

Call for Papers

Workshop and Special Issue on

Automating the Future of Farm Work?

Precision and Smart Agriculture Technologies Across East Asia in the Twenty-First Century

An international workshop to be held at

The Hong Kong University of Science and Technology,

Division of Social Science

20th and 21st February, 2020

We invite submissions for a workshop and subsequent special issue of a Science & Technology-related journal devoted to precision and smart agriculture technologies and their application across East Asia in the twenty-first century.

Scholars interested in participating in this workshop and special issue should submit an abstract (at least 1,500 words) by **August 30, 2019**. Authors will be notified by **September 27, 2019** if their papers have been accepted for presentation at the workshop. There is no registration fee. Airfare and up to three nights of hotel accommodation will be provided. Complete drafts of the papers (comprising a minimum of 8,000 words in English including headings, references and footnotes) must be submitted by **November 29, 2019**. All papers will be circulated among the participants in advance and participants are expected to comment extensively at the workshop on each other's papers; discussion is a key objective and element of this workshop. A subset of authors will be asked to submit their papers for inclusion in the special issue by **January 31, 2020**, with the expectation that their papers will be published by late-2020, provided they pass the external review process.

Overview

This workshop will investigate the automation of farm work and the emergence, development and deployment of precision and smart agriculture technologies (hereafter, referred to as precision agriculture, or PA)—Internet of Things (IoT), sensors, integrated circuits, drones, robotics and artificial intelligence (AI), GPS and satellite imaging and so on—across East Asia in the twenty-first century.

The industry is fast gathering momentum across the world as well as across East Asia. The Fourth Industrial Revolution, an era defined by rapid advances in numerous technologies, notably intelligent computing technologies such as AI, robotics and the IoT, is facilitating cost, efficiency and environmental benefits in agriculture, thus aiding the reliability of global food security (FAO 2018; Walter et al. 2017).

Moreover, PA technologies have the potential to bring peasants and rural farmers, rural residents returning to the countryside, government workers and commercial representatives together in new and unprecedented networks of interdependence, reconfiguring rural and regional economies in new and unprecedented ways (Kritikos 2017). Indeed, many commentators start with the observation that the introduction of PA technologies may alleviate ailing rural bodies who conduct much farm work today, especially in poorer nations, by providing an impetus for younger and educated people to move to the countryside and pursue careers in agriculture. At the same time, however, the introduction of PA technologies introduces complex ethical considerations such questions of access and inclusion (Sandbrook 2015).

Workshop Scope

The goal of this workshop is to deliberate theoretical and empirical research findings with a view to identifying regulations and policies that can facilitate the broad-based development of PA technologies and their implementation across regional and rural economies. This may include, but is not limited to, questions pertaining to business models, efficiencies, ethics, profitability as well as transparency. We seek to explore, in short, just how smart is “smart” agriculture?

In particular, this workshop seeks to go beyond the topic of technical componentry and explore the *processes* and *outcomes* of precision and smart agriculture technologies.

Regarding *processes*, we wish to explore how PA technologies are imagined, conceptualised, designed, manufactured and deployed. Rather than view the development of PA technologies as occurring in a vacuum, we wish to pay equal attention to all agents involved in conceiving and producing these technologies, human and non-human, the dialectic nature of these processes and the underlying values and judgements explicated by different actors throughout these processes. Actor-Network Theory (e.g. Latour 2005), for example, seeks to unravel how technologies become—or are “translated” into—objects that are used in daily lives and the complex network of actors involved in this process. Notions of “domestication” (e.g. Silverstone and Hirsch 1992), moreover, similarly seek to unravel the complex and unique ways in which a new technology becomes part of peoples’ daily lives in a particular society by examining the symbolic, practical and cognitive processes involved.

This is important when considering PA technologies in nations with rural populations where educational attainment and class identity may form powerful barriers inhibiting equal participation in new economies formed by PA technologies. At the very least, we seek to unravel and identify exactly who are PA users and non-users—peasants and farmers, pesticide businesses, local government interests, etc.—and their interactions squarely inside investigations into PA technology development (Oudshoorn and Pinch 2003).

Regarding *outcomes*, we are interested in investigating what kind of hierarchies emerge between various actors, what kind of human-technology relationships and techno-subjectivities can be observed, and what kind of urban/rural—even hybrid—identities

form. Lastly, we wish to understand PA technology automation efficiencies, promised versus actual. In Australia and the UK, for example, the use of satellite imagery to check compliance with legislation led farmers to hold a fairer opinion of compliance processes and develop better relations with government representatives (Purdy 2011). Meanwhile in China, the use of drones to spray pesticides has created significant cost efficiencies as companies such as XAG and DJI have created networks of young and educated drone operators who sell their services to rural communities. There is a significant gap in knowledge, however, when it comes to understanding other political, social and cultural outcomes.

Summary of Objectives

These are but some of the broad areas we are interested in receiving submissions on. As the goal of this workshop is to deliberate theoretical and empirical research findings with a view to identifying regulations and policies that can facilitate the broad-based development of the PA industry across East Asia, other topics and questions we are interested in are (but not limited to):

- How are PA regulatory and policy frameworks developed, what does this reveal about attitudes toward the Fourth Industrial Revolution and what path dependencies, national values and other priorities does it explicate (either single-case or comparative in nature)?;
- How are specific PA technologies developed? Which actors are involved, and which are not? What global and/or regional production networks exist? Are there any transparency and/or ethical concerns? How does this (re)configuration assist PA industry development and how might it be improved?;
- How are PA users and non-users—operators, farmers, private businesses—conceived of and incorporated into technology development? How do users and non-users respond to and interact with PA technologies?; and
- This workshop is interested in agriculture in a broad sense and is not limited to crop farming; we welcome submissions from scholars researching the livestock and animal food preparation industries as well as the aquaculture and fish industries, for example.

Submission Procedures

To submit an abstract for consideration for the workshop, please attach your abstract to an e-mail and send it to Sacha Cody (sachacody@ust.hk). In the subject line of the e-mail, please write: MMEA PA Workshop: The Title of Your Paper.

Please note your abstract should include the title of the paper, all author(s) names and affiliations as well as contact information. It should contain clear information on the research method(s), data source(s), analytical tool(s) and theoretical framework(s) to be used.

Please note we are seeking original contributions; papers that have already been published or submitted for publication will not be accepted.

**** NOTE:** *The organising committee (Sacha Cody and Naubahar Sharif) welcomes emails to informally discuss ideas prior to the submission of a proposal. Please write to Sacha and he will respond to all inquiries promptly. ***

Highest priority will be given to papers that combine a general theoretical discussion with new empirical findings as well as policy and regulatory implications. Papers may be based on new comparative research as well as single-case studies, and on qualitative as well as quantitative research methods.

This workshop is funded by the *Making Modernity in East Asia (MMEA): technologies of everyday life, 19th – 21st centuries* (<https://mmea.hku.hk>; RGC CRF HKU C7011–16G) research project. This is a collaborative research project between The University of Hong Kong and The Hong Kong University of Science and Technology. The main objective of this collaborative research project is to establish a new, interdisciplinary way of understanding East Asian modernity through the lens of everyday technology.

Workshop participants' work will be viewed by the broader MMEA team (<https://mmea.hku.hk/about-the-project/project-team/>). Workshop participants may have the opportunity to liaise and meet with other team members while in Hong Kong.

References

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- Purdy, Ray. 2011. Attitudes of UK and Australian Farmers Towards Monitoring Activity with Satellite Technologies: lessons to be learnt. *Space Policy* 27: 202–212.
- Sandbrook, Chris. 2015. The Social Implications of Using Drones for Biodiversity Conservation. *Ambio* 44(4): S636–S647.

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