

# Roles and responsibilities in transition?

## Farmers' ethics in the bio-economy

Z. Robaey, L. Asveld, and P. Osseweijer

The idea of the bio-economy comes at a time where technological solutions are increasingly necessary to move away from a fossil fuel based economy in order to redress our environmental bill and fight climate change. The most known example of the bio-economy is the production of bio-fuels, not the least controversial because of the food versus fuel debate, and yet it could be acceptable under the right circumstances (Nuffield Council 2011). In the meantime, a multitude of technological developments have emerged for producing biofuels from different sources of biomass, including leftovers of agriculture, and specialised energy crops. With these technological developments, multiple stakeholders aiming to set up sustainable bio-based value chains have emerged. Here sustainable refers to using biomass, as a renewable resource, and having overall less greenhouse gas emissions. Besides bio-fuels, bio-based value chains explore what products could be made from biomass such as materials, or nutraceuticals. Farmers, then, become an important provider of a resource that might be needed by many, and that is neither food nor feed.

The language of the bio-economy sometimes seems to take biomass for granted in terms of pointing to possibilities with biomass. Farmers, as producers of biomass, can suddenly play a central and critical role for the success of these technological endeavours. Considering today's environmental challenges, what arable land is used for and how it is used is a question of moral significance (Kline et al. 2017). Considering the role of farmers and the choices they will be brought to make regarding the values chains they want to participate in are of moral significance as well. What is their role in these new value

Z. Robaey, L. Asveld,  
and P. Osseweijer

Biotechnology & Society, Department  
of Biotechnology, Delft University of  
Technology, The Netherlands.

Corresponding author: Zoë Robaey  
[z.h.robaey@tudelft.nl](mailto:z.h.robaey@tudelft.nl)

chains? What are their responsibilities? What kind of farmer's ethics is accessible to make responsible choices when considering what to plant, and to whom to sell? Or in other words, what is a farmer's ethics in the bioeconomy? While much work has been done on farmer's preferences, or attitudes, little has been said about farmer's ethics.

Meijboom and Stafleu (2016) suggest that entrusting farmers with professional moral autonomy (PMA) increases the chance of them formulating innovative answers to ethical issues. In the case of the bio-economy, this would suggest that having PMA would help farmers make choices and base them on certain elements of justification (could be principles, rights, values, etc.). To do so, Meijboom and Stafleu (2016) suggest a number of institutional solutions after making the case that farming is a profession: a code of ethics, ethics education, or ethics as an integral part of farmers' organization. These elements would anchor farmer's moral responsibilities and support their PMA, or in other words, capacity to act in a given agricultural moral dilemma. However, the bio-economy presents several challenges for such institutional solutions, such as the existence of different institutions in different countries and the related difficulties of coordination. Also, the rapid technological developments create new value chains in which farmers, as producer of biomass, could have the opportunity to participate if they were autonomous.

The account suggested by Meijboom and Stafleu (2016) seems still far removed from the reality of the farmer in her context. Also, this account requires working and reliable institutions, with a high degree of agreement amongst farmers. In addition, in the context of the bioeconomy, and increasing globalization, such a governance structure for farmers' ethics might prove insufficient to deal with the challenges of institutionalizing a farmers' ethics locally and then globally. How can we then conceptualize farmer's PMA? One could conceptualize it as a role responsibility, or as a bundle of rights and responsibilities. These concepts, however, also offer the rigidity

we criticize above. Instead, we suggest a conceptualization that allows for change, by being fluid and dynamic. We suggest understanding PMA as the realization of capabilities through the identification of values and the cultivation of epistemic virtues.

Values are important goals shared by society, like freedom, or equality, or sustainability. Asveld (2016) argues that experimenting and thereby learning about values, effects and institutions is necessary for the bioeconomy. For biofuels, the two competing values of sustainability and economic benefits for farmers first seemed to go hand in hand. Rapidly after, issues of indirect land use change (whereby a change in agricultural production can change the amount of CO<sub>2</sub> released in the atmosphere) made these two values confront each other: it was sustainability or economic benefits. According to Asveld, had these two values been made more explicit, the societal debate would have had the opportunity to address conflicting issues earlier on.

But how can this learning be facilitated? Cultivating epistemic virtues and being supported to do so would allow farmers to learn about the transition: about their values, about impacts, and about institutions. Epistemic virtues can be cultivated for different kinds of knowledge and different kinds of learning. Robaey (2016a) suggests that responsibility in using new technologies can only happen if learning happens. Also, when a technology is acquired, the responsibility to learn must be shared, supported and encouraged along the value chain (see Robaey 2016b).

Oosterlaken (2015) suggests that we can design technologies for capabilities. We would like to suggest that having PMA would mean for farmers to choose for or develop technologies that best allow them to realize their capabilities. Explicating values, and cultivating epistemic virtues could be a way to realize capabilities. As an example, we present one of Nussbaum's central capabilities as reported by Oosterlaken (2015). "Practical Reason. Being able to form a conception of the good and to engage in critical reflection about the planning of one's life. (This entails protection for the liberty

of conscience and religious observance)”. Here, explicating what values mean, and learning about a technology by exercising one’s epistemic virtues will allow a farmer to formulate a conception of the good, and thereby make choices for her field, and plan for the next season and maybe more.

To conclude, this brief overview of the topic, in order to understand the role and responsibilities of farmers in a transition to a bio-economy, using the notion of professional moral autonomy is useful. We suggest fleshing out this notion by

looking at values, epistemic virtues and capabilities in order to account for a dynamic, flexible, and specific context. This is a first step in defining what farmer’s responsibilities should look like in the bio-economy, and therefore a suggestion for a farmer’s ethics.

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