AGRIFOOTPRINT
CARBON FOOTPRINT ASSESSMENT IN CROP GROWING AND AGRI FOOD VALUE CHAINS

ABOUT
The INNOVATION COMPANY BIOINVEST-AGRO LLC. (Ukraine) has been on the market since 2004. The company focuses on the development of innovative adaptive technologies for plant growing that enhance productivity and quality of crop production. The company’s solutions allow to reduce operating costs and risks, optimise the use of nutrients and plant protection products, and reduce the losses of the transitional period during the introduction of energy saving technologies in the soil cultivation practices (No-till, Mini, Strip-Till).

CHALLENGE
The aim of the AgriFootprint pilot is to create a service for the assessment of carbon footprint of agricultural products in the process of growing. Also, it is the tool for sound adjustment of agrotechnological, organisational and management decisions by food producers of plant origin. The service meets demand among crop producers and will create a new niche of eco-economic services.

HOW THEY USED EOSC SERVICES
The AgriFootprint pilot implementation divided into few MVPs that includes building comprehensive infrastructure encompassing Kubernetes cluster for services, code repository with delivery process and metadata datasets storage for carbon footprint modeling.

RESULTS
Each of MVPs of the pilot uses different sets of EOSC services, namely: EGI Cloud Compute, EGI Cloud Container Compute, EGI Online Storage, Elastic Cloud Compute Cluster (EC3) for Kubernetes or Paas/SaaS, Zanodo, Amnesia, OpenAIR Research Graph and OpenAIR Broker.

IMPACT
Despite a 6-month pause due to the Ukrainian war, the collaboration was successful in developing a cloud-based model for carbon footprint estimation in agriculture, and creating a prototype cloud service.

HOW THEY USED EOSC SERVICES
The NOSC-UA DIH, acting as an i4trust ambassador, prepared and executed an experiment for agricultural data exchange among SMEs from multiple countries, resulting in the realisation of the i4Trust Data Spaces Experiment “Carbon Agri Data Space (CADS)”. With the support of EOSC DIH, the cloud model developed in AgriFootPrint was adapted to meet i4Trust Dataspaces requirements.

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The service was successfully prototyped and tested with 3 farmers (from Spain and Ukraine) and 3 Farm Management Information Systems (FMIS) (Greece, France and Italy). The solution allows Farmers and FMIS to estimate and trace carbon footprints during food production, providing a ready-to-use service for diverse stakeholders based on standard mechanisms for data interoperability, value creation, and data sovereignty. TRL notably increased from TRL2 to TRL6.

COUNTRY: UKRAINE
SECTOR: AGRITECH

TRL 6

BUSINESS PARTNER

EOSC SERVICE PROVIDER

SUPPORTING PROJECT

EOSC DIH Use Case Brochure