Development of the GEF Proposal:
On the global nitrogen cycle: towards the International Nitrogen Management System (INMS)

Third Partners/Stakeholder Meeting
Madrid 24 March 2014

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INI and NERC

The big idea

- What would a global science policy support process for nitrogen look like?
- What are the issues to connect?
- Who are the players that need to be involved?
- What would be the main elements?
- How does this relate to other actions (nitrogen and related issues)?

TFRN goes global

UN says fertiliser crisis is damaging the planet

Scientists urge rich world to halve its meat consumption

The shape of nitrogen to come

An analysis reveals the huge impact of human activity on the nitrogen cycle in China. With global use of Earth's resources rising per head, the findings call for a re-evaluation of the consumption patterns of developed societies.

MARK A. SUTTON & ALBERT BLEEKER

Although Earth's atmosphere consists of nearly 80% dinitrogen (nitrogen

NO_x to the formation of ground-level ozone, which causes crop losses; increased emissions of nitrous oxide (N_2O), a greenhouse gas; and extreme levels of water pollution by nitrates

Nature doi:10.1038/nature11954

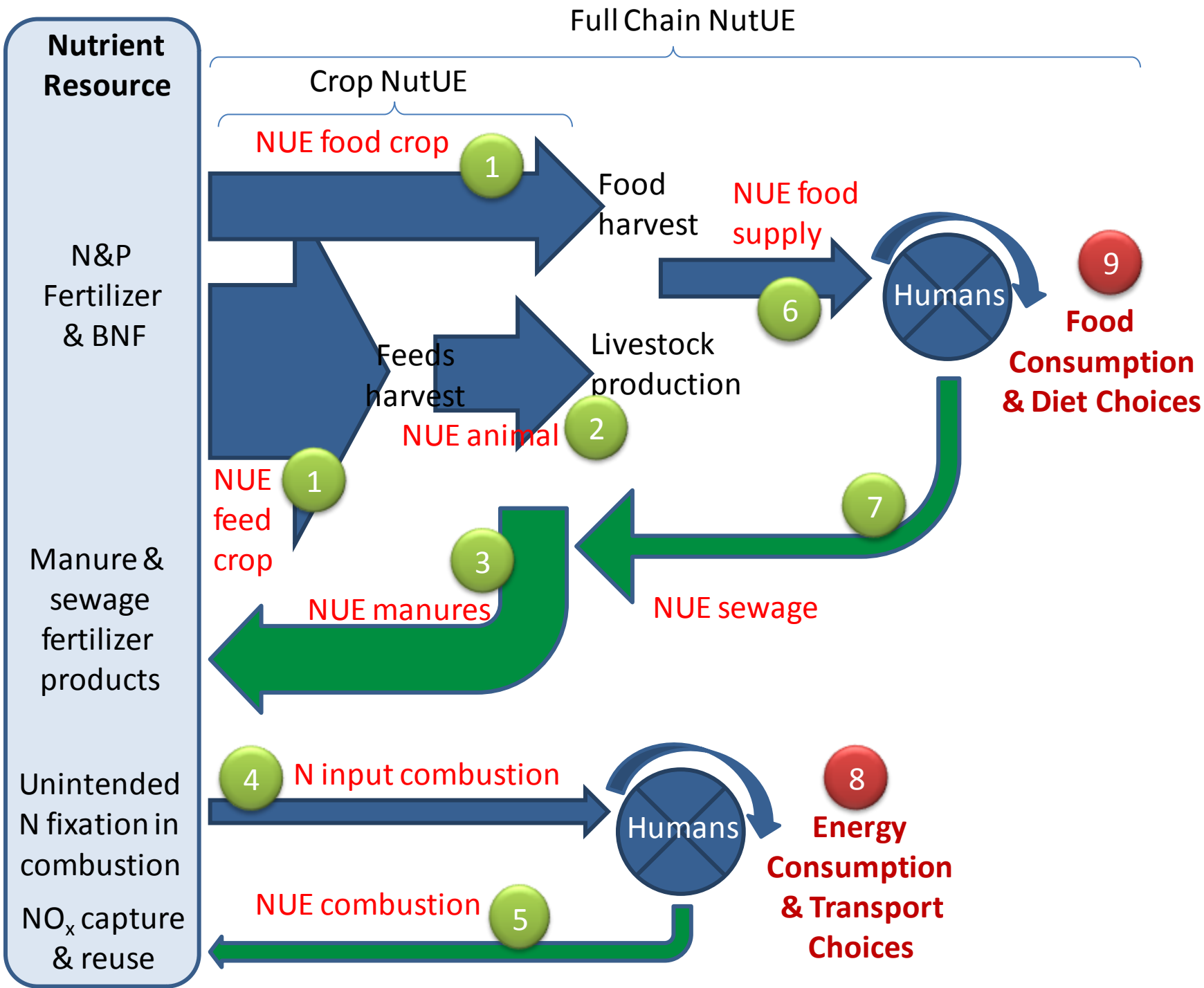
Global Overview on Nutrient Management

Our Nutrient World

The challenge to produce more food and energy with less pollution

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

18 Feb 2013: *Independent* , *Guardian*, *Herald Tribune*, *Times of India* and 300 articles worldwide


Nutrient Resource
N&P Fertilizer & BNF
Manure & sewage fertilizer products
Unintended N fixation in combustion
NO_x capture & reuse
Full Chain NutUE
Crop NutUE
NUE food crop
1
Food harvest
NUE food supply
6
Humans
9
Food Consumption & Diet Choices
Feeds harvest
Livestock production
NUE animal
2
NUE feed crop
1
7
3
NUE manures
NUE sewage
4
N input combustion
Humans
8
Energy Consumption & Transport Choices
NUE combustion
5

Our Nutrient World:
A new inter-governmental focus

- There is no global treaty that links the many benefits and threats of the altered N cycle.

Options

- UN Framework Convention on Climate Change
- UN Convention on Biological Diversity
- To extend and strengthen the mandate of the Global Programme of Action for Protection of the Marine Environment from Land-based Activities (GPA)

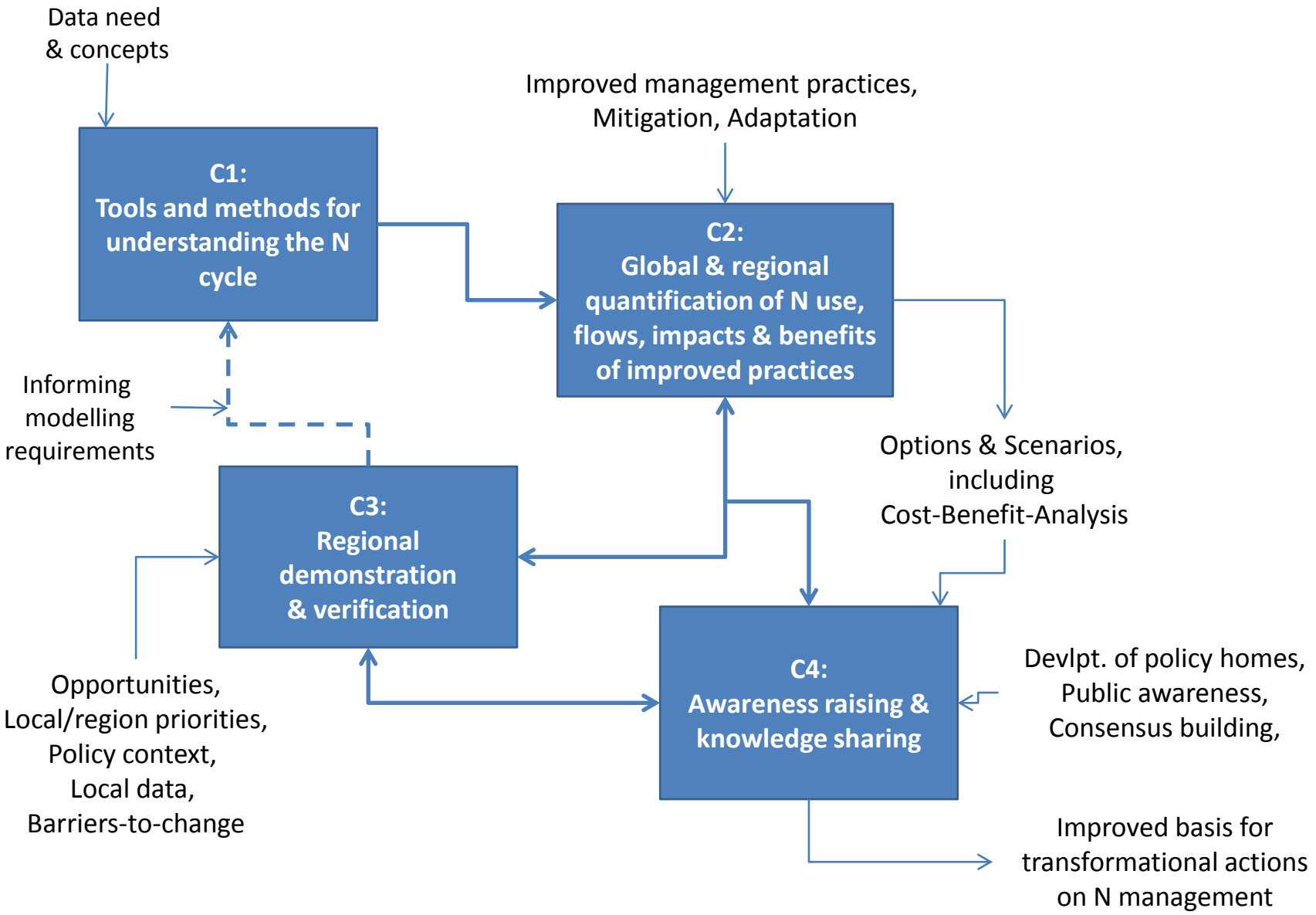
Parallel Tracks

- Track 1: International governance involving countries and linking nitrogen challenges of too much and too little.
- Track 2: *A better coordinated science-policy support process – gathering evidence to support decision makers (INMS)*
- Track 3: Basic and applied field research
- Track 4: Extension, training, action etc.

Work on Track 1 and Track 2 proceed in parallel

- INMS
  - Invited by GEF (Global Environment Facility) to develop the proposal
  - Follows on from recommendations of the Science and Technology Advisory Panel (STAP) of GEF International Waters.
  - How can we develop a joined up approach to manage the N cycle – building a stronger gravity for taking action, by clearly showing and quantifying the cobenfits.
  - International waters and other threats coming together.
- INMS is Track 2
- Other actions Track 1 developed in parallel.

Components Diagram for GEF-INMS



Key

Functions of the potential working groups:
PANS: Policies and Analysis of Nitrogen Synergies (lead group).
FLAG: Fluxes & Levels Assessment Group
STAG: Sustainability and Threats Assessment Group
BID: Budgets and Indicators Development
CBAG: Costs & Benefits Assessment Group.
STORG: Societal & Technical Options Responses Group

Project Components :
C1: Tools to apply methods for understanding the nitrogen cycle
C2: Global/regional quantification of N use, flows and impacts
C3: Demonstration and verification of management tools at local and regional levels.
C4: Awareness raising and knowledge sharing.

International Nitrogen Management System (INMS)

–illustrating tasks, data, models & potential working groups