



Engineering Studies

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Call for papers – Special issue

“New engineering actors and practices in agriculture”

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Engineering Studies is an **interdisciplinary journal** devoted to the scholarly study of engineers and engineering. It advances analysis (historical, social, cultural, political, philosophical, and organizational) which enhances **critical understanding of engineering education, research, practice, policy, and representation**.

Engineering Studies involves critical investigation in the practices under study (work, design, formation, or service to society); it does not publish papers that seek only to improve the effectiveness of engineering. Prospective authors are invited to reflect on and anticipate how their work might prove helpful to the academy and beyond.

Engineering Studies warmly welcome prospective authors to submit their contributions to a special issue dedicated to **New engineering actors and practices in agriculture**. The study of engineers and engineering generally focuses on product design, infrastructure (transport, water, energy, telecommunication), and particular industries such as aerospace, energy, and computing – but rarely agriculture, except in field-specific journals. However, **engineers and engineering are deeply engaged with agriculture, food and rural communities**. This special issue seeks to shed some light on engineers involved in agriculture: who they are, what are their relations to other actors, and what are their practices.

Agriculture is facing new problems and societal issues, such as health preoccupations, global food security, climate change, degradation of farmland, stresses in the use of resources, consumption pattern changes, animal welfare, etc. In this context, **agricultural engineering** is changing in many directions, especially in terms of **design, production, and maintenance of new technologies**, such as: smart farming and precision agriculture that involve new hardware

(e.g. drones, robots, sensors, etc.), software (e.g. georectification, optimization of inputs applications and irrigation, blockchains), systems (e.g. tracking systems, Internet of things), artificial intelligence, data bases, and data analytics. **Crops and animals** themselves are changing with genetically modified organisms and gene editing, microalgae feedstocks, new inputs and new production methods (e.g. hydroponics, vertical or urban farming, agroecological practices, seawater farming, etc.). **Harvesting, storage, and transformation** also face new challenges and technology with biomaterials (e.g. bioplastics), cultured meats, and bioenergy production. **Social innovations** also involve new engineering practices, such as crowd farming or reorganisation of markets and distribution at local levels.

The work and organizations within which engineering activities take place range from the technical management of plants and animals in situated fields and farms, to the management of large tangible or intangible infrastructures (irrigated perimeters, online databases or globalized value chains). **Engineering education** is consequently often considered as an essential lever for changing agricultural production methods and for meeting the major challenges facing agriculture. Trained at universities, or in engineering schools backed by agricultural research laboratories, they are called upon to occupy very diverse jobs, after having been confronted with constantly evolving knowledge and research fronts. The nature of their activities has itself changed considerably as a result of the major transformations that have affected the relationship between agriculture and society, in particular in industrialized and emerging countries. But at the same time, and particularly in the Global South, **farmers' access to engineers** and technologies is still a scarce resource, a situation in which specific modes of innovation are developing, based on the use of local resources and on appropriate processes. Thus, many questions and controversies arise regarding the **role of Western engineering** and its **articulation with local knowledge systems**, particularly in the **Global South**, and the management of material and product flows on a local and global scale.

This diversity and density of issues makes the study of engineering in agriculture particularly promising for the understanding of engineering and engineers. It also provides an opportunity to an original contribution to the field of **rural sociology and STS applied to the agricultural sector**, the latter having so far done little to explore the role of engineers and their practices.

The editors of this special issue of *Engineering Studies* seek papers that examine the intersection of engineering with agriculture, the food supply, and related societal issues. The proposals could engage critical understanding of what is or was going on with agricultural engineering and its history, new engineering practices with a specific interest for digital agriculture and other emerging technologies, and new challenges for engineering raised by the problems of rural communities and food production and distribution.

Interested authors should contact the guest editors. Papers to be submitted before Dec 2019.

Instructions for authors

<https://www.tandfonline.com/action/authorSubmission?journalCode=test20&page=instructions>