

From citizens' to farmers' science: are smartphone technologies a useful tool in participatory agricultural research?

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Abstract

Over the last decade citizen science approaches have become increasingly popular in several disciplines supported by the proliferation of mobile communication technologies such as smartphones. However, citizen science methodologies involving large numbers of participants seem not yet have been widely adopted in agricultural research, even though participatory on-farm approaches involving small farmer groups are now more widely used.

Here, we present results of an online survey amongst British and French farmers, investigating i) smartphone use in various farm management practices, and ii) the interest of farmers to participate in citizen science projects. Eighty-nine per-cent of the 57 respondents from Britain and France owned a smartphone, which was also the device they used most often on a daily basis for farm management when compared to other communication devices (including laptop and desktop computers, tablets, landline telephones). A third of farmers using their smartphone for farm management were not using any farm management specific applications on their smartphone, but of the farmers that did, an average of four applications were used. Farmers were very positive about citizen science regarding it as a useful tool for data collection, real-time monitoring, identification of research questions, experimental work, and wildlife recording on farm. They showed strong interest to participate in citizen science projects with varying and often high time commitments. Experimental work was the most likely activity for which respondents felt some financial support was necessary.

This paper is the first to quantify and explore farmers' use of smartphones for farm management in Europe, and to document farmers' support and potential interest to participate in farm related citizen science projects. Smartphone technologies offer great potential for participatory agricultural research, and our results show that farmers tend to have sufficient knowledge of the technology as well the enthusiasm to engage in citizen science. This paper provides a basis and justification for the wider application of smartphone technologies in future participatory research projects that are concerned with exploring pathways towards greater agricultural sustainability and resilience.

Keywords:

Citizen science, smartphones, farm management applications, Britain, France, participatory research