

# The cohabitation of opposite policy paradigms: the case of GMOs in Ghana

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## **Abstract**

The production of Genetically Modified Organisms (GMOs) still heat the policy debate in many countries of the world. Environmental and health safety concerns generally appear to dominate the public debate, but the introduction of GMOs in low and middle income countries has tended to draw the discussion onto another policy field, namely food security and economic development. The latter binomial has indeed emerged as a very powerful paradigm for shaping the general global policy discussion about GMOs and technological choices in less developed countries. However the question remains pertinent as to what extent such paradigm had been internalized by recipient countries. What role have public authorities played in such process?

In the African context, Ghana is in the process of introducing the cultivation of GMOs. Known as one of the most performing African countries in terms of democracy, accountability and free press, Ghana has showed a high level of contestation over GMOs, fundamentally characterized by the confrontation between civil society organizations and the scientific community. Reflected on the enactment of opposite narratives and discourses over GMOs contribution to economic development, this specific policy confrontation has nonetheless contributed to set the referent for the debate, namely food security and economic development. The government of Ghana, instead, has not engaged with any policy narrative or discourse in particular. Indeed, it has not subscribed to the same referent, i.e. food security and economic development, and rather stressed on the alleged scientific values of environmental and health safety.

Drawing from qualitative interviews to different policy actors, including officials at the Ministry of Health (MoH), governmental agencies, and civil society's organizations, we wish here to present the Ghanaian case study as one in which policy ambiguity has played a major role in stabilizing one specific paradigm of discussion, namely food security and economic development, by deliberately referring to a concurrent paradigm of justification, namely environmental and health safety.

We argue that the inactivation of policy paradigms of justifications – such as economic development – might be linked to the unwillingness or incapacity of responsible political authorities to be part of a relatively young “public space” searching for its “empowerment” (Dryzek 2011). By strictly touching upon political values and ideas of national identity, the economic development paradigm indeed stirs the activation of “multiple tests of legitimacy” (Rosanvallon 2011) that are arguably not yet stabilized into distinct policy values and interests. Hence, they cannot be tested. On the contrary, science is called upon to provide its own test of legitimacy by validating the safety of GMOs upon the supposed

neutrality of its validation practices. In the case of Ghana, we even observe a case of institutionalisation of policy ambiguity wherein the authority of the newly established National Biosafety Authority precisely draws from this latter test of legitimacy.

# 1. Introduction

The introduction of Genetically Modified Organisms (GMOs) still heats the policy debate in many countries of the world. Environmental and health safety concerns generally appear to dominate the public debate, but the introduction of GMOs in low and middle income countries has tended to draw the discussion onto another policy field, namely food security and economic development. The latter binomial has indeed emerged as a very powerful paradigm for shaping the general global policy discussion about GMOs and technological choices in less developed countries. However the question remains pertinent as to what extent such paradigm had been internalized by recipient countries. What role have public authorities played in such process? We shall use the case of Ghana to explore this question, as Ghana is in the process of introducing the cultivation of GMOs which has resulted in a high level of civil society contestation.

In Africa, a few countries, namely Burkina Faso, South Africa and Egypt have already approved GM cultivation and commercialization (Wambugu and Kamanga 2014, Okeno JA, Wolt JD, Misra MK, et al. (2013), while many others such as Ghana, Kenya and Nigeria have passed their regulatory acts but are still at the confined field trials (CFTs). This situation of 'deadlock', as suggested by a large portion of the institutional literature in Africa is sometimes attributed to poor institutional and scientific capacity (Adenle et al., 2013; Ayele, 2008) or, differently to a deliberate policy strategy of African governments to please multinational companies and the scientific community in the phase of GM crops' experimentation while refusing to face public contestation and move forward with commercialization process

([http://www.chathamhouse.org/sites/files/chathamhouse/field/field\\_document/20140721BiotechAfrica.pdf](http://www.chathamhouse.org/sites/files/chathamhouse/field/field_document/20140721BiotechAfrica.pdf)). Indeed, protests against GMOs introduction have been flourishing in many parts of these countries and Ghana has been no exception.

Ghana's foray into the world of GMOs and biotechnology began in 1998, when the Government of Ghana set up a National Biosafety Committee (NBC) to advice on biosafety issues and lead the negotiation to the Convention on Biological Diversity (CBD). With the ratification of the CBD in 2004, the Government of Ghana committed to a sustainable use of biological resources, including their genetic material. Since then a proactive programme for biosafety was initiated under the responsibility of the NBC for drafting a Biosafety Bill, produce guidelines for the implementation of the biosafety law with the technical and financial support of the United Nations Environment Program and the Global Environment Facility (UNEP/GEF). Between 2004 and 2008, the Biosafety Bill was drafted as well as the National Biosafety framework, setting up the basis for an underlying legal framework for biotechnology and biosafety policy in Ghana including laws, guidelines and regulations over biotechnologies practices, the mechanisms to handle requests for permits, exercise monitoring and inspections, and a system to promote information and public awareness.

After four years of delay (<http://www.afri-law.com/ghana-has-new-biosafety-law/>), the Parliament approved the Biosafety Act in 2011. The Biosafety Act is a key law regulating biotechnology in Ghana, mandating the establishment of a National Biosafety Authority (NBA). The NBA has just been set up in February 2015 after a long delay. This situation of delay combined with the previous introduction of the Plant Breeders Bill in 2013 has set the ground for civil society protests against the government which has been accused of silently and undemocratically promoting GMOs in the country, along with the penetration of multinational corporations and against public interest.

More recently, a fast track high court asked the Ministry of Food and Agriculture to stop the commercialisation of GMOs<sup>1</sup>. This injunction was a result of Food Sovereignty Ghana (FSG) (the most important civil society organisation active in the dispute) seeking to prevent the commercialization of GMOs, stating that only the National Bio-safety Authority was entitled to do so; hence in its absence the National Biosafety Committee could not proceed forward with the introduction of GMOs. Interestingly enough, the government inaugurated the board of the National Biosafety Authority just few days after the complaint was filed. Further to this, the case is adjourned till the 8th of June 2015.<sup>2</sup>

This high court judgement and the involvement of different parties to the lawsuit – besides the plaintiff FSG, the defendants are the Ministry of Food and Agriculture and the National Biosafety Committee, an increasing number of associations and groups is asking to join the process – indicates that the government failed to contain the contestation within the political arena, despite the efforts to produce a legislative and regulatory framework to GMOs. We wish here to understand the reasons for that by investigating how the government made use of a certain policy ambiguity to deal with on-going contestations, how it framed the GMOs issue and which discourse it enacted over it.

It is nothing new to say that policy ambiguity provides a fundamental aspect of political life to deal with ‘problematic ends’ and conflicting values (Hajer and Laws, 2008). However, policy ambiguity can be applied in different ways and through different tools; in the specific case of GMOs contestation in Ghana we shall see that the government proved to be ambiguous about policy outcomes and at the end failed to deal with the contested character of them. We will explain the government’s policy ambiguity by referring to the use of specific paradigms that it used to justify its own position (of policy ambiguity). Drawing from the general confrontation between food security and economic development on the one hand and environmental and human safety on the other, we will see that the government establishes its position by anchoring to the latter and programmatically ignoring the former. Hence, the political paradigm of food security and economic development that is so much diffused in international discourses over GMO’s introduction in Africa and especially supported by multinational companies, sees no engagement from the government of Ghana. On the contrary, this political paradigm sees an active engagement by the civil society and the scientific community which co-construct the political space of debate around it.

In order to locate the government and stakeholders’ positions into these two sets of paradigms, we will use a mix of documentary analysis, personal reports from local conferences on GMOs and discourse analysis based on qualitative interviews conducted in place to different policy actors, including officials at the Ministry of Health (MoH), governmental agencies, and civil society’s organizations and members of the scientific community. We shall then better appreciate the political consequences of the position of the government, whose paradigm of justification based on environmental protection and human health safety turned out to be perceived as a paradigmatic refusal to subscribe to the same ‘public space’ of debate as of the stakeholders, hence annulling the condition for their ‘empowerment’ (Dryzek, 1996; Dryzek and Stevenson, 2011). This conclusion shows that the use of policy ambiguity has

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<sup>1</sup> Ghana Court Orders Temporary Halt on Commercialization of GM Crops [Internet]. Sustainable Pulse. [cited 2015 Jun 9]. Available from: <http://sustainablepulse.com/2015/03/04/ghana-court-orders-temporary-halt-commercialization-gm-crops/>

Ghana Court Suspends Genetically Modified Products / Sputnik International [Internet]. [cited 2015 Apr 9]. Available from: <http://sputniknews.com/africa/20150304/1019039223.html>

<sup>2</sup> pyGhana.com GN. Court Reconvenes On June 8th For GMO Case - [Internet]. SpyGhana.com. [cited 2015 Jun 9]. Available from: <http://www.spyghana.com/court-reconvenes-on-june-8th-for-gmo-case/>

implications for the construction – or neutralization – of the public space in which official authorities accept to be exposed to some public test of legitimacy.

## 2. Brief theoretical overview of GMOs contestation

In international discourses about biotechnology, the main premises for introducing them in Africa and also in Ghana are improved agricultural productivity and food security. Generally, institutional and administrative capacities are raised as the main challenge against these premises: the 2000 CDB made it clear that the existence of a biosafety regulatory framework was crucial to grow GMOs crops in a sustainable way, and indeed a large international programme of technical and financial support was launched in collaboration with UNEP and GEF to endow African countries with a regulatory mechanism, one assuring that environmental and health risks derived from GMOs were handled through scientific assessment, regulatory management and communication. Theories on group coalition and GMOs diffusion in Africa particularly point to institutional and technical/scientific capacity as a major issue for promoting GMOs diffusion and especially for making corporate lobbying effective. On the contrary, where these capacities are weak they are generally taken to explain both little penetration of corporations' lobbying and greater success of anti-GMOs groups (Takeshima and Gruère, 2011; Pray and Naseem, 2007). As a second challenge, international experience shows that 'the public' - whatever the public may be at this point of the discussion - cannot be excluded from the discussion over GMOs cultivation and commercialization, especially because its inclusion can contribute to build trust in government policies along with the acceptability of these products. Examples from Mexico, Philippines and South Africa particularly suggest that the role of public trust is a key political resource in causing the global polarisation on GMOs to reach developing countries (Aerni and Bernauer, 2006), especially if this is to apply to trust in public as well as scientific institutions (Frewer, 2003).

The two challenges of institutional set-up and public trust are generally seen as connected on the idea that a strong regulatory framework ensuring a tight relation between risk assessment and risk management is more apt to 'reassure' the public over the benevolence of the government to minimize adverse effects from GM products on the environment and consumers' health. Institutional devices are indeed fundamental to cope with wicked problems, as they help contain the ambiguity of 'problematic ends' while structuring policy decision and action into a set of pre-determined situations of choice (Rein, 2008). However, as the new-institutional literature has long described, the role of institutions is to ease policy choices across different options and in relation to different actors rather than constraining them into pre-formatted categories. In this vein, institutions frame rather than control problems by allowing the necessary malleability to handle conflicting values, interests and ideas. In a sense, institutions should be porous to the social and political environment they are installed within rather than imposing a pre-determined shape on it. Similarly said, they should maintain their public and political identity, hence connect to 'the political', i.e. the tensions inherent in social and political relations (Mouffe, 2005) – in order to dispel the effect of public trust. In the last twenty years, at least, the international controversies over GMOs have indeed demonstrated that the space of contestation has been variably constructed by the way values, interests and ideas came to be assembled across different stakeholders, into different publics and through specific institutional settings, political practices and discourses to the end bringing some order and co-existence to inherent antagonisms

(Mouffe, 2005). Precisely, we wish here to understand how all these elements have played out in the construction of a politics over GMOs in Ghana.

### 3. The government's withdrawal from the debate over GMOs

The introduction of this paper has indicated that the government and the civil society are certainly two key stakeholders in the debate over GMOs in Ghana. The government legislative action to regulate GMOs and the opposition of FSG against that has indeed culminated in one very hard form of opposition brought to court. But this picture is only descriptive and veils important factors at play in the politics of GMOs in Ghana.

To begin with, a striking element in the GMOs contestation is the absence of the government from the space of debate, a fact that has been acknowledged by scientists which we have interviewed, statements in the media coming from minor political parties and, especially, qualified by the discourse of some members of the Ministry of Environment Science Technology and Innovation (MOESTI) responsible for the regulatory framework on GMOs. A member of the MOESTI defined the political question of GMOs as "routine process" while the "debate occurred due to presence of anti-GMO groups" (MOESTI 1). Most interestingly, he also argued that "we as Ministry cannot start counteracting anything [in relation to civil society contestations]. *We do not have the legal right to. We are focusing our efforts in trying to put in place the [Biosafety] Authority who will be mandated to counter all such things and who will be able to even bring parties together to debate on issues, to dialogue on issues and to understand each other*" (emphasis added). According to this latter statement, being part of the political debate would account for an illegal action, since the Biosafety Authority is mandated to be the only responsible and legitimate body to handle the contestation.

As much as the law is supposed to clearly state what the legitimate space of the debate is, the depoliticisation of it builds on a very ambivalent position of the government towards GMOs. The same public official as above argued that "the government position is stressed in the law" [Biosafety act] which means "that the government has two positions. Government is very much in favour of genetically modified organisms that have gone through biosafety and have therefore passed risk assessment and have been found to be safe to the environment and government is seriously against genetically modified organisms that have not gone through bio-safety". Similarly, another public official at the MOESTI (MOESTI 2), was referring again to the Biosafety Act to qualify the position of the Ministry of Environment on biosafety policy: "The Ministry position is simple. It's not taking any sides as to whether Ghana is for GMOs or against GMOs. That's not the position of the Ministry. The Ministry role is to make sure that we have in place the necessary structures which will ensure that the environment in this country and the people are safe. It ensures their safety. So it's a Ministry which is going to put in place, or use all available scientific knowledge and methods or procedures to ensure that whatever is coming into the country is safe for the people and the environment. We are not against GMOs. If it isn't from our own researches and other things - and the evidence is there from our scientists and so on who have conducted on prime trials and all those and they say that 'look, this is safe, from the work we have done, we'll go for it. But if they also do those things and they tell us that 'oh it's harmful to the environment, or it's harmful to the population then we won't go for it. That is our position". Finally, the securization of the government's position into a strict legal and apolitical framework is further

reinforced by both interviewees referring to the prescription of penal sanctions for whoever tries to introduce GM products unlawfully in the country.

The political absence of the government from the debate is further implemented by the fact that the opposition party is also inactive in it. As observed and pointed out by another public official (ANONYMOUS), for the first time the two parties did not engaged in the general political competition on GMO; in his words, the situation was related to a sort of political indifference in which none of the subsequent governments in place put any brake in the setting up of the biosafety committee, which was indeed initiated under one party leadership and continued under the opposite party. Therefore, political ambivalence has the characteristics of a bipartisan agreement in which the typical antagonism indistinctive of the issue at stake between the two major parties, the National Democratic Congress (NDC) and the National Patriotic Party (NPP), remains tacit.

### **3.1. The deactivation of 'the political'**

Samia Nkrumah, leader of the Convention People's Party and daughter of the first and very beloved president of Ghana Kwame Nkrumah, argues for a situation of effective lobbying on both sides of politics (<https://t.co/SgohMLFSul>), through which we could read an effective neutralization of the political aspect of the debate.

Lobbying on the ruling and the opposition party cannot be disproved. Personal communication from interviewees that wish to stay anonymous coupled with publicly known programmes sponsored by USAID and USDA to train Parliamentary Committees on biotechnology (Elmasoeur, 2014) and support other forms of collaborations (Scoones and Glover, 2009), indicate that lobbying has indeed been continuous in Africa and Ghana. Also, theories of group coalition and GMOs diffusion in Africa contend that lobbying is more effective where there are strong institutional and technical/scientific capacity (Takeshima and Gruère, 2011; Pray and Naseem, 2007). In light of this idea, Ghana promises to provide grounds for effective lobbying action, due to several factors: the presence of institutionalized frameworks of regulation (the national Biosafety Committee and the Biosafety Act); mechanisms for stakeholders involvement (for instance, USDA and USAID have primarily supported the establishment of networks of scientific and stakeholders collaborations, Elmasoeur 2014); and finally, the presence of an established network of scientific institutions of high capacity in Ghana counts on a vast network of qualified research centres in number of 14, among others the Savanna Agricultural Research Institute (SARI) or the Food Research Institute (FRI) in Kumasi (<http://www.csir.org.gh/>).

If lobbying has proved its influence by deactivating the political aspect of the debate, neutralizing political competition, and making use of a favourable structure of penetration in the country, at the same time this fact alone is not satisfying to understand why such neutralization has lasted until now; especially, what forms and discourses have allowed the government to disengage for so long, despite ongoing protests against GMOs. And indeed, what is precisely the political aspect of the debate? For this, we should look at the tensions in action, as any space of debate relies on them.

### 3.2. The activation of the politicization: the role of the scientific community

We know that the government has withdrawn from the debate, but we do not know which political tension created by which actors has the government precisely withdrawn from. This section is precisely devoted to make these aspects clear in order to qualify the inability of the government to engage with the protests of the civil society and to set the ground for analysing whether such inability reflects a case of policy ambiguity.

We know for sure that civil society organizations and especially FSG lead the protest against GMOs in the country. This is not new in the African and international experience of GMOs contestation. But as in any space of debate in which 'the political' plays in, there must be some tension in action (Mousse 2005), and we know for sure that the government steers clear from providing any element of tension. We may speculate that multinational companies substitute the government in this role through lobbying, but the picture is thinner than that. If it is true that lobbying occurs in building the tension and that its modalities occur by occupying some political void, nonetheless we shall consider that this occurs by supporting the scientific community and scientific research. In a sense, if lobbying has proved successful in deactivating 'the political' within public institutions, it has activated it in the scientific community. Indeed, despite the public status of major research institutes such as those established under the Council for Scientific and Industrial Research (CSIR), public funding for research are totally missing. As claimed by one scientists from CSIR, "the government does not fund our research, we write proposal and then DANIDA etc fund" (CSIR 1).

To be sure, we are not inferring any conclusions of manipulation of the scientific community in its connection to private funding coming from biotechnology corporations. Personal communications and interview data do not simply support such claim, despite this being one of the major accusations from the former general secretary of FSG. Very differently, we want to draw the attention on the political void occupied by lobbying action via the leverage of the very high national pride that motivates the scientific community in Ghana. Indeed, the political history of science and innovation in Ghana is connected to the political vows for an African way of development back in the late 50s as in the view of Kwame Nkrumah, one of the fathers of Pan Africanism. As presented on the CSIR website, "The Council [...] traces its ancestry to the erstwhile National Research Council (NRC), which was established by the Research Act 21 of August, 1958, a little over a year after independence, to organize and coordinate scientific research in Ghana and provide the necessary platform for Ghana's accelerated development. The Council came into being on 14th February 1959 with a Governing Council, which was chaired by the President of Ghana, Osagyefo Dr. Kwame Nkrumah, with Mr. F.E.V. Smith as its Executive Secretary and Mr. S.T. Quansah as Deputy Executive Secretary" (<http://www.csir.org.gh/>).

In light of these considerations of scientific national pride, the role that lobbying has played is not only in deactivating political antagonism, but in activating it into a separate political space in which the scientific community is the second 'agent of tension' in the polarization and politicization of the debate. Different sources from USDA (Elmasoeur, 2014), scientific documents (Wambugu and Kamaga, 2014) and interviews (CSIR 1) all confirm that the scientific community has always been considered a major interlocutor in the policy debate about GMOs in Ghana: not only as a source of 'scientific capacity', but also a strategic channel for policy action. Indeed and despite the presence of scattered critical scientific positions over GMOs which nonetheless remain silent due to the tendency of 'de-scientisizing' any

minority position and associate it to the side of civil society contentions (ANONYMOUS), the scientific community in Ghana appears very compact and very much engaged in the political debate of GMOs.

#### **4. The co-construction of a political space of debate – the role of FSG and the scientific community**

The political activism of scientists in favour of GMOs is not new in the international experience of GMOs. Nor is the polarization of the debate constructed with civil society at the opposite extreme. For instance, a study based in South Africa, interviewed academia, NGOs, government and business and found that “the strongest opponents were representatives of environmental NGOs and the strongest proponents were scientists representing public and private research institutes (Aerni, 2005). We may say that in Ghana the situation is similar insofar as there is strong constituency of the scientific community to lead and inform the debate over GMOs (Cooke and Downie, 2010), while other key stakeholders, such as NGOs, business and even farmers, are more testimony than engaged participants to the polarization in act. NGOs, farmers and corporate actors certainly influence the debate, but they are not the key actors, in the sense that their actions are relevant only to the extent that they are canalized by other actors, namely the scientists and civil society organizations (Food Sovereignty Ghana in particular). As we shall explain, they are a functional but not active part to the construction of the public space of debate.

The scientific community is overall in favour of the introduction of GMOs upon the reasons that it will not only enhance the scientific capacity within the country but also result in possible gains towards food security. Expanding on this, they believe that the introduction of GMOs will result in progress of Ghana, as they also feel that that GMOs will be beneficial to the farmers in Ghana as well as the public by setting the country to the track for self-sufficiency in certain aspects. Both these beliefs were echoed in the interview of CSIR 1, who stated that “we see it as a tool for security for food, technology for increasing productivity”. Also, two stakeholders meetings on GMOs held in July 2014 with the support respectively of the African nutrition society and the University of Chester (“Biotechnology and GM Foods: A Public Engagement Event”), and the Open Forum for Agricultural Biotechnology and the Program for Biosafety Systems, showed that the scientific community in Ghana is compact in asserting that GMOs will be a tool for both economic development and food security.

Meanwhile the civil society organisations are against the introduction of GMO. They are concerned about safety issues, impact on small farmers and the lack of profitability of GMOs among other things. Some analysis have indicated that the alleged socio-economic and environmental benefits are sometimes overestimated as cases exists to the contrary (Altieri and Rosset, 1999; Williams, 2009). They also fear that introduction of GMOs may be more in the interest of the private sector rather than in the interest of the public of Ghana and might in fact create issues of food security. It is indeed not unreasonable to think that GMOs adoption paves the way to multinational monopolies of agrobusiness and small farmers exploitation (Altieri and Rosset, 1999; Williams, 2009). This concern is apparent in the statement of the former general secretary of FSG who claims “But Plant Breeders Bill was the creation of the US biotechnology companies, it has nothing to do with Ghanaian farmers or scientists. They have relied so much on the prescription of WTO and TRIPS which we know as written by Monsanto. I can tell you on authority that they haven’t consulted the relevant stakeholders” (FSG

1). Food security in this sense becomes an issue of national security against the fear of neo-colonialism, as the technology is mainly developed by the private sector and in developed nations.

It is apparent that the contestation between these two groups of stakeholders revolves around the concepts of food security and economic progress, stabilizing, at least in principle, a common framework of debate. The term of 'progress' instead of development is not casual, for an issue of national and even African pride is felt by both sides on the debate. The regret expressed by many scientists over the opposition raised by the daughter of the first president Kwame Nkrumah, Samia Nkrumah, against GMOs warrants to this aspect. Also, the first African book on biotechnology was presented at a meeting of Open Forum for Agricultural Biotechnology held last July carrying in Accra (the capital of Ghana), so to cite the forward in the book, "the unspoken message [...] that Africa refuses to be left behind" (Wambugu and Kamaga, 2014). Especially, they refuse any interference into their economic progress blaming the presence of "people from civil society organisations being sponsored by people from EU and Belgium [coming out] out with information which is not credible", as in the words of CSIR 1. On the other hand, GMOs are seen to pave the way for neo-colonialism by private sector against national pride. On the side of FSG, one member emphasised the pride of the Ghanaian people and their democracy by airing the following concern: "More than 50 years with our first president, there has been onset of an attitude, deliberately crafted to exclude the Ghanaian people from policy making. If given the opportunity they won't allow the policy to pass. But unfortunately they can only complain now. This is part of the neo-colonial set up in the country" (FSG1).

## 5. Discussion

It is clear that FSG and the scientific community share a common referent framework to the GMOs debate based on the concepts of food security and economic progress, while clearly diverging in their ways "of selecting, organizing, interpreting, and making sense of a complex reality to provide guideposts for knowing, analysing, persuading, and acting » (Schön and Rein, 1993, p. 146). The two groups construct their own narratives of economic progress and food security by referring to the same categories of stakeholders, for whom they advocate partisanship (e.g. farmers), contested influence in the political debate (e.g. multinational corporations, NGOs, European Union and the United States), and even regrettable absence – e.g. the government. The assumptions or beliefs underlying their narratives, instead, are opposite, for GMOs are safe and unsafe according to the scientific community and FSG, respectively.

As any assumption and belief demand, their falsification or disproof is very difficult to achieve. The reason has to do more with epistemological reasons than cognitive ones, as the sense with which assumptions are endowed is precisely connected to the referent(s) they want to 'signify'; these referent(s) are the ones they hold as relevant and worth discussing to qualify their arguments about the impacts of GMOs on food security and economic progress. In light of this, the controversy between the scientific community and FSG cannot be settled only by 'fixing' assumptions and beliefs via some 'facts' about the safety or un-safety of GMOs. The narratives that are built upon assumptions of safety or un-safety are divergent not only because they rely on opposite incipit, but also because their own storylines are built upon progressive 'tests of the reality' (Boltanski and Thévenot, 2006) (i.e. the reality of economic progress and food safety) in which the same referents, e.g. farmers and NGOs but also international scholarly and media production over GMOs, are used to provide different conclusions.

However, the position of ambiguity held by the government and described in section 3 seems to be precisely building on the stabilization – if not fixation – of diverging assumptions and beliefs about GMOs safety by being clear both about the means to achieve the ends of biosafety policy, namely through the establishment of the NBA, and the political instrumentality of these means in settling the political debate. This combination of technical means and political solutions may give rise to a sort of ‘tyranny of the means’ to which ‘the public’ – here represented by the scientific community and civil society - may decide not to conform.

### 5.1. Tyranny of policy means?

The focus on the technical aspects alone of the on-going debate warrants to a position that is ambivalent and ubiquitous, for it covers all the possible positions available. The same institutional and scientific capacity that the literature generally refers to for promoting innovation and, in this case, biotechnology innovation, here provides the basis for holding up on the ambiguity of the outcomes of the government’s biosafety policy, i.e. approving or not approving commercialization of GM products. Outcomes are indeed to be defined by a scientific institutional authority, i.e. the NBA, whose role contributes to set the means of biosafety policy.

As suggested, this situation evokes the possibility of a ‘tyranny of means’ in which, so to paraphrase Selznick (1957) (quoted in Rein 2006), the fixing of means may make one lose track of underlying policy perspectives. In the situation of GMOs debate in Ghana, the policy ends of the government are only clear according to its own political paradigm, i.e. guaranteeing people’s safety; instead, the policy perspectives finally remain vague seen through the frames of the scientific community and the civil society. According to their frame, ‘GMOs safety’ is not a policy end but a matter of belief, as for them the political discussion and the political perspectives revolve around economic progress and food security.

The approach of the government which we appear as technical and somehow apolitical, resembles very much to a scientific practice of argumentation in which the discursive and justificatory strands overlap (Bouvier, 2007): explanations are provided within a framework that set the boundaries for what should be considered as relevant claims, excluding any that would not fit into it and possibly put it into question. In this sense, the political aspect of the debate gets twice excluded by the government: because the referent framework to which it subscribes precludes any dialectics that does not fit into it, and because this framework is voided, as to stakeholders frames, of any political tension, any ambiguity about policy ends or policy means. The ‘tyranny of means’ then stays precisely in the fact that the government does not acknowledge any possible ambiguity in the scientific results supporting biosafety decisions; rather it acknowledges the political transversality of such results thanks to scientific evidence and through the implementation of a ‘case-by-case approach’ to each GM crops. Not even policy evaluation is acknowledged as ambiguous and each case will be valued as to its ‘convincing power’ (“and if in fact we are convinced after those few trials, beyond all these levels of doubts, that it is safe”, suggested by a MOESTI 2).

## 5.2. Competing realities and legitimacy tests

The tyranny of policy means operationalized through the institutionalization of science into the NBA and combined with the neutralization of 'the political', may clearly exacerbate the debate. And indeed, in Ghana it has actually transformed it into an open conflict through court proceedings challenging the legitimacy of the government itself.

To be sure, the opposition between the scientific community and FSG already showed the characteristics of a conflict rather than a controversy. The difference between a situation of conflict and controversy stays in the objectives of the parties in the debate and the reference they make to external actors into the space of disagreement (Chateauraynaud, 2011). Within the same referent framework, the scientific community and FSG testified vows of dissensus. In the construction of respective arguments, they both made reference to additional stakeholders (see supra section 4). Also, specific events show that their confrontation was rather adversarial and certainly did not build on purposes of mutual communication. A quasi-interpersonal (more than political) clash was evident in several occasions between the former General Secretary of FSG and one scientists of CSIR, for instance when Dr Vandana Shiva, Founder of the Research Foundation for Science, Technology and Ecology came to Ghana to give a public lecture on GMOs or in occasion of the meeting "Biotechnology and GM Foods: A Public Engagement Event" mentioned above.

The action of the government and its use of policy ambiguity certainly did not provide any strategic tool of conflict resolution. For how 'evident' can the results of confined fields trials be on the safety or unsafety of GMOs – the presupposition of which is anyway challenged by the scientific literature on GMOs (Grandjean, 2004; Grandjean, 2013) - the reconciliation between the diverging assumptions of the scientific community and FSG would not be sufficient to settle the conflict. The reason is that the narratives that have ensued from the two diverging assumptions over GMOs have been progressively endowed with an internal coherence and made them autonomous from their premises. In this vein, initial positions get progressively more structured into real stories: they progressively accumulate new contents - it can be a scientific study, or an announcement from another country to introduce or ban GMOs - that can function as 'grips' and even tests to the realities of the narratives of each party.

It is precisely this aspect of 'reality tests' that makes policy ambiguity politically problematic in the case of Ghana: the realities to be dealt with refer to issues to which the government acknowledges no credit and for which the two stakeholder groups raise an issue of political support and national identity; the government, instead, identifies reality tests in the assumptions of safety or danger based on scientific evidence. In a sense, the kind of realities that are requested by the public (in this case, the scientific community and FSG) to be tested do not target the beginning of the story – i.e. its safety assumptions - but the conclusion of it – i.e. economic progress and food security.

This situation of mismatch of 'reality tests' have political implications as to the way policy ambiguity can actually be employed to solve – or at least tame – social conflicts. The reality tests raised by the GMOs debate in Ghana as just described raises issues of legitimacy. The position of the government is clearly one in which this test can only be developed within the NBA as the only legitimate space of debate and decision. On the contrary, for both groups of stakeholders at dispute, the legitimate space of debate is the one they co-create along their political tension and along the opposite signification of their shared framework of referents, i.e. food security and economic progress. In light of this, the situation of the government's withdrawal from a test of reality becomes actually one of withdrawing from a 'test of

legitimacy' (Rosanvallon, 2011). Both scientists and the civil society expressed the same cry for reality participation to the government, blaming its incapacity to step into it and take a position. This cry can also be understood by referring to the conceptual distinction between the public space of decision, in which different viewpoints interact, and the empowered space, in which decisions become authoritative (Dryzek, 1996; Dryzek and Stevenson, 2011). As one key feature of democratic decision-making is the transmission between these two spaces and the degree to which the public space can influence the empowerment space, the consequences of the government refusal to subscribe to the public space of debate can be read as annulling any possibility for stakeholders to participate in the process of authority and legitimacy construction for final decisions. In the same vein, as the *transmission* between the public and the empowered space has no political *tension* to travel along, the shifting of the conflict into another space of debate can be read as a way to construct the tension elsewhere.

## 6. Conclusions

This paper has described a case of policy ambiguity building on the GMOs debate occurring in Ghana. It has highlighted the government's position and involvement into the debate as one constructed over the ambiguity of the biosafety policy as to its policy outcomes, i.e. introduction or non-introduction of GMOs. The value of this strategic use of policy ambiguity has been then inquired and substantiated by looking at the discourses underlying it and by putting them into comparison with stakeholders' discourses over GMOs. It has emerged that the ambiguity of the government in dealing with GMOs protests was enacted by programmatically referring to a paradigm of justification that was alternative to the one for which stakeholders searched clarification. Interestingly enough, this case of policy ambiguity shows that the policy paradigm of food security and economic development that is so much diffused in international discourses over GMO's introduction in Africa and especially supported by multinational companies, sees no engagement from the government of Ghana. At the same time, the government still plays a role in the diffusion of this paradigm by making its integration politically 'silent', that is, by deactivating the political tensions underlying it.

However, the paper has also showed that this use of 'policy ambiguity without politics' proves to be detrimental when applied to a situation of conflict, which was already detectable in the positions of the two main stakeholders groups, the scientific community and the civil society, and which at the end found at least release in the legal space of dispute settlement. It is indeed not unusual to see conflicts that do not fit the technical apparatus of rules in place, changing their space of contestation. We have no counterfactual to tell whether the establishment on time of the National Biosafety Authority would have proved to be a successful technical effort to solve social tensions over GMOs, hence whether its delayed establishment can account for the ongoing conflict between scientists and civil society. However, the analysis suggests that any technical effort in place should take account of the test of legitimacy that is enacted at precise political moments. Rosanvallon (2011) talks about *multiple* tests of legitimacy to account for the instability to which current political challenges such as those related to technological choices are subjected to. Such instability implies a continuous renegotiation of the presumption of legitimacy for government action. In this view, any technical effort cannot overlook the political content underling it.

## References

- Adenle AA, Morris EJ and Parayil G. (2013) Status of development, regulation and adoption of GM agriculture in Africa: Views and positions of stakeholder groups. *Food Policy* 43: 159-166.
- Aerni P. (2005) Stakeholder attitudes towards the risks and benefits of genetically modified crops in South Africa. *Environmental Science & Policy* 8: 464-476.
- Aerni P and Bernauer T. (2006) Stakeholder attitudes toward GMOs in the Philippines, Mexico, and South Africa: The issue of public trust. *World Development* 34: 557-575.
- Altieri MA and Rosset P. (1999) Ten reasons why biotechnology will not ensure food security, protect the environment and reduce poverty in the developing world. *AgBioForum* 2: 155-162.
- Ayele S. (2008) Biotechnology and biodiversity debates and policies in Africa. *International Journal of Biotechnology* 10: 207-223.
- Boltanski L and Thévenot L. (2006) *On Justification: Economies of Worth*, USA: Princeton University Press.
- Bouvier A. (2007) Collective Belief, Acceptance, and Commitment in Science. *Iyyun* 56: 91.
- Chateauraynaud F. (2011) *Argumenter dans un champ de forces. Essai de balistique sociologique*, Paris: Pétra.
- Cooke GJ and Downie R. (2010) African Perspectives on Genetically Modified Crops. Assessing the Debate in Zambia, Kenya, and South Africa. In: Studies CfSal (ed). Washington D.C.: CSIS.
- Dryzek JS. (1996) Political Inclusion and the Dynamics of Democratization. *The American Political Science Review* 90: 475-487.
- Dryzek JS and Stevenson H. (2011) Global democracy and earth system governance. *Ecological Economics* 70: 1865-1874.
- Elmasoeur A. (2014) 2014 Ghana Agricultural Biotechnology Report. *GAIN Report*. USDA - Foreign Agricultural Service.
- Frewer L. (2003) 10. Societal issues and public attitudes towards genetically modified foods. *Trends in Food Science & Technology* 14: 319-332.
- Grandjean P. (2004) Implications of the Precautionary Principle for Primary Prevention and Research. *Annual Review of Public Health* 25: 199-223.
- Grandjean P. (2013) Science for precautionary decision-making. In: Gee D, Grandjean P, Hansen SF, et al. (eds) *Late lessons from early warnings: science, precaution, innovation*. Copenhagen: European Environmental Agency (EEA), 655-701.
- Hajer M and Laws D. (2008) Ordering through discourse. In: Moran M, Rein M and Goodin RE (eds) *The Oxford Handbook of Public Policy*. New York: Oxford University Press, 251-268.
- Mouffe C. (2005) *On the Political*, Abingdon  
New York: Routledge.
- Pray CE and Naseem A. (2007) Supplying crop biotechnology to the poor: Opportunities and constraints. *The Journal of Development Studies* 43: 192-217.
- Rein M. (2006) regraming problematic policies. In: Moran M, Rein M and Goodin RE (eds) *The handbook of Public Policy*. Unites States: Oxford University Press, 388-424.
- Rosanvallon P. (2011) *Democratic Legitimacy: Impartiality, Reflexivity, Proximity*, Woodstock, UK: Princeton University Press.
- Schon DA and Rein M. (1994) *Frame Reflection: Toward the Resolution of Intractable Policy Controversies*, New York: Basic Books.
- Scoones I and Glover D. (2009) Africa's biotechnology battle. *Nature* 460: 797-798.
- Takeshima H and Gruère G. (2011) Pressure Group Competition and GMO Regulations in Sub-Saharan Africa - Insights from the Becker Model. pp. . *Journal of Agricultural & Food Industrial Organization* 9: 1-17.

Wambugu F and Kamaga D. (2014) *Biotechnology in Africa. Emergence, Initiatives and Future.* Nairobi, Kenya: Springer International Publisher Switzerland.

Williams M. (2009) Feeding the World? Transnational Corporations and the Promotion of Genetically Modified Food. In: Clapp J and Fuchs D (eds) *Corporate Power in Global Agrifood Governance.* Cambridge, Mass.

London: MIT.