

# Fertilization & the Environment

## A technological network

### Stakes and aims

**Reduction of chemical inputs** in Agriculture – **Mitigation of nutrients losses** in the environment (waters, air) – Reduction of energy, nitrogen and phosphorus dependence of farms.

Endow the actors (farmers, agricultural extension services, resources and territories managers, authorities) of **methods and tools** for a sustainable management of the biogeochemical cycles in cropping systems and the fertility of soils.

### 32 partners

involved in research, training and extension activities :

**7 Research Institutes** and higher education schools in France (INRA, CIRAD, IRSTEA, ISARA), **Belgium** (Gembloux University, CRA-Wallonie) & **Switzerland** (Agroscope), **7 agricultural technical institutes** specialized by agricultural production and processing network (arable crop, fruit and vegetable, vine and wine, livestock farming) and their head-of-network (ACTA), **5 Chambers of Agriculture** and the national organization gathering them (APCA), **6 technical schools of agriculture**, **5 private laboratories, companies, agencies.**

### Main goal

to coordinate the wide range of activities which are needed for the successful design and transfer of new tools in **agriculture** (identification of the end-users and their needs, scientific state-of-the-art, shared data-sets, R&D projects, decision-making tools development and parameterization, training, ...)

### On-going projects

- 1. Collaborative R&D projects**, development of databases and implementation of decision-making tools
  - Characterization of **organic wastes**, naming and typology according to use, structure of a national database, implementation in fertilization tools
  - Improvement of **N and P management** at plot, farm to regional scales; measurements of **losses** (ammoniac volatilization, nitrous oxide emissions, nitrate leaching); impact of agricultural practices (crop rotations, legumes, reduction of mineral fertilizer)
- 2. Development of tools** for diagnostics and/or decision making in the area of fertilization and management of biogeochemical cycles : e.g., **AzoFert®**, software for advice on N fertilization at the annual field scale. **Syst'N®** webservice tool for diagnosis of N emissions ( $\text{NO}_3^-$ ,  $\text{NH}_3$ ,  $\text{N}_2\text{O}$ ), at the cropping system level
  - Conception of an educational tool (N'EDU) and modules adapted to the vineyard and to the arboriculture (N-Pérennes) on the basis of the AZOFERT® tool
- 3. Communication, dissemination and training.** Network animation, communication and training for the various actors in the use of the developed tools. Contribution to the national expertise, notably to authorities (Nitrates Directive)

### Management

The network is managed by a **strategic board**. Every project is carried out by a **project team**.  
Created in 2007, renewed in 2014 for 5 years.

### Outputs

**Data sets, software, scientific and technical publications, training sessions, educational tools, meetings and seminars, technical support to government policies.**

Contacts : [www.rmt-fertilisationetenvironnement.org](http://www.rmt-fertilisationetenvironnement.org)

Sylvie Recous, [sylvie.recous@reims.inra.fr](mailto:sylvie.recous@reims.inra.fr)

Mathilde Heurtaux, [mathilde.heurtaux@acta.asso.fr](mailto:mathilde.heurtaux@acta.asso.fr)

