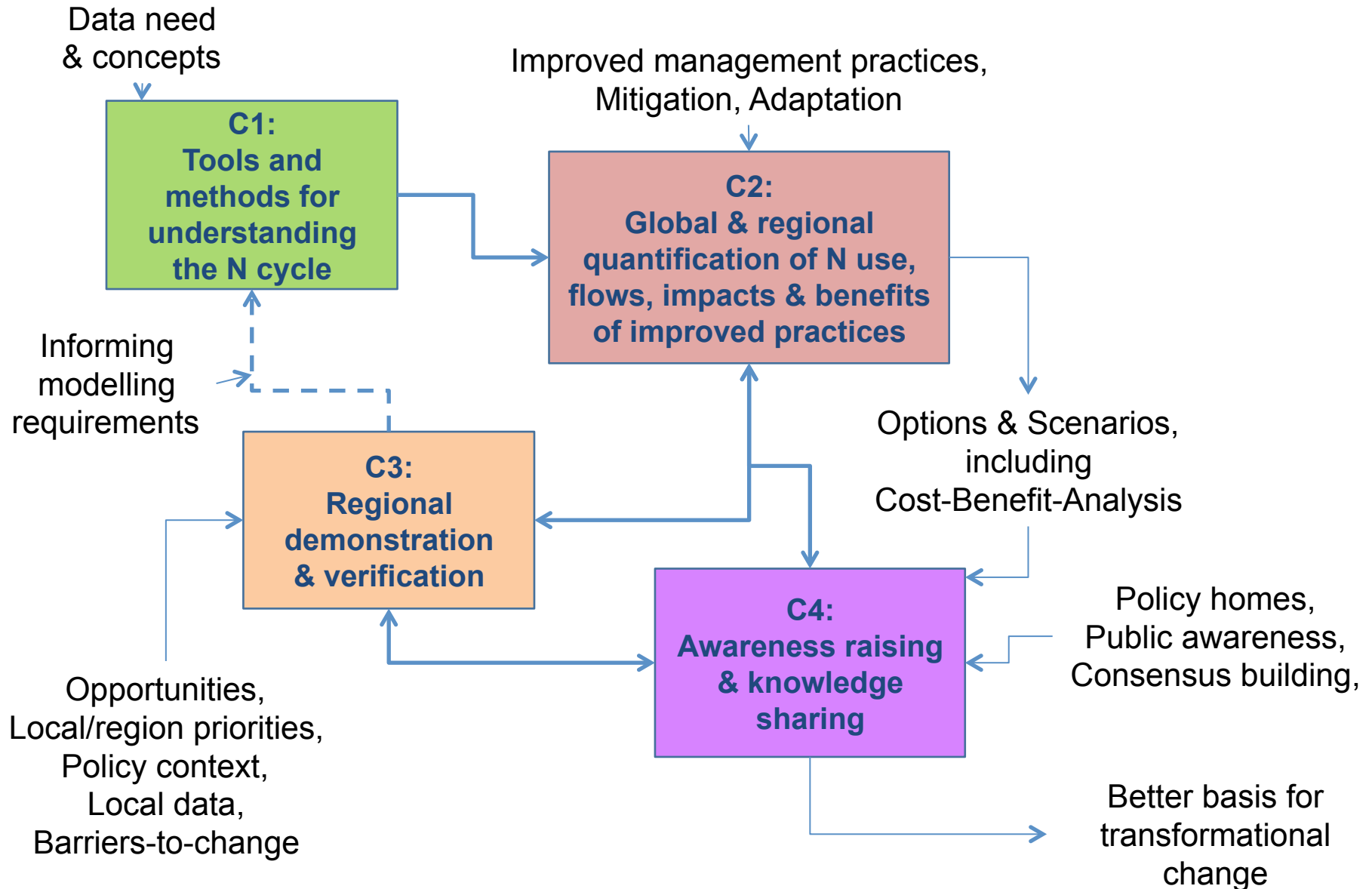
INMS in brief

- Bringing scientific evidence together to inform policies and the public on the **multiple benefits and threats of reactive nitrogen**
- Being developed as an international process with funding from the Global Environment Facility (GEF)
- Builds on and links together existing nitrogen networking activities

What will INMS deliver?

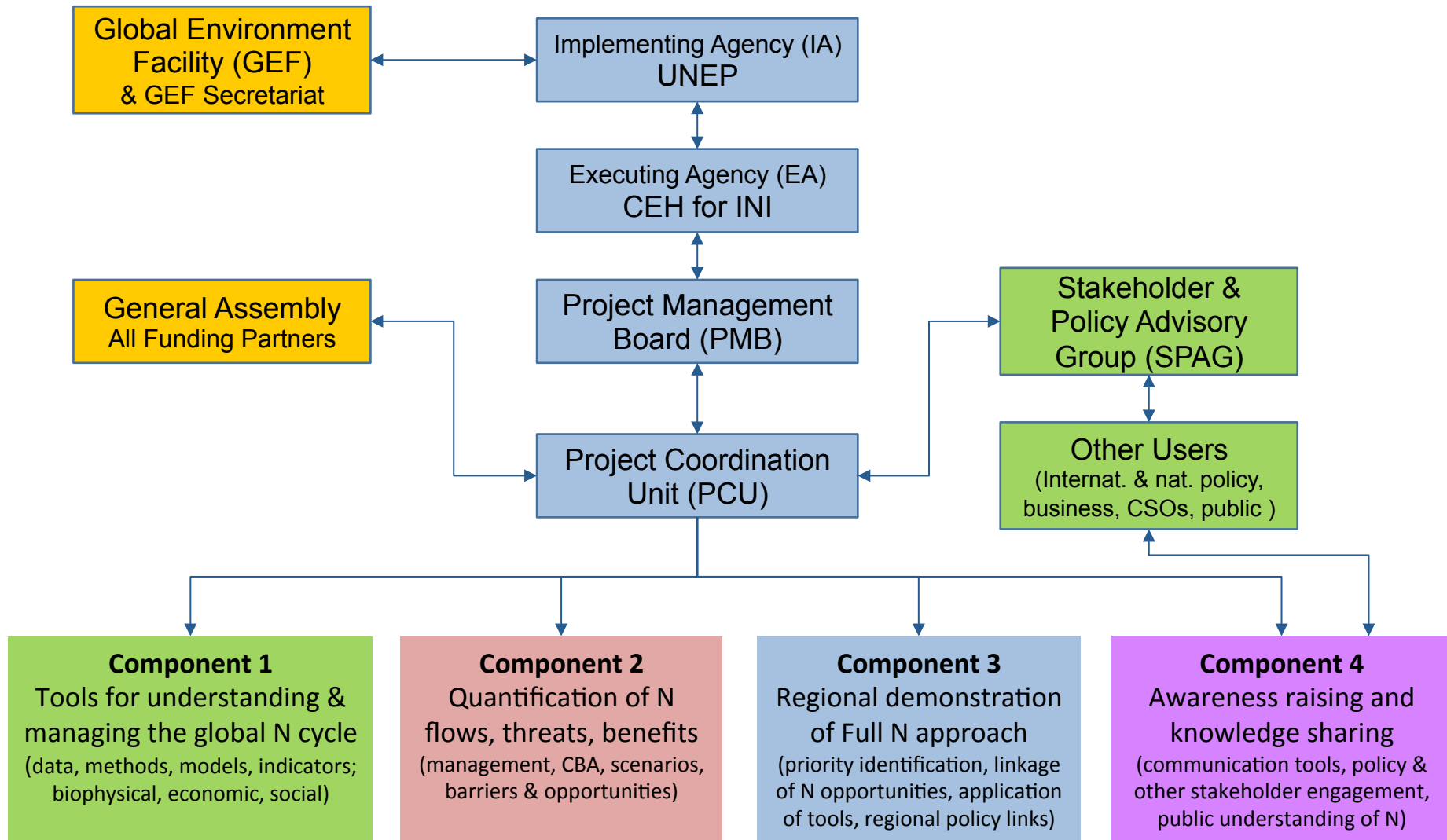
- **A global assessment** of the threats and benefits of human alteration of the nitrogen cycle and the opportunities for improvement.
- **A forward look** of what may happen if the problem is ignored.
- **Guidance on joining up** mitigation and adaptation options and strategies, linked to circular and green economy thinking
- **A platform for better cooperation** across science and policy domains helping to overcome the barriers.

Towards the International Nitrogen Management System (INMS)



Funders

Stakeholders



INMS Regions & Partners

- **Country clusters:** Major N sources, N flows, opportunities, NUE, barriers, sharing successes in country clusters

South Asia: India, Sri Lanka, Bangladesh, Nepal, Maldives

- *N. Raghuram, Tapan Adhya & INI South Asia*

East Asia: China, Japan (South Korea, Phillipines)

- *Xiaoyuang Yan & Kentaro Hyashi & INI East Asia*

Lake Victoria Basin: Kenya, Uganda, Tanzania, Rwanda, Burundi

- *Cargele Masso & INI Africa*

Latin America (La Plata): Brazil, Paraguay, Uruguay, Argentina, Bolivia

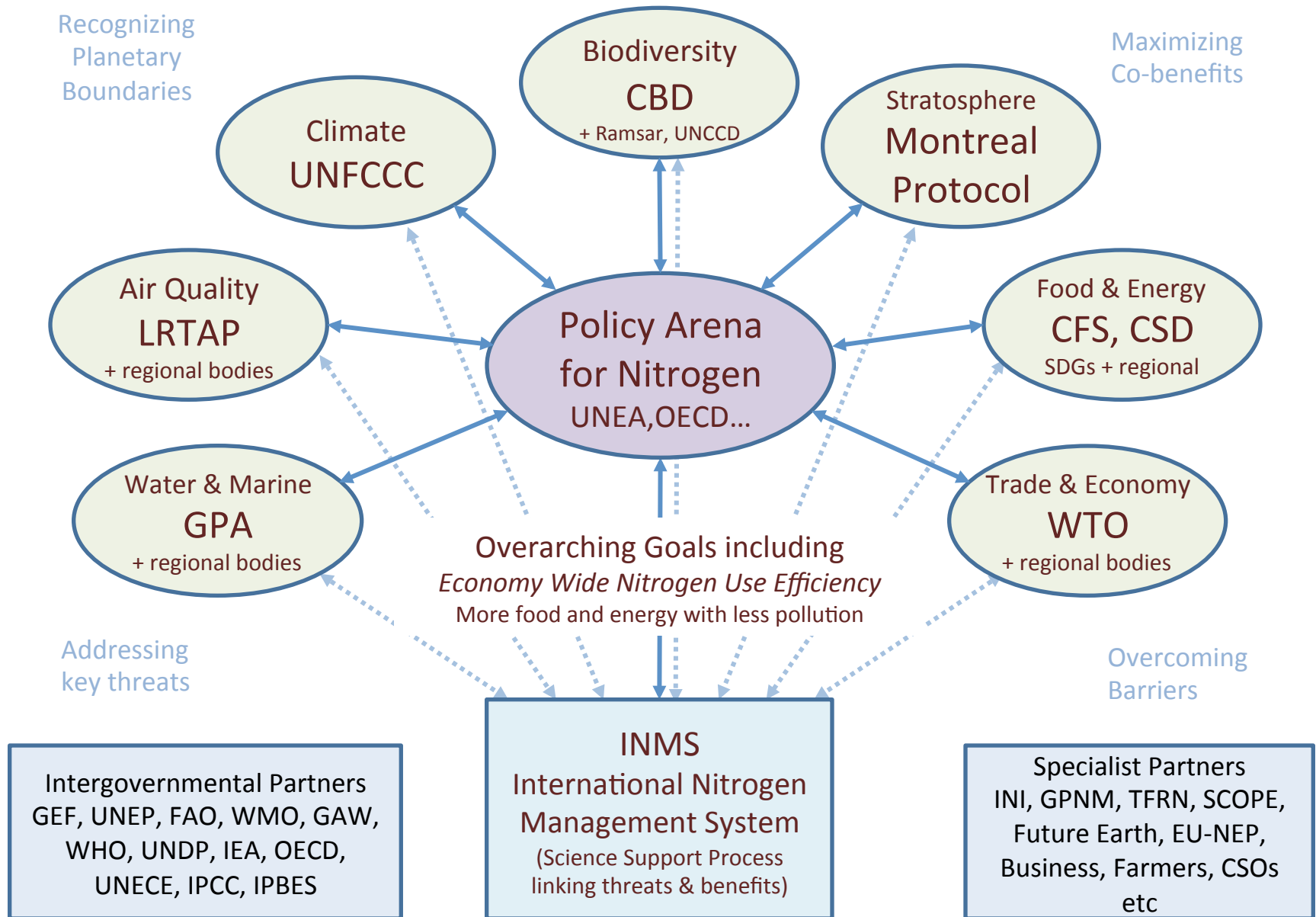
- *Jean Ometto & INI Latin America*

Black Sea: Diester, Prut & Lower Danube

- *Lidiya Molychuk & Serge Medinets, EPN-EECCA & INI Europe*

Plus developing action in West Europe and North America

Linking International Nitrogen Policy Frameworks



Addressing fragmentation of Nitrogen-related Targets across Multilateral Environmental Agreements

UNFCCC

Kyoto Protocol 1997 “3.1 The Parties... shall, individually or jointly, ensure that their aggregate anthropogenic carbon dioxide equivalent emissions of the greenhouse gases listed in Annex A [inc. N₂O] do not exceed their assigned amounts... with a view to reducing their overall emissions of such gases by at least 5 per cent below 1990 levels in the commitment period 2008 to 2012”

Paris Agreement 2015 “2.1. aims to strengthen the global response...including by... b) Increasing the ability to adapt to the adverse impacts of climate change and foster climate resilience and low greenhouse gas emissions development [inc. N₂O], in a manner that does not threaten food production.”

Convention on Biological Diversity

Aichi Targets 2010

Target 8: “By 2020, pollution, including from excess nutrients, has been brought to levels that are not detrimental to ecosystem function and biodiversity.”

Key focus on nitrogen. Each country free to set its own indicators and goals.

UNECE Air Convention

Göteborg Protocol 1999 & 2012

“7. Taking into account the scientific knowledge about the hemispheric transport of air pollution, **the influence of the nitrogen cycle** and the potential synergies with and trade-offs between air pollution and climate change” establishes **national “emission reduction commitments” for NO_x and NH₃ by 2020** critical loads and critical levels for 2020, and **“minimum control measures” for NO_x and NH₃.**

No global framework

Montreal Protocol

1987 No N₂O commitment

Recognized by the Vienna Convention. UNEP (2013): “Global anthropogenic N₂O emissions ... expected to almost double by 2050 unless mitigation action is accelerated. The continued build-up of N₂O in the atmosphere will continue to deplete the stratospheric ozone layer and in so doing will to a degree undermine the achievements of the Montreal Protocol.”

SDGs & Nitrogen

In development – a joined up system needed

Policy Arena for Nitrogen

UNEA, OECD..

Overarching Goals including
Economy Wide Nitrogen Use Efficiency
More food and energy with less pollution

INMS

International Nitrogen Management System

GPA

Manila Declaration 2012

“4. *Decide* actively to engage ourselves and step up our efforts to develop guidance, strategies or policies on the sustainable use of nutrients so as to improve nutrient use efficiency with attendant economic benefits for all stakeholders, including farmers, and to mitigate negative environmental impacts through the **development and implementation of national goals** and plans over the period 2012–2016, as necessary;”



Towards
INMS

**UN says fertiliser crisis
is damaging the planet**

Farming
**Union defends use of nitrogen in
high-octane climate change debate**

**Vervuiling met
stikstof kost
miljarden**

Pollution à l'azote : une lourde facture

International Nitrogen Assessment Launch

May 2020

N2020 Conference...

**Nitrogen
taint alert**

Warning over nitrogen footprint

INA Authorship

500 experts,

50 countries &

100 organizations

**Global scientific consensus
for the nitrogen world**

Scientifically independent

The International Nitrogen Assessment

From multiple challenges
to joined-up solutions

INI Contact

- You can contact the INI head office by sending an email to the following email address:
- contact@initrogen.org