Ipaast-czo: interoperable precision agricultural and archaeological sensing technologies

Image credit: Victorino Mayoral Herrera

Why bring archaeology and precision agriculture together?

Technologies, policies and priorities affecting agricultural landscapes are changing. Today, rural agricultural landscapes are being fundamentally transformed by the introduction of precision agriculture. In parallel, new policies and incentives are being developed to address the climate crisis, environmental sustainability and food security. Bringing the communities studying the past and present of agricultural landscapes together, connecting stakeholders in heritage, archaeology, policy, farming communities, and precision agriculture can help us to understand the impacts of and shape positive outcomes for this transformation by developing common ground and shared agendas.

Archaeology and Precision Agriculture have a lot in common. Technologies such as satellite imaging, drone-based imaging, and geophysical survey are used in the practice of precision agriculture to support farmers and land managers to make data-driven management decisions. Archaeologists use many of these same technologies to investigate the buried evidence for past human activities and make this evidence for the heritage of agricultural landscapes visible. Fundamentally, practitioners and researchers in both precision agriculture and archaeology are invested in developing a better understanding of soils, plants, topography, water, insects, current farming practices and anything else that shapes agricultural landscapes.

Image credit: Rachel Opitz

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There are benefits in sharing data and methods. Sharing data and analytical approaches between archaeology and precision agriculture can lead to new research and improved practices in both domains. Making our data more compatible can lead to access to information at an unprecedented scale and level of detail. By using these data bringing our different perspectives on how to analyse and interpret them together, we can enhance our understanding of the character of the agricultural landscape.

What we're doing. Concrete methods are needed to support a new approach to studying and managing agricultural landscapes. The ipaast-czo project is beginning to develop these methods by focusing on data, analysis and workflows used in archaeological and precision agricultural sensing.

Who is involved. The ipaast-czo is a collaboration between researchers in archaeology who are studying the evidence for long-term impacts of human activities on today's farmed landscapes and researchers in agronomy and precision agriculture who are studying how to best manage today's farmed landscapes sustainably. The project team is based in Spain, Italy, Belgium and the United Kingdom. You can read more about the team here.

Image Credit: Wessex Archaeology. CC license.

Illustration credit: Ainsley Seago.

Learn more about the project. You can read more about the project and its activities on its website. You can also sign up for the mailing list to receive updates on the project's activities

Participate in ipaast project activities. If you are interested in participating in project workshops, being contacted as part of a future stakeholder survey, or discussing anything else with the project team, please email the PI at Rachel.Opitz@glasgow.ac.uk with the subject line 'ipaast-czo participation'.

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