Nitrogen and the Sustainable Development Goals

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Overview

- Very brief background to SDG's
- Goals of relevance to the N Cascade
- Targets of relevance to the N Cascade
- Agreed indicators
- INMS and the SDGs

Sustainable Development Goals: Background

- 17 UN Sustainable Development Goals
- 169 targets
- Seek to build on the Millennium Development Goals and complete what these did not achieve
- The Goals and targets will stimulate action over the next fifteen years in areas of critical importance for humanity and the planet:
  - **People:** We are determined to end poverty and hunger, in all their forms and dimensions, and to ensure that all human beings can fulfil their potential in dignity and equality and in a **healthy environment.**
  - **Planet:** We are determined to protect the planet from degradation, including through **sustainable consumption and production, sustainably managing its natural resources** and taking urgent action on climate change, so that it can support the needs of the present and future generations.
  - **Prosperity, Peace, Partnership**

The 17 SDG's


SUSTAINABLE DEVELOPMENT GOALS
17 GOALS TO TRANSFORM OUR WORLD
1 NO POVERTY
2 ZERO HUNGER
3 GOOD HEALTH AND WELL-BEING
4 QUALITY EDUCATION
5 GENDER EQUALITY
6 CLEAN WATER AND SANITATION
7 AFFORDABLE AND CLEAN ENERGY
8 DECENT WORK AND ECONOMIC GROWTH
9 INDUSTRY, INNOVATION AND INFRASTRUCTURE
10 REDUCED INEQUALITIES
11 SUSTAINABLE CITIES AND COMMUNITIES
12 RESPONSIBLE CONSUMPTION AND PRODUCTION
13 CLIMATE ACTION
14 LIFE BELOW WATER
15 LIFE ON LAND
16 PEACE, JUSTICE AND STRONG INSTITUTIONS
17 PARTNERSHIPS FOR THE GOALS
SUSTAINABLE DEVELOPMENT GOALS

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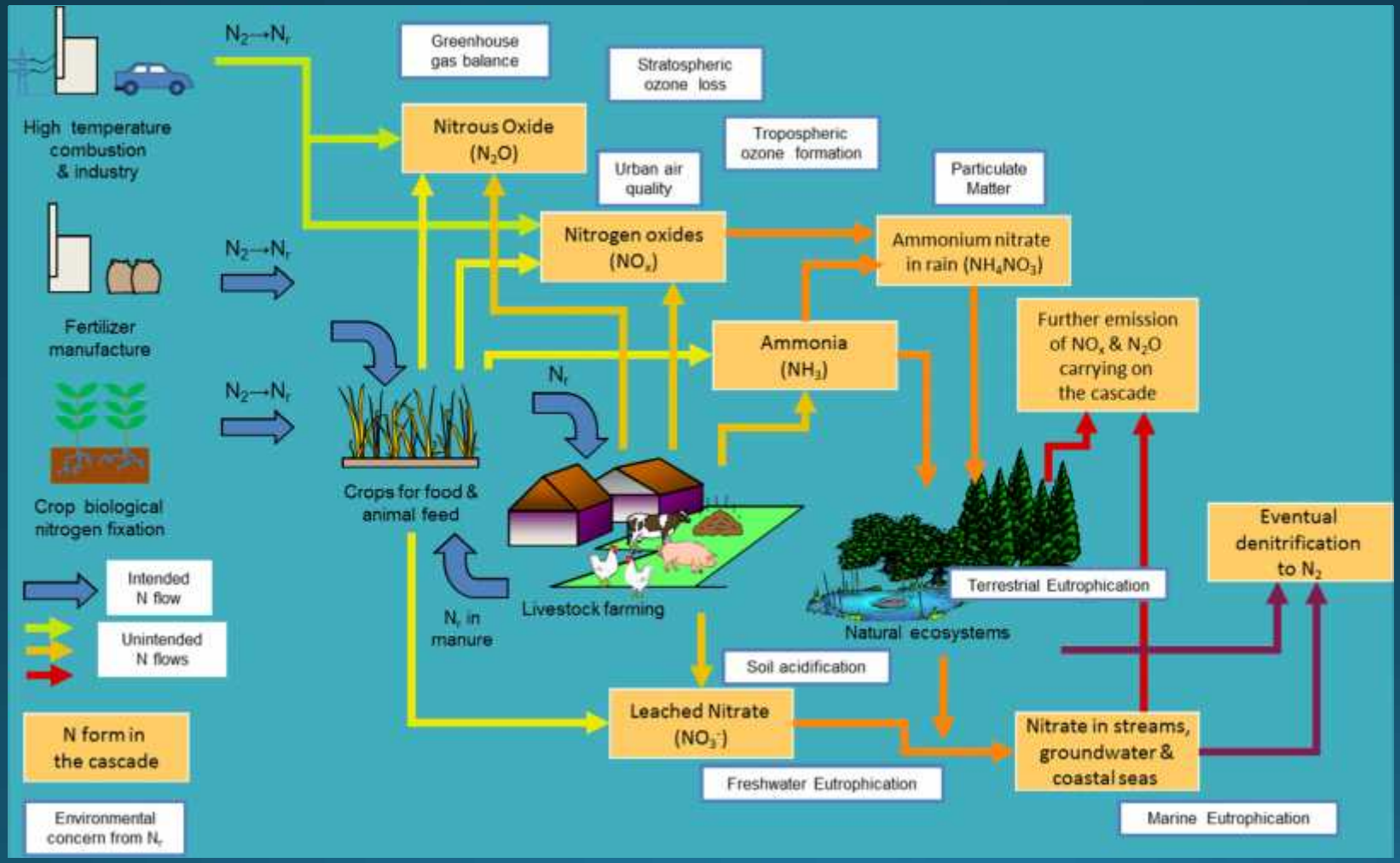
The N Cascade

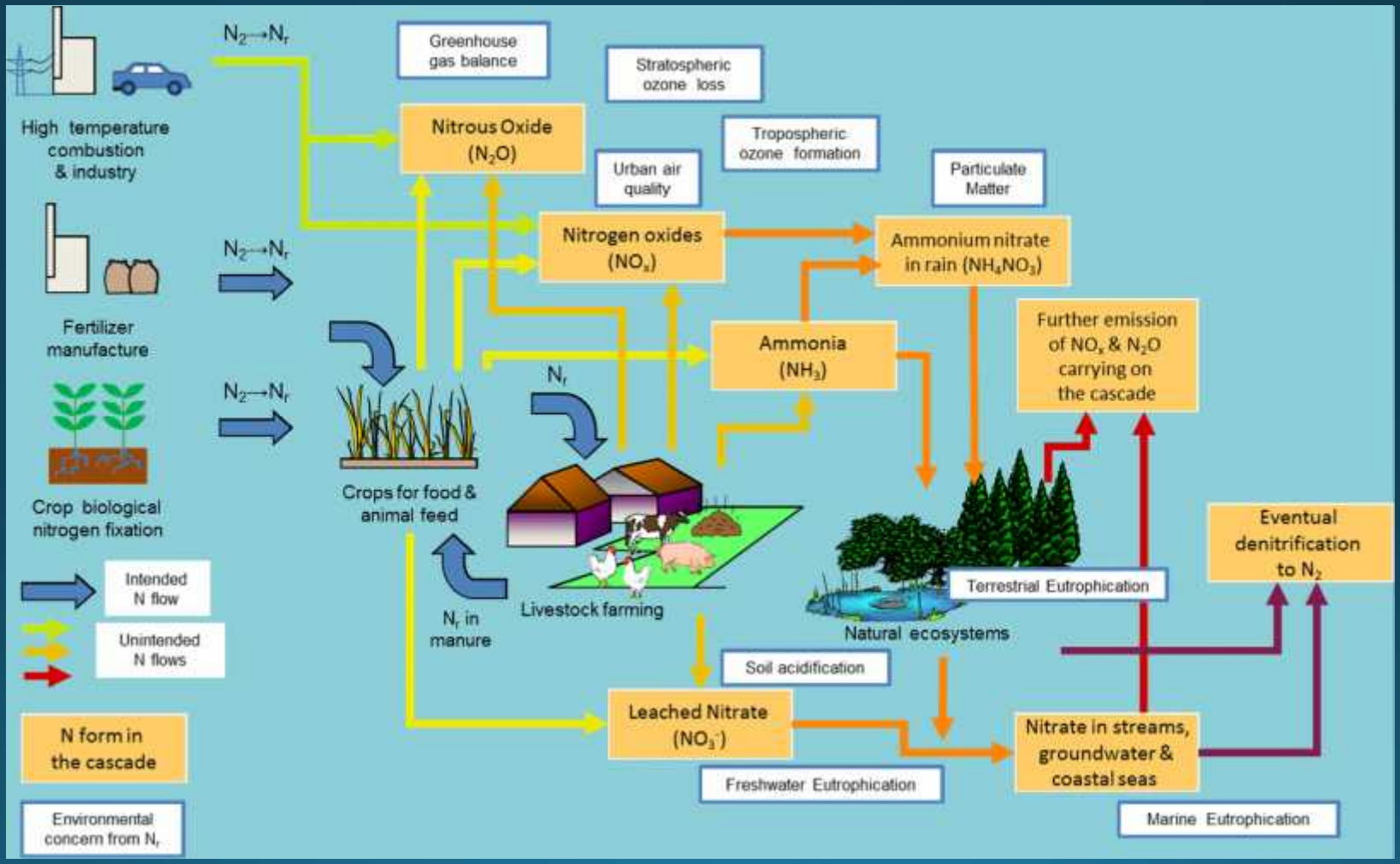


N Cascade and SDG's

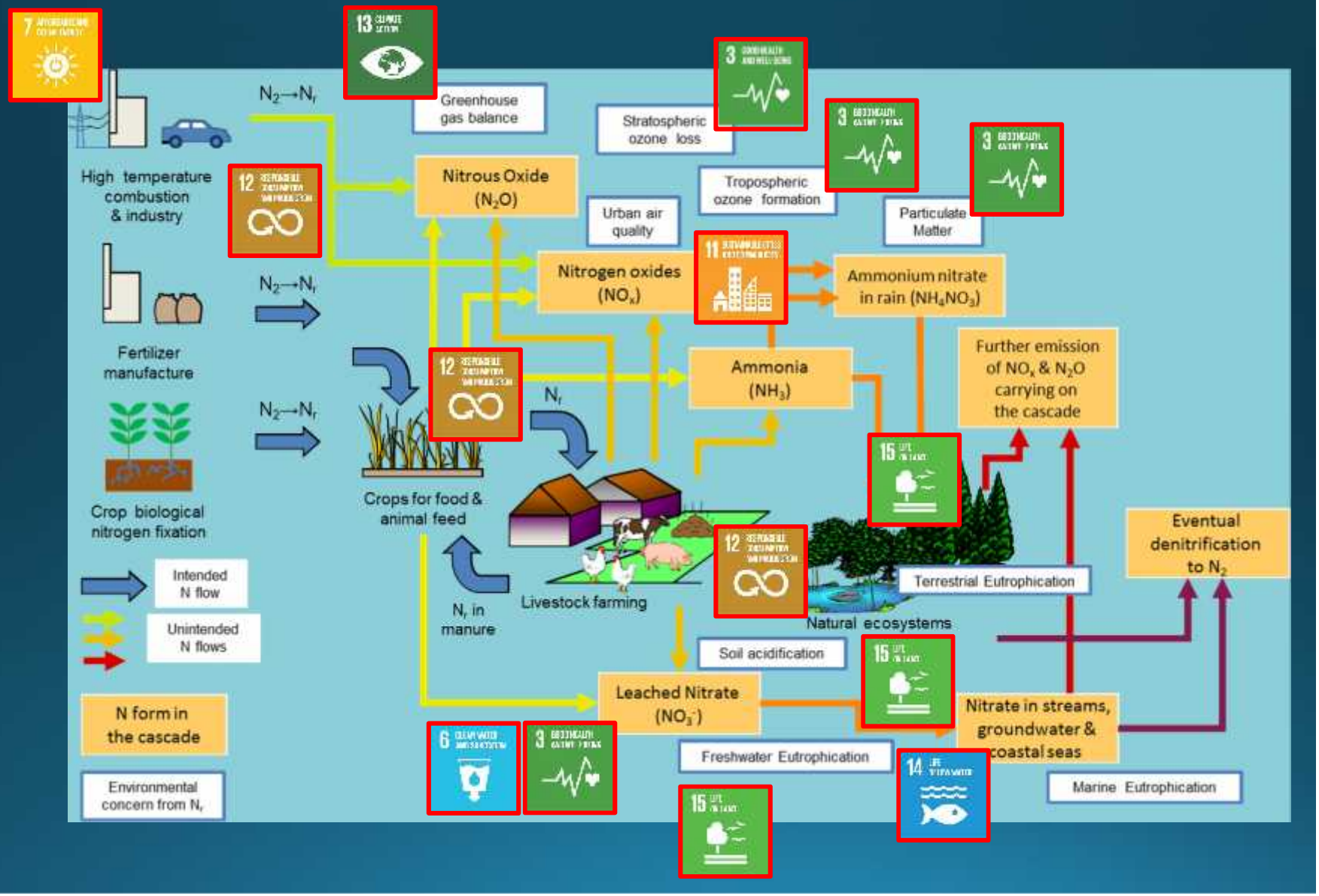
- Obvious links between nitrogen and the two systems, but this can be further classified….
- More N needed
- Less N needed
- Improvements in N management, through education, access to N and technical knowledge, improving partnerships and communication

SDG's – More N/improved use needed

Lack of access:
Fertilisers
Organic N
Best practice information
Technology



SDG's – Less N/better use of N needed



Clear SDG & Nitrogen Links

By 2030, ensure sustainable food production systems and implement resilient agricultural practices that increase productivity and production, that help maintain ecosystems, and that progressively improve land and soil quality

By 2030, substantially reduce the number of deaths and illnesses from air, water and soil pollution and contamination

By 2030, improve water quality by reducing pollution and by 2020 protect and restore water-related ecosystems, including mountains, forests, wetlands, rivers, aquifers and lakes

By 2030, reduce the adverse per capita environmental impact of cities, including by paying special attention to air quality and municipal and other waste management

Implement the 10-year framework of programmes on sustainable consumption and production, all countries taking action, with developed countries taking the lead, taking into account the development and capabilities of developing countries

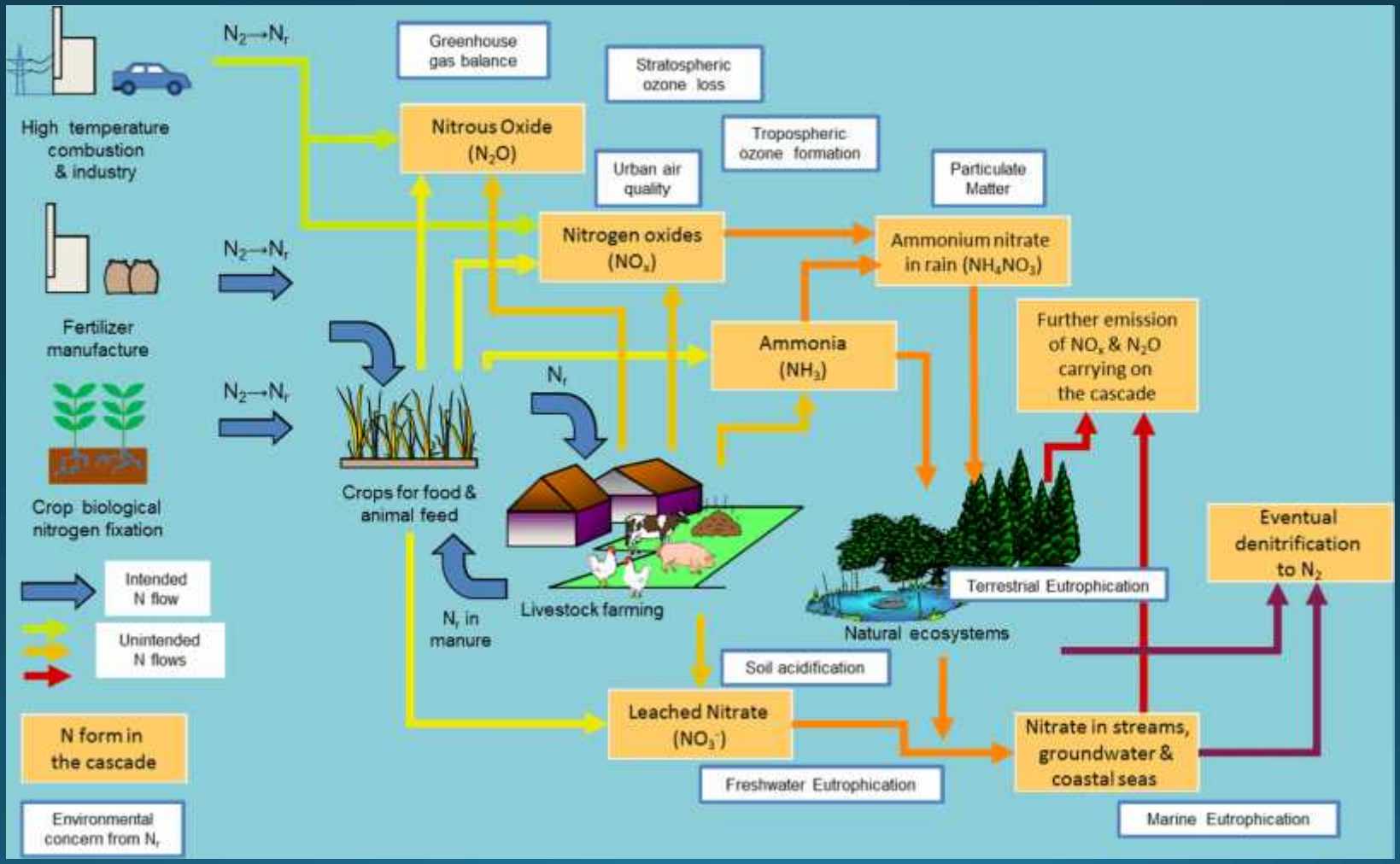
Improve education, awareness-raising and human and institutional capacity on climate change mitigation, adaptation, impact reduction and early warning

By 2025, prevent and significantly reduce marine pollution of all kinds, in particular from land-based activities, including marine debris and nutrient pollution

Take urgent and significant action to reduce the degradation of natural habitats, halt the loss of biodiversity and, by 2020, protect and prevent the extinction of threatened species

Improvements in N management, through education, access to N and technical knowledge, improving partnerships and communication

SDG's – driving improvements in N management

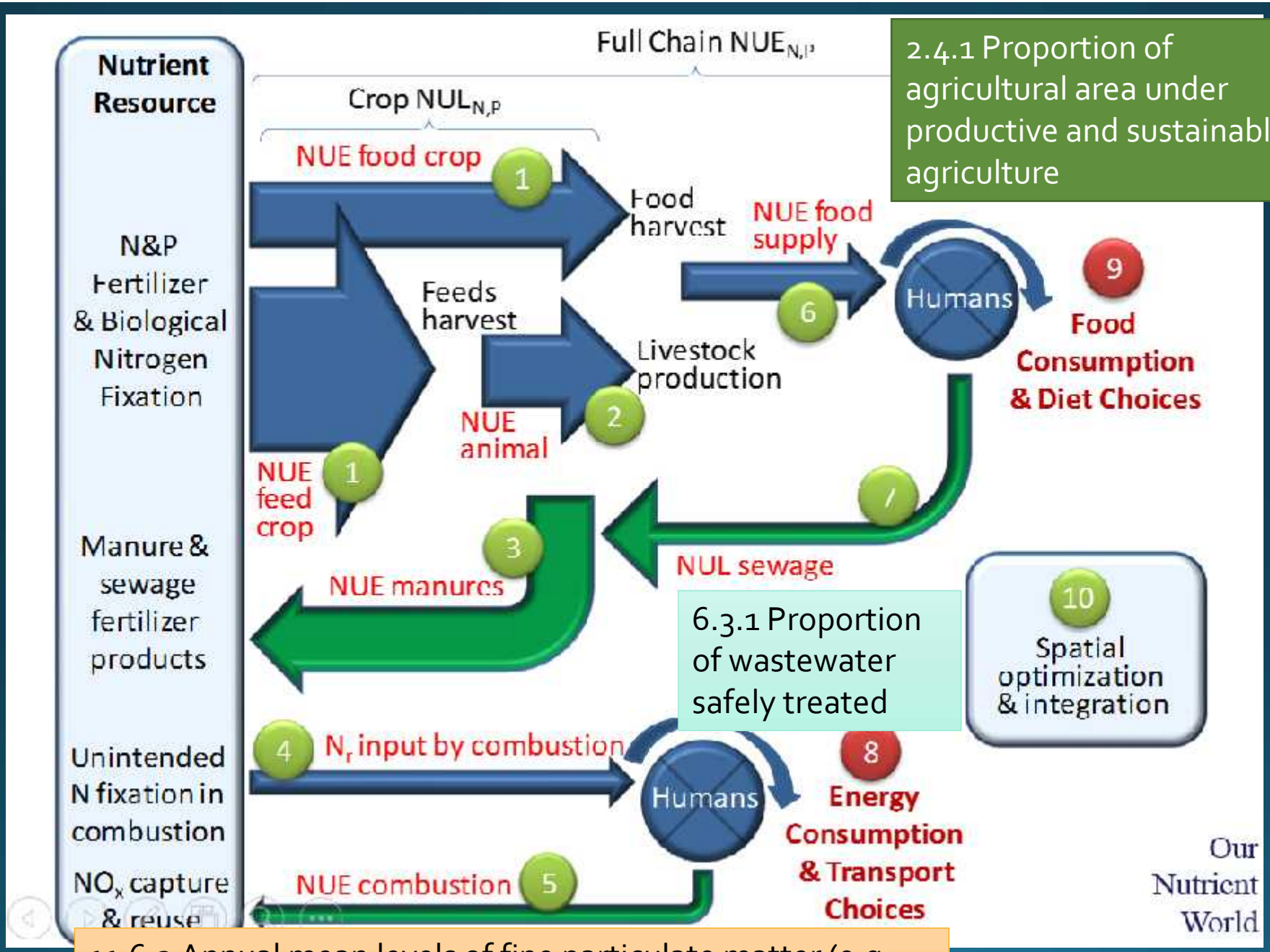


SDG's and indicators

- Countries will be asked to report on their attainment of the SDG's
- A number of 'indicators' to demonstrate achievement have been developed
- A nitrogen related indicator (e.g. Nitrogen Use Efficiency) was lobbied for, but ultimately not accepted
- There may be some scope for adding further indicators, but there is no clear path for this
- NUE may provide the opportunity to optimize the SDG's for situations where N is in short and oversupply

Relevant indicators

- 2.4.1 Proportion of agricultural area under productive and sustainable agriculture
- 6.3.1 Proportion of wastewater safely treated
- 6.3.2 Proportion of bodies of water with good ambient water quality
- 11.6.2 Annual mean levels of fine particulate matter (e.g. PM2.5 and PM10) in cities (population weighted)
- 12.1.1 Number of countries with sustainable consumption and production (SCP) national action plans or SCP mainstreamed as a priority or a target into national policies
- 14.1.1 Index of coastal eutrophication and floating plastic debris density
- 14.2.1 Proportion of national exclusive economic zones managed using ecosystem-based approaches
- 15.1.2 Proportion of important sites for terrestrial and freshwater biodiversity that are covered by protected areas, by ecosystem type
- 15.9.1 Progress towards national targets established in accordance with Aichi Biodiversity Target 2 of the Strategic Plan for Biodiversity 2011-2020



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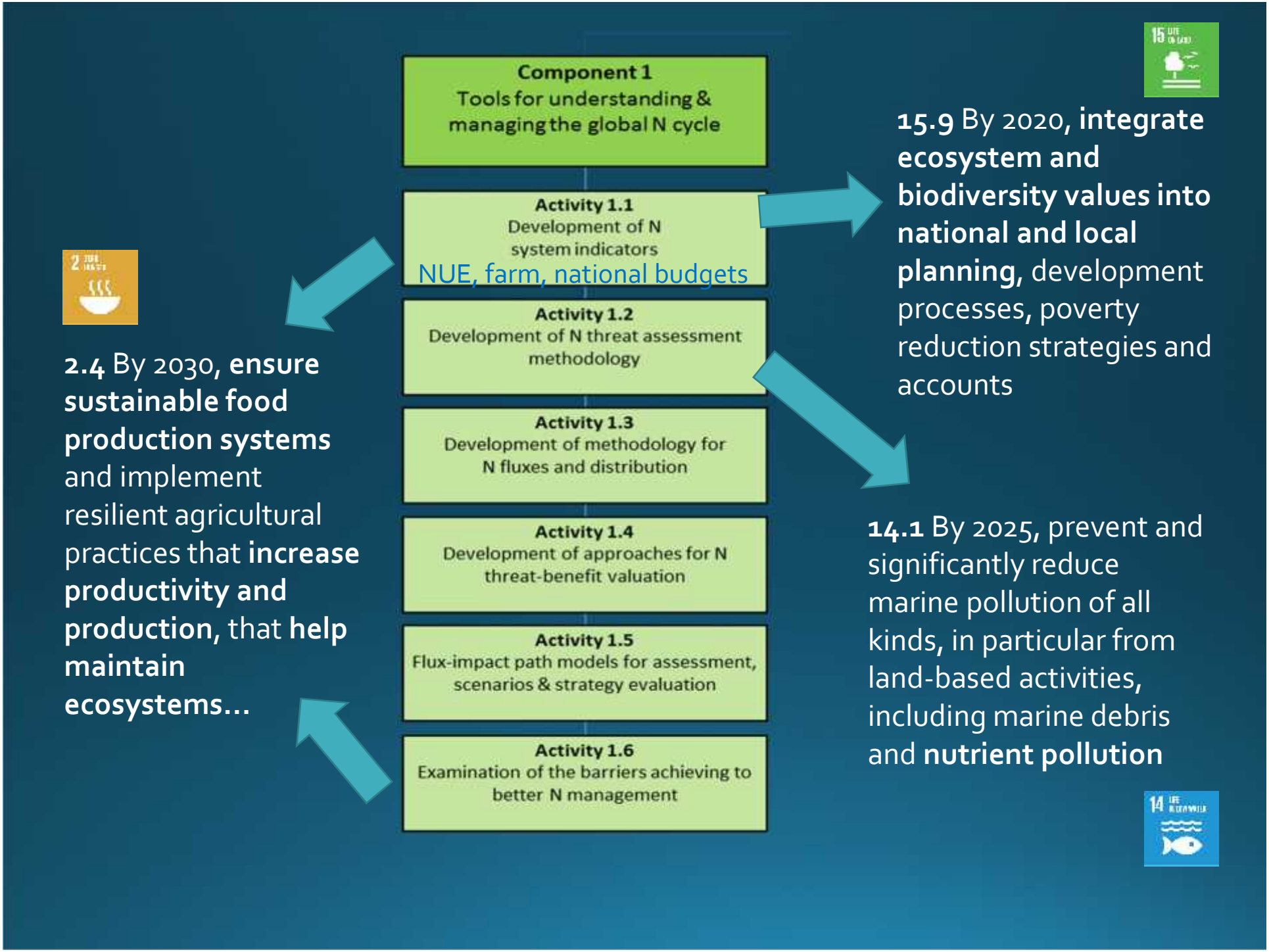

Component 1
Tools for understanding & managing the global N cycle
Activity 1.1
Development of N system indicators
NUE, farm, national budgets
Activity 1.2
Development of N threat assessment methodology
Activity 1.3
Development of methodology for N fluxes and distribution
Activity 1.4
Development of approaches for N threat-benefit valuation
Activity 1.5
Flux-impact path models for assessment, scenarios & strategy evaluation
Activity 1.6
Examination of the barriers achieving to better N management
15.9 By 2020, integrate ecosystem and biodiversity values into national and local planning, development processes, poverty reduction strategies and accounts
14.1 By 2025, prevent and significantly reduce marine pollution of all kinds, in particular from land-based activities, including marine debris and nutrient pollution
2.4 By 2030, ensure sustainable food production systems and implement resilient agricultural practices that increase productivity and production, that help maintain ecosystems…

Component 2
Quantification of N flows, threats & benefits

Activity 2.1
Quantifying N flows, threats and benefits at global and regional scales

Activity 2.2
Preparation of global assessment of N fluxes, pathways & impacts

Activity 2.3
Integrating methods, measures & good practices to address N_r issues

Activity 2.4
Future N storylines & scenarios with management/ mitigation options & CBA

Activity 2.5
Collation & synthesis of experience & measures adopted by GEF and others

6.6 By 2020, **protect and restore water-related ecosystems,** including mountains, forests, wetlands, rivers, aquifers and lakes

2.4 By 2030, ensure **sustainable food production systems** and implement resilient agricultural practices that **increase productivity** and production, that **help maintain ecosystems**, that strengthen capacity for adaptation to climate change, extreme weather, drought, flooding and other disasters and that progressively improve land and soil quality

Consider targets – e.g. 2020, 2030
3.9 By 2030, substantially reduce the number of deaths and illnesses from hazardous chemicals and air, water and soil pollution….

Component 3
Regional demonstration of Full Nitrogen Approach

Activity 3.1
Design methodology & conduct demos on regional N_r assessments

Demonstrations included:
Case 1: Developing areas with excess N_r.
South Asia, East Asia, Latin America
Case 2: Developing areas with insufficient N_r.
East Africa
Case 3: Regions with transition economies.
East Europe
Case 4: Developed areas with excess N_r.
West Europe [using regional co-finance]

Activity 3.2
Workshop to synthesize outcomes from demonstration activities

Activity 3.3
Building consensus on benchmarking N indicators for different regions

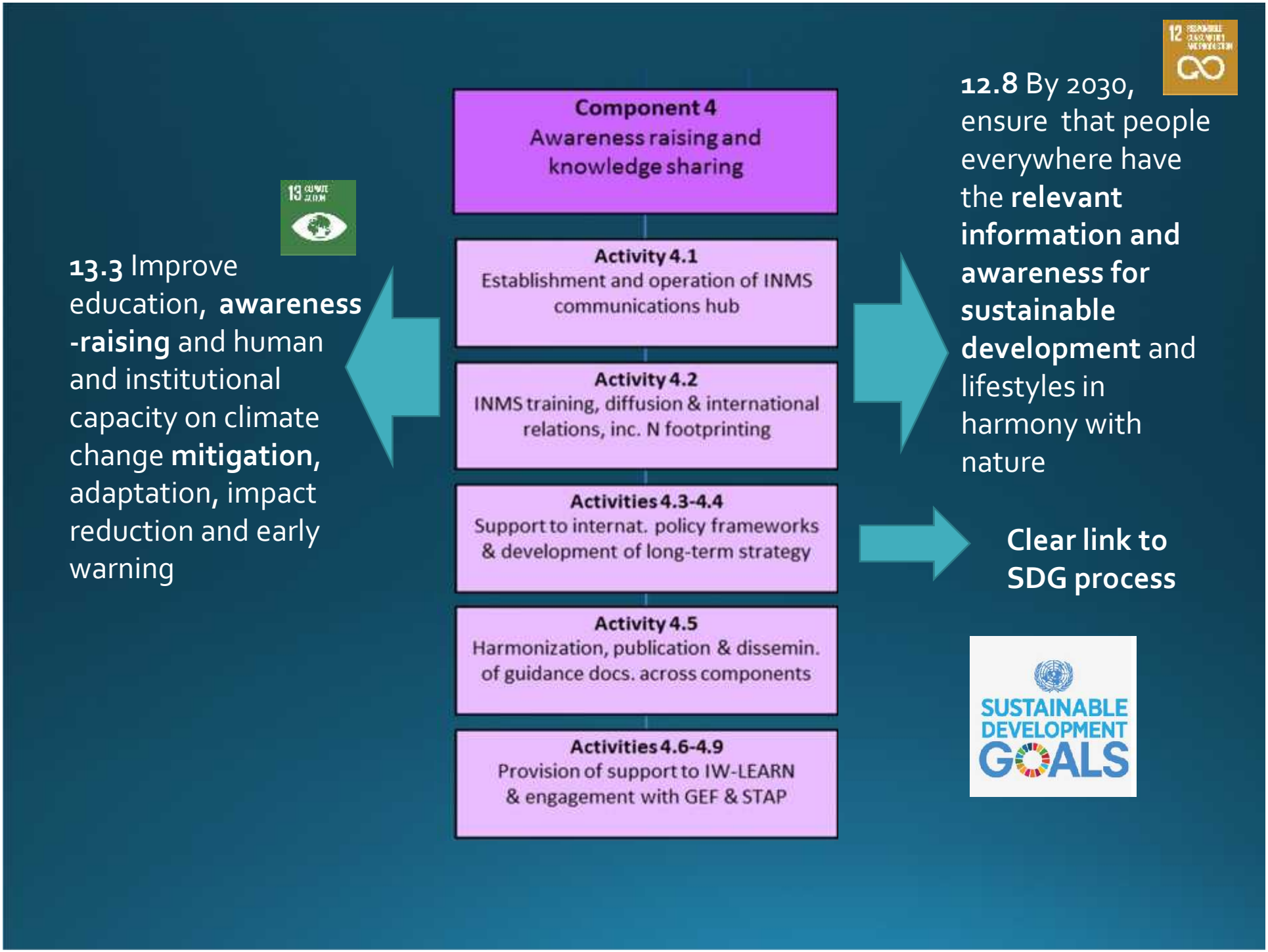
Activity 3.4
Demonstrating benefits of joined up regional N management

Regional Demonstrations (too much N, too little N)

Regional and national N assessments
15.9 By 2020, integrate ecosystem and biodiversity values into national and local planning, development processes, poverty reduction strategies and accounts

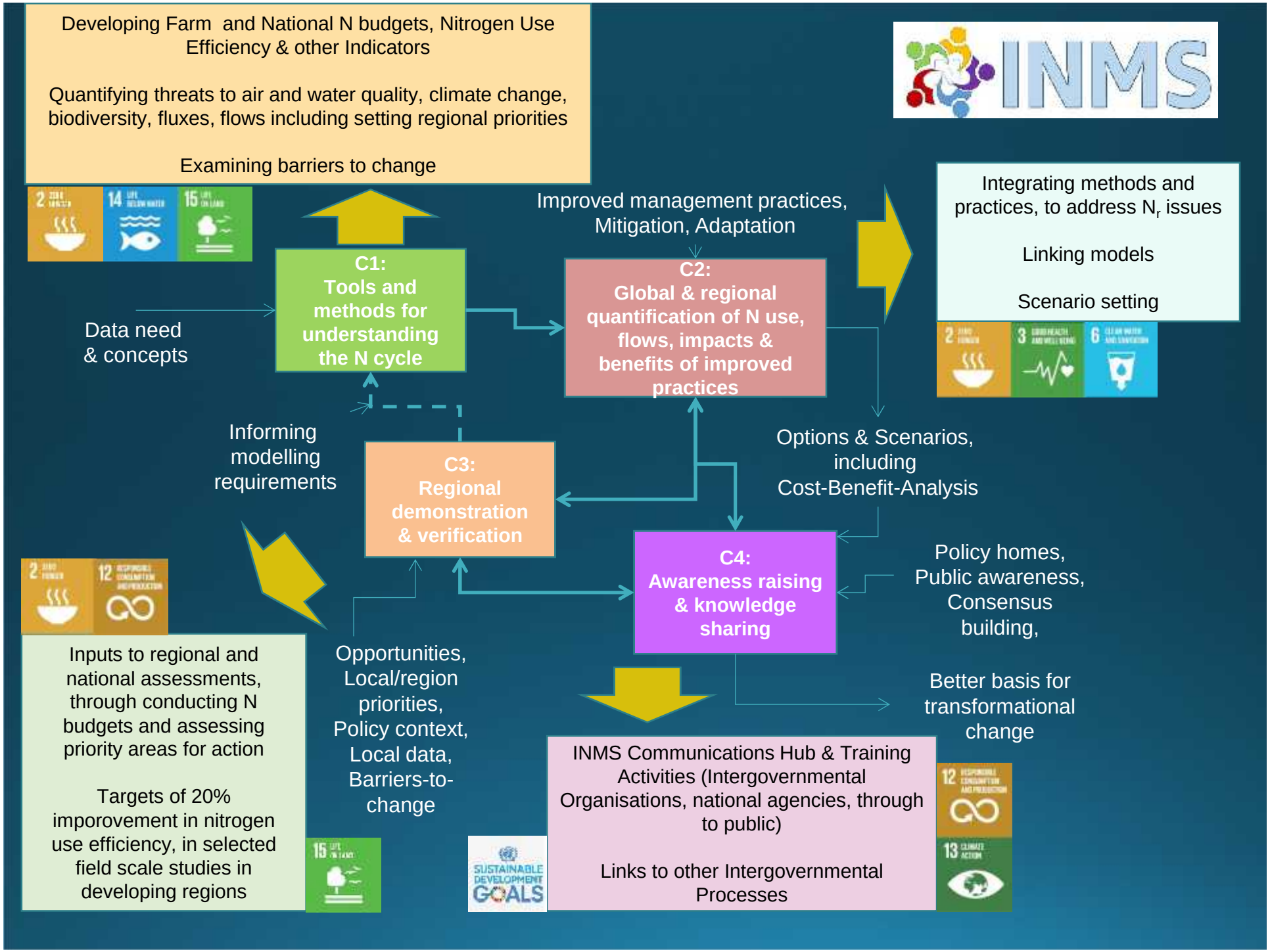
Field scale 20% NUE improvement
2.3 By 2030, double the agricultural productivity and incomes of small-scale food producers…

12.1.1 Number of countries with sustainable consumption and production (SCP) national action plans or SCP mainstreamed as a priority or a target into national policies

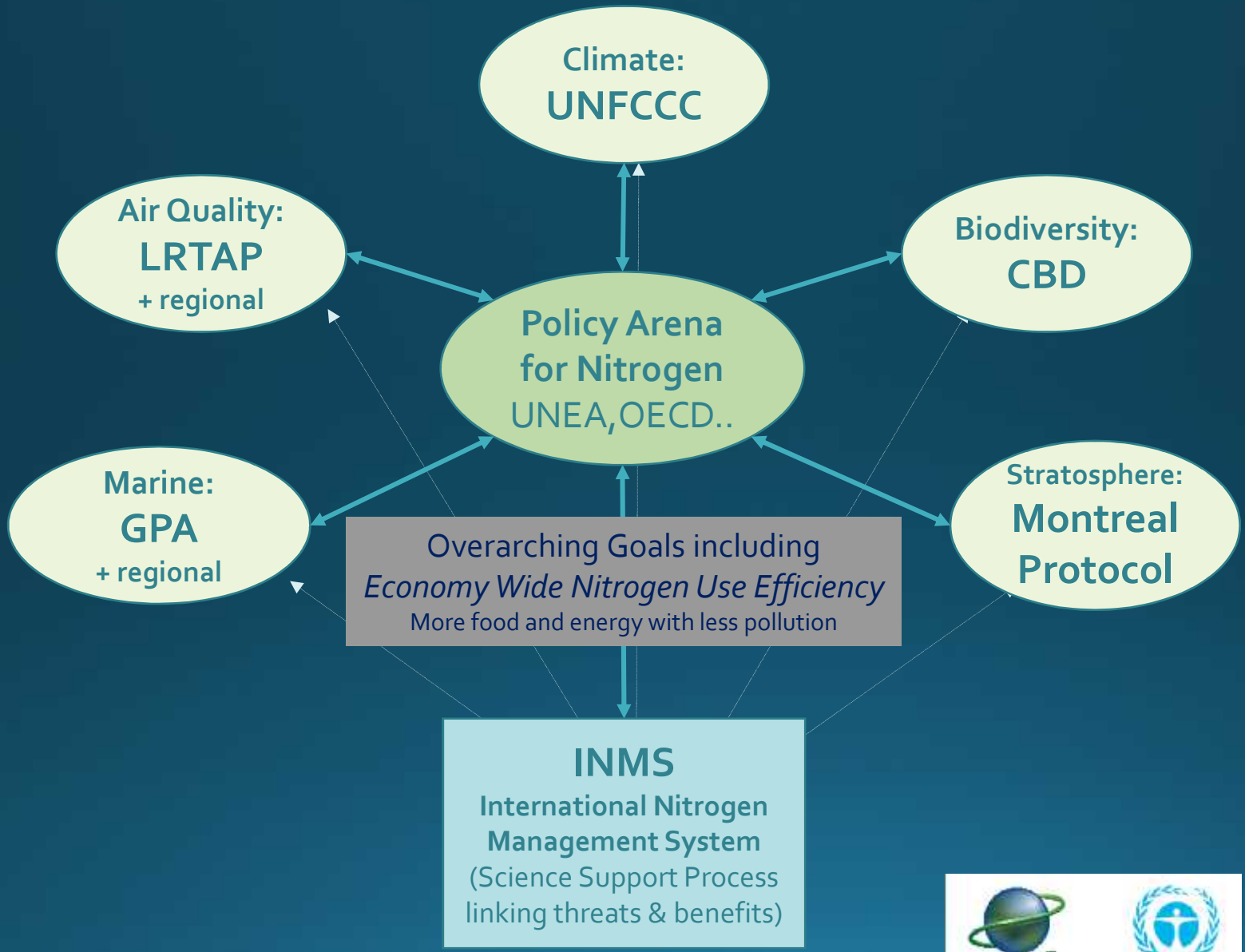

Component 4
Awareness raising and knowledge sharing
Activity 4.1
Establishment and operation of INMS communications hub
Activity 4.2
INMS training, diffusion & international relations, inc. N footprinting
Activities 4.3-4.4
Support to internat. policy frameworks & development of long-term strategy
Activity 4.5
Harmonization, publication & dissemin. of guidance docs. across components
Activities 4.6-4.9
Provision of support to IW-LEARN & engagement with GEF & STAP
13.3 Improve education, awareness-raising and human and institutional capacity on climate change mitigation, adaptation, impact reduction and early warning
12.8 By 2030, ensure that people everywhere have the relevant information and awareness for sustainable development and lifestyles in harmony with nature
Clear link to SDG process
SUSTAINABLE DEVELOPMENT GOALS

Conclusions

- There are many potential links between N and SDG's
- The link between N and the indicators for SDG's is not as straightforward
- NUE could be a powerful linkage, but is not yet accepted
- INMS will include work relevant for both N and SDGs'
- National action plans in the demos will be key
- Further development of specific N related indicators, such as NUE will be needed
- Timely engagement with the relevant IGO's could also play a part
- Awareness of how nitrogen could help support attainment of SDG's is crucial at several levels


Developing Farm and National N budgets, Nitrogen Use Efficiency & other Indicators
Quantifying threats to air and water quality, climate change, biodiversity, fluxes, flows including setting regional priorities
Examining barriers to change
INMS
Improved management practices, Mitigation, Adaptation
Integrating methods and practices, to address N_r issues
Linking models
Scenario setting
C1: Tools and methods for understanding the N cycle
C2: Global & regional quantification of N use, flows, impacts & benefits of improved practices
Data need & concepts
Informing modelling requirements
C3: Regional demonstration & verification
Options & Scenarios, including Cost-Benefit-Analysis
C4: Awareness raising & knowledge sharing
Policy homes, Public awareness, Consensus building,
Better basis for transformational change
Inputs to regional and national assessments, through conducting N budgets and assessing priority areas for action
Targets of 20% imporovement in nitrogen use efficiency, in selected field scale studies in developing regions
Opportunities, Local/region priorities, Policy context, Local data, Barriers-to-change
INMS Communications Hub & Training Activities (Intergovernmental Organisations, national agencies, through to public)
Links to other Intergovernmental Processes
SUSTAINABLE DEVELOPMENT GOALS

Linking International Nitrogen Policy Frameworks



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Towards INMS