

innovations

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## Call for papers – Special Issue

### Innovations at the service of agriculture? What opportunities and emerging risks?

Guest Editor(s): Sylvie Lupton, Michael Carolan and Raphaël Stephens

Agriculture is at the crossroads of major changes. Both push and pull factors encourage or drive farmers to innovate or adopt new processes, products or services (Nienaner et Potočnik Slavič, 2013). Hence, farmers can be both considered as entrepreneurs (innovation makers) and innovation takers.

On the one hand, pull factors encourage farmers to innovate through trial and error (Nelson et Winter, 1982). Agriculture is a particularly risky sector, as it faces difficult natural conditions (climatic change, animal and plant diseases...) and agricultural market fluctuations (price volatility of inputs and outputs) (OECD, 2000; Lupton, Chauveau-Aussourd and Randrianasolo-Rakotobe, 2019). Farmers are confronted with less government support since the emergence of the WTO (World Trade Organization) in 1995, whose aim is to liberalize world trade (elimination of quotas and duties, decreasing subsidies...). Faced with this changing environment (March and Simon, 1958), farmers seek new ways to produce (agroecology, diversification, organizational innovations) (Peyraud et al., 2020; Charrier et al., 2020; Salembier et al., 2020; Chartier and Lupton, 2020; Petit et al., 2019; Sneessens et al., 2019; Chiffolleau et al., 2019; Lemeilleur and Allaire, 2018; Touzard, 2017; Lupton, Randrianasolo-Rakotobe and Rakotonandraina, 2017), propose new services (farm sales, agrotourism) (Chiffolleau, 2019; Durrande-Moreau, 2018 ; Chiffolleau and Paturel, 2016) or start a new activity that differs fundamentally from their former occupation (agricultural methanization) (Grouiez et al., 2020), through incremental or radical innovations (Schumpeter, 1942).

On the other hand, one can observe another emerging trend, as innovations are more and more created for farmers (push factors) in a context of accelerating robotic performance and data processing (Pratt, 2015). Farmers are continuously solicited by firms offering new products

and services (connected weather stations, drones, big data, robotics, digital platforms and other new technologies) (Carolan, 2020) promising improved risk anticipation and better management of the farm. But do these innovations respond to the farmers' expectations and needs? Are they really necessary to increase farmers' welfare (flexibility of working hours, higher autonomy of the farmer...) by anticipating risks (connected weather stations, robots...) and facilitating farmers' lives from an economic (cost reduction, increase or stabilisation of farming incomes), social (widening of networks available to farmers, more interactions with consumers through alternative food networks...) and environmental (reduction of fertilizers and plant protection products...) point of view? These issues boil down to a broader problem: the mismatch between supply and demand pointed out by Hirschman (1974). Firms may propose to respond to risks and demands without really knowing the true needs of farmers (who are the best placed to know what they need), by proposing new products and services that may not be viable (start-up bankruptcy) or inadequate (Lupton, 2005). Innovative products and services may disappoint farmers, not because of the dishonesty of start-ups but a necessary learning-by-doing process of the start-ups that acquire knowledge with the reactions of farmers to their novelties.

A threshold question of this special issue is whether innovations created by or for farmers allow the latter to increase their income and produce in a more sustainable<sup>1</sup> way. In other words, do they contribute to improve the future of agriculture? Another underlying issue stems from the origin of agricultural innovations: do innovations created by farmers or farmers' families better correspond to farmers' needs and the risks they take? Finally, do innovations really correspond to farmers' expectations? Can they generate emerging risks (data confidentiality, digital gap leading to economic disparities between various territories...) that may be bigger than the risks and problems they are supposed to address?

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<sup>1</sup> The adjective sustainable refers to durable agriculture at economic (economic viability), social (limited controversies regarding new farming activities) and environmental (reduction of negative externalities) levels.

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### **Timetable for submission and acceptance of papers:**

- **28/02/2022:** Deadline for complete manuscripts through online paper submission: <https://jiem.manuscriptmanager.net>

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- **28/02/2023:** Final notification for acceptance:

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