**WHY**

Today’s agriculture is highly dependent on external nutrient inputs, and in particular mineral fertilisers supplying nitrogen (N), phosphorus (P), potassium, and other elements, which are indispensable components of many intensive farming systems.

**trans4num’s ambition** is to substantiate and broadly promote the nature-based solutions (NBS) approach for sustainable agricultural practices in Europe and China, focusing on nutrient management (bio-based nutrient sources, sustainable crop rotation, integrated pest management).

**HOW**

**trans4num methodological roadmap**

1. **Systemic analysis and state of the art**
   - Literature review on NBS transformation pathway options, local nutrient management tools
   - Literature review for SET-based variables identification for NBS cases cross analysis

2. **NBS Characterization and appraisal**
   - Observe, test, discuss, assess NBS cases and nutrient management plans
   - Map AKIS actions in the NBS sites using interviews
   - Cross-analyse NBS cases through multi-perspective assessment criteria

3. **Optimising nutrient flow**
   - Calculate nutrient flows using satellite-based data at regional and watershed level
   - Adapt existing nutrient management tools to develop a dynamic decision support system for optimum nutrient supply

4. **Scenario development**
   - Bio-economic simulations for the economic impact assessment of NBS using agent-based modelling
   - Model the regional food system and assessing potential trade-offs and synergies

5. **Designing transformative learning**
   - Stakeholder workshops to design future social innovations
   - Hackathon workshops to engage technology development actors
   - Transdisciplinary workshops for actor involvement and assessment of NBS innovations and transformation pathways

**WHERE**

To study NBS with a multi-level, multi-actor approach, **trans4num** has selected four European and three Chinese sites.

**OBJECTIVE**

to develop and test innovative NBS practices and pathways that contribute to a socio-ecological transformation of existing intensive agriculture systems towards increasingly sustainable nutrient management.

**WHAT**

- **Outputs**
  - Innovative NBS practices
  - DSS tool
  - Methodologies
  - Scenarios
  - Dissemination

- **Outcomes**
  - Strong international cooperation
  - New transformation pathways
  - Optimize nutrient flows
  - Market opportunities for NBS

**WHO**

Our consortium

**trans4num** is a four-year project funded under the Zero Pollution call as an EU-China international cooperation action on nature-based solutions (NBS) for nutrient management in agriculture.

Subscribe to our Newsletter

www.trans4num.eu/en/