

# The Internet and the agricultural world – What interactions between scientific knowledge and pragmatic know-how about the environment?

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## Abstract

This paper analyzes the contemporary stakes of the development of the agricultural Web as a tool reaching beyond mere professional concerns. Websites dedicated to the agricultural profession are also forums focusing on topic of relevance to society at large. This is especially the case for environmental issues, which are examined here. The development of the Internet has been accompanying the agricultural world's adaptation, but has also partly modified the relationship between scientific knowledge grounding and legitimating the practical orientations in the agricultural domain, and their translation by social actors. A cross-cutting characteristic of the "agricultural Web" is that it explicitly associates the diffusion of knowledge and scientific advances with the translation of these debates in terms of professional practices. The discourses developed via such websites, beyond their informative function, make it possible to position farmers as specific groups sharing a singular professional identity, and to reiterate the necessary contribution of their place and role in social activity. Environmental issues, which are being questioned by an increasingly large portion of society, are addressed there through the prism of technical/scientific progress to which farmers always had to adapt through public policies and regulations. Scientific advances are presented as a pragmatic matter of "common sense", even if this ends up brushing aside the scientific bases of such disputes.

## Introduction

For farmers, the Internet is primarily a professional tool, but they are not less active as 'net surfers than the rest of the population. The use of the Internet by farmers is mainly characterized by the use of dedicated agricultural websites, but moreover, 70% of "agrinauts" hold a subscription to at least two newsletters, and 26% participate in forums. For 68% of agrinauts, the use of new technology is presented as an essential adaptation to new professional requirements; 51% consider it an opening on the world, and 39% consider that it is a source of increased productivity for the farm (Gentilleau, Agri-Council survey, 2009).

These agricultural sites, which are increasingly developing, are generally created by individuals or structures originating in the profession, and have the characteristic of voicing opinions, thus prompting debates on issues related to professional practice. These issues often relate to the impact of environmental policy on agricultural practice. Beside analyses of agricultural public policies, scientific approaches for these issues are largely discussed. We will see that the agricultural Web is at the same time a tool for handling specific issues of the profession and a support for positioning relative to environmental controversies. Science is summoned in a paradoxical way: at the same time as a

Promethean justification of agricultural activity, and as a repository of interpretations hardly related to concrete experience. That is, there is a displacement of the object of criticism: when scientific references are used to dispute a form of agricultural activity, it is not science itself that is called into question, but the alliance of certain scientists with “the social movement”.

Our analysis will be chiefly based on the Acta Informatique website, which was initially a weekly gazette diffused with a circulation figure of 28,000. Acta Informatique is exemplary for the evolution of debates, and, because of the range of agricultural information that it disseminates, makes it possible to produce an account of the diversity of sources and stances around the issue of GMOs. The Acta Informatique gazette was selected as an example because it offers a set of syntheses and references taken both from scientific and agronomic circles and from the agricultural domain. It also has a particularly dynamic presentation, with ample space for subscribers’ comments and reactions. As such, it is a space of meeting and debate between scientific knowledge, its technical implementation, and professional practice.

## The agricultural Web: stakes for the profession

The development of the agricultural Web meets social needs which are for this profession an opportunity to take stance relative to a double stake of recognition and mobilization – all the more as it targets a much larger reader base than traditional professional media.

### A stake of recognition

A sociological originality of the agricultural profession is to be identified as a specific socio-professional group by the Institut National de la Statistique (INSEE) although farmers account for a mere 1,87% of the working population (INSEE, 2006). This classification may parallel the existence of certain social relations between the people of the category: vicinity, frequent encounters, possibly marriage, etc. They are also assumed to have similar behaviors and opinions: models of consumption, cultural behaviors, or political opinions. Also, they supposedly demonstrate a certain feeling of belonging, if possible with the approval of the other members of the group. Yet there are undeniable differences between categories of farmers (farm size, level of income, lifestyle...) but those seem to blur as soon as it comes to the “feeling of belonging” in the group. A discourse analysis study of the agricultural Web confirms this observation. In spite of the social homogenization of lifestyles since the 1960’s, most farmers still consider they are a “special group” that must remain cohesive to defend itself against misunderstanding and what they perceive as attacks perpetrated by the rest of society. This attitude is particularly notable with regard to the environmental issues. These are directly relevant to the agricultural profession because they address the transformation of nature by man and the negative externalities this generates. Additionally, environmental issues, more than any others, foster a recourse to scientific expertise, supposed to account rationally for both new problems generated by man (loss of biodiversity, climate change, effects of pollutants on health) and of the dangers of future practice. These disputed evolutions feed the sources and reasons of distrust, and the agricultural Web is one of the tools used by the profession to dispute what is presented as an external attack, fueling the point of the group’s differentiation, singularity, and important role in society.

Belonging to a profession often presented like the one to blame for a portion of environmental problems, farmers suffer from a not-so-factual image of their daily experience. The recent polemics over food and debates on climate change or GMOs placed them in the limelight. Thus challenged in their traditional role, farmers often feel they are being judged in their practices although they see themselves as just an element of a system they have to apply if they do not want their incomes to sink. The creation of discussion forums, and the comments that are posted there, thus testify of the new possibility to present online a professional identity anchored on its contributions and its functions. Many agrinauts take stance against the risk of amalgamation between the traditional image of the profession as a food provider, and an image blaming it for causing a number of dysfunctions (pollution, hole in the ozone layer, mad cow disease, etc.), now prominent in the media.

*“Farmers have become sitting ducks: they are less and less numerous, they defend themselves poorly, and what they do is all the more visible as TV images are easy to collect.” (1/7/2010).*

Many Web page authors and forum participants stick to a defensive position against perceived attacks on the profession. A number of sites created by farmers answer this concern for showcasing the practice, from seed purchase to harvesting, since answering the charges entails a will for some transparency about activities. The following extract testifies to the “good practices” implemented by the profession, with the author indicating that at “Gaec de la Garde – milk and cereals produced in partial self-sufficiency”, “good practices” are assessed as such relative to legal standards.

*“As I am passionate about my job. The idea was to make it known, in a detailed but accessible way, to non-agricultural people – because anything goes in what you hear about agriculture”*

For another agrinaut, who started a producers’ group, the point is also to give a better profile to the agricultural profession while insisting on a managerial image, “to let the farmers speak, to rehabilitate their image and to discard the stereotype of the ‘peasant who is a peasant only he wasn’t skilled in anything else’. No – peasants are peasants by choice. Many have higher education training, and are managers! And it may be them who will restore meaning to our lives.” (The interview is available online at <http://biodordogne.fr/saveur-nature>.)

Vis-a-vis those perceived attacks against the integrity of the agricultural world, a sense of identity develops, and uses the new media to maintain itself. As a consequence, actors as different as vine growers, stockbreeders or cereal farmers get together around the defense of this “professional identity”.

### **A stake of mobilization**

This stake of recognition is accompanied by a strong mobilization of the profession around what it perceives as environmental problems. The use of the Internet is part of this ground wave and strengthens the building up of parallel networks of production and circulation of information over which individuals, interactively, can reflect about their doubts and fears, and navigate to apparently credible information sources to answer them.

One way of positioning oneself in the vast debate on environmental problems consists in opposing the erudite sense of scientific experts with practical sense founded on the observation of the environment. Vis-à-vis predicted catastrophes, online exchanges oppose alternative scenarios which reframe the problem data in a broader framework. Critical positions are negotiated on topics involving a portion of uncertainty. But this recourse to practical sense is also what makes it possible to justify an attitude of prudence taking account of parameters of the issue that seem to have been unduly neglected. That farmers have had so far to increase productivity via an increasing use of fertilizers does not mean that they are not aware of hazards for health. They even often claim to be bell-ringers on this subject:

*“One has a clearer view of the relation between pesticides and cancers or leukemia... What new diseases are recent pesticides prompting now??? This will be known in fifteen years or so, as with other molecules. Is it so delirious to call for prudence when one is conscious of reality??? And I can tell you, this has nothing to do with organic farming, as you seem to insinuate – this is mere common sense... (1/21/2010)*

A consequence of the diffusion of scientific knowledge online is self-examination about how farmers can mobilize around disputed issues – often with critical distance relative to the information supplied. In a context where the credibility of information involves some form of trust, the very construction of environmental issues may be instantiated in this context, as expressed in this blogger’s comment:

*“Issues about the future of our planet and the place of mankind in this future are always considered in a one-sided outlook. So everyone sticks to one’s positions, which are always justifiable from some point of view.” (1/14/2010)*

The frequent recourse to proverbs and/or sayings also makes it possible to relativize issues that are making headlines. One of the most common methods is to depict the issue as larger than it is, and then defuse its projected consequences. Another is the introduction of some dissonance between alarming reports and projected consequences. These mechanisms of distance always seem to act on beliefs by reframing erudite knowledge in the broader scope of the overall knowledge held by the agricultural world.

All in all, the debates around the environmental issues and their consideration in the agricultural world led us to question the way in which it redefined these stakes via its specialized sites and forums. Issues relative to GMOs, biodiversity and climate change gradually became an unavoidable element in environmental policies but also a social and political stake in the current positioning of the agricultural world. To illustrate this point, we will briefly analyze as an example some exchanges about GMOs.

## The example of the handling of the issue of GMOs: between distance and appropriation

### **Bringing back scientific argument into a regulatory and professional framework**

The debate over GMOs is quite telling about the deep changes of the image of the farmer - not a citizen who discusses abstractly about GMOs, but a citizen challenged by a major issue relative to the evolution of his profession. In this respect, the scientific debate over GMOs is put in perspective in its broader relation to innovation in agriculture and the capacity of the agricultural world to adapt its professional practice to economic and social expectations.

Various online documents and the proceedings scientific conference on GMOs generally highlight the advantages of GMOs for the agricultural profession and their effects on its practice. The debate on the authorization of the commercial release of GMO seeds is accounted in detail in the gazette, with the presentation of the official statements of EFSA (European Food Safety Authority) and AFSSA (*Agence Française de Sécurité Sanitaire des Aliments* : the French agency on food safety in public health). With reference to the decisions made by these European and national organizations, the discourse on GMOs is rephrased in a register specific to the agricultural world, stressing the relationship between techniques of agricultural production and the food safety they offer on the one hand, and on the other hand the application of regulatory standards to agricultural activity. Advances of scientific knowledge on GMOs are regularly published in the gazette, especially in consideration of their agricultural efficiency. The resistance of GMO cultures to insects and parasites and the fact that they make it possible to use less pesticides are presented like the major assets of this kind of culture. The social and political stakes of GMOs are thus reframed as a technical improvement of agriculture.

*“That technological answers to the problems of agricultural production are insufficient is nothing new, and it will be always true. But deliberately trying to do without these solutions, though they have no proven hazard – that has always puzzled me. It is a convenient and cowardly position. Agricultural production never was and will be never easy to the point that, even for organic agriculture, one can do without technical solutions that are always necessary.” (1/15/2010).*

The criterion of efficiency is systematically put forward to assess positions about GMOs. The fact that these techniques allow a quantitative and qualitative improvement of agricultural production is presented as a means for farmers to ensure the sustainability of the feeding role of their activity. Within this framework, GMOs are less the object of scientific debate than of profession-centered positioning focused on technological innovation.

*“If Argentina lives again thanks to GMO soy and without paying much to Monsanto, that’s great to me! And if corn, cotton and beet producers in the USA earn a better living without having to spray their fields, thanks to GMOs, that’s great to me too” (11/29/2007).*

Although a lot scientific studies are presented in the gazette, the issue of the basic controversies that GMOs could prompt inside this community is not addressed. On the contrary, the positioning of the various points of view which are expressed there is mostly revolving around trust in scientific advances. The work of researchers is presented as rigorous and as providing a justification of the use of GMOs. In particular, the positions and conclusions of institutions like EFSA and AFSA provide a label of authority. The validity of scientific advances is not based on existing debates and controversies around GMOs, but on the development of a regulatory and professional framework for their licit application.

*“I said that I was ready to accept a freeze on GMO cultures provided a law was passed and was implemented before the next sowing campaign in the spring of 2008. The government must take*

*its responsibilities. It is the government that controls the parliamentary calendar, and it is imperative that the law be discussed right now” (10/18/2007).*

Claimed in the name of technical improvement of agriculture, the use of GMOs by farmers is mainly presented as a “traditional” form of improvement of modern agriculture. The justification of the use of GMOs is based not on scientific argument but on a professional framework of application of regulatory dispositions produced by public agencies that have jurisdiction in matters of environmental and medical safety, and which, in turn, are supposed to rely on scientific results. GMOs are somehow “neutralized” politically by a discourse and an argument line putting them in the perspective of a legal use of agricultural innovation. This is why, from the farmers’ point of view, controversies should not go beyond the scope of the decisions made in the name of public policies. Thus, discourse over GMOs is based on a relation of higher trust about the information disseminated by public regulatory agencies, and largely relayed by professional organizations.

At the same time, the systematic appeal to the legality argument to wind up debates shows some loss of control over the application of agricultural innovation. The diffusion of innovating techniques and practices has always been based on pragmatic experiments carried out by the farmers themselves, after a process of trial and error. The diffusion of GMO cultures follows another course, taking place less in agricultural world itself than in the trust granted to technical and professional organizations, increasing dependency both to political orientations and to the efficiency of scientific research.

#### *The debate over GMOs: a diversion of the object of criticism*

The critical positions on GMOs held by some actors situate scientific results within the broader scope of a debate fuelled by counter-evaluation. Studies and results are presented that underline the possible hazards of this cultivation technique, in particular to the environment and human health. Yet, the types of critical answers put forward by agrinouts show that they are in favor of the agricultural world. The object of contention is less GMOs as such than the way in which the agricultural world is presented as the originator of the problems. In this debate, the media and how they depict the profession are variously criticized.

*“You are refusing to see that the fear of GMOs is only one of the fears which are sold by the media and a number of people for their own interests, and that these fear-mongers are infinitely more dangerous than Monsanto.” (29 /11/2007).*

Political or scientific high-profile personalities and/or movements are charged with diverting scientific argument for political goals. To evidence this view, scientific argument is used to prove the political and militant bias of the opposition to GMOs. While there is some variety of positions, most agrinouts meet in an opposition to anti-GMO militants. Thus, critical positions on transgenic cultivations are systematically reframed as fear-mongering by protest movements.

The debates also involve an argument based on the “principle of precaution” which, in the name of scientific uncertainty, questions the agricultural application of these technological advances. Answers do not focus on scientific counter-arguments, but on the social and professional identity of agriculture. Thus, people disparaging GMOs are pointed at as people outside of the agricultural world, and not attuned to the social and economic stakes of the profession. In effect, anti-GMO criticism is depicted as an indictment of traditional agriculture to develop alternative modes of production, in particular organic farming. The defense of another agricultural model is de-valued as a misguided, unrealistic vision of agriculture, incompatible with the requirement of the profession, in particular its feeding role.

Discussions about GMOs thus involve a diversion of the object of criticism. Moving away from matters of scientific uncertainty, the answers eventually brought in stand in a register of a defense of agriculture and farmers, and more broadly, invoke the opponents’ ignorance of the reality of the agricultural world. Gradually, exchanges involve a discourse of recognition of the role of the agricultural activity, and claims about the living conditions of the farmers. The discourse slips towards a framing of farmers as “victims” obliged to fulfill the requirements of an unaware society which should rather be focusing on the actors who reduce the agricultural profession to poverty and oblige it to look for new, speculative types of production.

Overall, anti-GMO criticism prompts a defensive position on the part of the agricultural world. Scientific argument is called upon as a tool to strengthen and legitimate the role of technological progress in the development of modern agriculture, but is also diverted to defend the social and economic role of the agricultural world against outside protesters. In this context, the legitimation of questioning GMOs can only come from the agricultural world itself.

## Conclusion

As in many domains of activity, the Internet is about to take over in the agricultural profession from the traditional supports of information transmission, with the important difference that it is able to reach more members than the interested core. Online discourse will have to answer the expectation of the core audience, and to take into account the potential accessibility of other Web users. This makes it a potential means of social positioning for the agricultural profession. In particular, environmental issues have increasing relevance to society at large. As such, the agricultural Web can act as the voice of the agricultural profession while insisting on the economic and social issues potentially affecting it from decisions which would constrain its development. We showed that scientific legitimacy is necessary to support public policy. The value assigned to the regulatory and legal framework in the application of technological innovations like GMOs pertains to a broader view of agriculture where agricultural activity should be protected because of its food providing function. On the other hand, critical scientific groundings are very seldom evoked, and then only partially, which makes it possible to develop a hardly refutable argument base on the social role of agriculture and the victim's position of the farmer tied up by productivity and necessary adaptation.

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