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## The ‘wickedness’ of GM crop applications in the European Union

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### ABSTRACT

The European Union (EU) still retains genetically modified (GM) crop applications within its agriculture and on the EU market. The current EU non-GM crop regime is in fact a ‘fictitious’ or ‘virtual’ non-GM crop regime that has developed into a ‘wicked’ problem. Any progress towards resolving this impasse, either in favour of or against GM crops and their applications, is extremely difficult due to the inherent nature of the problem and the high level of conflict, discord and complexity involved. Top-down decisions are ineffective as a solution, which was clearly demonstrated by the failure to induce change when the GM potato Amflora was resolutely authorised for cultivation in the EU. True solutions require multi-level stakeholder engagement and a common understanding of a shared problem to break the impasse in the EU. Reaching this shared understanding remains a major – albeit interesting – challenge for future research.

**KEYWORDS:** Genetic modification (GMO, GMI); EU; regime; wicked problem; shared understanding

### 1. Introduction

European consumers have become increasingly disconnected from the agricultural practices and the production chain that actually produces their food. This disconnection generates a high dependency on other stakeholders and implies that if an agricultural practice is not part of the societal debate, we often take it for granted.

For a non-governmental organisation (NGO) social engagement is necessary to exert power. As NGOs are strongly opposed to genetically modified (GM) crops from an ideological standpoint, they have made GM crops a ‘socially sensitive’ innovation in the European Union (EU). Some authors argue that this successful public mobilisation relied on shared values across the majority of European citizens, while others describe the anti-GM front (and especially NGOs) as advocacy groups who impose their ideological opinions on society. Although there is no evidence of a direct cause-effect relationship, campaigns by NGOs (combined with media coverage) have indeed affected the overall EU public perception of GM crops and their applications. At present, Europeans are highly sceptical and restrained, and EU supermarkets openly refuse the use of genetically modified ingredients (GMI) in their stores.

### 2. Yes, we do eat GM food in the EU

Although GMIs must be labelled in the EU, most EU consumers are unaware of the fact that many GMIs are actually present in EU supermarkets and in the foods that they consume. For example, eggs, milk or meat derived from GM-fed animals are sold on the EU

market without a GM label (as these animal products are exempt from GM labelling under Regulation EC 1830/2003). Plant-derived processed food products may also contain GMIs at traces below 0.9%, as amounts below this threshold are also exempt from GM labelling under this Regulation. Hence, the non-GM regime in the EU market is only a ‘fictitious’ or ‘virtual’ non-GM regime. Clearly, this creates a tricky and challenging environment for EU supermarkets to conduct business, as the indirect presence of GMIs in their stores prohibits them from correctly claiming that they are ‘GM-free’ while it simultaneously inhibits them from publicly doubting the safety of GM crops.

At present, the EU GM crop legislation is one of the most stringent worldwide, yet unpredictable and vulnerable to shifts in public opinion. To date, this regulatory environment has failed to create a stable and predictable environment in which to research, regulate and implement GM crop applications. On a political level, for instance, individual Member States (MS) actively build and exploit a non-GM identity. They may implement co-existence measures that do not necessarily comply with the available scientific evidence but that create a ‘GM-safe’ country image (Ramessar *et al.*, 2010). Or they implement a national regulation to specifically market their non-GM identity, such as the labels ‘Gentechnikfrei’ in Austria, ‘ohne Gentechnik’ in Germany and ‘sans OGM’ in France. In addition, several MS, such as Austria, Luxembourg, Poland and Germany, have installed an official ban on MON810 cultivation on their territory (which is the only GM maize currently authorised for cultivation in the EU). These ‘GM-free identities’ reinforce the present

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fictitious EU non-GM crop regime, yet they somehow conflict with other European and international legislations that focus either on risk, safety and biodiversity or on free trade mechanisms, in terms of their assessment and decisions with regard to GM crops.

Many authors doubt whether the current non-GM crop regime in the EU will persist in the future, as at present GM crops are rapidly implemented outside the EU whilst a deadlock situation has developed within the EU. This disparity compromises the availability of non-GM certified raw materials (especially vegetable proteins) that the EU needs to import. Also, the new GM crops in the pipeline are quite diverse in terms of their characteristics and applications. New GM crop applications are expected to increase substantially in Asian countries, and this will reduce the attractiveness of producing non-GM crops for the European market. It is therefore of interest to determine how the EU regime will cope with these future trends.

### 3. A wicked problem

The current deadlocked non-GM crop regime in the EU can be classified as a 'wicked' problem, defined as having:

*'cause-effect relationships that are difficult or impossible to define, cannot be framed and solved without creating controversies among stakeholders, and requires collective action among societal groups with, strongly held, conflicting beliefs and values'* (Dentoni *et al.*, 2012).

GM crops directly impact on our agricultural and consumption practices and hence potentially impact on the cultural meanings attached to our food production and consumption. Therefore, many stakeholders to-and-fro position themselves dynamically and in different constellations in the GM debate. The wickedness of the problem, though, makes this debate very complex and includes many social issues, such as the globalisation of agriculture, the patentability of life forms, the role of science in society, the future of the common agricultural policy and the power of multinational industries.

However, solving a wicked problem is extremely difficult, due to the high level of discord and complexity involved. Attempts to solve such a problem cause unforeseen consequences or side effects. Top-down decisions simply do not work when addressing a wicked problem, as true solutions require multi-stakeholder engagement and a common understanding of a shared problem. That is why, for example, the decision by the European Commission to (resolutely) authorise the GM potato Amflora for cultivation in the EU was deadlocked within two years, as the agricultural biotech company BASF ceased to market the GM potato any further due to social resistance. Notably, this authorisation has now been annulled by the European Court of Justice (in December 2013), as the Commission departed from the rules of the EU authorisation procedures.

### 4. GM crops are a wake-up call

Currently, one of the highest values of GM crops is their ability to challenge the basic social, political and cultural principles of our 21<sup>st</sup> century EU society. For instance - do we support or oppose globalised

agriculture?; do we accept a vertical power distribution in our food supply chain?; do we accept public-private partnerships in fundamental research funding? From the perspective of a wicked problem - which cannot be solved, but only managed - these dilemmas and tensions are valuable, as they help organisations and communities to reaffirm their roots and express their desires about the future. So, regardless of whether GM crop applications are implemented on a larger scale, or not, they have generated discussions that matter within the EU.

In the US, GMIs are standard within conventional products and consumers that repudiate GMIs are forced to buy organic products as the best alternative. Yet, this seemingly stable GM crop regime in the US is currently wavering because obligatory GMI labelling of American food products receives considerable public attention through initiatives such as California's Proposition 37 or Initiative 522 in Washington. Thus it is not the actual GM crops or GM foods that constitute the wicked problem, but the accompanying regime that institutionalises this agricultural innovation.

### 5. The way forward

The present non-GM crop regime in the EU is a wicked problem and GM crop applications are deadlocked as a result. To move forward implies unlocking the present impasse, either in favour of or against GM crop applications. This requires a shared understanding of the values, risks, opportunities and problems relating to GM crops and their applications.

Generating this shared understanding is a highly complicated trial-and-error exercise, as the debate revolves around many, often intertwined, issues which are approached with sometimes opposing scientific evidence, perceptions and interpretations. Moreover, the stakeholders involved have to look for complementarity instead of focusing on distinction. For example, from an industrial perspective, agribusiness companies must focus on action instead of caution, and they must define a long-term vision instead of just anticipating. Consumers must better understand the process of agriculture and food production, and politicians must either fully acknowledge the consequences of a globalised EU agriculture or they must prioritise its complete self-supportiveness. However, reaching this shared understanding of GM crop (applications) in the EU is still a major - albeit interesting - challenge for future research.

### About the authors

**Linde Inghelbrecht** obtained a pre-doctoral FWO fellowship for a PhD at the Department of Agricultural Economics at Ghent University, in collaboration with the Social Sciences Unit of the Institute for Agricultural and Fisheries Research (ILVO). Her PhD focusses on understanding the present (non-) GM crop regime in the EU, and on formulating possible ways forward (either in favour of or against GM crop applications).

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## Acknowledgements

This Viewpoint is based on a peer-reviewed paper given at the 19<sup>th</sup> International Farm Management Congress, Warsaw, Poland, July 2013.

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