# Fertilization & the Environment joint technological network

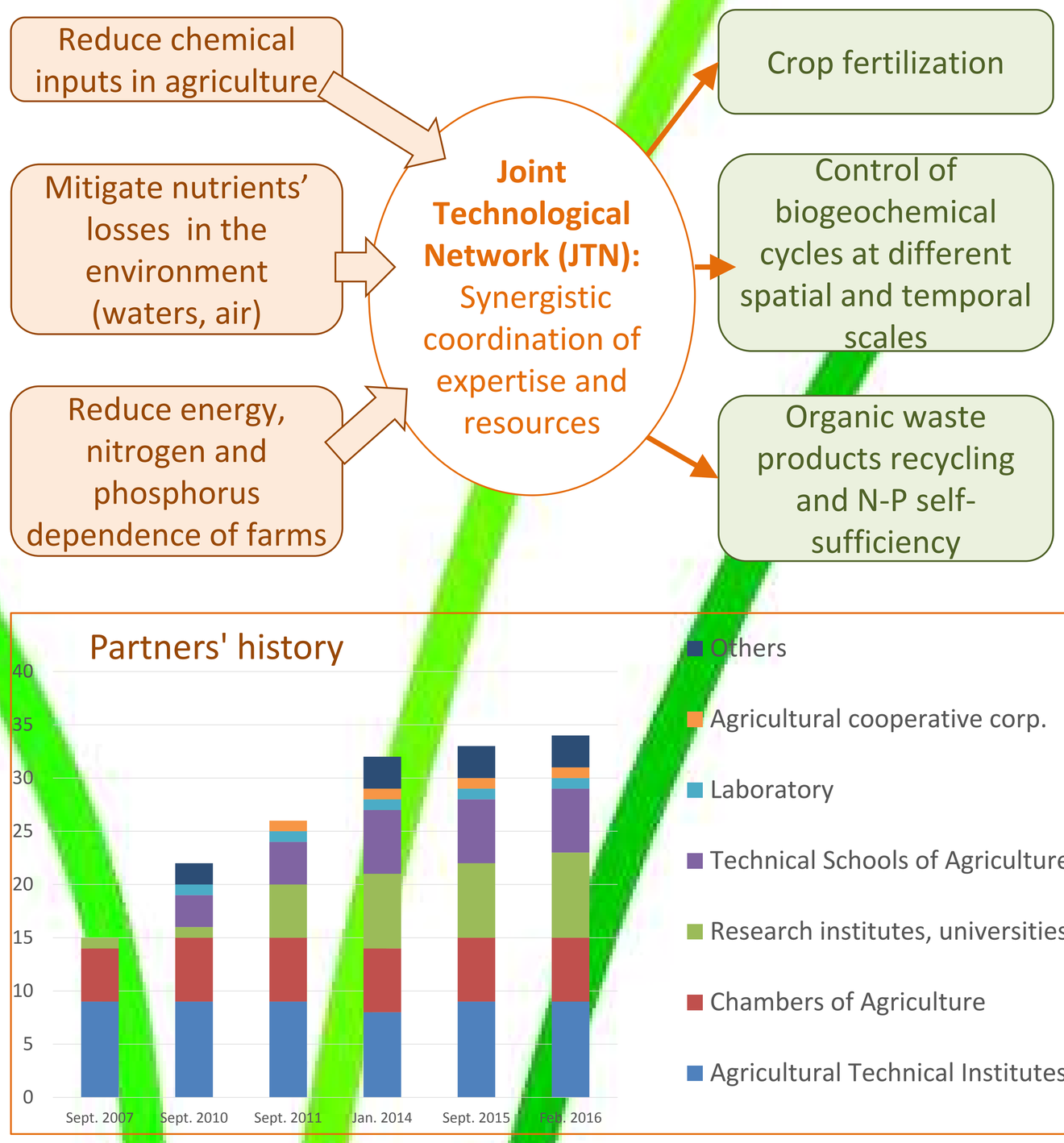
*teams, concepts, projects and tools used around fertilization and management of biogeochemical cycles*


S. Recous [1], M. Heurtaux [2], P. Dubrulle[1], N.Damay[3], F. Laurent [4], C. Le Gall [5], J.-M. Paillat [6], B.Verbèque [7]

[1] INRA Env & Agronomy Div., France, , [2]ACTA, [3] LDAR, [4] Arvalis-Institut Du Végétal , [5]CETIOM , [6] CIRAD , [7] Chambre d'agriculture Loiret, France.

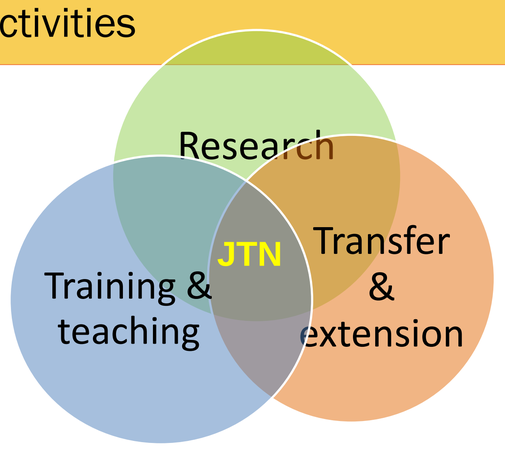

## Stakes and aims

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




## 34 partners

Around 100 people from 31 French, 2 Belgian and 1 Swiss partners involved in research, training and extension activities

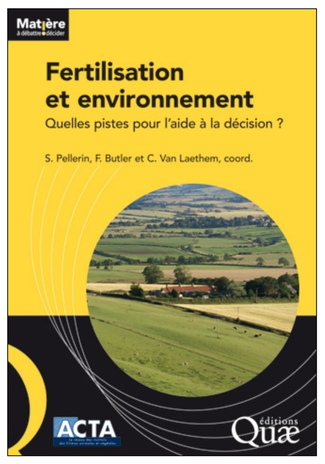






## Notable products

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 estimating N emissions ($NO_3^-$, $NH_3$, $N_2O$), at the scale of crops rotations
   - Conception of an educational tool (N'EDU) and modules adapted to the vineyard and to the arboriculture (N-Pérennes), both based on 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 technical support to government policies (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.

## Added values

Development of scientific and technical consensus; acquisition of a common vision; sharing of financial, and human resources, knowledge, tools and references, avoiding dispersion and duplication.


**Contacts :** www.rmt-fertilisationetenvironnement.org

**Sylvie Recous**, sylvie.recous@reims.inra.fr

**Mathilde Heurtaux**, mathilde.heurtaux@acta.asso.fr



Project supported by the French Ministry of Agriculture (Department of Higher Education and Research)

2016