

Nitrogen research at INRA as a contribution to Towards INMS

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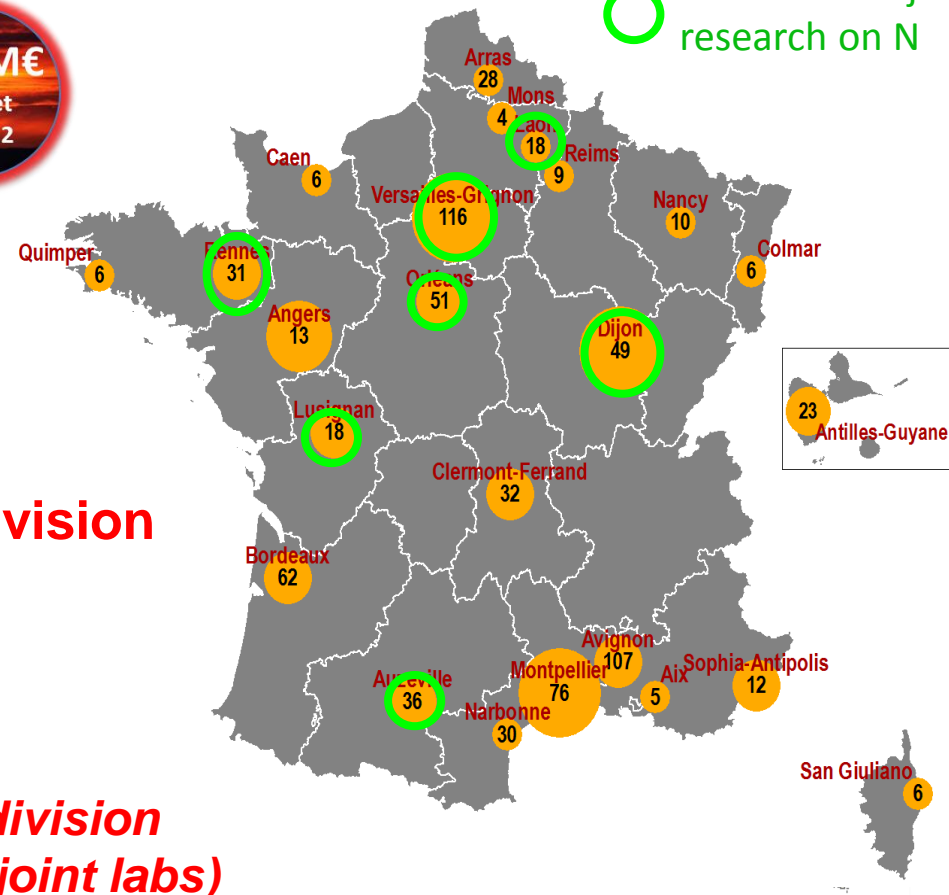
INRA: who are we?

INRA = a public targeted research institute under the 2 ministries in charge of Research and of Agriculture

INRA = the largest research for agriculture, food and the environment in Europe



○ Labs with major research on N



17 Research Centers

13 Research divisions

→ Research on N mainly in the **Environment and Agronomy division**

- **42 labs**
- **750 permanent staff**
- **250 contract staff**
- **+ 1450 staff from other INRA division and (agronomy) universities (joint labs)**

INRA et al.: what are we doing on N?

Field sites at different scales with relevance to INMS

- *Long term observation field sites over cropland (Grignon, Mons), grassland (Lusignan, Laqueuille), forests (Nancy, Fontainebleau, Bordeaux)*
- *Watershed scale sites: RBV (watershed network: Brittany, 3 in the Paris basin, South-West (Inra, Irstea, CNRS/Paris Univ)*
- *“Zones-ateliers”: Piren-Seine, ZA Pleine-Fougères*

Modelling

- Crop models: CERES-EGC, STICS (common model), ...
- Landscape models, farm models: Nitroscape, Casimod’N (TNT), Mélodie
- Large-scale models: hydrology (e.g. Seneque), atmosphere (e.g Chimère),
- Decision support models (Syst’N, AzoFert, AzoDyn)

Databases on soil, climate, agric. practices, long term observatories, etc.

Scientific collective assessments : e.g. N and livestock, measures to reduce GHG emission from agriculture, intercropping

Strong links with stakeholders

- Within the “Zones-Ateliers”: Piren-Seine (water management agencies, etc.)
- National agencies: Ademe, Onema, ANR
- Joint Technological Networks (RMT) and Units (UMT): Agriculture Sector



What can INRA et al. propose for INMS?

Towards a North-western Europe demonstration area? (based on existing programs/projects/networks; link with national policies including N-issues)

→ ***Under discussion with Spain (and Portugal?); approach new partners***

Data from our observing systems (when in Open-Access; under discussion) : soil, climate, agricultural practices, data from specific experiments

Dissemination of our models and decision support tools

→ Training sessions for some of these (e.g. STICS)

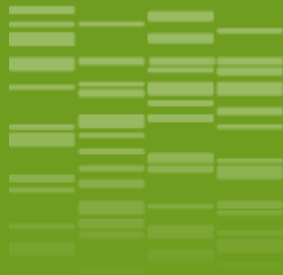
→ Running models on specific cases in the frame of common funded projects

Organize seminars / workshops on

- **Modelling integrated N cycling in agroecosystems based on ecosystem/crop models and/or DSS**
- **Including N emission (plot/farm scale) in larger scale models ? *Process-based models or simpler models?***
- **How to assess NH₃ (and possible other N losses) mitigation at “territory” (includes landscape, local actors and institutions) scale** (see additional slides)

→ ***Which possible fundings?***





Additional information

Long-term observation sites

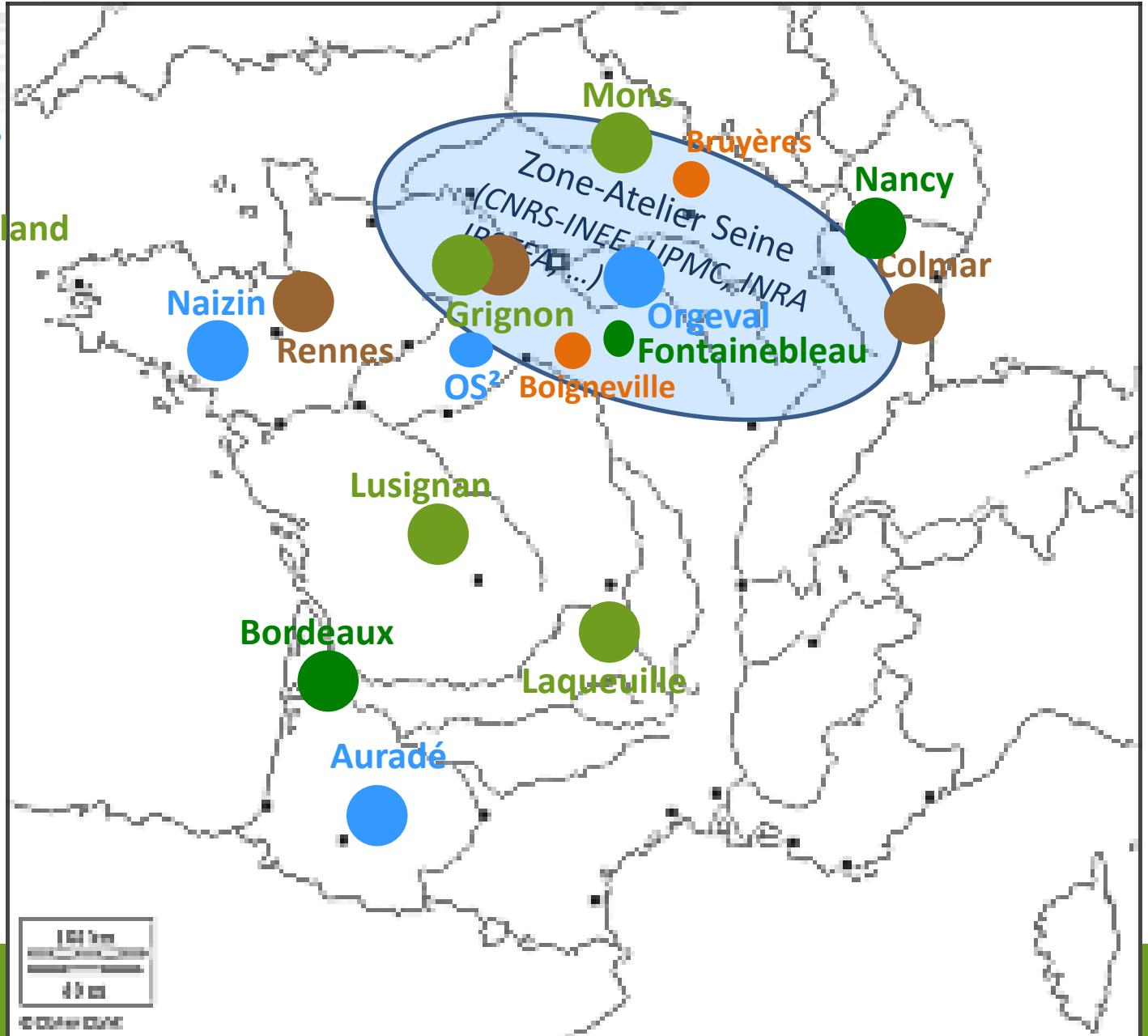
Watersheds

Crops/grassland

Forest

Organic manures

Others



ADEME – French Environment and Energy Management Agency

- **Status** : public agency under the joint authority of the Ministry for Ecology, Sustainable Development and Energy and the Ministry for Higher Education and Research. ~ 1 000 employees, Budget : ~ 600 M€
- **Priority areas** : energy, **air, climate change mitigation**, noise, transport, waste, polluted soil and sites, and environmental management.
- **Mission** : encouraging, supervising, coordinating, facilitating and undertaking operations with the aim of protecting the environment and managing energy.

<http://www.environmental-expert.com/companies/ademe-french-environment-and-energy-management-agency-23869>

Objective “Reduction of air pollutant emissions from agriculture” :

- **To initiate in 2015-2016** (with the French Ministries of Agriculture and Ecology) **exemplary operations** for reducing emissions of NH₃ and GhGs from the agricultural activities in a selection of French regions (*feuille de route 2015 issue de la conférence environnementale 2014*).
- **To evaluate and prioritize actions of reduction** that could be funded.
- **To propose protocols for assessing the effects** of these operations on emissions and air quality (*ex post*)



=> We are looking for **experience sharing and expertise**. How could this be done?

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