Master-/Bachelor thesis: QGis-based planning of an apple agroforestry system

Within **the agroforestry living lab/TransRegINT** we are researching different apple rootstocks (*Bittenfelder, Antonowka, MM111, D2212, M9, G214*). This spring the 2-year old rootstocks got grafted with scions of the varieties *'Zabergäurenette'* and *'Rheinischer Winterrambur'*. In autumn 2025 the 250 trees will be planted into two agroforestry systems on *Berkhöfel* and *Monreberg* farm as agroforestry living lab partners.

As your thesis you will plan those two agroforestry systems (AFS) in exchange with us as your supervisors and the cooperating farmers using QGis. The **planning process** needs to take the following aspects into account:

- **diverse apple tree planting** including 12 different rootstock x variety - combinations and 3 different tree forms – low, intermediate and high trunk trees
- **manageability for the farmers** including tree pruning, harvest, undergrowth management, tree protection against sheep, wild deer and other animals
- **fulfilled statistical standards** for the purpose of investigating the AFS as **field trials**

By completing a thesis in this project, you will gain insights into a concrete example of agroforestry planning and implementation including the exchange with our project practice partners.

QGis experience is a prerequisite. *QGis* is a free open-source geographic information system (GIS) software used to display spatial data. One field of application is the design of agroforestry plantings.

Start of thesis possible from March 2025

1st supervisor: Prof. Florian Wichern / Prof. Jens Gebauer
2nd supervisor: Anna-Lea Ortmann

contact: anna-lea.ortmann@hochschule-rhein-waal.de | 02821-806739951