



The non-GM crop regime in the EU: How do Industries deal with this wicked problem?



Linde Inghelbrecht^{a,b,*}, Joost Dessein^{a,b,1}, Guido Van Huylenbroeck^{a,2}

^a Ghent University, Department of Agricultural Economics, Coupure Links 653, 9000 Ghent, Belgium

^b Institute for Agricultural and Fisheries Research (ILVO), Social Sciences Unit, Burg. Van Gansberghelaan 115 Box 2, 9820 Merelbeke, Belgium

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ABSTRACT

In the European Union (EU), genetically modified (GM) crops are regarded as a socially-sensitive technology. At present, GM crops are rarely cultivated in the EU and non-genetically modified ingredients dominate the EU market. However, most consumers are unaware of the fact that many genetically modified ingredients (GMI) are present in EU supermarkets in spite of this virtual ban on GM. For example, eggs, meat or milk derived from GM-fed animals are marketed without a GM label. Moreover, the EU political landscape has failed to create a stable and predictable environment in which to either implement or reject GM crops and their applications. As such, the present non-GM crop regime in the EU presents a tricky and challenging environment for agribusiness companies to determine their GM business policy.

Few academic studies have analysed this industry perspective on the current EU non-GM crop regime. In this paper, we therefore analyse which discourses influence the GM business policy of agribusiness companies that are active on the EU market and how these discourses influence the decision-making process of several agricultural industry sectors on whether to include or exclude GMIs in products for the EU market.

The paper outlines three discourses that shape the discursive space of GM crop applications in the EU from an industry perspective, (i) *GMI as an agricultural payoff*; (ii) *GMI as a marketing threat*; and (iii) *non-GM crops as a preset end goal*. The paper also discusses how these discourses influence the GM business decision-making process for several agricultural industry sectors, these being the agricultural biotech industry, the compound feed industry, the food manufacturing and marketing industries, the potato industry and the organic farming sector. Accordingly, our research classifies the present non-GM crop regime in the EU as a “wicked problem”, due to the high level of conflict, discord and complexity involved.

Wicked problems cannot be solved, but only managed. Therefore, this paper proposes a different type of solution to break the impasse, either in favour of or against GM crop applications, by demanding multi-level stakeholder engagement instead of the current supply-chain-focused mode-of-action in industry. Nevertheless, it is necessary to adapt our knowledge about governing the particular dynamics of wicked problems, and this presents a highly complex - albeit interesting - challenge for future research.

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1. Introduction

As only legitimate reasons exist for the non-adoption of a new technology, the virtual absence of genetically modified (GM) crops in European Union (EU) agriculture and on the EU market has a certain logic [1]. Non-GM crops and non-genetically modified ingredients currently dominate the EU market. In total, the EU has only authorised (and thus legally permitted) 67 GM crops either for import into the EU, for deliberate release into the environment, or for processing in food and feed applications. In contrast, the United States currently has 196 regulatory approved GM crops [2].

* Corresponding author. Tel.: +32 272 23 55.

E-mail addresses: Linde.Inghelbrecht@ugent.be (L. Inghelbrecht), Joost.Dessein@ilvo.vlaanderen.be (J. Dessein), Guido.Vanhuylenbroeck@ugent.be (G. Van Huylenbroeck).

¹ Tel.: +32 9 272 23 57

² Tel.: +32 9 264 59 26

Particularly the cultivation of GM crops is uncommon in the EU. Only one GM crop is currently approved for cultivation: MON810, an insect-resistant variety of maize. The AMFLORA, a GM potato that exclusively produces amylopectin starch for industrial processing was until recently also authorized for cultivation in the EU (until December 2013), but the European Court of Justice has withdrawn this authorization as the Commission failed to adhere to the rules for the EU authorisation process [3]. In 2012, only five Member States (MS) have planted MON810, while eight MSs have already legally banned its cultivation on their territory [4]. The cultivation of Amflora has also been unsuccessful in the EU, as within the almost 3 years of authorisation its cultivation ceased completely because the agricultural biotech company BASF stopped marketing the potato after 2 years due to social resistance in the EU [5].

Non-GM crops and non-genetically modified ingredients thus form the dominant regime within the EU today, where “A regime comprises a coherent configuration of technological, institutional, economic, social, cognitive and physical elements and actors with individual goals, values and beliefs” [6].

However, this does not prevent the presence of genetically modified ingredients (GMI) in EU supermarkets. Products such as eggs, meat and milk derived from (imported) GM-fed animals are sold on the EU market without a GM label. Plant-derived food products might also contain an adventitious presence of GM crop traces (below 0.9%) without any GM label - because the EU Regulation only requires GMI labelling above a 0.9% threshold, and animal derived products are exempt from GM labelling. Ironically, several MSs such as France, Germany and Austria allow GM-free marketing of these products even though they may indirectly contain GMs [7]. This ‘fictitious’ or ‘apparent’ non-GM crop regime has created a tricky and challenging environment in which to conduct business. In addition, the EU political landscape has failed to create a stable and predictable environment in which to research, regulate and implement GM crop applications. The EU regulatory approval system for new GM crops is, in fact, one of the most stringent worldwide yet it is sensitive to shifts in public opinion [8]. Although the EU still acknowledges GM crops as a means to boost a knowledge-based bio-economy, practice proves otherwise [9,10].

Our paper addresses the fact that only a few academic studies have analysed the industry perspective on the current EU non-GM crop regime. How do agribusiness companies stand this regime? How do they operate within it? In this regard, a discourse analysis is an appropriate research methodology, as the analysis of meaning becomes central here [11]. In order to understand the positions of industry in this apparent non-GM crop regime, our research questions are as follows:

- 1) Which discourse(s) influence the GM business policy of an agribusiness company for the EU market?
- 2) How are these discourses reflected in practice? So, how do they influence the business decision-making process of several agricultural industry sectors on whether to include or exclude GMs in products for the EU market?

The paper outlines three discourses that shape the discursive space of GM crops and their applications within the EU from an industry perspective. It also discusses how these discourses influence the business decision-making process of several agricultural industry sectors - these being the agricultural biotech industry, the compound feed industry, the food manufacturing and marketing industries, the potato industry and the organic farming sector.

Accordingly, our analysis classifies the present EU non-GM crop regime as a “wicked problem” due to its high level of conflict, discord and complexity involved. As there are no true solutions to solve a wicked problem, addressing it requires multi-stakeholder

engagement (from industry, amongst others) in order to reach a shared understanding of a common problem. For most agribusiness companies, this strategy deviates from their current supply-chain-focused mode-of-action.

2. Methodology

With respect to the above mentioned research questions, this study was based on a discourse analysis [11], where a discourse is defined as a shared frame of meaning that “Exists in the minds of people and in the social networks of which they are part. It is based on their experiences and history, of which they may be aware or unaware, but which in either circumstance influences how they speak and act” [12]. In line with this definition, a discourse is constitutive of, and constituted (i.e. re-produced and transformed) by both social practices and institutions [11,13]. Our analysis has focused both on how GM crop applications were defined and problematised by multiple stakeholder groups and on the associated effect on the societal debate concerning GM crops in the EU.

The discourse analysis relied on an explanatory multi-sector holistic research design for which several sources of data were analysed. Our prime data were 41 semi-structured interviews undertaken between 2010 and 2011. Stakeholders were carefully sampled in multiple agricultural industry sectors by a snowball sampling technique [14]. Data-collection ceased when data saturation was reached in each sector. Both (i) individual companies, with a general product portfolio for either the national, European or world market, and (ii) representatives of the national and European federations of each sector, were interviewed in the following sectors: the agricultural biotech industry, the compound feed industry, the food manufacturing and marketing industries, the organic farming sector, and the potato industry (both the fresh potato market and industrial processors of chips and French fries). Sampling was initiated in these multiple sectors, as each of them represents an important category of chain actors within the overall agro-business chain. The potato industry was specifically included within the research design as potatoes are one of the first likely GM crop to become available for cultivation and/or processing in the EU in the shorter term (next 5–10 years) [15], and this increases the likelihood that the GM criterion was an upcoming item on the company’s business agenda.

The initial stakeholder group selection was verified and extended by using a non-probability snowball sampling technique, which has resulted in the inclusion of environmental non-governmental organisations (NGOs) in the research design - as numerous companies argued that you cannot understand a company’s GM business policy for the EU market without fully understanding the stance of NGOs [this influence by third parties on actors in the supply chain is commonly referred to as private governance [16]]. The number of actors interviewed per agricultural industry sector is provided in Table 1. Including food, feed and societal actors in the final research sample takes into account the complexity of the industrial players in the EU agricultural setting and incorporates chain actors with extreme views in the EU GM crop debate. Yet, extending this case-study research with other categories of chain actors may reveal additional discourses.

The stakeholder sampling was undertaken in Flanders (the Northern part of Belgium), as this region has a well-established biotechnology research platform and many regions that are declared GM-free [17,18]. The interviews explored the reasons for (commercial) (dis)interest in GM crops and their applications for the EU market. Much attention was paid to iteratively revising the interview guide so as to avoid all predetermination. The full interviews were transcribed ad-verbatim and used as input for the discourse analysis.

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