FUNDAÇÃO GETULIO VARGAS - FGV

ESCOLA BRASILEIRA DE ADMINISTRAÇÃO PÚBLICA E DE EMPRESAS-EBAPE

INTERNATIONAL CIVIL SOCIETY ACTORS IN GENETICALLY MODIFIED ORGANISMS AS A FIELD OF STRUGGLE: A NEO-GRAMSCIAN STUDY IN BRAZIL AND THE UNITED KINGDOM

YUNA SOUZA DOS REIS DA FONTOURA

Supervisor: Professor Alketa Peci

Rio de Janeiro

July 2015

FUNDAÇÃO GETULIO VARGAS - FGV

ESCOLA BRASILEIRA DE ADMINISTRAÇÃO PÚBLICA E DE EMPRESAS-EBAPE

INTERNATIONAL CIVIL SOCIETY ACTORS IN GENETICALLY MODIFIED ORGANISMS AS A FIELD OF STRUGGLE: A NEO-GRAMSCIAN STUDY IN BRAZIL AND THE UNITED KINGDOM

YUNA SOUZA DOS REIS DA FONTOURA

Thesis submitted in fulfilment of the requirements for the degree of Doctor in Business Administration at the Fundação Getulio Vargas-RJ - Escola Brasileira de Administração Pública e de Empresas – Brazilian School of Public and Business Administration.

Date of Defence: 27/07/2015

Examiner Committee:

Supervisor: Prof. Alketa Peci

Prof. Paulo Roberto de Mendonça Motta

Prof. Steffen Böhm

Prof. Eloise Helena Livramento Dellagnelo

Prof. Rafael Kruter Flores

Rio de Janeiro

July 201

Ficha catalográfica elaborada pela Biblioteca Mario Henrique Simonsen/FGV

Fontoura, Yuna Souza dos Reis da
International civil society actors in Genetically Modified Organisms as a field of struggle: a neo-gramscian study in Brazil and the United Kingdom / Yuna Souza dos Reis da Fontoura. – 2015.
188 f.

Tese (doutorado) - Escola Brasileira de Administração Pública e de Empresas, Centro de Formação Acadêmica e Pesquisa.
Orientadora: Alketa Peci.
Inclui bibliografia.

1. Organismos transgênicos. 2. Movimentos sociais. 3. Sociedade civil. 4. Governança. 5. Teoria do discurso neogramsciana. I. Peci, Alketa. II. Escola Brasileira de Administração Pública e de Empresas. Centro de Formação Acadêmica e Pesquisa. III. Título.

CDD – 303.484

YUNA SOUZA DOS REIS DA FONTOURA

"INTERNATIONAL CIVIL SOCIETY ACTORS IN GENETICALLY MODIFIED ORGANISMS GOVERNANCE: A NEO-GRAMSCIAN STUDY IN BRAZIL AND THE UNITED KINGDOM."

Tese apresentada ao Curso de Doutorado em Administração da Escola Brasileira de Administração Pública e de Empresas para obtenção do grau de Doutor em Administração.

Data da defesa: 27/07/2015.

Aprovada em: 27/07/2015

ASSINATURA DOS MEMBROS DA BANCA EXAMINADORA

Alketa Peci
Orientador (a)

Paulo Roberto de Mendonça Motta

Eloise Helena Livramento Dellagnelo

Rafael Kruter Flores

Steffen Bohm

This doctoral research is dedicated to my parents, Maria Alzenir Alves Souza dos Reis and Erington Luiz dos Reis, who have always inspired me to follow my dreams.

ACKNOWLEDGEMENTS

First and foremost, I would like to thank my parents, Maria Alzenir Reis and Erington Reis, my husband, Carlos Frederico Fontoura, and also my brother, Leonardo Reis, who always believed that I would get there and, particularly for their patience and love during the entire time of this doctoral process.

I would like to thank my supervisor, Alketa Peci, for believing in my potential when I most needed it, and for always being available to guide me in my research. Her encouragement and insights for my academic career have been priceless.

I also would like to thank Professor Steffen Böhm for his supervision during my field research in the United Kingdom, and for hosting me at the Essex Business School, University of Essex. My gratitude for believing in my project and in my potential as academic researcher, and for all the help and support that made this thesis possible.

My many thanks also goes to professor Roberto Guimarães, who introduced me to this theme of Genetically Modified Organisms (GMOs) in 2009 (during my Master's Programme) and who has always been a source of insightful learning.

My heartfelt thanks to my friends Lilian Alfaia Monteiro, Flávia Naves Mafra, and Jody Morris for their love, the constant encouragement, and their unconditionally friendship. I also give a special thanks to Sabira de Alencar Czermak, Sandra Moog, and Erna von der Walde for their kind support.

Acknowledgements must also be made to all the interviewees for their generosity in granting me time, always in a very kind and inspirational way. I would like to thank Gabriel Fernandes very specially for introducing me to some key civil society actors in GMO activism in Brazil and in the United Kingdom and for his generosity.

This thesis would have not been possible without the backing of the Brazilian Government, particularly, the Higher Education Personnel Improvement Commission (CAPES-Brazil) which provided funding during my doctoral research in Brazil and in the United Kingdom. I also thank the Brazilian School of Public and Business Administration, Getulio Vargas Foundation (EBAPE/FGV) for the financial support that allowed me to attend important academic conferences in Brazil and abroad, as well as, for encouraging me as a doctoral student and lending the support I needed to finish my thesis. From EBAPE/FGV, I also give a special thanks to Celene Melo and José Paulo Sampaio, for all the help, friendship, and encouragement.

Of course, this thesis would not have materialised without the committee members of my doctoral defence. Many thanks again to Professor Steffen Böhm, Professor Paulo Motta, Professor Eloise Dellagnelo, and Professor Rafael Kruter Flores. Thanks for your comments and constructive criticism**.**

ABSTRACT

Since the international financial and food crisis that started in 2008, strong emphasis has been made on the importance of Genetically Modified Organisms (GMOs) (or "transgenics") under the claim that they could contribute to increase food productivity at a global level, as the world population is predicted to reach 9.1 billion in the year 2050 and food demand is predicted to increase by as much as 50% by 2030. GMOs are now at the forefront of the debates and struggles of different actors. Within civil society actors, it is possible to observe multiple, and sometime, conflicting roles. The role of international social movements and international NGOs in the GMO field of struggle is increasingly relevant. However, while many of these international civil society actors oppose this type of technological developments (alleging, for instance, environmental, health and even social harms), others have been reportedly cooperating with multinational corporations, retailers, and the biotechnology industry to promote GMOs. In this thesis research, I focus on analysing the role of "international civil society" in the GMO field of struggle by asking: "what are the organizing strategies of international civil society actors, such as NGOs and social movements, in GMO governance as a field of struggle?" To do so, I adopt a neo-Gramscian discourse approach based on the studies of Laclau and Mouffe. This theoretical approach affirms that in a particular hegemonic regime there are contingent alliances and forces that overpass the spheres of the state and the economy, while civil society actors can be seen as a "glue" to the way hegemony functions. Civil society is then the site where hegemony is consented, reproduced, sustained, channelled, but also where counter-hegemonic and emancipatory forces can emerge. Considering the importance of civil society actors in the construction of hegemony, I also discuss some important theories around them. The research combines, on the one hand, 36 in-depth interviews with a range of key civil society actors and scientists representing the GMO field of struggle in Brazil (19) and the UK (17), and, on the other hand, direct observations of two events: Rio+20 in Rio de Janeiro in 2012, and the first March Against Monsanto in London in 2013. A brief overview of the GMO field of struggle, from its beginning and especially focusing in the 1990s when the process of hegemonic formation became clearer, serves as the basis to map who are the main actors in this field, how resource mobilization works, how political opportunities ("historical contingencies") are discovered and exploited, which are the main discourses ("science" and "sustainability" - articulated by "biodiversity preservation", "food security" and "ecological agriculture") articulated among the actors to construct a collective identity in order to attract new potential allies around "GMOs" ("nodal point"), and which are the institutions and international regulations within these processes that enable hegemony to emerge in meaningful and durable hegemonic links. This mapping indicates that that the main strategies applied by the international civil society actors are influenced by two central historical contingencies in the GMO field of struggle: 1) First Multi-stakeholder Historical Contingency; and 2) "Supposed" Hegemony Stability. These two types of historical contingency in the GMO field of struggle encompass deeper hegemonic articulations and, because of that, they induce international civil society actors to rethink the way they articulate and position

themselves within the field. Therefore, depending on one of those moments, they will apply one specific strategy of discourse articulation, such as: introducing a new discourse in hegemony articulation to capture the attention of the public and of institutions; endorsing new plural demands; increasing collective visibility; facilitating material articulations; sharing a common enemy identity; or spreading new ideological elements among the actors in the field of struggle.

Keywords: genetically modified organism, governance, field of struggle, civil society, neo-Gramscian discourse theory, hegemony

TABLE OF CONTENTS

LIST OF TABLES

LIST OF EXHIBITS

LIST OF ACRONYMS

ABRASCO - Brazilian Association of Collective Health

APROSOJA - Association of the State of Mato Grosso, Brazil

AS-PTA - Agricultura Familiar e Agroecologia

BINGOs - Business and Industry Nongovernmental Organizations

BIO - Biotech Industry Organization

CAPES-Brazil - Higher Education Personnel Improvement Commission

CBD - Convention on Biological Diversity

CGIAR - The Consultative Group on International Agricultural Research

CNA - The Confederation of Agriculture and Livestock of Brazil

COP-2 - The second Conference of the Parties

CTNBio - National Biosafety Technical Committee

DNA - genetic material; or short for deoxyribonucleic acid

EBAPE - Brazilian School of Public and Business Administration

EFSA - European Food Safety Authority

ENGOs - Environmental Nongovernmental Organizations

EU - European Union

FAO - Agriculture Organization of the United Nations

FGV - Getulio Vargas Foundation

GMOs - Genetically Modified Organisms

GRAIN - Genetic Resources Action International

GURT - Genetic Use Restriction Technology

IBAMA - Brazilian Institute of Environment and Renewable Natural Resources

IDEC - Brazilian Institute of Consumer Protection

IENGOs - Environmental Nongovernmental Organizations

INCA - National Cancer Institute

INGOs - International Nongovernmental Organizations

IRRI - The International Rice Research Institute

ISAAA - International Service for the Acquisition of Agri-biotech Applications

IUCN - International Union for Conservation of Nature

LMOs - Living Modified Organisms

MST - The Movement of Landless Peasants (in Portuguese “Movimento dos Trabalhadores Rurais Sem Terra”)

NGOs - Nongovernmental Organizations

NSM - New Social Movements

OECD - Organization for Economic Cooperation and Development

PLANAPO - National Plan for Agroecology and Organic Production (in Portuguese “Plano Nacional de Agroecologia e Produção Orgânica”

Pnae - National School Feeding Programme (in Portuguese “Programa Nacional de Alimentação Escolar”)

RAFI - Rural Advancement Foundation International

RTRS - Round Table on Responsible Soy

SPS - Agreement on Sanitary and Phytosanitary Measures

TRIPS - The Trade-Related Intellectual Property Rights

TWN - Third World Network

U.S. - The United States of America

UK - United Kingdom

UN - United Nations

UNCED - The United Nations Conference on Environment and Development

UNEP - United Nations Environment Programme

WTO - World Trade Organization

WWF - World Wide Fund for Nature

Figure 1: First March against Monsanto in London on May 25, 2013.
Source: The author (2013)

1 INTRODUCTION

In this first chapter, I will summarise the main arguments around the creation, production, and use of Genetically Modified Organisms (GMO) in order to provide a framework for the research question and the relevance of this study.

1.1 The problem and the research question

My involvement with the issue of governance in Genetically Modified Organisms (GMOs)[1] began in 2009 when I was enrolled in a Master's program. My research work on that occasion focused on how the Cartagena Protocol in biosafety influenced Brazilian legislation regarding GMOs, not only at a local level, but also internationally. As I was reaching the final stages of that research project, I became aware of the fact that, aside from the corporations and the state, different civil society organizations also influenced the struggle over GMO governance (see Figure 1). I then decided to investigate further the role of civil society actors within GMO governance.

Through the years I also became involved as an activist in the food movement in Brazil (where I am based) and abroad. My involvement as an activist is not associated to any

[1] In Brazil, the term 'GMOs' is widely applied in colloquial language. On the other hand, in the UK, the most common term used in colloquial language is GM food (Genetically Modified Food).

specific organization and can be described as that of an "organic intellectual" (Gramsci, 1971) who influences individuals and groups whenever possible and translates social transformations in a way that make sense to the public in general. Furthermore, the role of the organic intellectual is shaped along with the actors-subjects of a concrete society and directly related to their lived reality (Rauber, 2004). Following Misoczky, Flores and Böhm's (2008: 186) claim, I understand the organic intellectual to be someone who "has as its main function to contribute to the formation of a new morality and a new culture. That is, to contribute to the production of counter-hegemony".

However, this position also entails challenges. I see myself as a researcher first and an activist second (Roseneil, 1995; Uldam and McCurdy, 2013). This inevitably entails taken-for-granted observations with blind spots and shared sympathies (Plows, 2008).

In order to explore the research context, I believe that it is necessary to define GMOs and GMO governance. Transformations in the global scenario have created a transnational arena of governance in which governments, corporations, international organizations (e.g., United Nations), civil society organizations, and other actors attempt to influence international regulations directly to their own advantage (Scherer and Palazzo, 2011; Guedes and Faria, 2009).[2] In this way, my research problem is based on a definition of GMO governance as a contested "field of struggle" (Levy, 2008; Laclau and Mouffe, 1985) with actors competing and coalescing their interests and positions. GMO governance mirrors and reproduces key fault lines in debates on global social-ecological well-being (Viola and Franchini, 2012; Guimarães and Fontoura, 2012).

GMOs (or "transgenics") are defined as organisms whose genetic material (DNA) was altered in a way that does not occur naturally, but rather through sexual mating and genetic recombination (Nodari and Guerra, 2001). Their role in terms of food governance became prominent particularly after the international financial and food crises of 2008 (FAO, 2011, Rosset et al., 2011). As the world population is predicted to reach 9.1 billion in the year 2050 and food demand is predicted to increase by as much as 50% by 2030, and up to 70% by 2050 (FAO, 2013); higher attention has been given to food security.

[2] This process can be done in different ways, such as: regional and multilateral cooperation, the creation of international regimes; transnational cooperation; and other "global" political actions (Keohane and Nye, 2001). Here I highlight the role of international civil society actors in the global GMO agenda, or, "GMO governance".

Strong emphasis has been made on transgenic seeds associating them with the notion of "food security", which in turn has projected high expectations of profit in the biotechnological market, made up by large international conglomerates (Banerjee, 2003). Additionally, food security has been seen as the agenda of multinational corporate dominance of the food system as a whole, especially after the 2008 crises. The negative effects of these crises brought into light the importance of debates about the role of agriculture to guarantee food security (Edelman et al. 2014; Jarosz, 2011; McMichael, 2009; Patel, 2007; Reardon et al. 2003; Pereira, Fontoura and Fontoura, 2013).

During the Rio-92 conference in 1992, the first international milestone on biosafety was set with the creation of the Convention on Biological Diversity (CBD), which had the aim to guarantee biosafety, more specifically, the conservation and the sustainable use of the components of biological diversity and the equitable and just division of the benefits arising from the use of genetic resources (CBD, 2006). The main legal and independent instrument on biosafety resulting from the CBD is the Cartagena Protocol, developed in 2000 in the city of Montreal, Canada, but officially launched in 2003. In 2004, Brazil became one of the Parties ratifying the document.

For the first time in the international context, the Protocol emphasized the difference between GMOs and natural organisms and highlighted the potential environmental and human health risks resulting from modern biotechnology (Gupta and Falkner, 2006; Benthien, 2010). Without restrictive effect, the principal objective of this international agreement is to contribute to ensure the safe transfer, use and monitoring of GMOs to avoid adverse effects, focusing specifically on transboundary movements, that is, on the international transportation of GMOs from one country to another (United Nations (UN), 2000).

At the heart of these interlinked challenges are diverse and even competing visions regarding what to achieve, how to achieve it, and who should be the beneficiaries, which highlights the relevance of adopting the perspective of GMO governance as a field of struggle. Different actors have a stake in GMO governance, such as multinational corporations (e.g. Monsanto, Syngenta), nations-states, international organizations (e.g. Convention on Biological Diversity, Food and Agriculture Organization), social movements (e.g. Movement of Peasant Women), think tanks (e.g. International Council for Science), Nongovernmental Organizations - NGOs (e.g. Greenpeace), and others. These actors encompass a wide array of diverging and even contradictory positions. Key

points of contention revolve around the roles and importance of the private sector (particular large multinational agribusiness corporations), the public sector, and civil society actors (mainly social movements and NGOs) (Falkner, 2000; Banerjee, 2003).

Within civil society actors, it is possible to observe multiple, and sometime, conflicting roles. However, the role of international social movements and international NGOs in GMO governance is increasingly relevant. On the one hand, numerous acts of resistance serve as counterhegemonic forces. Many NGOs and social movements oppose this type of technological developments, alleging risks (environmental, health and even social harms) associated with the exponential increase of GMOs worldwide (Falkner, 2000; Gupta and Falkner, 2006).

Two significant events recently highlighted the increasing growth of civil society mobilization in GMO governance: Rio+20 and the first March Against Monsanto. In 2012, during the Rio+20 Peoples' Summit, some civil society actors protested against the adoption of GMOs worldwide and the increasing "dependency" of capital in modern agriculture. They also criticised the rhetoric deployed by multinational corporations on the need to feed the world population by 2050 and to tackle food security through GMOs (People's Summit, 2012). In 2013, the first March Against Monsanto was an international social movement that called on combating multinational corporations, such as Monsanto, as well as opposing GMOs. The movement started in The United States of America (USA) and took place on May 25 in more than 50 countries and more than 400 cities, with around 2 million people attending (Occupy Monsanto, 2013).

While both events adopted different ways of organizing and had different goals, they both aimed to promote organic agriculture and food sovereignty, protect local farmers, expose the cronyism between governments and corporations, and argue that biotechnology is not the solution to world hunger. The movements have included a range of different civil society participants; from transnational grassroots movements (such as International Social Movement 1 - anonymity guaranteed in this study), local social movements (such as Brazilian Forum of NGOs and Social Movements for the Environment and Development), local NGOs (such as GM Freeze, from the UK, and Agricultura Familiar e Agroecologia - AS-PTA, from Brazil), International NGOs (such as Greenpeace, Navdanya International, and Friends of the Earth), as well as farmers, women's movements, activists from social media groups (such as The Anti-Media and

Occupy Earth Now), indigenous groups (such as Association of Indigenous Peoples of Brazil), and others.

Along with international social movements, international NGOs have been seen as key players in setting environmental agendas for the future of humankind (Maguire and Hardy, 2006), as well as playing a prominent role in GMO governance. Grounded on the political capacity of their members to communicate and to use social technologies that facilitate decentralization to influence decision-makers and power holders, they provide know-how and material resources in the GMO field of struggle to local activists and social movement organizations at the domestic level (Fontoura and Guedes, forthcoming). According to Finger (1994), those NGOs represent the most significant expression of how the environmental movement has been transformed throughout the years, amplifying its influence from the national to the transnational level, thus altering its relationship with traditional, national, and state-centric politics.

However, their positions in GMO governance are conflicting. For years, some of those NGOs (such as Greenpeace and Biodiversity Action Network) have been reportedly resisting biotechnology and the diffusion of GMOs worldwide (Andrée, 2011). At the same time, others have been accused of cooperating with the multinational corporations, retailers, and biotechnology industry that promote GMOs (GMWatch, 2014). This shows that it is not easy to grasp the positions of NGOs in terms the GMO field of struggle. Moreover, civil society organizations can sometimes be merely an instrument of the state and they often manipulate states and market actors to achieve their own agendas (Escobar, 1995; Banerjee, 2011).

Drawing on the neo-Gramscian discourse approach (Laclau and Mouffe, 1985), the positions adopted by all these actors highlight GMO governance as a field of hegemonic struggle. Therefore, in this thesis research, I focus on unfolding the role of the "international civil society" in GMO governance by asking: ***"what are the organizing strategies of international civil society actors, such as NGOs and social movements, in GMO governance as a field of struggle?"*** Here, I define "organizing strategy" as the way these international civil society actors articulate and position themselves in the hegemonic struggle for GMO governance.

My conceptual lenses are grounded on the neo-Gramscian discourse approach (Laclau and Mouffe, 1985), based on the perspective that within a particular hegemonic regime there are contingent alliances and forces that overpass the spheres of the state and the

economy, while civil society actors can be seen as a "glue" to the way hegemony functions (Klimechi and Willmott, 2011). Civil society is then the site where hegemony is consented, reproduced, sustained, channelled; but also where counter-hegemonic and emancipatory forces can emerge (Levy and Egan, 2003; Spicer and Böhm, 2007; Gramsci, 1971). That is, any dominant discourse will necessarily remain incomplete in a collective process of hegemonic struggle (Laclau and Mouffe, 1985).

In a neo-Gramscian discourse approach, hegemony is partial and fragile as it is always open to contestation and resistance. Resistance occurs because civil society actors continuously attempt to articulate and develop "chains of equivalence" amongst several struggles in order to challenge the apparent discursive unity. However, the studies of Laclau and Mouffe (1985) do not go into any further detail about how exactly these actors organize themselves nor do they explore the main differences among them (Spicer and Böhm, 2007).

Recent studies using the neo-Gramscian framework have sought to examine the relationship and the boundaries between the private sector, the state, and civil society, and the role each of these may play in different hegemonic and counterhegemonic processes that are socially constructed through political articulations. These studies have problematized different forms of resistance that aim to challenge hegemonic discourses, an enlightening contribution to understand how fields of struggle for hegemony are formed (Andrée, 2011; Levy and Spicer, 2011; Rothenberg and Levy, 2012; Levy, 2008; Levy & Egan, 2003; Levy & Newell, 2002; Contu & Willmott, 2003; Böhm, Spicer and Fleming, 2008; Van Bommel and Spicer, 2011; Stavrakakis; 1997; Howarth and Stavrakakis, 2000).

However, these studies offer little if any insight as to how civil society actors operate or about their different organizing strategies, at the local and international level, and the ways in which they are deployed not only in order to resist but also to sustain hegemonic formations. In other words, civil society is still a big "black box" in neo-Gramscian studies. In particular, it is still very blurred as far as international civil society actors are concerned, since their organizing particularities have not been deeply explored and explained with this theoretical lens. Thus, in this thesis I also aim to contribute to neo-Gramscian studies by delving into international civil society ways of organizing in GMO governance. It is also important to point out that GMO governance has been largely neglected in the Management and Organization Studies fields of research.

Having said that, within this “field of struggle”, agricultural biotechnology practices are considered hegemonic (Shiva, 2005). For instance, in Brazil this is a highly relevant topic, since agriculture accounts for a significant part of the country’s economy. In 2013, agribusiness (one agricultural biotechnology practice) reached 1 trillion Brazilian Reais of the country’s Gross Domestic Product (Veloso, 2014). For Sauer (2008), agribusiness involves agricultural business (including producers), business industry and input traders, as well as production marketing (acquisition, processing and sale to end users), with focus on increasing production and productivity. Over time, both resistance and support to agribusiness from civil society actors have increased in GMO governance (Banerjee, 2003).

Focusing on international civil society actors, the empirical research was conducted in two key privileged locations to understand how GMO governance is shaped as a field of struggle from a more global perspective: Brazil and the UK. These two countries were chosen for their relevance in GMO governance. On the one hand, as previously mentioned, in 2003, Brazil became the fourth largest producer of transgenics in the world; on the other hand, the UK plays an important role in GMO governance, although resistance to GM technology in public opinion is high (Hickman, 2013). It must be noted, however, that a wider set of case studies could have provided further insights, but due to limitations of space and time during the doctoral research, it was considered advisable to focus the field research on these two countries.

The thesis was structured in five central chapters: Introduction, Theoretical Review, Methodology, Research Results, and Conclusions. In the first chapter the research problem, the relevance of the study and the scope of the research are detailed. In the second chapter, I develop a theoretical reflection on the neo-Gramscian discourse theory and civil society actors that will define the conceptual lenses of the research. The third chapter highlights the methodological strategies used in this study, based on a qualitative research approach, grounded on the neo-Gramscian discourse analysis. The fourth chapter demonstrates the research results of the field research, which entails a brief overview of the GMO “field of struggle” and the data analysis of field research in Brazil and the UK, focused on international civil society actors. In the end, the final chapter highlights the main theoretical and empirical conclusions of this research as well as the proposals for future studies.

1.2 Relevance of the research

The relevance of this research shall be discussed around four main aspects, which will be highlighted in this section. First, the rapid growth of GMOs worldwide has high impacts on the food systems debate. Secondly, even though international civil society actors have great impact on global governance and, particularly, on GMO governance, they have not been sufficiently researched as "international" political actors in the fields of Organization Studies, International Business, and International Management. Thirdly, this research provides a relevant contribution to neo-Gramscian literature by unpacking civil society and describing the practices and positions of civil society actors, not only at a local level, but internationally. Last but not least, the research also contributes to the daily lives of participants in civil society and of those involved in management.

The first relevant aspect of this research is to problematize biosafety as one of the most debated issues in food systems. In this way, the outcomes of this study have political implications for multiple stakeholders concerning the introduction, growth and release of GMOs and their by-products into ecosystems. Preserving biodiversity and ecosystems is critical to ensure the continuation of human life on the planet and to enable that the world population adopts a sustainable lifestyle and economic growth that reflects the importance of knowing the limits set by the dynamics of the biosphere in human life (Moreira, 2000). Social movements have claimed that the exponential growth of the corporate GMO industry around the world is evidence for the neoliberal logic of "green capitalism" and for the way it has marketised nature, causing worrying social and environmental impacts (Banerjee, 2003, 2011; Böhm, Misoszky and Moog, 2012).

Secondly, in terms of field research, in Organizations Studies, organizational scholars have increasingly recognized the importance of understanding the interactions among distinct organizational forms. Particular attention has been given to the relational exchanges between social movements and organizations, including business corporations (Yaziji and Doh, 2013). However, De Bakker et al. (2013) have pointed out that more studies should be conducted on the intersection between social movements, corporations, and societies, as well as to advance the understanding of the political economy of governance. The interpenetration of organizations and organizing happens in different ways through direct and indirect interactions between the agents, including civil society actors. This means that not only corporations should be taken as the main organizations of a specific field.

Organization Studies have also neglected the "international" aspect of civil society actors. Although there are numerous references in the existing research to "international" NGOs without mentioning or labelling them as "international" (Maguire and Hardy, 2006; Dubuisson-Quellier, 2013; Yaziji and Doh, 2013), the studies of Beech (2008) and Hardy, Palmer and Phillips (2000) advocate that NGOs deliberately adopt the term "international" in their identity-claim when they seek to gain a favourable reaction from governmental bodies. Thus, the use of the term "international" draws on and interacts with a wider context of discourse. In this case, the incorporation of "international" has a meaningful impact by fitting language into an external context (Beech, 2008).

Nonetheless, recent research in Organization Studies has begun to analyse international social movements actors using anti-corporate social movement theory (Kraemer, Whiteman and Banerjee, 2013; Banerjee, 2011). However, according to Kraemer, Whiteman, and Banerjee (2013: 825) "organization studies have largely ignored the often disruptive nature of transnational anti-corporate organizing efforts".

Moreover, in order to challenge management discourses, international civil society actors develop advocacy strategies, such as public protests and media campaigns (Yaziji and Doh, 2013; Spicer and Böhm, 2007; Banerjee, 2011). Thus, they are key organizations in setting international agendas at local and global levels, and from within and outside corporations (i.e., NGOs-corporations relationships and participatory projects, shaping consumers' preferences, influencing public opinion) (Maguire and Hardy, 2006; Dubuisson-Quellier, 2013; Yaziji and Doh, 2013; Beech, 2008; Wright, Nyberg and Grant, 2012). For instance, they also mediate conflicts and try to represent community interests in global environmental governance (Spicer and Böhm, 2007; Kraemer, Whiteman and Banerjee, 2013; Banerjee; 2012; Yaziji and Doh, 2013). Hence, it is clear that these are key organizations in the global governance process, with increasingly intersection between movements, corporations and society, a fact that underpins why more research should address in more depth the understanding on how civil society actors alter the conditions in which corporations act (De Bakker et al., 2013).

In short, I argue that there is still a need for further research on international civil society organizations in Organization Studies, especially regarding the ways they act and organize, and their political role in the often-troubling nature of transnational social movements. That is, in this study I call for a broader explanation of those actors in this field of research by problematizing them by means of a neo-Gramscian perspective.

In International Business and International Management, “civil society” is often represented in a homogenous way, which is far from how the reality of the struggle over GMO governance manifests itself. Recent studies have highlighted that international civil society actors differentiate themselves from the local ones in their practices, methods, structures of governance, strategic management and organizational structures (Boli and Thomas, 1999; Teegen, 2003; Van Huijstee and Glasbergen, 2010), as well as in their power to influence the global governance network (Gupta, 2002; Arts, 2002; Arts, 2005; Betsill and Corell, 2001a, 2001b; Boström and Hallström, 2010; Srinivas, 2010; Christmann and Taylor, 2006; Teegen, Doh and Vachani, 2004).

Böhm, Spicer and Fleming (2008) argue that it is remarkable that International Business as a field of research has very limited discussions about how multinational companies have been resisted in manifold ways. According to these authors, politics is addressed as having to do with formal institutions, such as the negotiations taking place between host governments and multinational corporations, but there are few studies about the importance of civil society actors and informal and clandestine actions against international business practices. Kourula and Laasonen’s study (2010) equally expresses that the “political” aspect of international civil society actors in the context of global governance has been neglected in the fields of International Management and International Business. Additionally, the narrow view these fields in the study of international organizations, which focuses on large private corporations, limits the scope of study in these areas (Guedes and Faria, 2010; Guedes, 2010).

Concerning global governance, international civil society actors have played decisive roles (Arts, 2005; Betsill and Corell, 2001a, 2001b; Boström and Hallström, 2010; Gupta, 2002). Some partnerships between those actors and different agencies with distinct patterns of organizing (like big private corporations and international organizations) draw our attention, since they were very antagonistic in the past (Fontoura and Guedes, forthcoming).

Although global governance has been scarcely addressed in the abovementioned studies, multiple international actors have been widely debated in the field of International Relations (Martens, 2006; Reimann, 2006). More specifically, Joachim and Locher (2009) investigated main themes related to NGOs in global governance in the International Relations field. They found that the main topics are: the strategies and tactics of these organizations (Beyers, 2004; Burgerman, 2001); their impact in the

formulation of international agendas (Locher, 2007; Joachim, 2007; Gordenker et al., 1995); the elaboration of norms (Clark, 2001; Keck and Sikkink, 1998); the increasing rise of a global civil society (Kaldor, 2003; Boli and Thomas, 1999; Wapner, 1996); the consequences of international NGOs in relation to state sovereignty (Friedman, Hochstetler and Clark, 2005); and, last but not least, the perspectives about the democratization of international institutions (Nanz and Steffek, 2004; Scholte, 2004; Greven, 2006).

In this way, I argue that it is necessary to amplify the scope of research by approaching GMO governance not only at the level of "management" itself but also at the level of "governance" (Faria and Guedes, 2010). In spite of the difficulties regarding the meanings of "management" and "governance", Faria and Guedes (2010) argue that the first is more related to the practices and skills of managers inside the business enterprises, while the second is more related to the practices and powers of higher-order actors and networks that constrain and enable the practices and skills of business managers.

Thirdly, this research is also relevant as it offers a reconsideration of complementary perspectives on neo-Gramscian discourse theory and its agent-structure framework for further research by unpacking civil society through the investigation of international civil society actors in GMO governance. The studies of Laclau and Mouffe (1985) are very useful to understand that social movements are central agents of resistance, but as pointed in the first section, they do not go into any further detail about how exactly these actors organize themselves and their struggles for hegemony. Also, besides Laclau and Mouffe's (1985) work, some recent research grounded on the neo-Gramscian discourse theory has sought to analyse the intertwined relationship among private, state and civil society actors in the process of hegemonic and counterhegemonic formation (Andrée, 2011; Levy and Spicer, 2011; Rothenberg and Levy, 2012; Levy, 2008; Levy & Egan, 2003; Levy & Newell, 2002; Contu & Willmott, 2003; Böhm, Spicer and Fleming, 2008; Van Bommel and Spicer, 2011; Stavrakakis; 1997; Howarth and Stavrakakis, 2000). However, they still did not inquire in much depth into civil society actors and their complex ways of organizing nor do they explain how the neo-Gramscian theoretical lenses could provide tools to deepen the understanding of these issues. Therefore, this thesis is also relevant inasmuch as it discusses civil society actors through the theoretical lenses of neo-Gramscian discourse theory and, as consequence, can contribute to unpack the big 'black box' of civil society in GMO governance.

Finally, it is important to highlight that this study aspires also to contribute to the daily life of participants in civil society organizations and in management. Civil society actors in agrifood systems are highly connected to this issue, and the outcomes of this research will reinforce key topics related to their realities in their cause and work. Moreover, different actors in management and food businesses work close to this theme, and thus this research may contribute to their understanding on how hegemony has been resisted in GMOs struggle. This highlights the importance of the exchange between academia and different social actors.

2 THEORETICAL REVIEW

The purpose of this chapter is to present and discuss the theoretical framework of the thesis. The first section explores the neo-Gramscian discourse approach on hegemony (Laclau and Mouffe, 1985). After that, I delve into civil society actors, some important theories around them, the main actors involved and their role in global politics. By doing so, the chapter provides the main theoretical categories of analyses that will be operationalized in the empirical research.

2.1 Neo-Gramscian Discourse Approach on Hegemony

I took the neo-Gramscian discourse analysis as the main theoretical framework of this research mainly based on the 1985 study by Laclau and Mouffe entitled *Hegemony and Socialist Strategy*. Although this book has been chosen as the main reference for this doctoral thesis, I naturally acknowledge the relevance of other studies using this approach that have been done before and after Laclau and Mouffe, 1985. Therefore, in this section, different authors on neo-Gramscian discourse theory will be discussed in order to better understand this theory and its importance for the research object of this thesis.

In the late 1970s, the social sciences experienced a 'linguistic turn' as an intellectual critique to the mainstream theoretical approaches of the late 1960s and to structuralist theories of society, language, and culture. Likewise, it was a response to the crisis of Marxism and the rise of neo-conservative and neoliberal hegemony. In this context, discourse theory offered a new analytical perspective which aimed at understanding the meanings and rules that conditioned the construction of political, social, and cultural identity. Following this tendency, in the last decades we can speak of an emerging 'discursive turn' (Torfing, 2005; Alvesson and Karreman, 2011).

As a cross-disciplinary approach that aims to link key insights from linguistics and hermeneutics with central ideas from social and political sciences, this 'discursive turn'

emerged from the growing recognition of the connection between language and politics in societal transformation and through the basic understanding that 'politics matters' and, moreover, 'discourse matters' (Torfing, 2005; Alvesson and Karreman, 2011).

There are many kinds of discourse theory, which vary both according to their understanding of the overlapping of language and political power struggles and to their view on discourse (Torfing, 2005).

Drawing on the view that discourses construct and encompass a broad array of social phenomena (organizations, individuals, social reality) (Alvesson and Karreman, 2011), the neo-Gramscian discourse approach focuses on the concept of hegemony to investigate the processes of consent, resistance, and coercion that shape and are shaped by discourse articulations. As a global challenge to hegemonic stability, discourses and – more significantly– political struggle are embedded in GMO governance. Moreover, neo-Gramscian discourse theory offers a systematic explanation and key theoretical elements to examine how both resistance and consent emerge from civil society (Spicer and Böhm, 2007). In that sense, GMO hegemonic struggle in contemporary politics results from the fragile nature of the social that can never be fixed as an objective reality. Essentially, this fragile nature evokes the need for society to organize itself in a political terrain (Böhm, 2006).

Having its roots in Marxism, neo-Gramscian theoretical lenses "assume the centrality of the struggles that capitalist relations of production engender to contemporary politics" (Andrée, 2011: 175). However, it differs from "economistic" Marxism in its "dismissal of the assumption that the material basis necessarily defines ideological superstructure" (Laclau and Mouffe, 1985: 175).

The late British-based Argentine political theorist Ernesto Laclau and his life partner and co-author Chantal Mouffe (1982, 1985, 1987) aimed to develop a synthetic post-Marxist, post-structuralist, and postmodern political theory. For this purpose, they attempted to translate the different theoretical insights on discourse theory into a comprehensible framework that could act as a starting point for social and political analysis.

According to Torfing (2005), there are at least three different generations or traditions of discourse theory: 1) socio-linguistic analysis - defines discourse in the narrow linguistic sense of a textual unit (usually larger than a sentence) and focuses on the semantic aspects of written and spoken text (e.g., Downes, 1984; Holsti, 1969; Schegloff and

Sacks, 1993; Potter and Wetherell, 1987); 2) critical discourse analysis – sees discourse also as a social practice and not only restricted to a written or spoken language but a wide set of social practices (e.g., Foucault, 1985, 1990; Fairclough, l992, 1995); 3) post-structuralist discourse analysis – extends the notion of discourse in a way that it can now cover all social phenomena since it is a relational system of signifying practices depending upon a decentred system of contingently constructed differences and rules (Derrida, 1978; Laclau and Mouffe, 1985 Laclau, 1989; Stavrakakis, 1997).

Laclau and Mouffe's neo-Gramscian discourse theory is considered to belong to third-generation theoretical perspectives. In their book, Laclau and Mouffe (1985) explore the genealogy of the concept of hegemony through an array of radical political discourses. In so doing, the authors expand Gramsci's concept of hegemony by theorizing it as a discursive formation.

Laclau and Mouffe (1985) follow Foucault's notion regarding the internal relation between power and discourse, and "define discourse as a quasi-transcendental definition of the historically variable conditions of possibility of what we say, think, imagine, and do" (Torfing, 2005: 9). However, they abandon the distinction between the discursive and the non-discursive. For them, non-discursive phenomena like institutions, economic processes, and technology are ultimately constructed in and through discursive systems of equivalence and difference (Torfing, 2005).

Regarding Norman Fairclough's Critical Discourse Analysis, Laclau and Mouffe question the naturalist ontology latent in the idea that discourse results by extra-discursive powers at the level of the state or the economy and that the reflexivity and actions of the human agents reproduce and transform the social world. On the other hand, regarding social and political discourse, the differences between them are small since many of Fairclough's analytical notions and categories for analysing particular discourse and different types and genres of discourse can be used together with concepts from neo-Gramscian discourse theory.

Through these three generations of discourse theory, some developments were made towards a broader concept of discourse and power. This means that this development also results "of contingent intellectual articulations that open a variety of future paths of development" (Torfing, 2005: 9). Thus, third-generation discourse theory will not focus on observable facts or deep meanings. It will aim to understand the historical formation of the discursive conditions of social being (Torfing, 2005).

Likewise, in their approach “organization” is historically shaped and “dominated by the economic spheres of production, bureaucratically controlled by the state and legitimatized by civil society”. This is closely related to Gramsci’s conception of the materiality of ideology, which overcomes “superstructural” notions of ideology.

One of the most important theoretical elements in neo-Gramscian discourse theory is “ideology”. For Laclau and Mouffe, ideology “is not identified with a ‘system of ideas’ or with the ‘false consciousness’ of social agents”. Instead, it is “an organic and relational whole, embodied in institutions and apparatuses” (1985: 67), which binds a specific configuration of superstructures and societal groups around a number of basic articulatory principles. In other words, it functions as an amalgam in social subjectivity creating the conditions for political and economic groups to emerge. Thus, the discourse analyst must try to understand the materiality of ideology in a specific social formation.

The utmost outcome from the neo-Gramscian discourse analysis is to better understand how historical actors articulate their differential positions and ideological elements within the discourses that constitute the social fabric. It is important to point out that, for Gramsci, political subjects are not only described as classes (strictly speaking), but as complex “collective wills”. Gramsci stressed that: “politics in the modern mass society takes the form of a struggle for hegemony in terms of the establishment of a political and moral-intellectual leadership” (Torfing, 2005: 10).

In this sense, Laclau and Mouffe define articulations as “any practice establishing a relation among elements such that their identity is modified as a result of the articulatory practice” (1985: 105). Ideology is then fragmented, partial and a relatively coherent articulation of meaning. When articulated, different discourses are processed theoretically among social agents and incorporated into their very identity (Laclau and Mouffe, 1985). Thus, for neo-Gramscian discourse theory, “the institutionalization of a hegemonic project in an organic coupling of state and civil society is more important than taking control with the means of production” (Torfing, 2005: 11).

For Torfing (2005: 14), discourse can be seem as result of political decisions, but at a concrete level, discourse can be analysed as “an ensemble of cognitive schemes, conceptual articulations, rhetorical strategies, pictures and images, symbolic actions (rituals), and structures (architectures), enunciative modalities, and narrative flows and rhythms”. Together, these elements should shape and reshape meaning and provide a homogenous space of representation.

Discourse is then forged and enlarged through articulation processes defined as a practice that sets a relation among discursive elements that promotes a mutual modification of their identity (Torfing, 2005). The discursive articulations in neo-Gramscian discourse theory are a sine qua non factor for the rise of hegemony. Hegemony is a central category since it represents an important and contentious reference in Gramsci's work. Through this concept, Gramsci sought to comprehend the failure of socialist revolution worldwide, which entails:

> not only a unison of economic and political aims, but also intellectual and moral unity […] the development and expansion of the [dominant] group are conceived of, and presented, as being the motor force of a universal expansion […] In other words, the dominant group is coordinated concretely with the general interests of the subordinate groups (Gramsci, 1971: 181).

In neo-Gramscian discourse theory, hegemony is a socio-political situation that has "staked out" a particular, dominant idea of what reality is (Laclau and Mouffe, 1985). That is, it represents a consented form of power that allows the identification of people with their political and social institutions, contrasting with "coercive" forms of domination. It happens when power is held through an intellectual, moral, and political kind of leadership or authority (Levy and Egan, 2003; Spicer and Böhm, 2007; Gramsci, 1971).

Besides, the ideological elements articulated by a hegemonic class do not necessarily have a class belonging. This reiterates why weaker groups might consent to participate within hegemonic fields of struggle in which they have little influence to change the "rules of the game" and do not enjoy the "shared" benefits (Levy, 2008). Hegemony conveys a refined balance of ideology that legitimates the outcomes of a system, allows concrete concessions to weaker groups, and permits some degree of economic and political coercion. In this perspective, consent does not mean that weaker groups are victims of a form of false consciousness (Abercrombie, Hill and Turner, 1980). As pointed before, Gramsci's concept of ideology is not that of a rigid system of ideas imposed on society.

The outcome of class struggle provides a system-stabilizing class compromise where institutions reinforce the apparent universality of the dominant ideology. The struggle is largely over marginal changes in resource distribution, but not over the legitimacy of the system as a whole. Thus, it no longer appears to promote any specific class interest, at

the same time that it seems to provide some benefit to lower classes without threatening the hegemonic class and its interests (Rucki, 2011). Therefore, in governance contexts, hegemony may prevail under "a coherent conjunction or fit between a configuration of material power, the prevalent collective image of world order and a set of institutions which administer the order with a certain semblance of universality" (Cox, 1981: 139).

Based on that, neo-Gramscian discourse analysis encourages an investigation of "relations of force" (the material, institutional and discursive) and their connections across three levels of mutually constitutive political activity: global order, civil society, and the state (Gill, 1998). These three levels relate to: a) ideas as intersubjective meanings of what would be the collective images of world order; b) material capabilities as a process of accumulation; and, last, c) institutions as channel of order stabilization representing the mixture of the two previous elements (Cox, 1981).

For instance, in climate change governance, hegemonic structures allow market mechanisms, such as carbon trading, to become the primary mechanism to reduce emissions and highlight voluntary action rather than legislative measures (Böhm and Dabhi, 2009; Bumpus and Liverman, 2008). At the same time, there is a globally shared assumption that energy is a key driver of economic growth, an assumption on which much of the power of the fossil fuel lobby relies. This helps to explain the success of their lobbying efforts in climate change negotiations and why, in the end, "the interests of states in ensuring that climate change regimes do not create any obstacles to economic growth thus coincide with the interests of the fossil fuel industry" (Banerjee, 2012: 1764). Hence, discourses of climate change are inextricably linked with discourses of development and energy security. This governance struggle involves both developing and industrialized countries and other several actors lobbying for different positions and particular configurations of interests (Banerjee, 2012).

As mentioned before, in a neo-Gramscian discourse approach, the institutional group formed by those actors (comprising institutions, corporations, governments and transnational managerial elites) in climate change exercise structural power to ensure that whatever the agreement reached it does not harm their goals.

Likewise, the complexity around GMO governance affects national policies, international regimes, organizations, and also meanings and knowledge production in environmental, social, political, and cultural relations (Fontoura and Guedes, forthcoming). When these elements come into alignment, the prevailing economic,

social, and bureaucratic systems enjoy a level of stability and legitimacy, that is, a hegemonic situation. Thus, I argue that it is important to pay close attention to institutional, material and discursive "relations of force" in GMO civil society actors in order to better understand their hegemonic ambitions and their ability to affect specific practices. Moreover, neo-Gramscian discourse analysis is less about establishing a definitive description of when specific groups are or are not hegemonic, and more about explaining and describing the complexity of the processes of consent, resistance, and coercion involved in a broad-scale social change.

In doing so, this discourse approach integrates agency, dynamics, and power by conceiving GMO governance as a "field of struggle". The "field of struggle" operates in a very dynamic system of continuous flux of contradictions, ideologies, and agents, whereby equilibrium is never reached. Meanwhile, ideologies and actors are themselves instituted in field-level processes and structures, in a dialectical movement (Levy, 2008). This means that hegemony and ideology are incomplete and non-monolithic, but transitory and historically specific. Hence, resistance and oppositions can always arise (Gramsci, 1971). Mittelman (2000: 184) reinforces this notion by stating that, "Different historical contexts will produce different forms of hegemony with different sets of actors". Thus, hegemonic power is deeply intertwined with the concept of resistance.

For Cox, when actors stand against hegemonic-neoliberal forms of globalization, such opposition represents a "dialectical response to homogenization" or an "affirmation of difference" (Cox, 1997: 24). Therefore, resistance is part of a "double movement": first, the self-regulating market expansion inflames socially disruptive and polarizing trends; and secondly, there is a movement of the reassertion of political responses (Cox, 1995; Mittelman, 2000; Levy and Egan, 2003; Levy, 2008).

Such double movements mark moments of instability that generate an open fissure in a cascading effect that leads to a reconfiguration of the whole system (Levy and Egan, 2003). When discontinuity happens or a crisis of hegemony arises (or an "organic crisis" occurs, according to Gramsci), it means that the legitimacy of the ruling class collapsed in the face of a political failure that allowed the inchoate demands of subordinate actors to be voiced. These moments of a hegemonic crisis provide opportunities for restructuring new hegemonic relations between society, economy, and state (or counterhegemonic relations).

In this sense, “historical contingency” or “logic of the contingent” is a cornerstone in neo-Gramscian discourse analysis. This stresses that any hegemonic formation is dynamic since contingent articulations are privileging political moments in the structuration of society. That is, hegemony is not just the “unfolding of an identity but the response to a crisis” (Laclau and Mouffe, 1985: 7). Deeper levels of contingency produce new hegemonic articulations (also contingent), which in turn lead to new political actions of the institutions and restart the process of construction of hegemony.

Therefore, the logic of hegemony is based on contingency and articulation, and those two factors will together determine the identity of the hegemonic subjects (Laclau and Mouffe, 1985). Laclau and Mouffe (1985) pointed out that the dimension of contingency is even more visible in the contemporary world than it was in Gramsci’s time, as over time, hegemonic rearticulations have become far more generalized and common.

Likewise, contingency is central to challenge and resist hegemony. As highlighted by Otto and Böhm “every hegemonic discourse is only a partial fixation of a particular order that can be challenged through resisting forces” (2006: 11).

Hegemonic discourses result from the logics of equivalence, but also from the logics of difference. “Chains of equivalence” “involve the construction of common ideologies, identities and strategies” (Böhm, Spicer and Fleming; 2008: 177). Thus, in order to resist hegemony, some civil society actors attempt to develop their own hegemonic discourses “within and between their own operations by articulating ‘chains of equivalence’” (Böhm, Spicer and Fleming; 2008: 177). The understanding of these chains of equivalence is fundamental in neo-Gramscian discourse theory. They are set to reach a broad coalition in a common project in order to accommodate actors and their plural demands (Laclau and Mouffe, 1985). That is, “actors cancel out their differences, in order to identify with a particular demand. Yet, the establishment of this chain can never be a purely intentional and rational act” (Otto and Böhm, 2006: 10).

Antagonism is also central in neo-Gramscian discursive approach. Chains of equivalence also emerge by establishing a political frontier or antagonistic relationship with regards to other discourses (Otto and Böhm, 2006). This involves analysing logics of difference that rely on “antagonisms” for identity construction as a way to oppose the hegemonic discourse.

The logic of equivalence relates to the simplification of political space, while the logic of difference to its increasing complexity and enlargement (Laclau and Mouffe, 1985). Otto and Böhm (2006: 10) point out this coexistence between the logics of difference and logics of equivalence: "Yet, the establishment of this chain can never be a purely intentional and rational act, as the process is disrupted through an antagonistic relationship with other discourses, which at the same time is necessary for the unity of the movement".

Antagonism lies in the fact that identity cannot be unified into an existing system of differences (Dellagnelo, Böhm, and Mendonça, 2014). In order to identify oneself, one must delineate oneself from an "Other", "which we are not, and from which we are superior" (Otto and Böhm, 2006: 10). In short, "one can say that the constitution of an 'enemy' is necessary to construct the movement's identity as the precondition for its own existence" (Otto and Böhm, 2006: 10).

Laclau (2005) highlights the importance of the constitution of a common 'enemy' for a collective identity construction. For the author, its meaning is determined largely by the differential positions within the symbolic composition of society. The extensive series of social demands can boost the disintegration of the very symbolic framework of different collective groups. Thus, popular demands shall be less and less sustained by a pre-existing differential framework, and shall rather be grounded on the construction of a new one. Because of that,

> the identity of the enemy also depends increasingly on a process of political construction. I can be relatively certain about who the enemy is when, in limited struggles, I am fighting against the local council, those responsible for the health system, or the university authorities. But a popular struggle involves the equivalence between all those partial struggles, and in that case the global enemy to be identified becomes much less obvious. The consequence is that the internal political frontier will become much less determinate, and the equivalences intervening in that determination can operate in many different directions. (Laclau, 2005: 86)

Antagonistic relations are thus seen as "radical", but with the mutual recognition of legitimacy among the opponents (Mouffe, 2013). Moreover, antagonisms delineate society's limits since those are essentially antagonistic. In other words, antagonisms are external to society and thus they constitute the latter's impossibility of consolidation (or social organization) as a totality (Laclau and Mouffe, 1985). Based on the power of the antagonism to demarcate the line between the internal and the external, in the form of

two opposing systems of equivalences, its construction has become increasingly crucial in politics. For instance, forms of resistance can assume the character of collective struggles from the rise of an external discourse. This shows that there is no politics without hegemony. Therefore, in a neo-Grasmcian discourse theory, it is of utmost importance for us to identify the discursive conditions for the rise of a collective action and the conditions in which an antagonism has been constituted (Laclau and Mouffe, 1985).

Additionally, it is important to point out that the plurality of varied and often-contradictory positions discards the idea of a perfectly unified "society" or the broad concept of "the people". This might seem paradoxical if resisting hegemony requires the construction of a counterhegemonic identity, and this new identity will never achieve the status of a perfectly unified and homogenous agent, such as the "working class" discourse. On the contrary, antagonisms allow the emergence of Gramscian concept of "war of position" against the dominant hegemonic forms (Laclau and Mouffe, 1985).

In this sense, antagonism does not emerge at a single point of difference. There is an array of possible antagonisms in social realities and some of them can even oppose each other. The chains of equivalence will differ radically depending on the antagonism involved; and it may affect and penetrate (contradictorily) the identity of the group. Hence, "the more unstable the social relations, the less successful will be any definite system of differences and the more the points of antagonism will proliferate" (Laclau and Mouffe, 1985: 131). This proliferation makes the central identity of a group of actors more difficult to define, and, consequently, it also makes organising unified chains of equivalence more challenging.

Thus, the dynamic system in a neo-Gramscian approach to governance can also be described as an endless "war of position" of social contestation (Bohm, Spicer, and Fleming, 2008). For Gramsci, the "war of position" entails the progressive disaggregation and construction of people's identity in hegemony. It means that the identity of the opponents to hegemony, for instance, far from being fixed from the beginning, is mutating constantly. In this sense, the metaphor of "war" has little to do with the strict military sense, and rather stresses that, in collective actions, identity is not stable or fixed. For instance, struggles against private corporations are increasingly articulated at the international level. In a recent study about the Cartagena Protocol negotiations on GMOs, Fontoura and Guedes (forthcoming) found that different actors

from civil society were embedded in a "war of position" during the whole process of formulation and implementation of this international policy. For instance, sometimes they used antagonistic articulatory practices (e.g., activism protests in the pre-negotiation phase of the Protocol promoted by Greenpeace and Friends of the Earth), while sometimes they adopted hegemonic articulatory practices (e.g., the lobby of BioteCanada, International Trading House, and Japanese Bioindustrial Organization, during the initial proposals of the Protocol).

Another key concept in neo-Grasmcian discourse theory is that of the "nodal point" (or "empty signifier") which actors adopt in order to create chains of equivalence. In other words, to create chains of equivalence, actors in society articulate "nodal points". "Emptiness" is "an essential quality of the nodal point, as an important condition of possibility for its hegemonic success" (Howarth and Stavrakakis, 2000: 9). The nodal points are then quite ambiguous central points in a discourse connecting a variety of interests of different groups in a particular system of meaning or "chain of equivalence" with some degree of temporary stability (Torfing, 1999; Böhm, 2006; van Bommel and Spicer, 2011). As pointed out by Stavrakakis (1997: 266), "the nodal is the signifier of a 'lack of a lack', it represents itself as a point of absolute meaningfulness; it aims at arresting the flow of the Real". However, in their studies, Laclau and Mouffe underscore that social actors do not simply adopt a nodal point as philosophical point of view at the level of 'ideas'. Rather, it should "be seen as a more complex set of discursive hegemonic operations embracing a variety of aspects, both institutional and ideological, through which certain themes are transformed into nodal points of a discursive formation" (1985: 174).

For instance, in the case of the Bolivian "water war", the social movement that sought to resist management and business practices used the term "water" as a nodal point because "it was so open and general that it could comprise a plurality of demands and accommodate many different interpretations" (Otto and Böhm, 2006:16). Also, as an example, environmental movements often use the term "green" to refer to a wide range of floating signifiers from the environmental lexicon (Stavrakakis, 1997). In both cases, discourses compete for "the construction and stabilization of meaning by articulating as many elements as possible around certain privileged points. In this way, the resulting meaning will be always a 'political' fixation that will involve 'winners' and 'losers'" (Dellagnelo, Böhm, and Mendonça, 2014: 143).

In turn, nodal points comprise a range of "floating signifiers" that are articulated differently in different discourses (Laclau and Mouffe, 1985; Torfing, 1999). They are signifiers because they are full with meaning, and they are "floating" because they accommodate many different interpretations and can be attached to many possible patterns of signification, depending on how they are linked with other words (Torfing, 2005; van Bommel and Spicer, 2011). Civil society actors often exploit a sort of floating signifier in the attempt to create a richer language to articulate their political struggle, to mobilize broader support and attract potential allies (van Bommel and Spicer, 2011).

Moreover, considering that civil society actors also draw on antagonisms to construct identity, Laclau and Mouffe (1985: 171) defended that "Every antagonism, left free to itself, is a floating signifier, a 'wild' antagonism which does not predetermine the form in which it can be articulated to other elements in a social formation". Again, it is crucial to analyse "antagonisms" as a central type of floating signifier.

To clarify the concept of floating signifier, I take the example of van Bommel and Spicer's study (2011). In their research on the creation and development of the Slow Food movement, the authors found out that the movement had gained global reach (from Italy to other countries) by incorporating and articulating a large range of new floating signifiers through the years. First, the movement articulated the following signifiers: slowness, artisanal, local/traditional, and taste, under the nodal point "gastronomy". After 2000, it started to articulate floating signifiers beyond gastronomy, and articulated "sustainability", "social justice", and "biodiversity" as related to eco-gastronomy. By 2010, the slow food movement became more organized, and expanded to more than 150 countries, with more than 100,000 members by 2010.

In brief, to build collective identity three processes are required: a) an equivalential articulation among different demands that allows the emergence of "the collective"; b) the creation of an antagonistic borderline; and c) the unification of these demands in hegemonic discourse (or a stable system of signification) (Laclau, 2005: 75).

Last, but not least, even though Laclau and Mouffe (1985) highlight that social movements are the fundamental agents of resistance, they do not "go into any further detail about exactly how social movements organize their hegemonic struggles" (Spicer and Böhm, 2007: 6). Grounded on that, this study also aims to contribute to neo-Gramscian literature by opening-up the box of civil society through the investigation on the dynamical and complex role of international civil society actors in GMO governance.

2.2 Civil Society Actors

Initial theories in civil society used to refer to it as a social interaction sphere governed by political reasons (Arendt, 1958), disconnected from the state, the family and the marketplace (Hegel, 1821/2002), and where the savage was supposedly to be civilized and ordered (Hobbes, 1651/1985). In the last decades, civil society has often been characterized by individuals coalescing voluntarily around common ideas, causes, and needs to achieve collective gain or action, without the organizations being public or for profit in their origins (Yaziji and Doh, 2009).

In a neo-Gramscian discourse approach, civil society is central to hegemony (Klimechi and Willmott, 2011) as it offers "the vital ideological 'ground work' that establishes those structures of social and cultural consent that support, and enable the reproduction of the state and the economy" (Spicer and Böhm, 2007: 13). Levy and Egan also highlight that "the relative autonomy of civil society turns the ideological realm into a key site of political contestation among rival social groups and ideas" (2003: 806).

However, it is important to recognize that civil society is heterogeneous and encompasses a variety of actors, mainly represented by social movements and NGOs (Spicer and Böhm, 2007; Edwards, 2004; Mohan, 2002; Mercer, 2002; Mintzberg and Srinivas, 2009; Srinivas, 2010).

In this study, social movements will be defined as "collective challenges by people with common purposes and solidarity in sustained interaction with elites, opponents and authorities" (Tarrow, 1994: 3-4). From this definition, we identify three unique features of social movements, as follows: 1) they focus on collective challenges articulated by relatively coherent groups of people, which contrasts with micro-political approaches that are basically focused on individual forms of resistance; 2) they show that these collectives share a sense of solidarity and common purpose, corresponding to what Laclau and Mouffe (1985) call "chains of equivalence", which bind different groups involved in the struggle; and 3) they highlight that resistance may comprise sustained interaction with dominant groups such as economic elites (Spicer and Böhm, 2007).

For Laclau and Mouffe (1985), social movements are the key agents of resistance. Nevertheless, it is important to stress that not all social movements are the same and struggles are fragmented and can be articulated in an array of different discourses.

In the face of the transformations experienced in capitalist societies in the last decades, "new social movements" (NSM) theory attempts to understand contemporary social movements (Johnston et al. 1994). NSM theory draws from continental European traditions of social theory and political philosophy and emerges in part as a critique to the inadequacies of classical Marxism on collective action (Cohen, 1985; Klandermans, 1991; Klandermans and Tarrow, 1988; Larana, Johnston and Gusfield, 1994).

For NSM theorists there are two main types of reductionism in classical Marxism which hinder the possibility to comprehend contemporary forms of collective action: a) Marxism's economic reductionism, in which all politically significant social action results from the central economic logic of capitalist production and that all other social logics are secondary in the formation of such action; b) Marxism's class reductionism, which assumes that the most relevant social actors are defined by class relationships rooted in the process of production and that all other social identities are secondary in shaping collective actors. These assumptions in Marxism privilege a proletarian revolution embedded in the sphere of production and disregard other forms of social protest (Buechler, 1990).

NSM theorists, in turn, emphasize other logics of collective action based on ideology, culture, and politics as the foundation of much action. In addition, they have focused in other sources of collective identity such as gender, sexuality, and ethnicity. The term "new social movements" thus refers to a variety of collective actions that have displaced the old social movement of proletarian revolution associated with classical Marxism (Cohen, 1985).

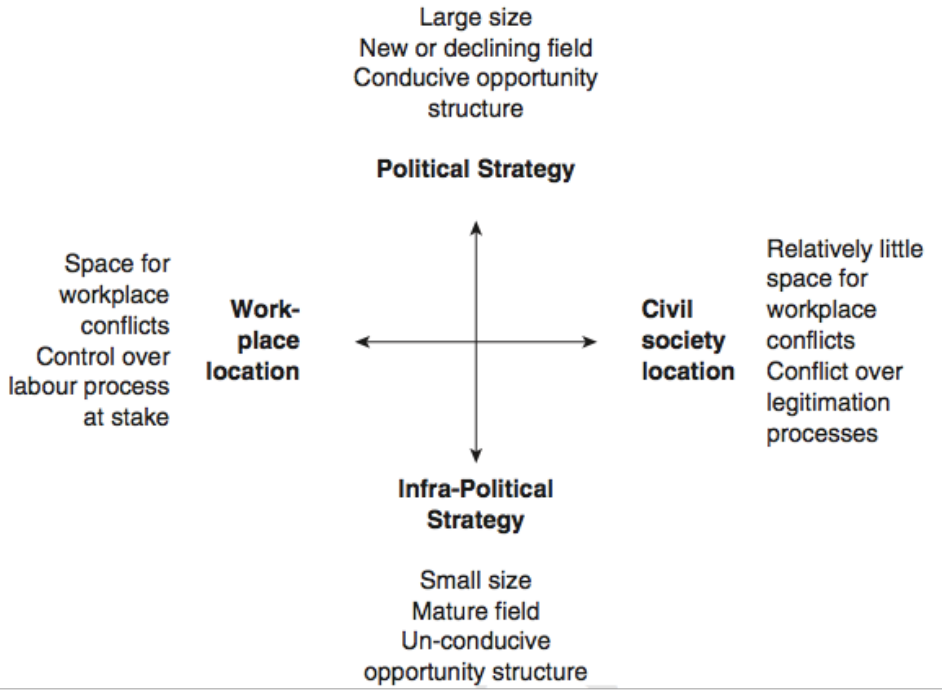
The main themes discussed in NSM theory have been as follows: a) symbolic action in civil society and the cultural sphere as arena for collective action coexisting with instrumental action in the state or political sphere (Cohen, 1985; Melucci, 1989); b) the importance of processes that foster autonomy and self-determination instead of strategies to maximize power and influence (Habermas, 1984-1987; Rucht, 1988); c) the role of postmaterialist values in collective action (in contrast with struggles restricted to the allocation of material resources) (Inglehart, 1990; Dalton, Kuechler and Burklin, 1990); d) investigation on the construction of collective identities and identification of group interests, instead of taking for granted that the conflict groups and their interests are structurally determined (Hunt, Benford and Snow, 1994; Johnston, Larana and Gusfield, 1994; Klandermans, 1994; Melucci, 1989; Stoecker,1995); e) the socially constructed

nature of injustice and ideology, rather than assuming that they result from a group's structural location (Johnston, Larana and Gusfield, 1994; Klandermans, 1992); and f) the array of submerged latent, and temporary networks that often provide the basis of collective action (Melucci, 1989; Gusfield, 1994; Mueller, 1994).

As example, in the last decades, NSMs have produced research on the feminist movement, the environmental movement, the peace movement, the anti-nuclear movement, the gay movement, human rights groups, and so on (Fitzgerald and Rodgers, 2000; McAdam and Kloss, 2014; McAdam, Tarrow and Tilly, 2001). Further, I also highlight that anti and pro-GMO movements are NSMs.

Through the years, McAdam has investigated social movements and their political strategy for expanding opportunities for resource mobilization and political access (McAdam and Kloos, 2014; Fligstein and McAdam, 2012; McAdam and Boudet, 2012; McAdam, Tarrow and Tilly, 2001). That is, social movements can form and mobilize resources such as funding opportunities and legal regulations, and they can get access to influential institutions and other political actors. These variables are components of political opportunity structures and they allow us to understand the structural environments in which conducive or unconducive opportunities arise that either constrain or encourage activism (McAdam, McCarthy and Zald, 1996). Exhibit 1 illustrates the relation of social movement location and political opportunity structures.

Exhibit 1 - Dimensions of social movements according to location



Source: Adapted from Spicer and Böhm (2007: 8)

As pointed out in Exhibit 1, opportunity structures are "consistent - but not necessarily formal or permanent - dimensions of the political environment that provide incentives for people to undertake collective action by affecting their expectations of success or failure" (Tarrow 1994: 85). A conducive opportunity structure occurs where there is relatively open access to participation in the dominant institutions, when elite allies are available, and the state has a reasonably low propensity or capacity for repression, and last, but not least, when political alliances are relatively unstable (McAdam, 1996). In these cases, the public attempts to challenge dominant actors by collective actions. They would be more likely to set up a more organized challenge to succeed elite groups. Hence, "social movements will be more likely to adopt political strategies when they are large in size, when they operate in new fields and when they face conducive opportunity structures" (Spicer and Böhm, 2007: 20).

The other strategy that resistance groups may adopt is through infra-politics in an unconducive opportunity structure. This strategy aims to challenge managerial hegemony in a less formalized and organized way. It often consists of direct and non-hierarchical initiatives by actors to rebuild social relationships and claim their rights. In infra-politics strategy, the focus is not formal organizations or involvement with official centres of power such as the state or corporate hierarchies.

In this type of strategy, resistance agents favour claiming rights directly. Their aim is to create and experiment alternative identities, cultural innovation, and some symbolic economy (Spicer and Böhm, 2007; Melucci 1989, 1996; Blaug 1998; Crossley, 2002). Usually these resistance groups avoid formality and hierarchical organizational forms, as they also are against forms of authoritarianism and "institutional orientation" (Crossley, 2002; Blaug 1998). The agenda they pursue involves "challeng(ing) the machine of the state with viral micro-operations" (Blaug, 1998: 45), characterized by struggles at the level of everyday practices. These include contesting dominant styles in industry (Rao, et al. 2001, 2003), the rise of shareholder activism in large corporations (Davis and Thompson 1994), and gay and lesbian causes (Creed et al. 2002).

Based on these dimension explanation (from Exhibit 1), I argue that resistance in GMO governance can be characterized as large in size (i.e., affects different types of civil society organizations worldwide), a quite new field (i.e., the commercialization of GMOs started mainly only the 1990s; that is less than 3 decades), and face a conducive opportunity structure with institutions that are quite often open access to public

participation (i.e., the CBD, the Food and Agriculture Organization of the United Nations - FAO, and European Union - EU, are key institutions in GMO governance and they all require some degree of public participation).

For some authors, the tendency to place identities in NSMs theory at centre stage neglects the emphasis over movement participants' position in the social structure (Fitzgerald and Rodgers, 2000). Hardisty (1999) argued that this narrow view of identity groups does not take into account larger issues such as U.S. imperialism, class, or the exploitative nature of global capitalism. Grounded on new-Gramscian approach, Mouffe (1984) argues that these new social movements are the expression of antagonisms that have risen as a result of the new hegemonic formation consolidated after Second World War. For the author, advanced capitalist societies have become an extensive market place and this "commodification" of social life has been followed by the "bureaucratization" resulted from the growing intervention of the state at all levels of social reproduction; and, by the "cultural massification" resulted from the wide influence of the mass media.

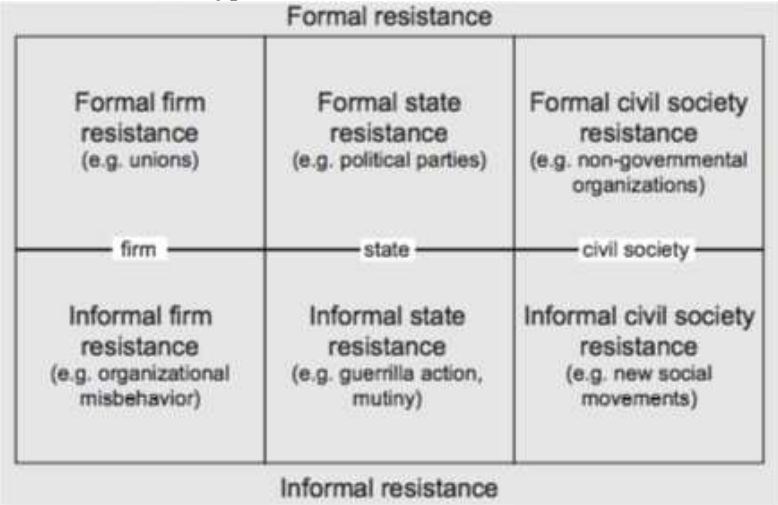
Drawing from the same perspective, Laclau and Mouffe (1985) claim that, despite the fact that NSMs studies are not centred on "class struggle", it is important not to put them together into a unified category opposed to that of class. Rather, scholars should seek to emphasize

> not the idea of arbitrarily grouping them into a category opposed to that of class, but the novel role they play in articulating that rapid diffusion of social conflictuality to more and more numerous relations which is characteristic today of advanced industrial societies. (Laclau and Mouffe 1985: 159)

As can be seen in NSMs literature over the past years, social movements are becoming more influential, organized, and incorporated into international politics and business through new organizational forms represented by "NGOs" (Davis and McAdam, 2000). Reimann (2006) establishes a relationship between that fact and institutions of global governance. In other words, over time, in global governance contexts (such as GMO governance), international institutions have produced new "international political opportunities" for funding and participation of NGOs that enabled a structural environment highly conducive to a dramatic growth of NGOs. While some NGOs work together with business enterprises, others resist them in many ways (Reimann, 2006).

For instance, Böhm, Spicer, and Fleming (2008) highlight that NGOs and social movements are the main actors resisting international business practices[1] in civil society. However, their role in resistance differs in two main ways of organizing: formal and informal. Thus, drawing on a new-Gramscian framework of analysis, the authors maintain that within civil society NGOs are the main formal types of organization to resist international business practises while social movements represent the main informal one. The distinct types of resistance (formal and informal) to international business are described in Exhibit 2.

Exhibit 2 - Types of resistance to International Business



Source: Adapted from Böhm, Spicer and Fleming, 2008:175

This result encouraged me to explore the political role of NGOs. In contemporary western societies, NGOs are private, not-for-profit organizations that serve particular societal interests by targeting operational and advocacy efforts on economic, political, and social goals, such as equity, education, human rights, health, and environmental protection. They also deal continually with private foundations, governments, and multilateral institutions for funding purposes. Usually NGOs try to be accountable to the "clients" they serve. Likewise, they measure their success by their impact on these clients and their communities (Woller and Parsons, 2002; Teegen, Doh and Vachani, 2004).

In organizational terms, many NGOs today keep a paid and permanent professionalized staff, and their activists have personal qualifications that are specifically required for their work in the NGO, such as fund-raising skills, journalistic skills, media experience, and a scientific background in different fields of research (Martens, 2002; Clarke, 1998). For some authors, NGOs are a reservoir of management professionals and a highly

[1] International business practices include multinational corporations and their articulation with a wide range of groups in distinct international contexts (Böhm, Spicer and Fleming, 2008).

skilled labour pool (Tarrow, 1998; Teegen, Doh and Vachani 2004). Furthermore, they have at least a basic organizational structure with offices, fulltime members, headquarters, financial income, and constitution (Martens, 2002; Teegen, Doh and Vachani, 2004).

These organizational aspects intertwined with structural incentives for civil society organizations at the international level allowed NGOs to increase their opportunities for political access and participation in policy-making processes (Reimann, 2006). Hence, NGOs' organizational structures and high skilled professionals enable them to gain legitimacy in the political arena as they can argue that they are *close* to the people (Fisher, 1997, my emphasis). It also influences decision makers to rely on NGOs to improve their political claims in political contestations.

In terms of funding, the universe of international sponsors of NGOs has increased dramatically in the past two decades including not only international organizations, but also new actors in a complex array of governmental, quasi-governmental, and private organizations. Without material resources, they would not be able to survive. United Nations (UN) support alone has grown exponentially when comparing the 1950s and 1960s with the 1980s and 1990s. In the late 1990s, UN agencies were providing more than $2 billion a year to NGOs not only for implementation of UN projects but also for NGO networking, NGO training and "capacity building" programs, and attendance to UN conferences (Reimann, 2006).

Other international bodies, such as the World Bank, the Organization for Economic Cooperation and Development (OECD) and the European Union (EU) set up numerous programs to support the growth of NGOs during the late 1980s and 1990s. EU funding to NGOs also increased dramatically in this period. Not only each EU member state has its individual bilateral aid programs, but also since the 1960s, the EU has had its own separate foreign assistance program. EU funding for NGOs had a budget of approximately $3.2 million in the mid-1970s. By 1995, it had skyrocketed to an estimated $1.0 billion, which represents between 15% and 20% of all EU foreign aid (Randel and German 1999).

In the U.S., quasi-governmental and political foundations have been used to channel state funds to NGOs, just like in the European case since the 1980s and 1990s when these organizations started to devote a significant portion of their grants to NGOs and others social movements. The U.S. government funds most of these quasi-governmental

foundations, such as the Asia Foundation, the African Development Foundation, the Eurasia Foundation, and the Inter-American Foundation (Reimann, 2001).

Those private foundations are also big sponsors of NGO programs and have become an important elite ally of these organizations. International development was the main area funded by foundations during the 1970s; in the 1980s and 1990s, they intensified their contribution in terms of funding both service and advocacy NGOs (Jenkins, 1998; Berry, 1999). From 1999 to 2000, the 14 foundations listed in Exhibit 3 spent more than $1.1 billion on international programs and projects, and donated 2,139 to NGOs and transnational NGO networks for international development, human rights, security, gender issues, the environment and civil society development (Reimann, 2006).

Exhibit 3 - Funding of NGOs by Selected American Foundations - 1999-2000

Foundation	*Number of Grants (Year)*	*Total International Funding*
Alton Jones Foundation	69 grants (1999)	$16.6 million
Carnegie Corporation	21 grants (2000)	$7.3 million*
Ford Foundation	600 grants (2000)	n.a.
Gates Foundation	51 grants (2000)	$701 million*
Global Fund for Women	354 grants (2000)	$4 million
Hewlett Foundation	91 grants (2000)	$60 million*
Kellogg Foundation	73 grants (2000)	$40 million
MacArthur Foundation	112 grants (2000)	$36 million*
Mott Foundation	215 grants (1999)	$27 million
Packard Foundation	156 grants (2000)	$42 million
Rockefeller Brothers Fund	87 grants (2000)	$9 million*
Rockefeller Foundation	195 grants (2000)	$142 million
Turner Foundation	56 grants (1999)	$4 million
Wallace Global Fund	59 grants (2000)	$5.7 million
Total	2139 grants	$1.1 billion

Source: Adapted from Reimann (2006: 54)

In the international domain, international NGOs are also considered more accountable and formally organized to represent “humanity” in civil society (Boli and Thomas, 1999). In this sense, NGOs themselves are seen to be increasingly multinational and subject to many of the same pressures and influences of multinational corporations, such as technological advancement, increasing returns, globalization, and economic development and integration (Teegen, Doh, and Vachani, 2004).

Furthermore, for some authors, those NGOs influenced the spread of world-cultural principles, such as universalism, individualism, progress, rational voluntaristic authority, and world citizenship. Some international NGO lobbying convinced states to apply their principles (at least in some issues and some sectors) based on their world-cultural principles perspective (Boli and Thomas, 1999; Srinivas, 2010; Banerjee, 2003).

For instance, international NGOs, such as Greenpeace, depending on the issue, have the legitimacy to often directly speak in the name of civil society, without necessarily being able to represent the different positions held inside that movement. Historically, Greenpeace emerged from the environmental movement of the 1970s and early 1980s that also influenced the foundation of Green Parties in European Countries. In 2002, with 2.5 million members, Greenpeace was present in 30 countries and had the largest number of members in Holland (600 thousand), Germany (500 thousand), and the United Kingdom (400 thousand). Drawing on direct media actions as their most visible type of action, the organization is also deeply involved with scientific research and lobbying practices. With its "spectacular actions", it looks to brand itself with the flag of heroism and of purity (Van Der Heijden, 2002). Greenpeace's activism is driven, most of the time, by professionals, such as Engineers, Finance and Logistic Administrators, Web designers, Senior Researchers and so on (Greenpeace, 2015).

Save the Children, also an international NGO, was established in the 1930s in the U.S. Throughout its more than 80 years of action, Save the Children's approach has focused on saving children's lives and investing in childhood (everyday, during times of crisis and in the future). In this way, the international NGO has employees with specialized skills to address children's needs in different local realities such as Mozambique, Afghanistan, Haiti, and Bolivia. In 2015, Save the Children was present in 120 countries (Save the Children, 2015).

In governance contexts, international NGOs also unite support and opposition in the domains of their target policies. They are able to reach voters through media campaigns in order to pressure governments, while lobbying other networks (i.e., private sector, grassroots representations) through different forms of action (Fontoura and Guedes, forthcoming). For example, in 1987, anticipating a decisive vote from the World Bank in relation to a development project in the Amazon, environmentalists from international NGOs (such as Friends of the Earth) in the U.S., Europe and Australia together researched and drafted letters with environmental scientific fact sheets to their respective governments. In one week, the lobby coordinated and simultaneously helped to cancel the proposed development project. In other situations, international NGOs also relied on their access within voter circles aiming to obtain assistance in the formulation of national public policies (Princen, 1994).

Furthermore, international NGOs also provide scientific understanding focused on their target policies by conducting their own research and studies and through their relationships with scientific communities. Since governments and international organizations do not obtain this type of information on a routine basis, and their responses to global problems (i.e., climate change, food hunger, and others) are much more relative and centred on managing the crisis, the availability of this type of information from international NGOs proves to be very valuable (Princen, 1994).

Sullivan, Spicer, and Böhm (2011) argue that international civil society actors (such as international NGOs) encompass a new mode of "global activism" that is part of the so-called "transnational social movement". Tarrow defines the "transnational social movements" as "socially mobilized groups with constituents in at least two states, involved in sustained contentious interaction with power holders in at least one state other than their own, or against an international institution, or a multinational economic actor" (2001:11). Nowadays, these movements have made unconventional political campaigns focused more on issue-based movements, like those mentioned above when discussing NSMs, from environmentalism to civil rights.

For many years now, Banerjee has claimed that, in transnational social movements, western international NGOs tend to promote their own agenda at the national level, which may generate a clash of interests with few successful and equitable cases of cooperation and interaction in transnational campaigns (Banerjee, 2003; 2011; Kraemer, Whiteman and Banerjee, 2013). Banerjee highlights this contradictory role of international NGOs:

> It is important to note here that while NGOs can play a crucial political role in mediating conflicts and representing community interests they do not automatically hold the moral high ground when it comes to social and environmental issues or representing Indigenous communities. NGOs and civil society actors may not be profit driven, but their power and legitimacy to represent marginalized groups must also be scrutinized along with their motives and intentions. (2011: 331)

This often-contradictory position of international NGOs can also be observed in GMO governance. As pointed in the introduction, during the Rio+20 and the first March Against Monsanto of 2013, while some international NGOs showed resistance to agribusiness practices, others cooperated and even supported hegemony.

However, I believe that, without dismissing the relevant contributions of the studies analysed in this section, there are some key limitations to international civil society actors that have not fully explored. First, the plurality of the international civil society actors is still not clear, as most of the studies tend to group those actors under a single over-encompassing term. Sometimes they use "civil society actors" (without describing who they are, where and how they act), sometimes they use only "NGOs" or, less frequently, "international NGOs" (as if there is no difference among those types of NGOs in many aspects - strategy, locus of actions, related issues, main targets, and so on), and sometimes "social movements" or only "transnational social movement" if they act internationally (without differentiating the ways in which they are organized, as if they were the same worldwide and were organized in the same way, with the same strategy to achieve their goals, etc.).

Secondly, research on international civil society actors as effectively representing "humanity" in global governance is still lacking. In this sense, I would like to argue that more studies should problematize the real legitimacy of those actors to represent "humanity" or, the often neglected "marginalized voices" of other members of civil society. For instance, considering that the rise of GMOs worldwide seriously affects the reality and daily life of small famers, peasant communities, indigenous people and other subjects on the margins of society, one might ask whether international civil society actors in GMO governance really represent their plural demands or which international civil society actors resist and which maintain hegemony in GMO governance. These problematizations of international civil society actors are still blurred and neglected in Organization Studies, Management and Business fields of research (particularly in the international domain).

Thirdly, the literature on international civil society actors tends to portray social movements as essentially actors of resistance. Grounded on a neo-Gramscian approach, every collective action shall comprise sustained interaction with dominant groups (Spicer and Böhm, 2007). This is not clear from the literature in social movements. Rather, the widespread notion is that all social movements are always a form of resistance.

My fourth argument poses that those studies do not delve into the dichotomy to be observed between Southern and Northern contexts. Moreover, they do not take into account that different local realities and their position in geopolitics might affect the way that international civil society actors act. Thus, if they act "internationally" it is important

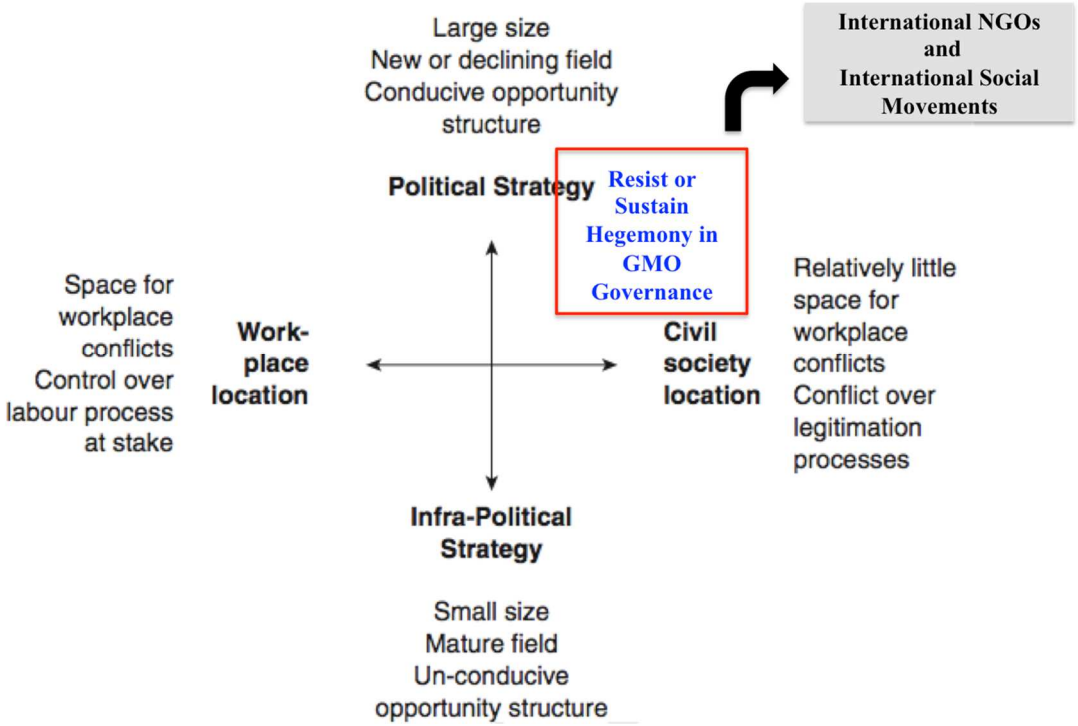
to ask what the similarities and differences in those actors' strategies are when applied to Southern or Northern realities and to what extent this matters.

Finally, I believe that there is still little explanation on why international civil society actors cooperate with or resist hegemonic struggles in global governance. Therefore, one might ask what motivates one international civil society organization to engage in hegemony while others decided to confront it, and what could be the main reasons for this.

With these reflections on the literature on international civil society actors, I aim to make my contribution to understanding them as key relevant players in global governance that should be better explored and understood.

In this sense, the classification of Böhm, Spicer and Fleming (2008) in Exhibit 2 for the types of resistance to International Business within civil society, can also be useful to differentiate the types of "international civil society actors" that I am investigating. Therefore, based on Exhibit 1 and Exhibit 2, I classify the international civil society actors in GMO governance as formal (international NGOs) and informal actors (international social movements). Then, in the Exhibit 4, I show how these organizations can be distributed based on Exhibit 1 (adapted from Spicer and Böhm, 2007).

Exhibit 4 - Positioning and differentiating international civil society actors in GMO governance



Source: The author

After these reflections on international civil society, in the next chapter I shall discuss methodology that will guide the operationalization of this research.

3 METHODOLOGY

This chapter presents the methodological strategy adopted for this research. In the first section, I discuss the research design, showing the qualitative perspective I have used followed by the type of research. The second section traces the site selection. In the third, I describe how data were collected and analysed. Finally, the chapter concludes with a discussion about the methodological limitations of this research.

3.1 Research Design

To explore international civil society actors in GMO governance (GMOs "organizational field" of struggle) and unfold the concept of civil society through these actors and their way to promote consent, resistance, and coercion, this research adopts a qualitative perspective of investigation grounded on Laclau and Mouffe's discourse analysis to governance and the neo-Gramscian concept of "hegemony" (Laclau and Mouffe, 1985; Levy and Egan, 2003; Levy and Newell, 2005; Levy, 2008; Böhm, Spicer and Fleming, 2008).

In order to achieve this, I wish to go beyond the understanding of organizational processes within the formal boundaries of organizations and institutions (Parker, 2002; Böhm, 2006). As highlighted by Otto and Böhm,

> following Laclau's language, organisation is seen as hegemonic impossibility that cannot be reduced to the contemporary discourse of neo-liberal management and business. Seeing organisation as hegemonic impossibility therefore opens up new possibilities for understanding resistance against managerial and business initiatives in civil society and imagining new and alternative forms of social organisation. (2006: 9)

Drawing on this concept of "organisation as hegemonic impossibility" and that we need to expand the notion of organization on the basic of social process (Cooper and Burrell,

1988; Böhm, 2006), this study adopts a discourse analysis as the core of its research design.

Discourse analysis has been used to study institutions (e.g. Phillips and Malhotra, 2008; Hirsch, 1986; Motion and Leitch, 2009; Maguire and Hardy, 2006; Lacerda, 2014) and there are numerous types of discourse analysis (Van Dijk, 1997; Alvesson and Kärreman, 2000a; Wetherell, Taylor and Yates, 2001; Grant, Hardy, Oswick and Putnam, 2004). The main premise of the growing trend of discourse analysis is that "discourse" constitutes and/or builds any phenomenon under investigation (organizations, individuals, reality). That is, language builds organizational reality, rather than just reflecting it (Fairclough, 1995; Alvesson and Karreman, 2000a, 2000b, 2011; Hardy, Lawrence and Grant, 2005).

This discourse approach has been adopted to explain a variety of organizational phenomena (van Bommel and Spicer, 2011), including: organization theory (Böhm, 2006), entrepreneurship (Jones and Spicer, 2005), learning (Contu and Willmott, 2003), global production networks (Levy, 2008), international business (Böhm, Spicer and Fleming, 2008), strategic management (Levy and Egan, 2003), management education (Elliott, 2003), organizational culture (Ogbor, 2001), training programmes (Brown and Coupland, 2005), organizational identity (Coupland and Brown, 2004), industrial relations (Haworth and Hughes, 2003), institutional entrepreneurship (Levy and Scully, 2007), and organizational change (Spicer and Sewell, 2010).

Laclau and Mouffe's (1985) discourse analysis allows us to expose "hegemonic discourses as something contingent" that construct different aspects of social reality (Glynos and Howarth, 2007: 308), and therefore, how these discourses can be settled but also resisted. That is, Laclau and Mouffe's (1985) discourse analysis helps us to understand how popular resistance movements to hegemonic regimes are organised in their field of struggle. In doing so, this perspective draws on the discursive and symbolic dynamics of the social and on the conditions of emergence of resistance, at the same time that it explores how civil society actors build a counterhegemonic discourse (Otto and Böhm, 2006).

However, it is important to point out that in neo-Gramscian discourse analysis, discourse does not refer just to bodies of text (i.e., Grant, Hardy, Oswick and Putnam, 2004), but to "any complex of elements in which relations play the constitutive role. This means that elements do not pre-exist the relational complex but are constituted through it" (Laclau,

2005: 68). As highlighted in section 2.1 of the theoretical review, for this approach, discourse characterises the underlying logics, rules, and ways that delineate the relationships among a series of distinct "elements" (Willmott, 2005). This aspect of discourse allows it to generate a "sense of solidarity" that can be used by the participants in political action to support or resist hegemony (Laclau and Mouffe, 1985).

In order to operationalize this discourse approach, discourse analysts "are not just concerned with the way in which social actors understand their particular worlds, but attention is focused more on the creation, disruption and transformation of the structures that organize social life" (Howarth and Stavrakakis, 2000, p. 6). Moreover, they shall not describe society as static in an all-encompassing, centralized place. In other words, "society should be seen as a social interaction that occurs within a discursive context" (Dellagnelo, Böhm and Mendonça, 2014: 143).

Likewise, as a discourse analyst, Laclau (1991) states that the methodological tools cannot be taken as a unified system of procedures called "methodology" (Laclau, 1991). The mechanical application of a fixed theory "would contradict its own epistemological assumptions, as the aim is to deconstruct categories and fixed entities" (Otto and Böhm, 2006: 11). Based on that, more than delimitating fixed steps and categories of investigation, this research design aims to trace the discourses actors use to assign meaning to events in order to construct or resist hegemony.

I do this in the context of the international civil society actors in GMO governance. The key theoretical categories under analysis were hegemony; historical actors; ideological elements within the discourses; relations of force (discursive, material, and institutional); historical contingencies, chain of equivalence, antagonisms, nodal points, and floating signifiers (Laclau and Mouffe, 1985, Laclau, 1991, 2005; van Bommel and Spicer, 2011; Levy and Newell, 2005; Howarth and Stavrakakis, 2000; Otto and Böhm, 2006; Dellagnelo, Böhm and Mendonça, 2014; Klimechi and Willmott, 2011; Levy, 2008). The next section describes how data were collected to reflect these categories and how they were analysed.

3.2 Data Collection and Analysis

The main strategies of data collection consisted on primary data combined over 36 in-depth interviews with a range of key civil society actors and scientists representing GMO governance in Brazil (19) and the UK (17), and direct observations of two events:

Rio+20 in Rio de Janeiro in 2012, and the first March Against Monsanto in London in 2013. The relevance of these events is closely connected to neo-Gramscian discourse theory, since both of them represent privileged sites of discourse articulations in order to sustain and/or resist hegemony in GMOs.

Twenty years after Rio-92, where discussions about biosafety and GMOs gained strong attention, Rio+20 represented the most significant global event in favour of sustainable development. Aside from the participation of heads of state and representatives (more than 190 countries sent representatives to Rio), participating in parallel events were representatives from civil society (mainly composed of NGOs, co-ops, indigenous communities, religious groups and others); scientists from different fields, think tanks, politicians and representatives from the private sector. Moreover, amid a global economic recession, the conference started on June 13, 2012 and went hardly noticed worldwide by civil society, the media, and the scientific community (Guimarães and Fontoura, 2012). Thus, the importance of this multi-stakeholder arena highlights its importance for investigating how different actors articulate different discourses in GMO governance in order to resist or endorse GMO hegemony.

Additionally, as mentioned in the introduction, in 2013, the first March Against Monsanto was an international social movement that aimed to combat multinational corporation Monsanto and also to oppose GMOs. Two million people attended the March, which took place on May 25 in more than 50 countries and more than 400 cities (Occupy Monsanto, 2013). In terms of discourse articulation, the March Against Monsanto represented a privileged locus of investigation for this study since it showed what discourses have been articulated against and pro-GMOs (it is important to say that some pro-GMO discourses can be articulated in antagonistic ways) by civil society actors in GMO resistance. Furthermore, in neo-Gramscian discourse theory, the mobilization against Monsanto represented more than a manifestation against the largest multinational corporation in the GMO business. It was a demonstration against the whole biotech agrochemical conglomerates, which also include Bayer, DuPont, and others (Sklair, 2002).

The actors interviewed were selected by the criteria of accessibility and importance within the GMO field of struggle, locally and internationally. Additionally, because of the “struggle” aspect, I decided to interview different types of civil society actors in GMO governance in both countries to better understand my object of research from

distinct standpoints, especially of those who are very active in GMO governance. During the field research, I highlighted that the anonymity of the interviewees and of their organization would be guaranteed in this study. The interviews were conducted through Skype and in person (see Table 1).

Considering the emphasis on international civil society actors in this research and the emphasis on GMOs as field of struggle from a global perspective, the interviews could not focus on one single country; that is why I conducted them in Brazil and UK.

In addition, I collected secondary sources consisting of a wide range of academic books and articles, media sources, "grey" literature and many of the foundational texts of civil society GMO organizations, as well as websites, publications, histories, speeches, and campaigning literature.

Table 1 - List of interviewees in field research in Brazil and the UK

Organization Description	Activity of the Interviewee	Short Biography	Month, Year	Type	Country of Interview
Catholic University of São Paulo	Researcher and Campaigner	Professor at the Catholic University of São Paulo, with a PhD in Social Sciences. Has been studying the evolution of the GMOs in Brazil and worldwide for over 20 years.	April, 2015	Skype	Brazil
International NGO 1	Director of Conservation, Brazil	Following GMOs in the NGO's Superintendence of Conservation Programs for over 10 years.	April, 2015	Skype	Brazil
International NGO 1	Campaigner, Latin America and Caribbean	Among other issues, works directly with GMOs in field offices on program development and implementation throughout Latin America.	April, 2015	Skype	Brazil
International NGO 1	Director, Policy & Science Department, International Office	Works as Executive Director of the NGO International office; has worked at the UN and has also been Executive Secretary of the Secretary-General's High-Level Panel on Global Sustainability. Has followed GMO governance for over 15 years.	May, 2013	Skype	United Kingdom
International NGO 2	Ex-Policy Director, UK	Executive director of the NGO-UK for twelve years (1989-2000), and is the leading voice of civil society against GMOs in the country since that time.	June, 2013	In Person	United Kingdom
International NGO 2	Ex-Campaigner Coordinator in GMO, UK	Served as coordinator of the NGO's campaign on GMOs for 10 years.	May, 2013	Skype	United Kingdom

Organization Description	Activity of the Interviewee	Short Biography	Month, Year	Type	Country of Interview
International NGO 2	Ex-Policy Director, Brazil	Holds a PhD in Social Sciences, founded the NGO in Brazil in 1992, led the first campaigns of the NGO against GMOs in the country, and has followed the subject in the country for over 20 years.	April, 2015	Skype	Brazil
International NGO 3	President, Brazil	Working on the GMO agenda as campaign leader in the NGO for 9 years.	Abril, 2015	Skype	Brazil
International NGO 4	Executive Director, International Office	The director is widely regarded as an authority on issues of global governance, corporate concentration, and intellectual property monopoly. Additionally, he has more than four decades of experience working on international civil society, first addressing aid and development issues and then focusing on food, agriculture, and commodity trade. In 1977, he co-founded this NGO, and has worked on the politics of biotechnology and biodiversity.	June, 2013	Skype	United Kingdom
International NGO 5	Campaigner, UK	This campaigner has worked for over 10 years with the NGO focusing on agribusiness issues. Worked in direct actions against GMOs during the EU negotiations in the issue.	April, 2013	Skype	United Kingdom
International NGO 6	Europe Director	Ran the Europe office of the NGO in the environment sector for over ten years, focussing on international advocacy, policy, and civil society strategy. Has been an activist for 15 years in several environmental issues, including GMOs.	April, 2013	Skype	United Kingdom
International NGO 7	Senior Representative, UK	The Senior Representative of the NGO has worked for over 30 years on sustainable development, food and water issues, and public policy, both nationally and internationally, and has a long-standing commitment to bettering the spiritual, social, and economic lives of rural people.	April, 2013	Skype	United Kingdom

Organization Description	Activity of the Interviewee	Short Biography	Month, Year	Type	Country of Interview
International NGO 8	Programmes Director, UK	Co-founded the NGO in 2002 and, since then, designs and develops programmes with civil society organisations in themes such as GMOs.	April, 2013	Skype	United Kingdom
International NGO 9	Coordinator, UK	Activist and agriculture expert. Has worked with permaculture and sustainable technology demonstration since 1988. In the last decade, has worked in sustainable food security solutions (also against GMOs), while addressing environmental problems at the grassroots level.	April, 2013	Skype	United Kingdom
International NGO 10	Senior Advisor, UK	Has worked in environmental issues for 25 years (including GMOs in Europe and UK), had leading positions in 4 large international NGOs, has been an environmental consultant for 10 years.	June, 2013	Skype	United Kingdom
International Social Movement 1	UK Leader	Started the movement in the UK in 2012, and since then has been an active voice in peasant representation and in the diffusion of agroecology and food sovereignty in the country	May, 2013	In Person	United Kingdom
International Social Movement 1	Brazil Leader	Current coordinator of the movement in Brazil. Has been an activist in the civil society combating GMOs for over 10 years.	Abril, 2015	Skype	Brazil
Local NGO 1	Research Director and Editor	Has researched GMOs for 17 years and is the main editor of the one of the most recognized local NGOs working on the GMO issue in the UK.	April, 2013	In Person	United Kingdom
Local NGO 2	Director of the Campaigning Group	Director of the Campaigning Group against GMOs for more than 10 years	April, 2013	Skype	United Kingdom
Local NGO 3	International Advocacy Adviser	Works as senior international campaigns officer and has worked in GMOs for more than 15 years	May, 2013	Skype	United Kingdom
Local NGO 4	Legal Advisor	Legal adviser to one of the most active NGOs in GMOs in Brazil.	April, 2015	Skype	Brazil
Local NGO 5	Campaigner and tutor	Campaign coordinator in the women and agroecology area, agronomist and technical advisor of the NGO; has worked in the fight against GMOs for over 10 years.	April, 2015	In Person	Brazil

Organization Description	Activity of the Interviewee	Short Biography	Month, Year	Type	Country of Interview
Local NGO 6	Researcher and Campaigner	Doctor and Master in Nutrition in Public Health from the Public Health School of the University of São Paulo, Brazil. Currently is a food researcher and for the last two years has worked in the food and health area of the NGO, especially regarding food labeling, including labeling of GMOs in Brazil.	April, 2015	Skype	Brazil
Local NGO 7	Researcher, Campaigner and tutor	Agronomist, technical advisor and researcher. Has followed the history of GM policy in Brazil and the World for over 10 years, besides working directly with farmers in agroecological practice.	April, 2015	In Person	Brazil
Local NGO 8	Researcher and Campaigner	Performs research on GMOs in Brazil since Rio-92 and is a member of the NGO Board.	April, 2015	Skype	Brazil
Local Researcher Association	Coordinator	Agronomist, member of the Study Group on agro-biodiversity and Coordinator of the Working Group on Pesticides and Transgenics of the NGO.	April, 2015	Skype	Brazil
Local Social Movement 1	Policy Director	Director of the largest organic food and farming organisation in the UK, has fought GMOs in the UK for 25 years.	June, 2013	Skype	United Kingdom
Local Social Movement 2	Researcher and Campaigner	Coordinator of the campaign against pesticides for the last 5 years, and militant against transgenics in Brazil for over five years.	April, 2015	Skype	Brazil
Local Social Movement 3	Researcher, Campaigner and Coordinator	GM researcher and militant against GMOs for more than five years.	April, 2015	Skype	Brazil
Local Social Movement 4	Coordinator	Coordinates the movement against GMOs for over 10 years.	April, 2015	Skype	Brazil
Local Social Movement 5	Researcher, Campaigner and Coordinator	Researcher and leader of one of the largest movements against GMOs and pesticides in Brazil.	April, 2015	In Person	Brazil
Local Social Movement 6	Campaigner and Coordinator	Has acted in the coordination of movement against GMOs for over 10 years.	April, 2015	Skype	Brazil
Local Social Movement 7	Campaigner and Coordinator	Since 2000 coordinates the movement that has, among other agendas, the fight against GMOs in the country.	April, 2015	In Person	Brazil

Organization Description	Activity of the Interviewee	Short Biography	Month, Year	Type	Country of Interview
Small local activist organization	Director and Campaigner	Activist in the food area, founded in 2012 a page on the social network Facebook to fight against GMOs in Brazil; the page has, since then, become one of the main pages for this activism in the country.	April, 2015	Facebook chat	Brazil
University of Essex	Professor and Researcher 1	Has researched the economics of new technologies, firm organisation, and licensing. Recent publications included the interplay between intellectual property, GMOs and competition policy.	June, 2013	In Person	United Kingdom
University of Leeds	Professor and Researcher 2	Has researched critical geopolitics, climate change, social justice, civil society, the environment, and social movements for more than 15 years. Nowadays, has been concerned with two key areas of interest: the spatiality of social movements in the Global South and Global North; and the practical, political and ethical challenges of scholar activism.	June, 2013	Skype	United Kingdom

Source: The author

Initially, from the secondary sources I briefly construct a narrative of the development of GMO governance as a key step to discuss GMOs as a field of struggle and the role of international civil society actors. By doing that, I do an overview of some significant moments, relevant contingencies that happened in GMO governance, the main actors and institutions involved, as well as their articulation with materiality and discursive resources in this field of struggle.

In the second section of the research results chapter, I explore the process by which some international civil society actors resist or support hegemony in GMO governance. As pointed out above, grounded on the neo-Gramscian discourse perspective in Laclau and Mouffe's study (1985), I examine those actors in the construction of chains of difference and equivalence in identity formulation that are drawn and redrawn in the context of GMO hegemony. From the actors involved, I focus on the investigation of international civil society actors in GMOs, such as international NGOs and international social movements (see Exhibit 4).

Drawing particularly on previous academic research on GMO governance, I found that "GMOs" constitute the common denominator where the articulations occur since the 1990s. I then define them as the nodal point of this study (Andrée, 2011; Gupta and Falkner, 2006; Hiatt and Park, 2013; Massarani, 2013). Subsequently, I identified the floating signifiers that articulate GMOs as nodal point. They were mainly recognized in the data collected through direct observation at Rio+20 (Rio+20 People's Summit, 2012), media sources (Allain, Nascimento-Schulze and Camargo, 2009), academic texts, international negotiations publications, and other secondary sources (Andrée, 2005).

From those sources and from the in-depth interviews, I found that civil society actors have largely claimed both "science" and "sustainability" as a legitimizing argument for their future practices in GMOs (i.e., People's Summit, 2012; Allain, Nascimento-Schulze and Camargo, 2009; Krimsky, and Wrubel, 1996; Heffernan, 1999; Andrée, 2005, 2011; Gupta and Falkner, 2006; Hiatt and Park, 2013; Massarani, 2013). In other words, they articulate "science" and "sustainability" in chains of difference and equivalence in GMOs through the articulation of what I call a second level of floating signifiers that also encompass an array of discursive sources within them (see table 2).

Table 2-Floating Signifiers within the Nodal Point of GMOs

Floating Signifiers	
1) Science	
2) Sustainability	
Second Level of Floating Signifiers	Discourses Articulated
2.1) Biodiversity Preservation	environmental conservation; biosafety; protection of traditional and marginalized peoples; conservation of the material, aesthetic and spiritual wellbeing; respect to the integrity of the planet's life support systems
2.2) Food Security	green economy, agriculture productivity, feed world population, food commodities; agribusiness by-products (seeds, fertilizers and other agro-chemical products and services); global markets; global retailing; trade; private corporations
2.3) Ecological Agriculture	Agroecology; feminism; food sovereignty; organic food; animal and human health

Source: The author

As pointed in section 2.1, every antagonism "left free to itself, is a floating signifier, a 'wild' antagonism which does not predetermine the form in which it can be articulated to other elements in a social formation" (Laclau and Mouffe, 1985). Therefore, I also investigate how antagonistic discourses are reflected in the practices of international civil society actors.

Finally, in the last section of the research results, based on the neo-Gramscian discourse theory and its main categories of analysis, I focus on the role of international civil society actors in hegemony (see also van Bommel and Spicer, 2011; Levy and Scully, 2007; Spicer and Böhm, 2007). First, I investigate the main shifts in GMOs discourse in Brazil and in the UK since the 1990s. To do so, I combine secondary and primary data from the interviews and direct observation to verify my account and make the necessary adjustments, editions, and amendments for the significant moments.

Subsequently, I discuss the multiple strategies of resistance and support deployed in international civil society in GMO governance hegemony. These actors influence collective identity within hegemony or in the counterhegemonic struggle. To do so, I combine the data collected from field research in Brazil and the UK with direct observations and secondary sources on GMOs. In Table 3, I describe the key theoretical categories for hegemony in neo-Gramscian discourse theory and provide some examples.

Table 3 – Examples of key theoretical categories in neo-Gramscian discourse theory

Key Theoretical Categories	Examples
Historical contingencies	Through the investigation of the construction of GMO governance and its key moments in Brazil and UK, I identify the main historical contingencies in GMO governance. After that, I demonstrate how those moments allowed important discursive articulations in the hegemony of GMOs (for instance, see Tables 7 and 8).
Nodal Points	As pointed out in the brief overview on the GMO "field of struggle", "GMOs" emerge as the common "empty" denominator where the articulations occur in GMO governance, since the first studies carried out on GMOs in research institutes and corporations. Until the end of this study, they prevailed as the only nodal point articulated in GMOs struggle, as the research results will highlight. The operationalization of this nodal point is demonstrated through the articulation of the floating signifiers in GMO governance throughout the research analysis.
Floating Signifiers	The floating signifiers are revealed in the brief overview of GMO governance and in historical contingencies in Brazil and UK. From these moments, I show that they are articulated among actors in GMO hegemony in order to construct a common collective identity. Their operationalization is also demonstrated when I delve into the way international civil society actors craft or resist hegemony in GMOs.

Key Theoretical Categories	Examples
Antagonisms	In the chapter of the research results I highlight how international civil society actors articulate antagonisms in GMO hegemony. In this way, I demonstrate how those actors articulate a floating signifier in order to build a "common enemy" that will delineate the identity of one group against the other.
Chain of equivalence and difference	These chains result from the articulation of the floating signifiers by international civil society actors. Thus, in the research result chapter, I demonstrate how those actors articulate different discourses in order to establish a chain of equivalence and/or a chain of difference in GMO hegemony (for instance, see Table 9).
Ideology	From the analysis of the historical contingencies and in the investigation of international civil society actors in hegemony, I highlight how sharing an ideology binds different actors and also helps to construct common identity. Moreover, I show how ideology shifts over time and impacts the rearticulation of international civil society actors and their strategy to build hegemony.
Hegemony	Hegemony in GMOs is operationalized in 3 ways: 1) through the demonstration of the main institutions and the material forces in GMO struggle; 2) after that, by showing that different actors articulate discourses in historical contingencies in order to create discursive chains that will create hegemonic alliances; 3) finally, the research results will also demonstrate hegemonic alliances through the investigation of multiple strategies deployed by international civil society actors in processes of identity articulation and mobilization.

Source: The author

From the data collection and analysis described in this section, I shall examine in depth how international civil society actors manage competing tensions in seeking to establish or oppose hegemony. This involves investigating how those actors constitute hegemonic links between diverse groups around a common identity in GMO governance.

3.3 Site Selection

Considering that my focus is on international civil society actors, the research could not be carried out in one single country; consequently, this research privileged two key locations for comprehending GMO field of struggle from a more global perspective, Brazil and the UK. It must be noted that although it would have been desirable to conduct field research in ore countries, I focused on these countries given the limitations of space and time during the doctoral research.

In 2003, Brazil became the fourth largest producer of GMOs in the world, and by 2010 it was already the second largest, with 25.4 million planted hectares (Sindag, 2011). The country registered the greatest growth in surface area of land cultivated with transgenic in 2013 (40.3 million planted hectares), an increase of 10% from the GMO cultivation in 2012 (ISAAA, 2014). On the other hand, Brazil is megabiodiverse, with the most diverse

flora in the world (Amazon, Atlantic Forest, and Cerrado) (Conservation International, 2012). As a major exporter of agricultural commodities based on transgenic crops, Brazil has seen great conflicts of interest among different actors (Fontoura and Guedes, 2013). Moreover, Brazil was one of the most important voices during the negotiations for the Cartagena Protocol (Fontoura and Guedes, forthcoming). All these aspects highlight the importance of Brazil as a site to study GMO governance and explain why it was selected for this research.

The UK plays a substantial role in GMO governance in three distinct pathways. Firstly, it hosts some of the most important international civil society actors involved in the issue (UK FOOD GROUP, 2013). Secondly, it has had a strong representation in the European GMO regulation from the beginnings of policy formulation in 1990 (Neslen, 2015; NCBE, 2015). Thirdly, as pointed out in exhibit 5 below, public opinion in the country has strongly resisted the consumption of GMOs (UEA/MORI, 2004). According to the ComRes poll conducted in 2013, although the public fear of GMOs may be easing through the years, the public rejection in the UK is still high as many are still sceptical (Grice, 2013; Jordan, 2014). Additionally, as a member of the European Union, the UK has never approved GMOs for direct human consumption and it is still a strong voice in GMO governance (NCBE, 2015).

Exhibit 5 - On the whole, how would you describe how you feel about GM food? (%)

	2002	2003
Very good thing	2	2
Fairly good thing	13	12
Neither good nor bad thing	35	40
Fairly bad thing	25	24
Very bad thing	19	16
No opinion	5	6

Source: Adapted from UEA/MORI GM Food Survey 2003 (Weighted dataset, n=1,363); UEA/MORI GM Food Survey 2002 (Weighted dataset, n=296), (UEA/MORI, 2004).

3.4 Methodological and Research Limits

Despite the aim to establish a strict methodology during the execution of this research, it is important to highlight that, as with any methodological approach, Laclau and Mouffe's neo-Gramscian discourse theory on hegemony presents limitations.

According to Geras (1990), Laclau and Mouffe's (1985) influential post-Marxist book, *Hegemony and Socialist Strategy* does not engage with the material realities of social

struggle, as the authors do not make distinction between the discursive and non-discursive fields of reality.

In addition, there has been a long debate between Laclau (e.g. 2006) and Žižek (e.g. 2006) on neo-Gramscian theory. Žižek has argued that Laclau's conceptions of the subject and the category of antagonism are too fixed, and that he should take Lacanian psychoanalysis into account.

Jones (2006) criticizes the reception of Laclau in Organization Studies, which, according to him, has not engaged critically with discourse analysis. Jones (2006) calls on organization scholars to read Laclau in a more nuanced and critical way, pointing out the difficulties of simply merging neo-Gramscian discourse theory into the ontological and epistemological traditions of this field. This author has also warned against the danger of uncritically adopting neo-Gramscian discourse theory in Organization Studies without understanding its particular reading, or perhaps misreading, of the Marxist tradition (Dellagnelo, Böhm, and Mendonça, 2014).

Lastly, as methodological limitations, Dellagnelo, Böhm and Mendonça (2014) highlighted that there is still a need for a more in-depth understanding in studies using neo-Gramscian discourse theory as to how different groups and organizations function (how they make decisions, how they are lead, how they are funded, etc.), as much as to how they often do not function "properly". That is, when they fail to achieve their main goals. This lack of research highlights the difficulties of applying neo-Gramscian discourse analysis.

The limitations of this research, in turn, were: 1) time and site selection defined for the data collection and analysis; 2) organizations selected for the interviews in both countries; 3) time for the conclusion of the doctoral study; and 4) my own limitations inasmuch as I am a researcher and an activist at the same time.

Although transgenic organisms were first released in the 1970s in the U.S., GMO governance as a field of struggle started its debates and negotiations in the 1990s (Banerjee, 2003; Shiva, 2005). Therefore, the data collection and analysis in this research focused on GMO governance beginning in the 1990s and up to 2015 (the year of its conclusion). In terms of site selection, the investigation of international civil society actors in GMO governance worldwide was impossible due to the budget and time limitations. In this way, as I explained in section 3.3, the UK and Brazil were chosen as

the only sites of investigation of this study. However, the research did not ignore the main events related with governance issues that happened outside those countries.

The second limitation refers to the organizations selected for the interviews in Brazil and UK. Apart from one, all civil society actors interviewed in my field research resist GMO hegemony, which turned out to be one limitation of this study. However, it did not affect the conclusions of my study because I did not limit my data collection to interviews. As mentioned before, I also collected data through direct observation in Rio+20 (Rio+20, 2012) and the first March Against Monsanto (UK, 2013), and through an array of secondary sources (media, foundational texts, websites, publications, histories, speeches, campaigning literature, academic books and articles, and more sources of "grey" literature) on international civil society actors in GMO governance as a whole (i.e., those who support and those who oppose hegemony). Furthermore, according to neo-Gramscian discourse analysis, the application of interviews is not strictly necessary for the investigation of hegemonic formation (Van Bommel and Spicer, 2011; Böhm, 2006; Laclau, 2005), which also validates the conclusions of this study.

The third limitation relates to the time for the conclusion of the doctoral study, which is formally four years in Brazil (where my Doctoral Programme is based) and a maximum of four years and a half. I point this as a limitation of this research mainly because of the challenges of investigating a very dynamic and contemporary phenomenon in the international domain. For instance, this study would have profited from more time to interview other actors in GMO civil society in Brazil and the UK, as well as state actors, multinational corporations, think tanks, foundations, and others. I believe that the outcomes would be more accurate. Unfortunately, the time was too short to pursue further interviews.

Lastly, the final research limitation concerns my engagement as an activist in GMO governance while being a researcher. As pointed in the introduction, it is quite a challenge to disconnect from shared sympathies and taken-for-granted observations (Plows, 2008).

4 RESEARCH RESULTS

In this chapter, I present the research results, using neo-Gramscian discourse analysis to better understand international civil society actors in GMO hegemony. Firstly, I discuss GMOs as a "field of struggle". After that, I delve into the process by which international civil society actors resist or support hegemony in GMO governance.

4.1 A brief overview of the GMO "field of struggle"

In order to discuss the role of international civil society actors in GMO hegemony, I first present a brief overview of GMOs as a field of struggle since the 1990s.

4.1.1 A brief overview of the GMO governance narrative

Before focusing on the GMO governance narrative (particularly since the 1990s), I believe that it is important to understand some relevant events, actors, institutions, policies, and materialities that contribute to contextualize the beginning of GMO governance as a field of struggle, looking at the field from a neo-Gramscian perspective.

The technological manipulation of transgenic seeds is intimately related to scientific advances in the fields of genetics and molecular biology, sponsored by large U.S. philanthropic organizations (like the Rockefeller, Carnegie and Ford foundations since the end of the 1950s) and private investments in Research & Development (R&D) on plant breeding (like AgriCetus, Cargill's, Calgene Inc., Asgrow Agronomic, DeKalb Genetics Corporation and Delta & Pine Land Company) (Schenkelaars, 2011; Herdt, 2005). Increasingly more money has been invested in this research, especially after the 1970s.

Moving beyond the boundaries of their operations in their localities, the Rockefeller and Ford foundations supported the establishment of an international research centre for the development of rice varieties, and other studies about rice in the tropics. The International Rice Research Institute (IRRI) initiated its operations in 1960 in the

Philippines. In 1971, a number of U.S. government agencies donors and the World Bank joined the foundations of agricultural biotechnology researchers to establish another international research institute, the Consultative Group on International Agricultural Research (CGIAR). In 1976, more than 62 million dollars became available annually from around twenty-six donor organizations for more than a dozen research institutes in agriculture biotechnology (Baum, 1986).

Such institutions came to establish breeding and germplasm[1] banks around the world (Herdt, 2005). Over time, industrialized countries have supported strong systems of intellectual property rights and subsidies for their farmers and farm exports to guarantee international adherence to their trade interests. They also have been actively concerned with international crop varieties and germplasm and have joined other nations to set a series of treaties to regulate them. In turn, the germplasm banks (or gene banks) have produced knowledge on plant breeding, treating germplasm as a common heritage freely available anywhere in the world. Germplasm banks, as agents of power, have come to be considered the "guardians" of germplasm as a common patrimony of humanity (Herdt, 2005).

Paradoxically, the countries with the most biodiversity and, consequently, with a wider range of germplasm worldwide are currently considered to be poor or developing countries. This shows that the transference of germplasm in the world has happened unevenly and asymmetrically. While poor developing countries are sources of germplasm extraction, wealthy industrialized countries, such as the U.S., receive the germplasm often without any kind of supervision or control by the countries of origin, since they lack the organizational structure or effective inspection to control its extraction and use (Kloppenburg, 1988).

Moreover, the communities from where the germplasm is extracted –generally, indigenous groups, small farmers or traditional communities– are those that suffer the greatest direct and indirect consequences of this process. Therefore, germplasm cannot be considered simply synonymous to genetic variations, since its extraction is directly related to the practices of social, cultural, and agricultural reproduction developed by these communities –practices that constitute symbols of power and are a substantial part

[1] Germplasm is 'living tissue from which new plants can be grown. It can be a seed or another plant part – a leaf, a piece of stem, pollen or even just a few cells that can be turned into a whole plant. Germplasm contains the information for a species' genetic makeup, a valuable natural resource of plant diversity' (SeedQuest, 2015).

of their identity, heritage, and history (Shiva, et al., 1995; Shiva, 2001, 2005; Banerjee, 2003; Benthien, 2010).

Through the 1970s and 1980s, the growing number of research institutes and germplasm banks led to scientific advances in manipulation of plant cells and molecules, followed by the creation of new technologies and the advancement of biotechnology as scientific field (Herdt, 2005). The advancement of biotechnology made the materialization of a "gene action" discourse possible in which North American geneticists assigned to genes the features of agency, autonomy, and causality (Peci, Vieira and Clegg, 2009).

This "gene action" process that was taking place in the U.S. culminated in the creation of GMOs and their commercial cultivation in the country in the 1970s, followed by other countries, mainly in the 1990s (Banerjee, 2003; Shiva, 2005). As pointed out in the first chapter, all GMOs are defined as organisms whose genetic material (DNA) was altered in ways that do not occur naturally, whether through sexual mating or genetic recombination (Nodari and Guerra, 2001).

In this sense, as an outcome from scientific studies in research institutes and corporations, "GMOs" get established as a "nodal point" in GMO hegemony since the beginning of the field formation (the GMO field of struggle) until the present. That is, the discussions around GMOs have always been grounded on scientific arguments, which justify the use of "GMOs" as the empty signifier in GMO hegemony under which all other discourses will be articulated. In other words, through the years, no other nodal point replaced "GMOs" because it represents the broadest signifier that could comprise different demands and accommodate plural interpretations (Otto and Böhm, 2006).

The strong "scientific" aspect (in research institutes, corporate laboratories, and universities) of GMO creation (and of biotechnology as a whole) highly contributed to my selecting "science" as the first floating signifier articulated by the actors within the GMO field of struggle. Its importance has changed through the years, but "science" is still a very powerful signifier coalescing actors, whether they support or oppose GMO hegemony, as it sets most of the terms in which the main discussions on risk assessment of transgenic cultivation and consumption are conducted.

In 1994, the first GMOs were released for commercialization in the U.S. They were genetically modified tomatoes, created by the biotechnology company Calgene (no

longer available in the market) (GMO Compass, 2015). Nowadays, in terms of volume, the main GMOs are corn, cotton and soybeans (James, 2003).

From the definition of GMOs, we understand that all GMOs are created by corporations and could have never been produced in nature (like natural open pollinated seeds). They are patented, which forces farmers to pay royalties to the company that owns the seed patent (Natural Society, 2015; Monsanto, 2015). This has high impact on GMO governance as it directly affects farmers, their food production, and consequently, the global food system. In other words, with non-GMOs, farmers can save seed from one season and replant it the next season, which eliminates their initial seed cost after the first planting. The same cannot be done with GMOs. In fact, it is illegal to save GMO seed.

Therefore, GMO patent rights are very important in the GMO field of struggle. Within civil society, while some actors oppose GMOs on the grounds that they constrain farmers from autonomous seed saving (a practice that has always been done in agriculture) (Shiva, 2013), others support the claims of the companies that patenting GMOs and prohibiting farmers to save the seeds is justified by the high cost of investment in research and development done by GMO corporations to foster innovation (RTRS, 2015).

After 1997, the struggle around seed saving became more acute in GMO governance, when scientists in the U.S. developed a new GMO technology called the "Genetic Use Restriction Technology" (GURT). Commonly referred to as "terminator technology", these GMOs are sterile so they cannot be reproduced. That is, the plant's capacity to reproduce has been genetically "terminated" (i.e. the plant produces a crop but the seeds of the crop will not germinate viable offspring seeds in the subsequent generation or will produce viable seeds with certain genes switched off) (Genome British Columbia, 2007).

The first organization to create and spread the term "terminator" was the international NGO "Rural Advancement Foundation International" (RAFI), which had its name changed to EtcGroup in 2001 (Herring, 2006), underlining the emerging role of international NGOs in GMO governance.

In 2003, 18 terminator seeds were patented with the World Trade Organization (WTO) by seed companies (see Appendix1). Most of the allegations in favour of terminator seeds are also grounded on the protection of "intellectual property rights", to prevent the technology from being hijacked. That is, farmers would not be able to save some seed for

the next season, as the seed is essentially sterile. They would necessarily have to buy more seed after every harvest period (Genome British Columbia, 2007). This would reduce the seed companies' costs over patent protection. For instance, Monsanto has had quite often filed costly lawsuits against farmers and has paid high-priced lawyers. Over time, not only are the costs bad for the company, but the lawsuits also represent bad publicity as taking farmers to court influences public opinion against the company's operations (Centre for Food Safety, 2005). However, the companies also claim that this technology is beneficial for agriculture and could ensure biosafety (the conservation and the sustainable use of the components of biological diversity and the control of genetic resources). Terminator technology would then limit the spread of GMO genes to other plants in the natural environment through natural pollination. Hence, GMOs would not mix with wild plants.

On the other hand, for many civil society actors these justifications have never been plausible. For them, they would increase dependency of farmers on biotech companies, their seeds, and by-products (i.e. fertilizers, pesticides, and herbicides). That is, they would be tied to corporate monopoly (Herring, 2006; EtcGroup, 2011; Shiva, 2013). Moreover, they claim that it would also put the control of food system in the hand of few private seed corporations, as they would have the ownership and control over seeds. In other words, for most of civil society actors against terminator seeds, these organisms are the complete opposite of the concept of food sovereignty, which emphasizes peasant and indigenous forms of agriculture, and prioritizes local and national economies and markets (Patel, 2009).

Within GMO governance, after several debates around the commercialization of terminator seeds, in 2000, the Convention on Biological Diversity (CBD) adopted "Decision V/5 section III, paragraph 23" (ECO, 2006) that bans field testing or commercial use of this technology. Likewise, in 2002, the United Nations Food and Agriculture Organization's (FAO) Commission on Genetic Resources for Food and Agriculture condemned terminator and asserted the inalienable right of farmers to save seeds, develop plant varieties, and exchange seeds without restriction (FAO, 2002).

The biotechnology market in agriculture was directly influenced by the increasing productivity of GMOs worldwide. From 1996 to 2003, the world area planted with GMOs rose from 3 million to 67.5 million hectares (James, 2003), and in 2013 it achieved 174 million hectares (GMO Compass, 2015). Large multinational agrochemical

conglomerates such as Bayer, DuPont, Dow, Monsanto, Hoechst, Shell, and Sumitomo experienced incremental expansion of their business with GMOs (Sklair, 2002).

It is important to point out that the growth of GMO commercialization has been also closely related to food security. Following this increase of GMO trade, articulations around "food security" among the actors, institutions, and materialities in The GMO field of struggle emerged. Therefore, I highlight that "food security" is another key floating signifier that has been articulated to support or resist GMO hegemony.

After the financial and food crisis of 2008, discussions around food security sparked which highly affected the debates in GMO governance. In food security discourse, it was claimed that corporate involvement in the food system was essential to tackle world hunger (Jarosz, 2011; Patel, 2007; McMichael, 2009). Considering that agriculture has been increasingly constrained by climate change and that there is a "shrinking space" for adaptation (Pereira, 2012), most of the concerns focus on how to feed over 9 billion people by 2050. As a result – and also because of changing diets – food demand is projected to grow by 50% by 2030 and 70% by 2050. Therefore, under the pitting production discourse, the agri-business corporations have been promoting the expansion of GMOs and the agro-industrial food systems (Jarosz, 2011; McMichael, 2009; Patel, 2007; Reardon et al., 2003).

Finally, underlying the discourse articulation of food security we find the debate around "green economy", led by private corporations and rich European countries. For them, green economy results from the harmony between economic development and environmental improvement. This combination would increase income and employment levels as well as living conditions, with sustainable use of the environment through price mechanism. The state of food security could be achieved through the spread of green economy to enhance global food markets, global food retailing, and global food trade (Guimarães and Fontoura, 2012). Thus, food security, as a key signifier, has been strongly claimed by the private sector in GMO governance, particularly by biotech companies.

Biotech companies in the market use germplasm as their main research material to develop new products. In the 1990s, the three main companies were: (a) DuPont (U.S. origin), with revenues that exceeded $1.8 billion in seed sales (conventional and transgenic) by the end of the 1990s, (b) Monsanto (from the U.S.), with sales of approximately $1.8 billion, (c) Novartis (from Switzerland with production in U.S.), with

a turnover of 998 million dollars. In 2004, the ten largest seed companies in the world encompassed 50% of the global seed market, and held 64% of the market in 2006 (EtcGroup, 2007). Table 4, created by EtcGroup, highlights the sales of biotech conglomerates worldwide in 2009.

Table 4 - World's top 10 seed companies in 2009

Company (Headquarters)	Seed sales 2009 (US$ million)	Market share (%)
1. Monsanto (U.S.)	7.297	27
2. DuPont (U.S.)	4.641	17
3. Syngenta (Switzerland)	2.564	9
4. Groupe Limagrain (France)	1.252	5
5. Land O' Lakes (U.S.)	1.100	4
6. KWS AG (Germany)	997	4
7. Bayer Crop Science (Germany)	700	3
8. Dow AgroSciences (U.S.)	635	2
9. Sakata (Japan)	491	2
10. DLF-Trifolium (Denmark)	385	1
Total top 10	**20.062**	**74**

Source: Adapted from EtcGroup, 2012

In the 1980s, Monsanto created different products resistant to Roundup (herbicide), and in the 1990s, it consolidated the biotechnology trade through mergers and acquisitions in the field of seeds, as well as in the creation of biotechnological products (Pelaez and Poncet, 1998). In 1989, Monsanto started the first field tests with Roundup Ready (RR) transgenic soybean in the U.S., followed by Puerto Rico, Argentina, Costa Rica, and Dominican Republic. Studies with RR soybean lasted until 1994, and the product was released to be marketed in the U.S. in 1996 (Benthien, 2010).

In 2004, Monsanto was already responsible for 88% of the total transgenic seeds planted worldwide and 90% of transgenic soybean commercialization (EtcGroup, 2007). In 2012, this U.S. multinational occupied the status of the largest seed-producing company worldwide, with a profit of approximately $1.22 billion dollars before the end of the year (WSJ, 2012). The power of Monsanto in GMO governance goes beyond owning a technology that has high aggregate value and produces increasing market earnings. It owes much to the pro-GMO lobby in several aspects: international and local regulations, intellectual property mechanisms of protection, dissemination of GMOs to tackle world hunger, and others.

In addition to biotech companies, other actors –international players– are also important in GMO governance, such as the WTO. The WTO was created in 1995 to regulate international trade and in 2015 this international organization had 161 members (including the EU) (WTO, 2015a). The Trade-Related Intellectual Property Rights (TRIPS) established by the WTO is the most important multilateral agreement on intellectual property. According to TRIPS, each and every invention, in all technological sectors, will be patentable, providing that it is new, it involves an inventive step, and it is susceptible to industrial application (WTO, 2012). The Agreement came into effect also in 1995 and became a particular point of contention in the agricultural community, especially because of seed patents. Since its creation, the U.S. led the need for patenting plants, unlike most European countries. After signing TRIPS, states have to modify or adapt their legislation at the national level in order to guarantee an enforceable system of intellectual property protection (Herdt, 2005; Benthien, 2010).

The WTO has also another Agreement that impacts GMO trade: the WTO Agreement on Sanitary and Phytosanitary Measures (SPS). The SPS delineates how governments can apply plant and animal health measures and food safety (WTO, 2015b). As stated in SPS, it is possible to restrict crops containing GMOs and conventional agricultural trade based on scientific risk assessment. This restriction should be consistent with other government policy measures (Falkner, 2000). Nonetheless, there is no consensus on the kind of evidence that would be necessary or sufficient to prove that a GMO crop is safe and acceptable (Millstone and Van Zwanenberg, 2003).

As with the role of different actors, there are important milestones that marked GMO governance. In terms of international regulation, the United Nations Conference on Environment and Development (UNCED), also known as “Rio-92” and the “Earth Summit”, was the first major milestone in GMO governance as it created the CBD. Its main objectives are conservation, the sustainable use of the components of biological diversity, and the equitable and just division of the benefits that result from the use of genetic resources (CBD, 2006). Additionally, it defines policies and legal instruments in favour of biodiversity, with 196 countries as Parties of the convention, including Brazil and the UK (CBD, 2015). It is important to highlight that, although the U.S. has been a key player during the formulation of the CBD, the country has never been Part of the CBD.

Rio-92 represents, then, a significant moment in GMO governance as the creation of the CBD highlights the concerns of state leaders and other actors around biodiversity preservation, which includes the discussion of fair and equitable benefits arising from the utilisation of genetic resources. The creation of the CBD was also related to the development of the rules that would regulate the access to and use of genetic resources (Fontoura and Guedes, forthcoming). In this sense, I highlight that in Rio-92, "biodiversity preservation" was strengthened as another important floating signifier articulated by actors in GMO governance, especially connected to biosafety (or, as mentioned in the first chapter, to conservation and the sustainable use of the components of biological diversity - CBD, 2006).

Different efforts were made to create international standards of biosafety and GMO regulation until the approval of the Cartagena Protocol on Biosafety under the CBD. The negotiations ended in 2003, when the protocol came into effect. The Cartagena Protocol is an independent regulatory framework that aims "to contribute to ensuring an adequate level of protection in the field of the safe transfer, handling, and use of GMOs". Apart from the emphasis on transboundary movements, it also includes avoiding adverse effects of GMOs on conservation, sustainable use of biological diversity, concern on the risks of GMOs to human health, and reaffirms the precautionary principle (UN, 2000). According to the Precautionary Principle, the Parties of the protocol can decide whether to accept imports of GMOs through an evaluation of risk assessment, scientifically tested case by case. Thus, Parties can establish specific guidelines to prevent or reduce potential adverse effects of GMOs (Hill and Sendashonga, 2006).

From then on, the Protocol turned out to be the most relevant international legal and independent instrument related to GMOs (Andrée, 2005; Gupta and Falkner, 2006). In 2015, 170 countries were Parties to the Protocol (including the EU). It must be highlighted, though, that large GMO exporters, such as Argentina, Chile, Canada, and the U.S., have never been Parties to the Protocol (CBD, 2015). The Protocol negotiations rapidly generated academic interest on this issue and much attention was given particularly to a potential conflict with WTO regulations (Gupta and Falkner, 2006).

For a better analysis of GMO governance, I believe it is relevant to point out the main actors and their political role during this negotiation, but a detailed description of the entire process would be beyond the scope of this project. In the formulation phase of the CBD, the participation of civil society actors was very limited. The WWF was the only

international NGO present at the first expert meeting, which caused several complaints from the respondents –governmental and nongovernmental actors. After this initial phase, civil society participation during the formation sessions was strongly represented by WWF, the International Union for Conservation of Nature (IUCN) and GRAIN. These international NGOs had wide access to the United Nations Environment Programme (UNEP) and to state representatives, enjoying thus the possibility of influencing the first reports and ideas among the delegates in domestic and international negotiation sessions (Arts, 1998); indicating their alliance with such organizations was key, and they served as gatekeepers to other potential organizations

The CBD came into effect in 1995, six months before the creation of WTO. During the implementation phase of the CBD, the participation of civil society actors grew immensely. The participation of NGOs increased from 5 to 10 organisations in comparison with the formation sessions, and to 70 and 100 in the implementation phase. In this process, not only Northern-based NGOs participated, but also Southern-based NGOs (Arts, 1998). In the meantime, NGO participation in other agencies and conventions of the UN system grew rapidly after the mid-1990s. Since Rio-92, the UN encouraged NGO involvement in its agencies to "make information readily available and to foster inclusiveness in decision-making processes" (Wiser, 2008: 7).

The growing participation of NGOs in the CBD is one of the main reasons why the U.S. refused to sign the Convention in the Earth Summit, as pointed out by one government respondent: "The fact that Bush refused to sign the CBD woke up the NGOs. They argued as follows: there must be something in it if America is so frightened of it" (Arts, 1998: 170). This involvement of NGOs in the CBD negotiations was not well received by the U.S. government as it impacted the first draft of the Convention changing it from a conservation-oriented institution to one oriented mostly towards development and the environment.

Between 1992 and 1995, civil society actors were officially allowed to participate in the pre-negotiation phase of the Protocol, as every expert on the subject was able to participate. They were mainly represented by international NGOs. Most of these organizations defended the necessity of a strong protocol in biosafety (Arts and Mack, 2003). During Rio-92, the key actors around the first draft of the CBD and the Cartagena Protocol were states, international NGOs (represented mainly by World Wide Fund for Nature - WWF, Greenpeace, Friends of the Earth International, Birdlife International,

Biodiversity Action Network, Genetic Resources Action International - GRAIN, and RAFI - now EtcGroup), multinational corporations (represented mainly by Monsanto, DuPont and Syngenta), and other industrial lobbyists (such as EuropaBio, Biotech Industry Organization - BIO, BioteCanada, Japan BioIndustry Organization, International Chamber of Commerce and the International Association of Plant Breeders for the Protection of Plant Varieties) (Arts, 1998; Arts and Mack, 2003; Andrée, 2005; Clapp, 2003; Depledge, 2000). They struggled for their positions (pro and against GMO regulation).

After this first phase of pre-negotiation, for the second Conference of the Parties (COP-2) in 1995, the direct participation of civil society actors was reduced and limited. From then on, they were completely excluded by the CBD from the group that would formally develop the Protocol (Earth Negotiation Bulletin, 2012). In this way, civil society actors (represented by international NGOs) began to adopt a strategy of influence by way of contact with government representatives outside the formal meetings, communicating their considerations and highlighting relevant information about the topic. They also acted as legal, political, and scientific advisors, especially of developing countries, by making them aware of the possible negative consequences of cross border and transgenic movements in their countries. They also influenced the EU officials outside of formal negotiations, however in a more limited way (Arts and Mack, 2003).

In the meantime, and at the forefront of the debate on the future of biotechnology, the participation of the industry grew rapidly during the negotiations of the Protocol. In 1996, eight industrial groups attended the negotiations, while more than 20 attended in 1999 (Clapp, 2003).

By that time, multinational corporations not only assisted state officials but also conducted the negotiations with a predominant “economic” view of the environment and sustainability (especially Monsanto, DuPont, and Syngenta). To achieve their goals, those multinationals worked together with Business and Industry NGOs (BINGOs) (mainly represented by EuropaBio, BIO, BioteCanada, Japanese Bioindustrial Organization e International Trading House), other industrial lobbyists from the Global Industry Coalition (Sarfati, 2007), and with the Miami Group (Arts, 2005). The Miami Group was formed by U.S., Argentina, Canada, Chile, and Uruguay (large GMO exporters and producers). They all engaged in the opposition to a very restrictive Protocol that could affect GMO production and trade (Levy and Newell, 2000).

In 2003, the Cartagena Protocol entered into force and since then the Parties of the Protocol have debated central issues concerning biosafety, such as risk assessment; compensations; information dissemination; labelling; responsibilities, and increased capacity.

The main achievements of the pro-GMO group in this final document was the weakening of many of the restrictions presented in the initial proposals of the Protocol, such as the adoption of the term "Living Modified Organisms" (LMOs) instead of GMOs, which places the focus on the seeds and diverts attention from the by-products. Likewise, the acquiescence of the Cartagena Protocol to WTO regulations favoured the pro-GMO lobby. That is, if a country is accused of not complying with the Protocol's principles, it can appeal before the WTO to clarify commercial obligations on GMOs (Falkner, 2000; Arts and Mack, 2003).

In this sense, the final document did not completely reflect the interests of the groups voicing resistance against the pro-biotechnology lobby (most developing countries, the EU, and the international NGOs mentioned before). However, the inclusion of the Precautionary Principle and the socioeconomic considerations in the final document of the Cartagena Protocol were considered a "victory" for this group (Falkner, 2000; Arts and Mack, 2003).

From the CBD and Cartagena Protocol negotiations, I would like to highlight that the adoption of "LMOs" instead of "GMOs" in the final document of the Cartagena Protocol was an attempt from those that support GMO hegemony to change the nodal point of "GMOs" in the GMO field of struggle. Further struggles around this issue would not include the by-products of the transgenic seed cultivation, which are of great relevance in the biotech market. However, this strategy did not stop the actors from articulating "GMOs" up to the present as the most important empty signifier in GMO hegemony. Visibly, this strategy did not succeed in the GMO field of struggle.

The analysis of those negotiations also revealed that, within GMO governance, a particular type of international NGO was the most important voice from civil society not closely attached to business interests (unlike the BINGOs and the Global Industry Coalition). These international NGOs were environmental NGOs (Egelston, 2013; O'Neill, 2009) – known as ENGOs in Environmental Politics literature, indicating the growing role of environmental dissent, based on biodiversity protection, in GMO governance.

The strong role played by international environmental NGOs explains in part why GMO governance is mainly located in the global environmental agenda and not in the health, human rights, climate change, or others. Apart from the representation of civil society actor, another explanation of why GMO governance is mainly set in the global environmental agenda relates to biodiversity protection. First, most GMO exporters (i.e., Canada, U.S., Brazil, and Argentina) and importers (i.e., China, Philippines, Morocco, and Ecuador) are rich countries in terms of biodiversity. This generates serious concern for the risk posed by the introduction of GMOs into native environments.

Since the Cartagena Protocol, some of these international environmental NGOs have been reportedly resisting the increase of GMOs worldwide together with some international social movements, such as International Social Movement 1. In October 2000, in the III Conference of International Social Movement 1, the idea around "food sovereignty" was already advanced and the debates focused on the movement's own challenges regarding identity construction. During this conference, one of the themes discussed was the rise of biotechnology and GMOs. In the final declaration, the movement put forward as its main strategies around GMOs (International Social Movement 1, 2000a): a) to strengthen its participation and formalize its presence in forums and international organizations such as CBD, FAO, the Cartagena Protocol, and the International Forest Forum; b) to start an international campaign within International Social Movement 1 to publicize and inform on issues of genetic resources, biodiversity, and biosecurity; and c) to conduct a campaign in each country where the movements is organized to demand from all governments a fair economic and legal framework for a rural development model centred on peasants and farmers.

My direct observations during two international events related to GMO governance (Rio+20 in Rio de Janeiro, 2012, and the first March Against Monsanto in London, 2013), indicated that, for these actors, there are a number of potential risks associated with GMOs and the tests designed by multinational corporations.

Additionally, they claim that: a) GMOs are engineered for herbicide tolerance (i.e. Roundup) and as a result, the use of toxic herbicides has increased 15 times since they were introduced in agriculture; b) the long-term impacts of GMOs are unknown for human health, biodiversity and the environment, but once released, these organisms cannot be recalled; c) they are a direct extension of chemical agriculture that promotes a dependable and vulnerable farming, which increases hunger, poverty and suicide among

farmers; and, d) the exponential growth of the GMO industry around the world is the evidence of the neoliberal logic of "green capitalism" (to some "green economy") and the way it has marketised nature, causing worrying social and environmental impacts.

All those mobilizations highlighted the need for a more "ecological agriculture" that would be the main alternative agriculture practice against industrial agriculture. In this way, based on my field research, direct observations, and secondary data, "ecological agriculture" emerges as another important floating signifier that has been strongly articulated by those actors that aim to construct resistance to GMO hegemony. Their claim for "ecological agriculture" includes the defence of agroecological practices without the use of GMOs and pesticides, of organic food, more feminism against a male-dominated agricultural model based on biotechnology, the focus on food sovereignty instead of food security, and an intense concern for animal and human health.

However, not all international civil society actors position themselves as counterhegemonic force in GMO governance. In both events, different international environmental NGOs and international social movements declared opposition to the "controversial" role of WWF, another important international environmental NGO. For them, this NGO does not represent the interests of the people as it cooperates with agribusiness, retailers, and the biotechnology industry that promote GMOs. As an example of their argument, they exposed that WWF had joined other powerful actors in GMO governance to establish the Round Table on Responsible Soy (RTRS) in 2006. For them, WWF is cooperating with corporations to promote transgenics through the label of the "GMO sustainable soybean production" in a global standard (RTRS, 2014).

However, WWF's Position Statement on GMOs highlights that it does not aim to promote GMOs. On the contrary, its main concern is the adoption of the precautionary principle in each location where the NGO works. Moreover, WWF:

> advocates the retention of non-GMO options for all relevant commodities.
>
> […]
>
> The assessment is informed by the Precautionary Principle and international protocols – particularly the Cartagena Protocol on Biosafety. WWF develops its strategy in each location based on this risk analysis.
>
> In its work on sustainability standard setting for commodities that include GMOs, (such as the Roundtable on Responsible Soy, and the Better Cotton Initiative), WWF supports and

> promotes the development of tracts for non-GM varieties within credible standards. Doing so guarantees that non-GMO varieties remain an option; provides a comparative baseline for measuring the performance of GMO products, and impacts such as the use of pesticides; and ensures actors, including both producers and consumers, access to non GM products. WWF applies the same principle in its bilateral relations with companies. (WWF, 2012)

Other civil society actors (international and local ones) are also members of RTRS, as can be seen in Table 5.

Table 5- Civil Society actors in RTRS in 2015

Name	Country
Access Development Services	India
Aliança da Terra	Brazil
ASA	India
Bhatiya Samruddhi Fiance-BASIX	India
Conservation International	U.S.
Earth Innovation Institute	Brazil
Fauna & Flora International	UK
Fundación Moisés Bertoni	Paraguay
Fundación para la Conservación y el Uso Sustentable de los Humedales	Argentina
Fundación Vida Silvestre	Argentina
Guyra Paraguay	Paraguay
Instituto Centro Vida – ICV	Brazil
Instituto ETHOS	Brazil
Natuur & Milieu	Holland
Solidaridad	Holland
SRIJAN	India
The Centre for Advanced Research & Development	India
The Nature Conservancy	Brazil
Vrutti	India
World Resources Institute	U.S.
WWF	Brazil

Source: Adapted from RTRS, 2015

Like WWF, most of these civil society actors in RTRS defend that increasing soybean production is fundamental to ensure food security, animal feed, and biofuels. In their argument they also make the link between GMO soy and the need for green economy, good agricultural practices, responsible soy certification; sustainable land use, business management tools, and multi-stakeholder involvement, as pointed in the following examples: a) Unilever and the international NGO Solidaridad established a partnership to improve people's lives in Unilever's supply chains (Solidaridad, 2015); b) the creation of

The Greener Soy Project conducted by the Soy and Corn Producers Association of the State of Mato Grosso, Brazil - APROSOJA - in partnership with the international NGO The Nature Conservancy and local municipalities (TNC, 2012); and, c) the defence of multi-stakeholder processes by the international NGO Fauna & Flora International to strengthen environmental governance in landscapes affected by GMOs (Fauna & Flora International, 2015).

Meanwhile, in terms of state actors and public opinion in GMO governance, through the years, the diversity of positions has increased. Although some public authorities and institutions have presented GMOs in a highly positive light, other state leaders are still very suspicious of this technology and highly influenced by the opposition to GMOs in public opinion. Such divergent positions are also reflected in the countries' legislation and policy on transgenics. The EU has one of the most comprehensive and strict legal regimes on GMOs, which places it as an important actor in the counterhegemonic force in GMO governance. After some state negotiations around this issue, the counterhegemonic articulation within the EU "won" the debate on GMOs, a fact that is reflected in the current strict EU legislation. On the other hand, U.S., Canada, Brazil, and other countries have officially promoted transgenic seeds in international forums, and their legislation is more flexible on GMOs. Therefore, those countries are recognized as supporters of hegemony in the GMO field of struggle.

As for research funding, large sums have been invested in GMO research in the last decades. For example, from 2001 to 2010, only the EU put EUR 200 million in research grants (for 50 projects, involving more than 400 research groups) (European Commission, 2010). In 2010, in the U.S., research funding by GMO companies accounted for 60% of the total of university grants for agricultural research (Richardson, 2012).

In this section, I provided a brief narrative of GMO governance that highlighted some significant events, institutions, materialities, discourses (floating signifiers), countries, multinationals, international regimes, international organizations, and international civil society actors that articulate in this field of struggle. Moreover, from this analysis I argue that in GMO governance, the natural seed (not manipulated or genetically altered in a laboratory) is no longer a mean of production (as raw material) but a final product (as grain), altering the social and formal (legal) significance of life, becoming a channel for the process of capitalist commodification.

Additionally, I found that multinational corporations (e.g. Monsanto, DuPont and Syngenta), big GMO exporters (e.g. U.S., Brazil and Canada), industrial lobbyists (e.g. EuropaBio, Global Chamber of Commerce and some BINGOs), agribusiness farmers, pro-GMO international civil society actors (e.g. The Nature Conservancy), and the WTO articulate GMOs in order to support hegemony in this field of struggle. On the other hand, the main actors that articulate GMOs to resist hegemony are the EU and some international civil society actors (e.g. Greenpeace, International Social Movement 1) (Arts, 1998; Arts and Mack, 2003; Andrée, 2005; Clapp, 2003; Depledge, 2000). They struggled for their positions (pro and against GMO regulations).

Finally, in Table 6, I describe some relevant significant moments in GMO governance that have been pointed out in this section.

Table 6 - A short historical overview of GMO governance

Year	**Event**
late 1950s	Scientific advances of genetics and molecular biology from the U.S. and Europe
1960	International Rice Research Institute (IRRI) was established
1971	Consultative Group on International Agricultural Research (CGIAR) was established
In the 1970s	Started GMOs commercial cultivation in the U.S.
From the 1970s to the 1980s	The growing number of research institutes and germplasm banks led to scientific advances in manipulation of plant cells and molecules
From the 1980s to the 1990s	Monsanto consolidated as a big biotechnology corporation
1989	Monsanto begins the first field tests with Roundup Ready (RR) transgenic soybean in the U.S.
In the 1990s	Started GMOs commercial cultivation outside the U.S.
1992	Earth Summit in Rio de Janeiro, Brazil
1992	Convention on Biological Diversity (CBD) was idealized
1995	World Trade Organization (WTO) was established
1995	Trade-Related Intellectual Property Rights (TRIPS) was established
1995	Agreement on Sanitary and Phytosanitary Measures (SPS) was established
1995	Convention on Biological Diversity (CBD) was established
1996	Roundup Ready (RR) was released to the market in the U.S.
1997	Scientists in the U.S. developed a new GMO technology commonly referred to as “terminator technology”
2000	Convention on Biological Diversity (CBD) banned “terminator technology”
2002	Food and Agriculture Organization of the United Nations (FAO) condemned “terminator technology”
2003	Cartagena Protocol was established
2004	Monsanto was already responsible for 88% of the total transgenic seeds planted worldwide and 90% of transgenic soybean commercialization
2006	Round Table on Responsible Soy (RTRS) was established

Year	Event
2008	Financial and Food Crisis of 2008
2012	Rio+20 in Rio de Janeiro, Brazil
2013	First March Against Monsanto worldwide

Source: The author

4.2 Diversified Strategies of International Civil Society Actors in GMO hegemony

In this section, I draw on neo-Gramscian discourse analysis to discuss the diversified strategies that international civil society actors deploy in GMO hegemony. To do so, I start by highlighting important shifts in GMO discourse in Brazil and the UK since the 1990s.

As pointed before in the theoretical review, civil society actors often foster and employ a common language through the articulation of broader popular discourses in order to resist or support hegemony (Van Bommel and Spicer, 2011; Laclau, 2005). Therefore, in the second sub-section of this topic, I explore the strategies adopted by international civil society actors through the ways they articulate the floating signifiers "science" and "sustainability" and, consequently, the nodal point of "GMOs" (see table 2).

4.2.1 Shifts in GMOs discourse in Brazil since the 1990s

As discussed in the theoretical and methodological sections, "historical contingencies" are central to a neo-Gramscian discourse analysis as they represent privileging political moments in hegemonic formation. Every historical contingency influences the identity of the hegemonic and counterhegemonic subjects. That is, these contingent moments demand new hegemonic articulations that can always be challenged through resisting forces. In this way, in Table 7, I highlight key empirical manifestations of significant moments and historical contingencies (in bold and underlined in the table) and the shifts in GMO discourse in Brazil since the 1990s. In Table 7 (and further in table 8) I give empirical examples of changes in the discourses articulated around "GMOs", focusing on its representation in the media, websites, and other secondary literature on GMO governance (Gamson and Modigliani, 1989; Selsky, Spicer and Teicher, 2003).

Table 7- Shifts in GMOs discourse in Brazil since the 1990s

<table>
<tr><th colspan="4">Nodal Point: "GMOs"</th></tr>
<tr><th>Floating signifier</th><th>Second Level of Floating Signifiers</th><th>Example</th><th>Main institutions in the struggle</th></tr>
<tr><td>Significant Moment</td><td colspan="3">1992 - In Rio-92, Brazil supports the creation of the CBD</td></tr>
<tr><td>Science</td><td></td><td>"Brazilian diplomacy, sensitive to national concerns on the subject, adopted an active attitude in the CBD negotiations. The main lines of action of Brazilian diplomacy were:
1. definition of the rules concerning the exchange of materials and scientific information between countries with biological diversity and countries with biotechnology" (Maia Filho, 2010: 46)</td><td rowspan="3">-States
-International Organizations
-Multinational Corporations
-BINGOs and other industrial lobby
-International NGOs</td></tr>
<tr><td rowspan="2">Sustainability</td><td>Biodiversity Preservation</td><td>"Brazilian diplomacy, sensitive to national concerns on the subject, adopted an active attitude in the CBD negotiations … The first aspect that the CBD highlights is that it does not have a conservationist character as it sees conservation of biodiversity directly linked to its sustainable use, in accordance with the present needs of humanity taking into account the necessary limitations to enable it to be used by future generations." (Maia Filho, 2010: 46)</td></tr>
<tr><td>Food Security</td><td>"Brazilian diplomacy, sensitive to national concerns on the subject, adopted an active attitude in the CBD negotiations. The main lines of action of Brazilian diplomacy were:
3. rule definitions on the obligations of States regarding protectionist policies of biodiversity resources;
4. definition of intellectual property rules on biotechnology;
5. international funding for the implementation of the CBD." (Maia Filho, 2010: 46)</td></tr>
<tr><td>Significant Moment</td><td colspan="3">1995 - Brazil becomes a member of the WTO</td></tr>
<tr><td>Sustainability</td><td>Food Security</td><td>"The World Trade Organization (WTO) was established in 1995 with the aim of bringing all nations the benefits of globalization … Brazil was the country-founder of both the initiatives, as has always been interested in reducing tariff barriers (rates excise tax) and non-tariff (bureaucracy, unreasonable health rules etc.) to its agricultural products." (Scheller, 2006)</td><td>-States
-International Organizations
-Multinational Corporations
-BINGOs and other industrial lobby
-International NGOs</td></tr>
</table>

Significant Moment	1995 - Brazil signs the TRIPS Agreement		
Sustainability	*Food Security*	"One major change of TRIPS… was the patenting obligation of genetically modified organisms (GMOs)." "Brazilian law, especially the 'patent law' resulted from extensive pressure from the international community, especially the US and its pharmaceutical industry, for the establishment of a strict legal framework in the context of intellectual property. It was heavily inspired by the Agreement TRIPS" (Dias, 2009: 18 and 81)	-States -International Organizations -Multinational Corporations -BINGOs and other industrial lobby -International NGOs
Significant Moment	1995 - First Brazilian Law on Biosafety is formulated based on the precautionary principle		
Sustainability	*Biodiversity Preservation*	"[The law] was the first Brazilian law on biosafety and its formulation was based on the precautionary principle … Brazilian officials … saw the need to formulate a law that would guarantee environmental conservation and human and animal health" (Fontoura and Guedes, 2013: 12)	-Brazilian State Agencies -'biological bureaucrats'
	Food Security	"Its purpose was to regulate the handling and the use of GMOs, defining the guidelines for research, experimentation in the field, importation, production, storage, transportation, and commercialization." (Fontoura and Guedes, 2013: 12)	
Significant Moment	1997 - General Coordination of the National Biosafety Technical Committee (CTNBio) gives Monsanto approval for field trials of Roundup Ready soybeans and the first experimental field tests of GMOs starts in Brazil		
Science		"Since 1997 Monsanto conducts studies in Brazil with Roundup Ready soybeans resistant to glyphosate herbicide." (Floriani, 2015)	-Brazilian State Agencies -Monsanto
Sustainability	*Food Security*	"the company triggered a process of seed company acquisitions in the country, stopping in 1997 first in the corn seed market second in soybeans, with 60% and 20% respectively Brazilian production" (Wilkinson, 2005: 10)	
Significant Moment	1998 February - Consumers advocate GMO labelling		
Sustainability	*Food Security*	"the Institute [Brazilian Institute of Consumer Protection - IDEC] obtained an injunction, granted on an emergency basis, which prevents the government from authorizing the marketing of Monsanto's transgenic soybean. The goal of the action was to secure the preliminary assessment of the risks to the consumer, the obligation to report on the label the presence of GMO content and conducting environmental impact study." (IDEC, 2015)	-International NGO -Local NGO

Significant Moment	1998 February - The Federal Police find at the Passo Fundo (RS) airport that illegal transgenic soybean from Argentina (known as 'Maradona soybean') had been smuggled into the country by Brazilian farmers		
Sustainability	*Food Security*	"The first seizure of transgenic soybeans planted in Brazilian soil occurred in 1998 in the central region of Rio Grande do Sul ... Smuggled from Argentina, the seeds are known among farmers as 'Maradona soybean'" (EMBRAPA, 2015)	-The Federal Police
Significant Moment	1998 September - first GMO approved for commercial release by CTNBio (Monsanto's RR)		
Sustainability	*Food Security*	"the first commercial release of genetically modified soy plantations in the country - a type of grain tolerant to the herbicide Roundup Ready (RR), produced by the multinational Monsanto, one of the world's largest biotech companies." (Vasconcelos, 2006)	-Brazilian State Agencies -Monsanto
Significant Moment	1999 September – Allegations of illegal planting of GMOs in Rio Grande do Sul generate rumours around the country that 'facts were being created'. That is, the cultivation of illegal transgenic seeds in Rio Grande do Sul was irreversible.		
Sustainability	*Food Security*	"The president of the Brazilian Association of Seed Producers (Abrasem) - stating that the smugglers have even held field days, with distribution of leaflets and seed offers - announces that the transgenic soybean planting in Rio Grande do South shall, from seeds smuggled from Argentina, reach 1 million hectares in the crop 99/2000, about a third of the area planted with the crop in the state." (RAS, 2015)	-The Brazilian Association of Seed Producers -State Secretary of Agriculture from Rio Grande do Sul
Significant Moment	1999 December - The federal government issues a draft proposal for a labelling policy for GMO products		
Sustainability	*Food Security*	"The Federal Government, in December 1999, drafted a proposal for GMO foods labeling… Labeling, in addition to providing safety to consumers through information, also enables a marketing difference for products/brands, thus generating and improving competition among producers." (Cavalli, 2001)	-Federal Government -International NGO -Local NGO -Campaign for a Brazil Free of Transgenics

HISTORICAL CONTINGENCY: EVENT THAT HIGHLY INFLUENCED NEW HEGEMONIC ARTICULATIONS IN GMO FIELD OF STRUGGLE	**THE PROVISIONAL MEASURE OF 1999 GRANTED CTNBIO AUTHORITY OVER GMO SALE AND PRODUCTION. THIS EVENT DEMONSTRATED THAT IT WAS CLEAR THAT THE COUNTRY HAD REACHED A POINT OF NO RETURN REGARDING GMOs**		
Science		"There is a need for long-term testing. As some scientists have noted, absence of evidence is never evidence of absence. But in the case of Brazil, CTNBio and the government have done exactly the opposite." (Campolina and Gonçalo, 2001)	- Brazilian State Agencies -States (U.S. and Brazil) -Monsanto -International NGOs -Local NGOs -Campaign for a Brazil Free of Transgenics
Sustainability	*Biodiversity Preservation*	"In fact, the decisions of CTNBio are subject to questioning not only by its disregard for environmental laws … the whole existence of CTNBio may be illegal and void their acts." (Campolina and Gonçalo, 2001)	
	Food Security	"As you can see, the government, contrary to the precautionary principle, seeks to accelerate the release of GMOs to attend the demands of multinational companies and without any concern for the health of Brazilian consumers and the integrity of the environment." (Campolina and Gonçalo, 2001)	
Significant Moment	2000 - Brazil supports the need for a Biosafety Protocol under the CBD, based on the precautionary principle		
Sustainability	*Biodiversity Preservation*	"Brazil was one of the first countries to join the CBD of the United Nations (UN), whose function is to define rules for the conservation of the planet's biodiversity, its sustainable use and the fair and equitable sharing of benefits arising from the utilization of genetic resources." (Glass, 2010)	-Federal Government -International Organizations -Multinational Corporations -BINGOs and other industrial lobby -International NGOs
Significant Moment	2000 - The President publishes a provisional measure amplifying the authority and the power of CTNBio		
Science		"An outline of [provisional measure] PM, obtained by *Valor* in September, gave power to the CTNBio to set of inspection rules, authorize the use of genetic engineering and authorize imports of GMOs." (AS-PTA, 2000)	-Brazilian State Agencies -Federal Government -Local NGOs
Sustainability	*Food Security*	"An outline of PM, obtained by *Valor* in September, gave power to the CTNBio to set of inspection rules, authorize the use of genetic engineering and authorize imports of GMOs." (AS-PTA, 2000)	

Significant Moment	2001 - Decree No. 3871 comes into force setting forth that products with traces of GMOs in excess of 4% must be labelled		
Sustainability	*Food Security*	"During Fernando Henrique Cardoso's government Decree No. 3871 of July 18, 2001 entered into force, a piece of legislation that 'imposes labeling of packaged foods containing or produced from genetically modified organisms as well as other measures'. Some procedures have become clear as anti-GMO [activists] complained about the lack of commitment to protect humans and the environment." (Campos, 2003)	-Federal Government -Multinational Corporations -Brazilian State Agencies -Campaign for a Brazil Free of Transgenics -Local NGOs -International NGO
Significant Moment	2003 - A presidential provisional measure allows farmers to plant transgenic soybeans for one year only without transporting them across state lines. In addition, farmers must pay indemnities if they harm the environment or consumers' health.		
Sustainability	*Food Security*	"The provisional measure authorized the planting of transgenic soy for those farmers who had illegally cultivated genetically modified soy in the previous year. For planting, the approved law required only one Term Liability Adjustment and Conduct." (Greenpeace, 2004)	-Federal Government -Brazilian State Agencies -Multinational Corporations -Agribusiness Farmers -Campaign for a Brazil Free of Transgenics -Local NGOs -International NGO
HISTORICAL CONTINGENCY: EVENT THAT HIGHLY INFLUENCED NEW HEGEMONIC ARTICULATIONS IN GMO FIELD OF STRUGGLE	**IN 2005, THE NEW BRAZILIAN LAW ON BIOSAFETY REPEALED THE BRAZILIAN LAW ON BIOSAFETY OF 1995. THE NEW LAW RESTRUCTURED THE CTNBIO (WHICH HELD GREATER AUTONOMY) AND SETTLED THE NEED FOR ESTABLISHING THE BRAZILIAN NATIONAL BIOSAFETY POLICY. FOR A MOMENT, ACTORS AGAINST GMOs THOUGHT THEY HAVE LOST THE BATTLE. THIS EVENT WAS CENTRAL IN NEW HEGEMONIC ARTICULATIONS**		
Science		"This law established safety standards and oversight mechanisms for GMOs … based on the promotion of scientific research in biosafety and biotechnology … CTNBio becomes responsible for issuing technical opinion on any release of GMOs into the environment and for monitoring the development and technical and scientific progress in biosafety in the country." (Fontoura and Guedes, 2013: 13)	-Federal Government -Brazilian State Agencies -Multinational Corporations -Agribusiness Farmers -Campaign for a Brazil Free of Transgenics -Local NGOs

Sustainability	*Biodiversity Preservation*	"This law established safety standards and oversight mechanisms of GMOs … based on the promotion of scientific research in biosafety and biotechnology, protection of life and human, plant and animal health, as well as the observance of the precautionary principle for environmental protection." (Fontoura and Guedes, 2013: 13)	
	Food Security	"Under Brazilian law, any transgenic product must have prior clearance with different stages of research before being released for marketing. For this, different regulatory instructions establish the necessary technical guidelines, such as import, sale, release, storage, handling, transport, use and disposal of products derived from GMOs." (Fontoura and Guedes, 2013: 13)	
Significant Moment	2007 May - The first GMO corn seeds from Bayer and Monsanto are approved for commercial use in the country.		
Sustainability	*Food Security*	"The green light for the use of transgenic corn in Brazil was given in 2007 with the approval … Today [2014] it is estimated that 80% of crops grown across the country are transgenic." (Globo Rural, 2014)	-Federal Government -Brazilian State Agencies -Multinational Corporations -Agribusiness Farmers -Soy and Corn Producers Association -Confederation of Agriculture and Livestock -Campaign for a Brazil Free of Transgenics -Local NGOs -International NGO -Local Social Movement -International Social Movement
Significant Moment	2007 October - A federal judge suspends deliberations on commercial releases of transgenic corn, alleging that the first approval of CTNBio did not apply the precautionary principle and the Biosafety Law, and therefore should be reviewed.		
Science		"According to the judge's decision, the standards recently issued by the Commission do not meet the precautionary principle and the Biosafety Law and therefore should be reviewed … CTNBio has delegated the companies themselves to submit a monitoring plan concerning to its transgenic species - instead of fulfilling their assignment required by Article 14, III, of Law 11.105". (Greenpeace, 2007)	-Federal Government -Brazilian State Agencies -Multinational Corporations -Agribusiness Farmers -Soy and Corn Producers Association -Confederation of Agriculture and Livestock
Sustainability	*Biodiversity Preservation*	"According to the judge's decision, the standards recently issued by the Commission do not meet	

		the precautionary principle and the Biosafety Law and therefore should be reviewed." (Greenpeace, 2007)	-Campaign for a Brazil Free of Transgenics -Local NGOs -International NGO -Local Social Movement -International Social Movement
	Food Security	"To elaborate rules of coexistence and commercial post-release monitoring of GMO maize is legal requirement … For disobeying the law, the CTNBio was forced … to establish … biosecurity measures to ensure the coexistence of varieties of organic corn, conventional and agroecological with GMO varieties." (Greenpeace, 2007)	
Significant Moment	2008 - Two varieties of transgenic corn from Bayer and Monsanto are approved for commercial use		
Sustainability	*Food Security*	"In a public statement released soon after the meeting of the Council of Ministers, organizations of socioenvironmentalist movement … stated that 'the political decision of the Lula government, to place agribusiness over the health of the population … is a great irresponsibility that will mark its mandate.'" (Thuswohl, 2008)	-Federal Government -Brazilian State Agencies -Multinational Corporations -Agribusiness Farmers -Soy and Corn Producers Association -Confederation of Agriculture and Livestock -Campaign for a Brazil Free of Transgenics -Local NGOs -International NGO -Local Social Movement -International Social Movement
HISTORICAL CONTINGENCY: EVENT THAT HIGHLY INFLUENCED NEW HEGEMONIC ARTICULATIONS IN GMO FIELD OF STRUGGLE	**IN 2010,A SCIENTIFIC RESEARCH ON GENE MONITORING BY THE STATE OF PARANÁ PROVED THAT THERE HAD BEEN CONTAMINATION OF COMMON CROPS BY TRANSGENIC CORN, EVEN WITHIN THE RULES ESTABLISHED BY CTNBIO THAT AIM TO GUARANTEE THE PRECAUTIONARY PRINCIPLE REGARDING RISKS. AFTER THIS EVENT, GMO HEGEMONY BECAME AGAIN WIDELY OPEN TO CONTESTATION AND RESISTANCE IN THE COUNTRY**		
Science		"The Secretary of Agriculture of the State of Paraná - SEAB released … the results of the "Plan of Monitoring of gene flow between GM maize and non-GM crop in western Paraná." The study has scientific rigor and proves the contamination of common crops by transgenic corn, even within the rules established by CTNBio." (Agroecologia e Alternativas Ecológicas, 2010)	-Secretary of Agriculture of the State of Paraná (SEAB) -Brazilian State Agencies -Campaign for a Brazil Free of Transgenics -Local NGOs

Sustainability	*Food Security*	"For the European market, the product [organic] would also be rejected, since the non-GMO certification has tolerance of 0.9%." (Agroecologia e Alternativas Ecológicas, 2010)	-Local Social Movement -International Social Movement
	Ecological Agriculture	"If this maize was intended for the organic market, where the transgenic index is 0%, the production would be compromised, as well as producer certifications. In the European market, the product would be rejected, since the non-GMO certification has a tolerance of 0.9%." (Agroecologia e Alternativas Ecológicas, 2010)	
Significant Moment	2012 - The Study Group on Agricultural Biodiversity was officially established at the Ministry of Agrarian Development		
Science		"It is through stimulating the production of knowledge and dissemination of information that we will increasingly popularize the subject and extend it to society" (MDA, 2013)	-Brazilian State Agencies -Campaign for a Brazil Free of Transgenics -Local NGOs -International NGO -Permanent Campaign Against Pesticides and For Life -Local Social Movements -International Social Movement -Federal University of Santa Catarina (UFSC)
Sustainability	*Biodiversity Preservation*	"[The Study Group on Agricultural Biodiversity] aims to deepen the understanding and qualify debates about the conservation of agro-biodiversity, the risks of Genetically Modified Organisms (GMOs), and the guarantee of the rights of farmers and consumers." (MDA, 2013)	
	Food Security	"[The Study Group on Agricultural Biodiversity] aims to deepen the … the guarantee of the rights of farmers and consumers." (MDA, 2013)	
	Ecological Agriculture	"In addition, the Group elaborates articles and contributes to the production of booklets and books on agroecology, family agriculture, and biosecurity by the Ministry of Agrarian Development (MDA), and it also participates in events and meetings between the government and civil society related to these issues." (MDA, 2013)	
HISTORICAL CONTINGENCY: EVENT THAT HIGHLY INFLUENCED NEW HEGEMONIC ARTICULATIONS IN GMO FIELD OF STRUGGLE	**IN 2015, 8TH OF APRIL, THE NATIONAL CANCER INSTITUTE LAUNCHED A REPORT ADOPTING A POSITION AGAINST THE USE OF PESTICIDE AND GMOs IN BRAZIL. THIS MOMENT GAINED WIDE MEDIA COVERAGE SINCE HIGH PESTICIDE CONSUMPTION BECAME HIGHLY RELATED TO CANCER IN HUMANS. THIS MOMENT ILLUSTRATES A BIG HEGEMONIC ARTICULATIONS IN GMO FIELD OF STRUGGLE**		
Sustainability	*Ecological Agriculture*	"The institution states that these substances generate large problems like environmental pollution and poisoning of people, such as workers and people living near crops and livestock … Among the effects associated with chronic exposure to the pesticide's active	-The National Cancer Institute -Brazilian State Agencies -Campaign for a Brazil Free of Transgenics -Local NGOs

		ingredients the following can be cited: infertility, impotency, miscarriages, birth defects, neurotoxicity, hormonal disruption, effects on the immune system, and cancer'" (G1, 2015)	-International NGOs -Permanent Campaign Against Pesticides and For Life -Local Social Movements -International Social Movement
Significant Moment	2015, 9th of April - GMO Eucalyptus of FuturaGene Brasil Tecnologia Ltda is approved for commercial use		
Sustainability	*Food Security*	"According to the company, Brazil is the first country to release genetically modified eucalyptus. FuturaGene' technicians said that the modified eucalyptus has 20% more productivity and can be used in the production of wood, paper and other items … Also, FuturaGene stressed that the release will allow it to produce more with fewer resources, and ensure sustainability" (Tokarnia, 2015)	-Brazilian State Agencies -Biotech company -Permanent Campaign Against Pesticides and For Life -Local NGOs -International NGOs -Local Social Movements -International Social Movement
HISTORICAL CONTINGENCY: EVENT THAT HIGHLY INFLUENCED NEW HEGEMONIC ARTICULATIONS IN GMO FIELD OF STRUGGLE	**IN 2015, 28TH OF APRIL, THE CHAMBER OF DEPUTIES APPROVED A LAW PROJECT THAT WOULD CANCEL THE NEED OF GMO LABELLING, LIFTING THE OBLIGATION OF CORPORATIONS TO INDICATE WHETHER THEIR PRODUCTS CONTAINS GMOs. AGAIN, THIS LAW PROJECT DEMONSTRATED NEW ACTORS ARTICULATIONS IN GMO HEGEMONY, SUSTAINING AND RESISTING IT IN THE COUNTRY. IN THIS MOMENT, THE POWER OF PRO-GMO ACTORS IN GMO HEGEMONY WAS REINFORCED**		
Sustainability	*Food Security*	"With the approval of the law, the symbols that identify products with GMOs today will may not be present on the labels and the final consumer will no longer be sure about the presence of GMOs in foods through labeling" (IDEC, 2015)	-Chamber of Deputies -Multinational Corporations -Confederation of Agriculture and Livestock of Brazil -Permanent Campaign Against Pesticides and For Life -Local NGOs -International NGOs -Local Social Movements -International Social Movement

Significant Moment	2015, 26th of May - Senate makes poll on GMOs labelling		
Sustainability	*Food Security*	"The Senate has a space for citizens to express their opinion on any proposal under discussion in the Senate. There was an open poll to give opinion on the Law Project debated in the Chamber of Deputies to put an end to mandatory labelling of GMO products … which implies that consumers will not have any clear or accurate information to assist them in their choice not to consume GMO products." (Terra de Direitos, 2015)	-Senate -Permanent Campaign Against Pesticides and For Life -Local NGOs -International NGOs -Local Social Movements -International Social Movement -Brazilian Association of Collective Health
	Ecological Agriculture	"[The Law Project] violates the right of farmers and food companies who choose to produce food free from genetically modified ingredients, since it sets forth that the labelling of such foods with expressions such as 'GMO-free' can only be placed if based on specific analysis." (MST, 2015)	

Source: The author

The main significant moments and contingencies since the 1990s in Brazil as shown in Table 7, allow me to demonstrate that, through the years, different actors articulate distinct "floating signifiers" in order to support or resist GMO hegemony.

Using this table as reference, I identified that, since the beginning of the 1990s, "science" and "sustainability" have been articulated by the actors in GMOs and, thus, they are the central to the actors' identities. Within "sustainability", the actors focused on "biodiversity preservation" and "food security" as their core discursive elements of articulation for many years, and started articulations around "ecological agriculture" especially after 2010.

Additionally, in Table 7 we can see the main 5 historical contingencies in the GMO hegemony in Brazil after the 1990s: 1) the Provisional Measure of 1999 that gave CTNBio authority over GMO sale and production; 2) the new 2005 Law on Biosafety; 3) the research released in 2010 by the State of Paraná on gene monitoring proving the contamination of common crops by transgenic corn; 4) the report of the 8th of April of 2015 launched by The National Cancer Institute (INCA) against the use of pesticide and GMOs in Brazil; 5) the Law Project of 28th of April of 2015 against GMOs labelling in the Chamber of Deputies.

The first historical contingency of 1999 caused a huge impact in GMO hegemony in Brazil because from then on, the actors knew that the country had reached a point of no

return regarding GMOs. The leading voice in "science" articulation was the General Coordination of the National Biosafety Technical Committee (CTNBio) based in the Ministry of Science and Technology. The Provisional Measure of 1999 gave CTNBio the authority over GMO commercialization since the institution would be the responsible for the formulation and implementation of the Brazilian Biosafety Law and the one in charge of establishing technical safety standards and technical advice relating to GMO risk assessments. With CTNBio approval, GMO seeds (i.e., Monsanto's transgenic seed; the FuturaGene' transgenic eucalyptus, and so on) can be legally commercialized in Brazil, provided they do not cause any harm to human health, living organisms and environment.

On the other hand, for some civil society actors the great power granted to CTNBio in GMO hegemony reflected that Brazil would support the technology and its by-products in global food systems without much concern for biodiversity preservation. The main reason for their claim was the increasing access of multinational corporations to CTNBio's deliberations. In order to get its GMO seed approved for commercialization, a multinational corporation must submit its own scientific tests demonstrating that it is safe for human and animal consumption and for the environment. In other words, for some civil society actors, CTNBio would not be able to guarantee that all "scientific" tests from corporations were reliable and, after the seeds were released, it would be even more difficult to control the negative impacts of GMOs. Thus, they reinforced their articulations around the floating signifier of "biodiversity preservation" in opposition to GMOs. Moreover, for them, as a "megabiodiverse" country (Conservation International, 2012), Brazil should strengthen its efforts in "biodiversity preservation" and not in the GMO trade.

The leadings actors in this instance were international NGOs, such as Action Aid and Greenpeace, and local NGOs, including the Brazilian Institute of Consumer Protection (IDEC), Terra de Direitos (in English, Land's Rights), and AS-PTA. Together, those NGOs created the "Campaign for a Brazil Free of Transgenics" to build a chain of difference against those that articulated "food security" to support GMO hegemony (mainly represented by the federal governments of the U.S. and Brazil, and the multinational Monsanto). Through the years, the Ministry of Environment and the Brazilian Institute of Environment and Renewable Natural Resources (IBAMA) also endorsed the articulation of "biodiversity conservation".

The second historical contingency was the new 2005 Brazilian Law on Biosafety. For the actors opposing GMOs, this new law was a moment when many of them thought about giving in to the GMO agenda, as if they had lost the battle. However, as pointed by the Researcher, Campaigner, and Tutor of the Local NGO 7:

> [at that time] some entities thought that the time had come for things to get started in a concrete way because, before that, only "pirate" soybeans had been introduced into the country. Now it was different, now it was for real, everything would be official and legalized. Now the impact [of GMOs] that we had been announcing and alerting against, this impact would now start to reach farmers, consumers We understood then that the campaign should be intensified, or, at least, that it had to change its strategy, its main goals… Basically, the ones that remained in the campaign were Greenpeace (but it was already leaving the leadership of the campaign), IDEC, AS-PTA, Land's Rights, and the Movement of Small Farmers, which was our bridge with International Social Movement 1.

After that moment, some civil society actors reviewed their strategies and introduced "ecological agriculture" as another floating signifier to be articulated in GMO resistance. As a result, this new signifier also begins to construct actors' identities and their positions around GMOs, which reinforces the importance of historical contingencies in neo-Gramscian discourse theory and that hegemony is dynamic, incomplete and can always be challenged.

For the pro-GMO group, this Biosafety Law of 2005 also marked how effective articulations around "food security" were to create a chain of equivalence in GMO hegemony. More actors joined this identity chain in order to get their interests attended, such as other multinational corporations (i.e., Syngenta, DuPont), the Ministry of Agriculture, Livestock and Supply, and agribusiness farmers.[2] This Law would advance Brazil's transgenic-based agribusiness exports.

The third historical contingency I have highlighted is the research report released in 2010 on gene monitoring developed by the State of Paraná that verified the contamination of common crops by transgenic corn, even within the rules established by CTNBio. This contingent moment opened GMO hegemony to contestation and resistance. In this way, some civil society actors took advantage of this disruptive moment to endorse their defence of "ecological agriculture" as the main alternative to industrial agriculture in GMO hegemony. Ecological agriculture has been strongly articulated by International

[2] Agribusiness is an agriculture model highly dependent on foreign capital, monoculture, biotechnology and mechanization. It is also highly hierarchical and masculine model (Welch, 2005).

Social Movement 1, the Movement of Small Farmers and by the NGOs AS-PTA, IDEC, and Land's Rights. This strategy attracted more actors to the construction of a common identity to oppose GMOs, especially more local social movements, such as Local Social Movements 2, 3, 4, 5, 6, and 7, interviewed in this study. This highlights the importance of International Social Movement 1 as a key international actor from civil society in the GMO counterhegemonic movement. That is, International Social Movement 1's articulations with local NGOs expanded the GMO chain of difference in Brazil through the introduction of new grassroots voices (small-farmers, peasants, quilombo communities, indigenous people, religious groups, and others) and their local social movements in GMO resistance.

Five years later, another historical contingency emphasized "ecological agriculture" as the dominant discourse in opposition to GMO hegemony. It was the report of the 8th of April of 2015 launched by The National Cancer Institute against the use of pesticide and GMOs in Brazil. As one of the main medical institutes in cancer treatment, and because of that, also closely related to public opinion in Brazil, the INCA report obtained wide media coverage around the risks of GMOs to human consumption and the defence for a more "ecological agriculture" in people's life. This contingency brought about the re-engagement of Greenpeace and the incursion of new civil society actors, such as Friends of the Earth, Brazilian Association of Collective Health (ABRASCO), MST, and the strong grassroots voice of the Permanent Campaign Against Pesticides and For Life. It is important to underline that this contingent moment showed the re-engagement of the international civil society actors, International Social Movement 1, Greenpeace, and Friends of the Earth in GMO resistance in Brazil.

In the same year, but only 20 days after this historical contingency, the Chamber of Deputies approved the Law Project against GMO labelling, highlighting that the articulations around "food security" to support GMO hegemony have not ended. Quite the opposite, they have reached the institutional realm of the Chamber of Deputies and its articulations with other pro-GMO actors, including the Confederation of Agriculture and Livestock of Brazil (CNA). At the same time, this historical contingency had big media coverage and allowed the actors in the chain of equivalence in GMO hegemony to reinforce their power and state their positions before public opinion.

The investigation of the shifts in GMOs discourse in Brazil since the 1990s demonstrated that different actors in Brazil support and resist hegemony through the dynamic

articulation of different discourses (that are also articulated in GMO governance, as pointed in the previous section), institutions, and materialities. The analysis of historical contingencies in the country very clearly shows the articulations strategies and the importance of international civil society actors in a local context.

4.2.2 Shifts in GMO discourse in the United Kingdom since the 1990s

In in table 8 in this sub-section I show the historical contingencies and the shifts in GMO discourse in the UK since the 1990s.

Table 8 - Shifts in GMOs discourse in UK since the 1990s

Nodal Point: "GMOs"			
Floating signifier	**Second Level of Floating Signifiers**	**Example**	**Main institutions in the struggle**
Significant Moment	1996 February - GMO tomato paste by Bioscience Company Zeneca was approved in the UK		
Sustainability	*Food Security*	"The first genetically modified, or GM food goes on sale today in British supermarkets. Genetically modified tomato puree, which will be available in Safeway and Sainsbury stores, has been produced from fruit which has had the rotting gene removed … However, supermarket giant Tesco said it would not be stocking the GM puree because the new product did not offer any additional benefits to customers compared to normal puree … The processing requires less energy and water, which helps lower the price" (BBC, 1996)	-States (U.S. and UK) -Supermarkets -Multinational Corporations
Significant Moment	1996 February - Consumer groups protest demanding GMO labelling		
Sustainability	*Food Security*	"Consumer groups have called for the mandatory labelling of products which are or contain GM products - at the moment labelling is voluntary." (BBC, 1996)	-UK Government -Multinational Corporations -Supermarkets -Organic Consumers Associations -The Union of Concerned Scientists -International NGO
Significant Moment	1996 February - Critics call GMOs "Frankenstein foods"		
Sustainability	*Food Security*	"Some critics have dubbed the modified products 'Frankenstein foods' and have warned of a consumer boycott." (BBC, 1996)	-States -Supermarkets -Organic Consumers Association -The Union of Concerned Scientists -International NGO
Significant Moment	1996 February - GM tomato puree was labelled		
Sustainability	*Food Security*	"Since 1996 Sainsbury has sold a clearly labelled GM tomato puree and the company is urging customers to check labels to see which products contain such ingredients." (BBC, 1999a)	-UK Government -UK State Agencies -The Federation of Small Businesses

			-Supermarkets -International NGO
Significant Moment	1997 - Global food giant Unilever said that would protect consumers in the UK with GMO labelling, but at the same year acted differently in the in the Philippines		
Sustainability	*Food Security*	"In 1997 the co-chairman of Unilever, Morris Tabaksblat vowed that his company would protect consumers who do not want to buy food containing GE material … In 1997, Unilever in the United Kingdom proudly announced that it would be the first company in the world to voluntarily label its GE foods in advance of government regulations. It labeled a soya product called 'Beanfeast' and promised to label further GE ingredients in its food. As a result sales of Beanfeast fell by 50% and ultimately Unilever was forced to remove the GE ingredients altogether … These are all fine words from Unilever. Yet the truth here in the Philippines is that neither Unilever nor its subsidiary Bestfoods, label the presence of GE ingredients – let alone offer the care lines, the in store leaflets or the GE-free guarantees that they provide to European and Australasian consumers.". (Greenpeace, 2015)	-Multinational Corporation -International NGO
Significant Moment	1998 April - a UK supermarket chain bans use of GMOs in its products; a move which is over the following 18 months is followed by the other UK supermarket chains.		
Science		"Government policy on genetically-modified food will not change, despite the decision by supermarket chain Tesco to phase out stocks containing GM products, the Prime Minister has said. … Tony Blair told the House of Commons the argument should be conducted 'on science, not scares'." (BBC, 1999d)	-UK Government -Scientists -Supermarkets -International NGOs
Sustainability	*Food Security*	"He said Tesco itself admitted it is withdrawing GM foods not because of safety concerns, but for commercial reasons … Tesco fell in line behind Sainsbury's, Asda, Safeway and Iceland, which have banned GM ingredients from their own-label foods." (BBC, 1999d)	
HISTORICAL CONTINGENCY: EVENT THAT HIGHLY INFLUENCED NEW HEGEMONIC ARTICULATIONS IN GMO FIELD OF STRUGGLE	**A BIG CONTROVERSY REGARDING LORD SAINSBURY (LABOUR DONOR) BEING APPOINTED AS SCIENCE MINISTER BY TONY BLAIR IN 1998 JULY, EMPHASIZED THE NEED FOR NEW HEGEMONIC ARTICULATIONS IN THE COUNTRY AS IT BECAME CLEAR THAT THE UK GOVERNMENT WAS CLOSELY INVOLVED WITH POWERFUL GMO LOBBY GROUP**		
Sustainability	*Food Security*	"Lord (David) Sainsbury of Turville was Science Minister in Tony Blair's government from 1998-2007. He was also a member of the cabinet	-States (U.S. and UK) -Multinational Corporations

		biotechnology committee, Sci-Bio, responsible for national policy on GM crops and foods, and as such was a key adviser to Blair on GM technology. He is also a donor to Blair's Labour Party … When he was made Science Minister, Lord Sainsbury resigned as Chairman of the Sainsbury's supermarket chain and put into a blind trust major investments in two plant genetics-related investment companies (Diatech Ltd and Innotech Investments Ltd). Innotech has a substantial stake in a firm called Paradigm Genetics involved in a joint GM-related venture with Monsanto. … For instance, when Lord Sainsbury travelled to America as Science Minister in 1999, to research a report into biotechnology, he was accompanied by members of the BioIndustry Association, a lobby group for companies involved in GM food (the DTI helped pay their costs). His company, Diatech is an Associate Member of the BioIndustry Association." (LobbyWatch, 2015)	-Supermarkets -UK State Agencies
Significant Moment	1998 August - Dr Arpad Pusztai of the Rowett Research Institute, Aberdeen, published a research suggesting that GM potatoes were toxic to rats in feeding trials.		
Science		"The work of Arpad Pusztai and the credibility of scientists. In August 1998, Arpad Pusztai, a scientist from the Rowett Research Institute, a highly respected government laboratory in Aberdeen, Scotland, claimed on television that he had shown that a particular form of GM potatoes damaged the health of rats … Several months later, Pusztai's results were publicized with renewed fervour by the anti-GM lobby, and his results were understood by some as showing that all 'Frankenstein Foods' (the memorable phrase coined by the tabloid press) were unsafe to eat." (Krebs, 2000)	-States (U.S. and UK) -Multinational Corporations -UK State Agencies -International NGOs -The Royal Society (the voice of the British science establishment) -Academy of Medical Sciences
Significant Moment	1999 March - All foods, additives, and flavourings that contain more than 1% of GMO must be labelled		
Sustainability	*Food Security*	"As of March 1999, all foods, additives, and flavorings that have entered the market since September 1, 1998 and that contain more than 1% GM content have been labeled" (Phillips and McNeill, 2000)	-UK Government -Multinational Corporations -Supermarkets -UK State Agency -International NGOs

HISTORICAL CONTINGENCY: EVENT THAT HIGHLY INFLUENCED NEW HEGEMONIC ARTICULATIONS IN GMO FIELD OF STRUGGLE	**WHEN TONY BLAIR ANNOUNCES FARM SCALE TRIALS OF GMOs IN THE UK IN 1999 [SPRING] IT WAS AGAIN A KEY MOMENT IN GMO FIELD OF STRUGGLE IN THE UK, WHICH REQUIRED DIFFERENT ARTICULATIONS (PRO AND AGAINST-GMO). FROM THAT MOMENT ONWARD, IT WAS EVEN CLEARER THAT THE UK GOVERNMENT AIMED TO PROMOTE GMOS AS THE FUTURE HEGEMONY IN THE COUNTRY'S AGRICULTURE SECTOR**		
Science		"In spring 1999, following widespread calls for a halt to the development of genetically modified (GM) crops in the UK, the Government launched a four-year programme of farm scale trials." (Greenpeace, 2003)	-States (U.S. and UK) -Multinational Corporations -Supermarkets -UK State Agency -International NGOs -Local Social Movement
Sustainability	*Biodiversity Preservation*	"The trials were designed primarily to answer criticisms from English Nature and others concerned about the environmental impact of GM crops, particularly the secondary effects on biodiversity. According to the Government, the farm scale trials are 'designed to examine whether there are any differences in the diversity and abundance of farmland wildlife associated with the farmers' management of GM herbicide tolerant crops as compared with equivalent non-GM crops.' The Government believes that GM crops 'do not themselves present any direct threat to the environment'." (Greenpeace, 2003)	
HISTORICAL CONTINGENCY: EVENT THAT HIGHLY INFLUENCED NEW HEGEMONIC ARTICULATIONS IN GMO FIELD OF STRUGGLE	**IN 1999 JUNE, PRINCE CHARLES STRONGLY ADVOCATED TO PUBLIC OPINION: "ARE WE GOING TO ALLOW THE INDUSTRIALISATION OF LIFE ITSELF?" THIS KEY HISTORICAL CONTINGENCY HIGHLIGHTED THAT NOT ONLY CIVIL SOCIETY ACTORS WERE ARTICULATING DISCOURSES IN GMO FIELD OF STRUGGLE, BUT ALSO POLICY MAKERS, THE PRIVATE SECTOR, MEDIA AND OTHERS.**		
Sustainability	*Ecological Agriculture*	"And he rejects the argument that GM crops represent a solution to feeding the world's growing population as 'emotional blackmail'." (BBC, 1999a) "He says that if conventional and organic crops can become contaminated by GM crops grown nearby, people wanting to be sure they are eating or growing 'absolutely natural' food will be denied that choice. The Prince ends the article by asking 'What sort of world do we want to live in?' He asks, 'Are we going to allow the industrialisation of Life itself, redesigning the natural world for the sake of convenience and embarking on an Orwellian future?	-Prince Charles -Farmers -International NGO

		And, if we do, will there eventually be a price to pay?'" (BBC, 1999b)	
Significant Moment	1999 July - Europe's GMO battles		
Science		"But as far as biotechnology in food is concerned, it is the perceived risks that have dominated the headlines in Europe." (BBC, 1999c)	-States -EU -European Food Safety Agency (EFSA) -BINGOs -ISAAA -Multinational Corporations -Consumers associations -Scientists -International NGOs -Local Social Movement
Sustainability	*Food Security*	"So far, the industry has failed spectacularly to communicate the benefits of GM products to Europe's consumers. In the UK, the newspapers refer to Frankenstein foods, and supermarket chains have been racing to take them off their shelves. But this is not solely a British phobia. In Sweden, the farmers union will not even feed animals GM food. Rolf Erikson from the Union's Brussels office says they have little choice. … Europe's governments are not giving a clear lead either. Until they do, few people will openly embrace the new science." (BBC, 1999c)	
Significant Moment	2000 April - UK requires that all restaurant meals with GMOs must be labelled		
Sustainability	*Food Security*	"In April 2000, the new UK Food Safety Agency extended that provision to all GM foods, additives, and flavorings, including those on the market before 1998. The UK also requires that all restaurant meals with GM foods be labeled. In support of these rules, the UK has empowered the local authorities to enforce the system and adopted a range of financial penalties for mislabeling of products" (Phillips and McNeill, 2000)	-UK Government -Multinational Corporations -UK State Agency -Restaurants
Significant Moment	2000 May - Advanta Seeds has admitted that it sold GMO contaminated seeds to the UK, Sweden, France and Germany		
Sustainability	*Food Security*	"Advanta Seeds UK told the Government that GM contaminated oilseed rape seed had been sold to farmers across the UK. It claimed that GM contamination happened in Canada, when pollen from a GM 'Roundup' resistant crop was blown onto conventional oilseed rape being grown for seed. This briefing outlines what is known to have happened so far, the possible threats to the UK environment and farming posed by these contaminated crops and what action the Government and industry must take." (FoE, 2000)	-States -Multinational Corporations -Farmers -Scientists -International NGO
Significant Moment	2000 May - Honey in supermarkets was found to be contaminated with GMO pollen		
Sustainability	*Food Security*	"Britain's bee farmers are to seek an urgent meeting with the Government after Friends of the Earth (FoE) alleged that honey had been contaminated by genetically modified crops. Traces of GM pollen had been found in honey bought in an area of	-UK Government -Multinational Corporations -Farmers -Supermarkets

		England where GM crops in the Government's farm-scale trials programme had been grown last year, the green group said yesterday." (McCarthy, 2000)	-International NGO
Significant Moment	2001 March - "Safeguard clause" Directive 2001/18/EC established in the EU		
Science		"The Member State must have justifiable reasons to consider that the GMO in question poses a risk to human health or the environment." (GM Education, 2012)	-States -EU -EFSA -BINGO -Multinational Corporations -International NGOs
Sustainability	*Biodiversity Preservation*	"The Member State must have justifiable reasons to consider that the GMO in question poses a risk to human health or the environment." (GM Education, 2012)	
Significant Moment	2001 July - Research shows that public opinion on GMOs is not-well accepted in Europe		
Science		"Indeed, there is evidence that more knowledge about GMOs makes people more sceptical or polarised, not less." (Marris, 2001)	-States -EU -EFSA -BINGO -Multinational Corporations -Scientists -Supermarkets -Consumers associations -International NGOs
Sustainability	*Food Security*	"The approach used, however, helps to identify consumer concerns even if they still buy GM food, and even if they do not visibly oppose GMOs. Our results suggest that an apparent 'social acceptability' of a technology or a product does not necessarily demonstrate satisfaction with the related social and scientific processes. Indeed, qualitative data from our focus groups and from similar research … indicate that deep-felt concerns often persist and accumulate. In this way, they help to shape people's understanding of the world, which is then used to determine views about other issues. Such 'invisible concerns' can therefore have important long-term effects on public reactions to technological innovations … The participants knew and accepted that it was necessary to counter-balance risks with benefits, but felt that they were not told how this judgement had been made, and were not invited to participate in this process. They, therefore, suspect that in the regulation and management of risks, economic interests often override health and environmental considerations." (Marris, 2001)	
Significant Moment	2003 September - A nationwide debate in the UK showed that more than half of the population never wanted to see GMO crops growing in the UK.		
Science		"…report uncovered deep suspicion about government motives, with people following earlier studies which suggested there were … increasing concerns by its own scientists." (Vidal and Sample, 2003)	-States -EU -EFSA -Multinational Corporations

Sustainability	*Food Security*	"The widest formal public debate ever conducted in Britain has found an overwhelming percentage of people uneasy, suspicious or outrightly hostile to the introduction of genetically modified crops in Britain … In a clear message to government and supermarkets, only 2% of people said GM crops were acceptable 'in any circumstances' and just 8% said they were happy to eat GM food … The plant biotechnology industry has already taken a big hit in Britain. High-profile GM research companies such as Monsanto, Bayer and Dow have all closed down research facilities in Britain in recent years, drastically diminishing the career prospects of scientists working on GM crops. Only one multinational company, Syngenta, remains." (Vidal and Sample, 2003)	-Scientists -Supermarkets -Farmers -Consumers associations -International NGOs -Local Social Movement
Significant Moment	2003 November - European GMO-free regions Network was created.		
Sustainability	*Food Security*	"Founded in 2003 by Tuscany in Italy and Upper Austria, the GMO-Free Regions Network has grown to include 51 regions in eight EU countries: Austria, Belgium, Croatia, France, Italy, Greece, United Kingdom, and Spain. The Network continues to grow; regions from Norway will soon join and Ireland has announced it would be GM-free. The regions are united in their commitment to keeping their agriculture and food production free of genetically modified organisms and to encouraging sustainable agricultural methods throughout Europe. The 341 attendees at the most recent conference included 28 European Parliament members, regional government ministers, non-GMO ingredient suppliers, grain traders, and food producers, farmers, and representatives from agricultural cooperatives and non-governmental organizations (NGOs)." (The Organic & Non-GMO Report, 2010)	-States -Multinational Corporations -Supermarkets -Farmers
Significant Moment	2004 April - New rules for GMO labelling came into force in EU		
Sustainability	*Food Security*	"This means products such as flour, oils and glucose syrups have to be labelled as GM if they are from a GM source … Any intentional use of GM ingredients at any level must be labelled … This threshold is set at 0.9% and only applies to GMOs that have an EU authorisation." (Food Standards Agency, 2013)	-States -EU -EFSA -BINGO -Multinationals -Supermarkets -Farmers -Consumers associations -International NGOs -Local NGO

Significant Moment	2004 May - UK votes to approve GMO corn in EU		
Sustainability	*Food Security*	"British Agriculture Minister Ben Bradshaw voted in favour of approving Bt-11, and was joined by the Netherlands, Ireland, Sweden, Finland and Italy." "Britain's supermarkets have made clear they will not use GM ingredients in own-label foods. However, that does not mean they will not stock foods using GM made by big-brand manufacturers." (Poulter, 2004)	-UK Government -States -EU -EFSA -BINGO -Multinational Corporations -Scientists -Supermarkets -Farmers -Consumers associations -International NGOs -Local NGO
Significant Moment	2008 - The European Commission approved two varieties of GMO maize		
Science		"The European Commission authorised the GM maize GA21 for feed and food use and for import and processing. GA21 is not approved for cultivation in the EU." (GM Education, 2012)	-States -EU -EFSA -BINGO -Multinational Corporations -Scientists -Supermarkets -Farmers -Consumers associations -International NGOs -Local NGO
Sustainability	*Food Security*	"The European Union's food safety agency approved two genetically modified corns Friday, putting renewed pressure on EU nations to drop their objections to the use of biotech crops." (GENET-news, 2008)	
Significant Moment	2010 - GMO potato Amflora was approved for industrial applications in the EU		
Sustainability	*Food Security*	"Amflora is a genetically modified potato the result of two decades of research efforts. The Amflora potato is selected for its special starch properties used in paper making and adhesives." (GMO Education, 2012)	-States -EU -Multinationals -BINGO -International NGO -Scientists -Farmers
HISTORICAL CONTINGENCY: EVENT THAT HIGHLY INFLUENCED NEW HEGEMONIC ARTICULATIONS IN GMO FIELD OF STRUGGLE	**WHEN A NEW SURVEY SHOWS THAT THE UK PUBLIC'S CONCERN OVER GMOS HAS SOFTENED IN THE PAST DECADE IN 2012 MARCH, IT HIGHLIGHTED THAT THE "SUPPOSED MOMENT OF STABILITY" AROUND GMOs IN THE UK CAN STILL BE CHALLENGED BY POWERFUL HEGEMONIC FORCES IN GMO GOVERNANCE, WHICH STRONGLY DEMANDED NEW DISCOURSE ARTICULATIONS AMONG THE ACTORS.**		

Sustainability	*Food Security*	"A quarter of Britons are now unconcerned by GM food, compared with 17% nearly a decade ago, when supermarkets debated whether to introduce GM products following widespread public opposition and attacks on GM test fields in the 1990s. The number of people 'concerned' about GM has also fallen by 5%, said the Populus survey, commissioned by the British Science Association and published on Friday". (Adam Vaughan, 2012)	-UK Government -Multinational Corporations -Scientists -Supermarkets -Farmers
Significant Moment	2013, 3rd of June - The American giant Monsanto says that it gives up on lobbying for more GMO cultivation in Europe		
Sustainability	*Food Security*	"Monsanto spokesman, Brandon Mitchner, said: 'We are no longer working on lobbying for more cultivation in Europe. Currently we do not plan to apply for the approval of new genetically modified crops. The reason is, among other things, low demand of the farmers.' This was confirmed by a spokesman for Monsanto Germany, Ursula Luttmer-Ouazane, who told the media there that the company recognises there is no demand. She said: 'We've understood that such plants don't have any broad acceptance in European societies. It is counterproductive to fight against windmills.' Other GM companies, such as Bayer CropScience, BASF and Syngenta, have also dramatically scaled back or dropped efforts to get their crops accepted in Europe." (Poulter, 2013)	-EU -EFSA -Multinational Corporation -Farmers -Local NGO
Significant Moment	2013, 12th of June - UK environment secretary to push for relaxation of EU rules on GMOs		
Sustainability	*Food Security*	"The UK environment secretary is to lobby the EU to relax strict restrictions on growing GM crops for human consumption for fears of being 'left behind', it emerged on Wednesday. In a speech due to be given next week, Owen Paterson is expected to announce the government's intentions to start a new debate within Europe, with a view to opening up the possibility of GM crops being grown in the UK." (Moses, 2013)	-UK Government -States -EU -EFSA -BINGO -Multinational Corporations -Scientists -National Farmers' Union -Local Social Movement -Local NGO -International NGO
Significant Moment	2015 January - Debate in EU to allow (or not) member states to set their own rules on growing GMOs		
Science		"Environmentalists who favor a GMO ban say the crops have not been properly tested." (Arsenault, 2015)	-States -EU -EFSA -Multinational Corporations -BINGO -Scientists
Sustainability	*Food Security*	"Environmentalists who favor a GMO ban say the crops have not been properly tested - posing health risks for consumers and giving a small group of	

		corporations too much control over food supplies. The biotech industry says farmers should be free to grow whatever crops they want, and GMOs are a safe way to boost food production and feed the planet's growing population … Widely-grown in the Americas and Asia, GM crops in Europe have divided opinion. Many countries, including France and Germany, oppose them, while others, like Britain, favor them." (Arsenault, 2015)	-Farmers -International NGOs -Local NGO
Significant Moment	2015 February - UK Parliamentary committee says Europe's guidelines are "not fit for purpose"		
Science		"But it warns that the EU's regulatory regime is 'not fit for purpose' because it assumes, against the scientific evidence, that GM plants pose a greater risk than conventional crops … 'The scientific evidence is clear that crops developed using genetic modification pose no more risk to humans, animals or the environment than equivalent crops developed using more "conventional" techniques,' said the committee's chairman, Andrew Miller." (Wright, 2015)	-UK Government -EU -EFSA -Multinational Corporations -BINGO -Scientists -International NGOs -Local NGO -Local Social Movement
Sustainability	*Biodiversity Preservation*	"'The scientific evidence is clear that crops developed using genetic modification pose no more risk to … the environment than equivalent crops developed using more "conventional" techniques,' said the committee's chairman, Andrew Miller." (Wright, 2015)	
	Food Security	"Parliament's Science and Technology Committee says that GM versions of staple crops are already being grown around the world, increasing crop yields while cutting the need for pesticides … Mr Miller [the committee's chairman, Andrew Miller] said it was important that progress was made in improving global food security. 'To meet the huge challenge of feeding a burgeoning global population, using fewer resources, as our climate becomes increasingly unstable, we will need to use all the tools at our disposal, be they social, political, economic or technological,' he said." (Wright, 2015)	
Significant Moment	2015 March - New GMOs rules get final approval in European Council		
Sustainability	*Food Security*	"New EU rules allowing member states to ban or restrict the cultivation of genetically modified organisms (GMOs) on their territory were formally adopted by the Council on 2 March 2015. They will enter into force 20 days following their publication in the Official Journal of the EU. 'The new rules will give member states the freedom of choice: they can decide whether they want genetically modified crops to be cultivated on their territory or not. This	-UK Government -EU -EFSA -Multinational Corporations -BINGO -Scientists -Farmers -International

		is in line with the subsidiarity principle and respects citizens' and farmers' preferences', said Jānis Dūklavs, the Latvian minister for agriculture and President of the Council." (European Council, 2015)	NGOs -Local NGO
Significant Moment	2015 April - The EU approved the first GMO crops since 2013		
Sustainability	*Food Security*	"The European Commission said it had authorized 10 new types of maize, soybeans, cotton and oilseed rape as either human food or animal feed for 10 years. In practice, the crops produced by Monsanto, BASF and Bayer CropScience will principally be used as feed. It also extended by 10 years the use of seven other crops already in use produced by Bayer, Monsanto, DuPont's Pioneer and Dow AgroSciences … Friday's approval only covers imports, not cultivation. Only one GM crop is currently grown in Europe: Monsanto's maize MON810 in Spain and Portugal." (Business Insider, 2015)	-UK Government -EU -EFSA -Multinational Corporations -BINGO -Scientists -Farmers -International NGOs -Local NGO

Source: The author

Using Table 8, I demonstrate that, in the UK, since the beginning of the 1990s, "science" and "food security" were the most articulated floating signifiers in the nodal point of "GMOs". This suggests that the actors have mainly focused on "science" and the "food security" of this agriculture biotechnology in order to construct common identities in chains of equivalence in GMO hegemony. The UK and U.S. governments, multinational corporations, and supermarket were the main actors articulating these signifiers.

However, in the late 1990s, three historical contingencies highlighted the emergence of "food security", "biodiversity conservation", and "ecological agriculture" as new floating signifiers that would also be articulated in the GMO field of struggle. First, in 1998, a big controversy gained wide media coverage as cultivation of GMOs in the UK emerged as a possible reality in the near future: Lord Sainsbury (a Labour donor) was appointed as science minister by Tony Blair in 1998. From this moment onwards, articulations around the need of "food security" increased as Lord Sainsbury, also a member of the cabinet biotechnology committee, Sci-Bio, responsible for national policy on GM crops and foods, became Blair's key adviser on GMOs. Lord Sainsbury indication highlighted the growing articulations around "food security" in the UK, and the growing interest of GMO cultivation in the country (LobbyWatch, 2015).

Secondly, in 1999, the strong pressure of Tony Blair (UK Prime Minister at that time) to start farm scale trials of GMOs in the country was a fundamental historical contingency

as it directly reflected the UK government aims to promote GMOs as the future hegemony in the UK agriculture sector (herein, under the articulation of "science" tests). Around this contingency, different actors rethought their ways of action in order to support or resist GMOs. The main argument against GMOs came from the articulations around "biodiversity preservation" led by the international NGOs Greenpeace and Friends of the Earth, and the local social movement of Soil Association. For those civil society actors, farm trials with GMOs represented a direct threat to the environment and thus related the issue to "biodiversity preservation".

Thirdly, that same year, another remarkable historical contingency in the country came from the Prince of Wales and gained strong public attention. Prince Charles declared himself to be completely against GMOs as the solution to feed the world's growing population and advocated that actors should turn to "ecological agriculture", based on conventional and organic foods instead of GMOs and its by-products. The Prince articulated this signifier to construct a common identity against GMOs and the growing role of multinational corporations in the global food system. In a forceful statement, he asked, "Are we going to allow the industrialisation of Life itself?"

Therefore, I want to suggest that, unlike what happened in Brazil, in the UK, "ecological agriculture" was articulated in the GMO struggle since the late 1990s, while in Brazil it was mainly articulated against this technology after 2010. Conversely, in Brazil, "biodiversity preservation" was articulated in the early 1990s while in the UK it became articulated as an important discourse only in the late 1990s.

I identified that some possible causes for the same floating signifiers being introduced in different years in Brazil and UK are as follows (not necessarily in this order):

a) **Geopolitics** - In terms of geopolitics, in Europe, the UK represents the U.S. interests and acts as the most important "partner" of the U.S. in terms of business and political agreements. The GMO agenda in the UK started mainly because of economic geopolitical interests, as pointed out by two interviewees in the UK:

> that is because it threatens the interests of what they see as a very lucrative industry. And, the UK, in particular, does exactly what America wants it to. We are really a satellite state of America and, therefore, we've recently had our … environment minister … saying that, even if the rest of Europe doesn't want to cultivate GM crops, the UK will grow it alone. (Interviewee from Local NGO 1)

and

> Tony Blair supported Bush on Iraq and GM, completely, for the same reasons: a religious belief in the rightness of this. Blair wasn't interested in public opinion about Iraq and he wasn't interested in public opinion about GM. He believed GM was the future. He believed the future of British Economy would be GM. Lots of people did, he wasn't alone. It was a general view. (Interviewee from International NGO 2, in UK)

On the other hand, "biodiversity conservation" has been strongly articulated in GMO hegemony in Brazil because of the country's leading role in the pro-environmental agenda, as exemplified by its leading role in Rio-92 (especially in the creation of the CDB) and its aim to avoid contamination caused by the growing illegal GMO imports from Argentina (Benthien, 2010).

b) **Articulation of media and public opinion** - In the UK, civil society against GMOs strongly articulated with media actors in order to spread the idea that GMOs were not the same as natural food, and rather they created an imaginary of GMOs as "Frankenstein foods" (Poulter, 2013). This influenced the emergence of "ecological agriculture" right in the first years of GMO struggles with the claim in favour of natural food, transparency, and concern for human health.

On the other hand, in Brazil, civil society actors against GMOs tried to influence public opinion by accusing and confronting the government through activism and legal actions against the Federal Government in order to gain media coverage and public attention. For instance, the Ex-Policy Director of International NGO 2 from Brazil underlined the importance of taking legal actions against the government in the GMO agenda:

> in the International NGO 2 itself, the lawyers were not competent to do so at the time. And the Local NGO 6 had a great team … and they filed the first legal action ... We [International NGO 2] filed together, but then they continued the legal action.

In this way, "ecological agriculture" was not immediately perceived by public opinion as something bad to the human health since it was first articulated in legal actions, which is a formal way to resist GMOs and took more time to be known by the public.

c) **The central role of agribusiness actors in Brazil**;

In Brazil, agribusiness actors have what I call here a "central" role in the GMO field of struggle and this is closely related to the delayed emergence of ecological agriculture in this hegemonic context. Not only does agribusiness account for a significant part of the Brazilian economy (in 2013 it reached 1 trillion Brazilian Reais of the country's GDP, Veloso, 2014), but also it represents the strongest voice in GMO hegemony inside the country. This allowed agribusiness actors to avoid discussions against GMOs since the beginning. The centrality of agribusiness is reflected in the fact that Brazil has one of the highest rates of pesticide use in agriculture (Fontoura and Naves, forthcoming). On the other hand, as pointed out above, beyond the role of agribusiness in the UK, public opinion immediately associated GMOs to "Frankenstein foods", which led them to embrace the need for an "ecological agriculture" earlier than in Brazil.

d) **Country's biodiversity** - Brazil is considered one of the "megabiodiverse" countries (Conservation International, 2012), a category in which the UK is not included. Therefore, since the beginning of GMO discussions in Brazil, "biodiversity conservation" has been part of the articulation strategy of some actors to resist GMO hegemony.

e) **Degree of urbanization of "ecological agriculture" within the GMO field of struggle** - In the UK, the claims around the need for an "ecological agriculture" started mainly in urban areas, where the media are very powerful and more accessible to people (through internet, newspapers, TV news, radio channels, and so on). This place of origin influenced the rapid call for "ecological agriculture" in this country. In Brazil, the urge for an "ecological agriculture" started particularly in the countryside, traditionally set aside because of the central role of big agribusiness companies, and it took more time to convince urban consumers about the benefits of this type of agriculture. The political importance of such urban locus, is highlighted by the President of International NGO 3 in Brazil:

> We have worked this theme a lot in the city... GMOs are the space that we have tried to participate in with the same logic as the one used in the Campaign Against Pesticides in order to bring the issue to the city; that's where people are, where the people who decide are... What happens nowadays in the countryside has been decided in the urban world. That's where the political arena is, the mobilization, where people are able

> to organize. We're very focused on the city, right? We have the International Social Movement 1 as our partner in rural areas, also indigenous peoples, and some organizations that we work with at the national level and we have also been trying to address the cities since it [the NGO] is an environmental movement that is basically based where people live, in the city... Now, here [in the city] the question on transgenics is that they are putting an end to labelling… We have a lot of trouble, especially in the city. In the countryside … [they] know what is good, what is bad [for them] … City people do not have [that knowledge] anymore; processed foods do not give you the option of choosing what to eat anymore.

After those historical contingencies in the UK, the discussions around GMOs lost momentum in the UK after the strong opposition of public opinion to GMO consumption and after the EU approval of a very restricted regulation around transgenics. However, in 2012, a new survey was released in the country showing that the UK public's concern over transgenics had softened compared the past decade. In my interpretation, this is a relevant historical contingency that demonstrates that the UK government, multinational corporations, and big supermarkets still aim to promote GMO cultivation and commercialization in the country. In other words, this historical contingency highlights that "supposed moment of stability" around GMOs in the UK can still be challenged by powerful hegemonic forces in GMO governance (such as multinational corporations and the U.S. government and the U.S. and Brazilian agribusiness sector). It seems that the future around this issue in the UK is still very uncertain and new discourses, new chains and new ideologies can still emerge around "GMOs".

Finally, based on the elements presented in Tables 7 and 8 we can posit that the construction of a common identity in every hegemonic process is only possible because of "ideology" as it acts as "social cement" within specific articulatory configurations. As shown in Tables 7 and 8, through the years, in Brazil and UK, different social groups (policy makers, multinational corporations, consumers, farmers, supermarkets, social movements, media, research institutes, and others) articulate different discourses (i.e., science, food security, biodiversity preservation and ecological agriculture) among different institutions and apparatuses in order to build a specific configuration, with a common identity. This was only possible because a shared ideology acts like "glue" in social formation.

For example, in the UK, from 1996 to 1998, different social actors articulated "food security" (also among institutions and apparatuses) to build a specific configuration that

would allow a dominant social formation in GMOs. For two years, this configuration was hegemonic and shared the common ideology that the world needs GMOs, that biotechnology was the future of agriculture, that GMOs would increase food production and feed the world's population, and so on. However, in 1998, a renowned research institute in the country suggested that GMOs could be toxic for human consumption. This significant moment influenced distinct actors (from the media, civil society, even the Prince of Wales and others) to articulate "ecological agriculture" around the ideology that agriculture should be organic, the world should be GMO free, that biotechnology was not ecological, and so on. Based on that, I endorse the neo-Gramscian argument that ideology is fundamentally fragmented, partial and a relatively coherent articulation of meaning (Laclau and Mouffe, 1985).

Having presented the results of the analysis that was carried out on the shifts in GMO discourse in Brazil and the UK since the 1990s, I will now focus on discussing the role of international civil society actors in GMO governance.

4.2.3 Articulation of Floating Signifiers and Nodal Point

Considering "GMOs" as the nodal point in GMO governance, I first explore how international civil society actors articulate "science", and subsequently, how they articulate "sustainability" (with biodiversity conservation, food security, and ecological agriculture as the second level of floating signifiers) in order to construct or resist hegemony. Within this sub-section, it was fundamental to replace the name of some organizations because interviewees were offered a guarantee of anonymity for them and their organizations in this study.

4.2.3.1 Articulation of "Science"

Since the DNA of GMOs does not originate naturally, lots of attention has been given to their potential risks they pose (as highlighted in Tables 7 and 8). As pointed out in the brief overview section in GMO governance, since the beginning of GMOs as a field of struggle, transgenic seeds emerge as a "scientific outcome" of biotechnology that should be introduced in global agriculture. Therefore, "science" has always been articulated by powerful actors such as the U.S. government and the North-America multinational corporation Monsanto, to endorse the release of GMOs worldwide.

Within this debate, some international civil society actors have largely articulated "science" to build resistance or consensus around GMOs. They rely on science to

legitimize their arguments and, through that, persuade actors to mobilize in a common discourse. In other words, if their claims are based on scientific arguments and scientific research, the chances of being heard by international institutions, state representatives, and public opinion are higher. According to the Research Director and Editor of the Local NGO 1, in the EU negotiations, "science" has always been central in GMO negotiations:

> what the politicians in Brussels want is a strategy. To have an activist say to EFSA [European Food Safety Authority] "well, we don't want GM crops", what is EFSA going to do with that? There is nothing they can do. Whereas if you say to EFSA "look, we are lacking scientific proof that these GM foods are safe and therefore we want you to argue for two-year safety studies in rats" they could actually support that because they are supposed to be a scientific organization. I can guarantee you that they would resist it, because actually they don't want there to be any problem with GM crops. They have approved them as safe. They have claimed that tests are not necessary. However, they are obliged to at least listen to that argument and take it seriously. And I do know that at least one of the regulatory agencies in the EU is actually putting that idea to EFSA: you should be looking at long-term safety studies on GM crops.

The important role of some international environmental NGOs in the counterhegemonic GMO movement is strongly related to their own articulation of "science". Research data demonstrate that international environmental NGOs are widely regarded by civil society as the most reliable "science" source. As pointed out by the ex-Policy Director of International NGO 2 in the UK,

> Monsanto says [that] people who are against GMO are against science... In fact, environmentalists are also very science-based. At the time when the GM campaign started, International NGO 2 was doing two global campaigns, which existed only because of science… It was to protect the ozone layer … And the other campaign was climate change ... Before GM was a public issue at all, nobody had ever heard of it. A few scientists, a few environmentalists in International NGO 3 and International NGO 2, and Lancaster University, in the North of England did this research.

Likewise, the Policy Director of International NGO 1 in Brazil mentioned that: "International NGO 1 is strongly focused on scientific knowledge… It goes beyond ideology purposes… Those against GMOs take this position because of ideology".

Until 2003, before the entry into force of the Cartagena Protocol, all international NGOs (the main international civil society actors) in GMO governance articulated science to

construct a counterhegemonic discourse on GMOs, especially against the arguments of multinational corporations in defence of biotechnology as being a risk-free technology. However, right after the Cartagena Protocol, International NGO 1 and other 2 international NGOs from the counterhegemonic group in GMO hegemony shifted their position and started to articulate "science" to support hegemony. This engagement with those in favour of GMO hegemony demonstrates how powerful "food security" became as a floating signifier (it will be better explained later in this chapter). After that moment, more international civil society actors joined GMO governance and endorsed hegemonic positions through "science" articulations, especially some international NGOs. This does not mean that they all ignore the risk-posed by GMOs, but they maintain that these risks can be controlled, which makes GMOs a viable option in different contexts and social realities. In order words, in some cases the benefits of GMOs can outweigh their possible risks to human health, animals and to the environment.

On the other hand, International NGO 2, International NGO 3, International NGO 4, and other international NGOs continued to articulate "science" to contest hegemonic arguments in GMO governance. That is, since the 1990s, those organizations kept their strategy to create mobilization and a common identity to resist GMO hegemony through the articulation of this floating signifier. The Policy Director of International NGO 1 in Brazil expressed his opinion of the opposition to GMOs from some international NGOs in the following terms: "Someone showed me International NGO 2's position on transgenics [also based on scientific arguments]. I took a look and said; look, ok, we understand their position, but I would not like to endorse it".

Hence, given that hegemonic actors in GMO governance (i.e., biotech multinational corporations, agribusiness farmers and some states like the U.S.) also promote the safety of their GMOs through scientific studies, the more recent articulation of "science" as a floating signifier has confounded the differentiation of actors. I am not saying that this signifier is irrelevant. On the contrary, what is important to stress is that, in the last decade, in order to craft a common identity in GMO governance, "science" has not been the most effective signifier in differentiating civil society actors in GMO hegemony, which has led those actors to build their hegemonic or counterhegemonic strategies around other signifiers.

4.2.3.2 Articulation of “Sustainability”

I argue here that “sustainability” is a signifier that has been distinctively associated with civil society actors. Decisions and agreements around sustainability (especially in socio-environmental aspects) have increased considerably over the last decades. In this context, the globalization of the environmental crisis has mobilized many civil society actors around “sustainability” as being indispensable to maintain life on the planet (Guimarães, Fontoura, and Runte, 2011).

As an outcome of this research thesis, I defend that “sustainability” is a floating signifier in GMO hegemony that is articulated by international civil society actors in GMO governance by three other signifiers (which I call “second level of floating signifiers”, see Table 2): a) biodiversity preservation; b) food security; and, c) ecological agriculture. These three discursive resources encompass an array of meanings, symbols and interpretations (see Table 2). Moreover, the importance of those discourses in GMO governance also highlight why GMOs were incorporated as part of the agenda of the international environmental civil society (and not in the health or human rights agendas, for example) and led by international NGOs, since the beginning (see topic 5.1).

First, “biodiversity preservation” entails other important discursive resources, such as environmental conservation; protection of traditional and marginalized peoples; maintenance of the material, aesthetic and spiritual wellbeing; and respect to the integrity of the planet’s life support systems.

Usually, almost all actors in GMO governance articulate “biodiversity preservation” to legitimize their practices and claims. Nonetheless, some international NGOs and international social movements have articulated this floating signifier in their strategy to craft a counterhegemonic identity, which would weaken the singularity of their practices and, therefore differentiate them in comparison with pro-GMOs actors. Therefore, in order to create a chain of difference among civil society actors some international civil society actors have decided to articulate “biodiversity preservation” in an antagonistic way.

After the Cartagena Protocol on biosafety (pointed out in section 4.1 above), the articulations around “biodiversity preservation” increased in GMO governance. At that moment, some international NGOs and the International Social Movement 1 articulated “biodiversity preservation” to construct a common idea of an “enemy” in GMO resistance. In order to identify themselves, these international social actors delineated the

"other", "which they were not". That is, they pointed out that the way in which some international NGOs articulated "biodiversity preservation" with multinational corporations and other powerful actors in GMO hegemony characterized them as their "enemy" because for these NGOs, the introduction of GMOs into the environment would necessarily cause biodiversity degradation.

This antagonism stresses the two opposing systems of equivalences that are crucial in the understanding of politics, particularly the impossibility of hegemony as a totality. In other words, the construction of resistance through the articulation of one antagonism (in this case, "biodiversity preservation") turned out to be essential to the process of mobilization and identity building of a collective action against GMO hegemony. Thus, I found that, if a civil society organization claims to promote biodiversity preservation and, at the same time, supports GMO hegemony, resistance actors will immediately describe it as "their enemy". As an example, among all civil society actors interviewed in the field research (in Brazil and in the UK), one international NGO was firmly identified as an "enemy" for those contrary to GMO hegemony because of its position regarding biodiversity preservation.

As pointed by the Programme Director of International NGO 8:

> some are promoting it because International NGO 1 is in same kind of misunderstanding that thinks that GM will promote biodiversity because it [GMO] reduces the use of chemicals in the environment and, of course, that is not necessarily the case; in fact, it might actually increase the use of more toxic combinations of pesticides and herbicides.

Likewise, in Brazil, the Leader of International Social Movement 1 stressed, "We also highlight that this 'enemy' is recognized and shared in local and international realms by International Social Movement 1 to resist hegemony in their local and international actions".

With a radical standpoint, the president of International NGO 3 highlighted:

> We adopted a resolution … About four years ago, we had a meeting where we decided that no one from International NGO 3 can sit at the same negotiation table with a member of International NGO 1… the same is valid for other international pro-GMO NGOs. We do not dialogue with them, we do not relate to them at all.

Finally, I found that, regarding "biodiversity conservation", international NGOs 2, 3 and 4 and the International Social Movement 1 are the civil society actors that most articulate

this floating signifier through the adoption of an antagonistic strategy in GMO governance.

The second signifier articulated in sustainability is “food security”. Food Security also encompasses other important discursive resources (see Table 2 and Section 4.1), such as green economy, agriculture productivity, feeding world population, food commodities; agribusiness by-products (seeds, fertilizers, and other agro-chemical products and services), global markets, global retailing; trade; and private corporations.

Among the three signifiers articulated within “sustainability”, I argue that, in GMO governance, “food security” became the most powerful one, especially in sustaining hegemony and spreading the defence of GMOs as the future of agriculture worldwide. On the basis of what I presented in the previous sections of this chapter and also from the interviews conducted in Brazil and the UK, I conclude that the actors that most articulate “food security” are pro-GMO states (i.e. U.S., Brazil, Canada, Argentina) and multinational corporations (i.e. Monsanto, Bayer CropScience, Syngenta, Cargill, DuPont Nutrition Biosciences ApS). However, some civil society actors also endorse the need for “food security”, which demonstrates a special tenet of neo-Gramscian theorists, namely that every hegemonic formation must also be legitimatized and supported by some civil society actors.

Through the years, the number of international civil society actors (represented by international NGOs) that endorse the need for “food security” has increased (see Table 9). Even though some resistance has risen in GMO governance since the 1990s (as mentioned in 4.2.1 and 4.2.2), it is also noticeable that more recently, after the financial and food crisis of 2008, the articulations around “food security” have become stronger and, consequently, the diffusion of values and ideologies around food security, which has enabled, for example, the return of the discussions on GMOs in the EU (for cultivation, commercialization, animal feed, and others), as pointed by EuropaBio (an important BINGO and biotech lobby hub in Europe): “The global biotechnology industry rebounded strongly in 2013, with public companies achieving double-digit revenue growth and a sharp increase in funds raised” (EuropaBio, 2015).

Thus, the more recent reactivation of the argument that a more industrial agriculture based on GMOs is required in the EU and also worldwide as one concrete solution to feed the world population by 2050 is particularly related to the articulations around the discourse of “food security”. The international pro-GMO NGO “International Service for

the Acquisition of Agri-biotech Applications" (ISAAA) highlights in its website the importance of "food security":

> Food, feed, fiber, and fuel for the world's 800 million people who suffer from hunger and poverty - this is the formidable task for many countries, development agencies, and other interest groups. Of the many strategies that have been forwarded to address the issues of global poverty and environmental degradation, crop biotechnology is seen as a viable contribution to the solution. As early as 1991, the International Service for the Acquisition of Agri-biotech Applications (ISAAA) saw the potential of crop biotechnology to improve the lives of small-scale farmers in developing countries. By sharing and disseminating scientific knowledge to the global community, and by facilitating the transfer of technologies to developing countries through public-private partnerships, ISAAA has established its role and contribution in world efforts to help achieve agricultural sustainability and development. (ISAAA, 2015a)

In 2004, the FAO (one of the most important international institutions in the global food system) also stated:

> The rigorous application of scientific advances to traditional agriculture, mechanization, genetic improvements and the development of fertilizers and pesticides enabled a doubling and redoubling of food production within the time span of a few decades … It helped accumulate capital, free up labour and provide ever more and more nutritious food. Eventually, a virtuous circle was created where productivity growth, rising incomes and better nutrition became mutually supportive and thus spurred overall economic development.

In this regard, I argue that the establishment of the Round Table on Responsible Soy (RTRS) in 2006 was a significant historical contingency in GMO governance and it highlights the power of "food security" in GMO hegemony. Moreover, a key feature about the RTRS as a fundamental historical contingency is the fact that, in this multi-stakeholder forum, different actors articulate the discourses of "food security" and "science" together to build a bigger and more stable hegemonic chain of equivalence in GMO governance.

RTRS is focused in the dissemination of the "RTRS Standard for Responsible Soy Production" that can be applicable worldwide and assures that GMOs soy production can be socially appropriate, economically feasible, and environmentally correct. It is

important to note that this standard is supported by The United Nations Global Compact,[3] which consists of powerful international actors in GMO governance (such as the Bayer CropScience, Cargill, Carrefour, Dow AgroSciences LLC, DuPont Nutrition Biosciences ApS, Grupo Santander Brasil, Monsanto, Marks & Spencer, HSBC Holdings plc, Nestlé, Sainsbury's Supermarkets, Shell, Syngenta, Tesco Plc, Unilever, and others).

Within GMO hegemony, the RTRS also has members from international civil society actors (such as Conservation International, Earth Innovation Institute, Fauna & Flora International, Fundación para la Conservación y el Uso Sustentable de los Humedales, Solidaridad, The Nature Conservancy, Vrutti, World Resources Institute, and WWF) (RTRS, 2015). This indicates that International NGOs are the main international civil society actors in RTRS.

The diversity of members of RTRS (soy producers, biotech industry, big retailers, and others) and its more than 180 members around the world are an indication that the strategy of articulating both signifiers within the same multi-stakeholder forum has proved to be an effective way to strengthen pro-GMOs voices, values, ideologies, and demands. This articulatory strategy has been useful in GMO promotion worldwide through stronger hegemonic chains of equivalence. Besides, I argue that RTRS represents the materialization of the ideology behind the discourse of "food security", which entails the diffusion of the green economy for a better world, the need to increase agriculture productivity to feed the world population by 2050, the need to attend global markets and global retailing, biotechnology as the future of agriculture, the widespread notions of the benefits of commodification, monetization and corporatization of food technologies and markets, among other ideological elements. The ideological elements behind food security can be identified, for example, by the official position of the international NGO Conservation International on food issues:

> CI's scientists are working to find solutions to the global food crisis. We're gaining a better understanding of how degraded fisheries can recover and how farmers can sustainably increase production. Around the world, we work to end unsustainable agricultural practices and overfishing — and promote more responsible activities. We work with our corporate partners to better understand the challenges of complex supply chains, answering questions like, "Where do all of a company's

[3] This is the main UN business body, with 8.320 companies as its members and in 170 countries. 'The UN Global Compact works with business to transform our world, aiming to create a sustainable and inclusive global economy that delivers lasting benefits to all people, communities and markets' (The UN Global Compact, 2015).

> ingredients and products come from, and how were they produced?" (Conservation International, 2015)

Thus, through the articulation of food security under the big discourse of "science" plus "sustainability", different actors created a powerful chain of equivalence that can accommodate plural demands in support of GMO hegemony and attract more actors, materialities, and institutions to join this initiative and make hegemony even stronger. For instance, from 1994 to 2009, private businesses contributed two-thirds of the genetic improvement of plants in the U.S. In 2009, three corporations – Monsanto (U.S.), DuPont Nutrition Biosciences ApS (U.S.), and Syngenta (Switzerland) – were the key players in biotechnology development and the ensuing control over seed markets (EtcGroup, 2012). Crucially, food security became a means towards wider foreign policy. The power of "food security" has been pointed out by Patel (2007: 9), who quotes the following statement from Earl Butz, the Secretary of Agriculture during the Nixon and Ford administrations : "Hungry men listen only to those who have a piece of bread. Food is a tool. It is a weapon in the U.S. negotiating kit". This quote stresses, for instance, that the articulations around "food security" in U.S. foreign policy are linked to ideological elements of commodification, monetization, and corporatization of food technologies and markets.

This highlights that "food security" is so powerful in GMO governance that its ideological elements are also articulated in state institutions and by state leaders in ways that empower the identity construction of GMO hegemony. As pointed out by the UK Ex-Policy Director of International NGO 2, in the beginning of the discussions around GMOs in the 1990s in the country he said:

> We didn't particularly approach policy makers, we had some contacts, but we have a very very very very pro-GM government … We had a meeting with Tony Blair [the prime minister at the time], me from International NGO 2 and a woman from Local Social Movement 1, so we had meetings with them but it was a completely waste of time. … [The prime minister at the time] said all medicine is going to be GM, all food is going to be GM. How can you stop it? You can't stop it; it is the future. All jobs in Britain will depend on GM. I'm not going to stop this. And we said, "We don't oppose to medicine; medicine is different, it is not in the environment, you can weigh the risks for each individual, but food everyone eats and it affects the environment… It's completely unsafe." He said, "No, no, this is all the same. I'm not listening. I don't mind that people are against it. I'm the prime minister".

The Researcher, Campaigner, and Coordinator of Local Social Movement 5 stressed that "food security" is also articulated by policy makers in Brazil:

> There is a lobby there ... there is pressure from these companies there [in the government], you know? Then we ask, "What is the price of public health? Who pays for these impacts? Who pays for all this? " For us, to have campaigns, to have organized a civil society that puts pressure on congress, on government, on parliamentarians... That is fundamental.

As an important historical contingency, the RTRS is marked by such hegemonic rearticulations and is followed by the repositioning of different civil society actors in terms of counterhegemony. Thus, it is worth noting that, for the international civil society actors against GMO hegemony, "food security" has been promoted by the same actors that have already commodified nature and caused worrying social and environmental impacts, as declared in 2004 by International Social Movement 1 after the FAO's declarations endorsing GMOs:

> FAO promotes GMOs as solution for world hunger, a slap in the face for those who defend food sovereignty. Is FAO being taken over by Monsanto, Syngenta and other corporate interests? … FAO has sold itself out to Monsanto… International Social Movement 1 demands a public retraction by FAO regarding this issue… Otherwise, we believe that further dialogue is useless because it makes civil society accessory to a policy of introduction of GMOs, a technology in which we see no solution at all and against which we will have to increase our struggle and resistance. (International Social Movement 1, 2004)

Thus, for them, the articulation of "food security" should be strongly resisted in an antagonistic way in order to reduce corporate control over the global food system and achieve more democratic and equitable outcomes. In other words, market environmentalism and corporate engagement by some international civil society actors in GMO governance within the discourse of "food security" is fully unacceptable for those who resist hegemony by establishing a division between "them" and "us" That is, they create an antagonistic relation.

As an example, during Rio+20, International NGO 2, 3 and 4 and International Social Movement 1 claimed that food security, as discourse, has been actively promoting the interests of private corporations and international trade. For them, private companies, agri-businesses and the current pattern of global food system are the main causes of the increase in world hunger and the state of food insecurity. They assert that corporate

actors are responsible for the commodification of nature and life and the culprits for negative social and environmental consequences that are often not accounted for. Additionally they argue that some governments and some NGOs must stop working for the interests of corporations and start working for the interests of the people, particularly those who are marginalized. Finally, they advocated that on no account could monoculture be sustainable since it always entails large-scale destruction of biodiversity.

The common "enemy" within this antagonistic strategy is clear; in the words of Local NGO 7 interviewee in Brazil:

> I've never seen one action of International NGO 1 in the transgenic theme. No, not in Brazil. I'm not saying they should not have a demonstration in favour of GMOs. What I'm saying is that I never saw any explicit action ... No. We never had anything to do with them ... But Cargill also sits at this round table ... No, we have never approached them.

Likewise, as highlighted by the Campaign Director of the Local NGO 2 in the UK, the opposition to those that support "food security" in GMO governance sets a barrier of "them" against "us":

> International NGO 1 teamed up with Monsanto to promote genetic engineering … And the idea that they are engaging with corporations in order to make things better [...] is morally unacceptable… And if they really want to work with industry […] there are many things they could do, but they chose to go for the money.

The President of International NGO 3 in Brazil reinforced their opposition to those actors that endorse "food security":

> No, we try not to use the discourse of the World Bank, we try not to use a UN discourse; we try to build our discourse, our identities. Well, those who are working with green economy as a positive thing are on the side of the corporations ... They seek funding with this discourse, the discourse that for money we will get people to look after the water, the environment, this thing of responsible soy, green cattle, green meat, everything is green ... For us this is market environmentalism, right? They are market-environmentalism organizations.

On the other hand, the Director of Conservation of International NGO 1 (a member of RTRS) also recognizes the opposition of other international civil society actors. When asked if International NGO 1 joins other civil society actors in Brazil in GMO governance, the Director explained why it does not:

> There is no engagement; Brazilian society is not very concerned about this thing of GMO, to the point that they took away transgenic labelling and no one complained ... With transgenics? No, we have not [engaged with civil society actors]... We haven't because this issue has no relevance in Brazilian society ... That's the point. We managed to do a campaign to protect a national park in the middle of the Amazon that was threatened by a hydroelectric ... It was a successful campaign … Now, if you ask people to "sign a petition against GMOs", they will not do that … It has no impact on the lives of citizens ... We mobilize society... only for more tangible issues.

This quote shows that International NGO 1 is oblivious of the actions undertaken by other international civil society actors in opposition to the suppression of GMOs labelling in Brazil (also conducted by International Social Movement 1 and International NGO 2). In order words, opposition was clear for both groups (the group of those who resist and the group of those who endorse GMOs). Therefore, it is evident that "food security" is articulated as an antagonistic floating signifier by international civil society actors against GMOs, led by the International NGOs 2, 3 and 4 and International Social Movement 1. They also have led the discussions in local contexts as pointed out by the Researcher, Campaigner, and Tutor of Local NGO 7 in Brazil, about the role of International NGO 2 in GMO resistance:

> The first public action was in 1997, I think, the first act to call attention to transgenics in Brazil; it was organized by International NGO 2. In 1997, who was talking about GMOs here in Brazil? A soy ship was arriving from Argentina that was going to dock, I think, in Rio Grande do Sul, to fill its tanks. Then they met International NGO 2 there. They did a public action. That action was in the newspaper: transgenics and such. They had this function of bringing the issue to the country.

Furthermore, regarding the investigation of the strategies applied by international civil society actors around "food security", it is worth noting that those actors contrary to GMO hegemony stated that "funding" is in the centre of the articulations of "food security". They claimed that one of the reasons why international NGOs involved in RTRS (part of their "enemy" group) are working closely with multinational corporations is fundraising. For them, the international NGOs that support GMOs in the RTRS receive lots of funding from multinational corporations. In the words of the Brazilian Leader of the International Social Movement 1: "[pro-GMO NGOs] have a very strong bond and are financed by banks, by the IDB [Inter-American Development Bank], the World Bank, and the major industrial corporations also have a very strong connection, right? So

for us, this is the end of the world". Likewise, the Coordinator of International NGO 9 in the UK pointed out:

> Small organizations, and the larger ones as well, have the challenge about firstly where our funding comes from. If our funding comes from the government, the current UK government is understanding, wanting to reduce regulations around here. A lot of the NGOs that depend quite heavily on government for their funding really don't want to come out against GM and that's a real problem. That's why some NGOs and even International NGO 1 has failed to come out against GM and in fact some are promoting it. … so, I think International NGO 1 has to review its policy on GM … but large NGOs depends a lot on the government for their funding so they are reluctant to come out against GM.

The former Policy Director of International NGO 2 in the UK also emphasized that fundraising can be crucial to the strategy international NGOs adopt. For the former Policy Director, it influences directly the international NGO's agenda, which sometimes is quite different from one country to another. The former Policy Director said:

> When I was in International NGO 2, International NGO 3 in the U.S. was funded by foundations … But European NGOs and Latin American and, actually, in India and Africa, in most of the world, NGOs need a big public support. And this is a great weakness of the foundation funding in America. They have very high levels of foundation funding... And they intend to be, fundamentally, I think, quite conservative and quite anti radical and idiosyncratic or individualistic or different. And the strength of NGOs, if NGOs are there for anything, is to throw up the charismatic individual, the weird campaign, which is suddenly successful. I mean, NGOs should be lively, confrontational, disputing, you know, inventive, you know, whereas, in America, you have ten big foundations. They sit down, they spend three years agreeing what to fund and they fund it. Well, how is that inspirational or inventive or...? So, for all these reasons, the American environmental movement ceased to be a grassroots movement in many states. But, for a long time, the grassroots in America was wisely used. People were involved in the gun lobby and in shooting animals and in demanding public access to nature national parks to kill things. That was the grassroots movement. A very powerful grassroots movement. Very right-wing and anti-environmental. Anyhow, in Europe, if you look at the GM campaign, there were huge local campaigns against GM, lots of activists in the field.

The international NGO "ISAAA", a supporter of GMO hegemony, lists its main donors on its website. The list shows that powerful actors in GMO hegemony, like Bayer CropScience Ag and Monsanto, sponsor the NGOs, which would endorse the previous

position around the impact of fundraising for those that are pro-GMO in civil society (see Exhibit 6):

Exhibit 6 - ISAAA Donor Support Groups

Donors

- AATF-African Agricultural Technology Foundation
- ABSPII/Cornell University
- ACTESA-Alliance for Commodity Trade in Eastern and Southern Africa
- African Biosafety Network of Expertise
- Ain Shams University
- ASARECA-Association for Strengthening Agricultural Research in Eastern and Central Africa
- Bayer CropScience Ag
- BBA - Burkina Biotech Association
- BioInnovative Program, ILRI
- Brazil-Africa Market Place
- Cairo University
- CropLife Asia
- CropLife International
- Department of Agriculture, Philippines
- IDRC-International Development Research Center of Canada
- KGT - TBP - Tree Biotechnology Programme
- Maharashtra Hybrid Seeds Pvt. Ltd (Mahyco), India
- Monsanto
- NaCCRI - National Crops Resources Research Institute (NaCRRI)
- NACOSTI-National Council for Science and Technology Innovation, Kenya
- NEPAD Planning and Coordinating Agency
- Program for Biosafety Systems, IFPRI
- RECOAB - Regional Agricultural Reporters' Network
- SEAMEO SEARCA, Philippines
- United Phosphorus Limited
- US Department of Agriculture
- US Department of State
- US Soybean Export Council
- USAID
- Vibha Agrotech Pvt. Ltd, India

Source: ISAAA, 2015b

Therefore, in this study I argue that fundraising has a direct impact on the ways international NGOs act and this somehow explains their mobilization capacity in GMO governance, which applies to all international NGOs (both the ones that resist and the ones that support GMO hegemony). Furthermore, the importance of fundraising reinforces that the organizational aspects (i.e., paid and permanent professionalized staff, management professionals, media experience and scientists from different fields of research) combine to create a conducive opportunity structure in GMO governance (i.e., the quite often open access to civil society participation in international institutions, such as CDB, FAO, and EU) and enhance the reliability of international NGOs to increase their political opportunities in the GMO field of struggle.

Additionally, I argue that the more the international NGO adopts a market-based model and managerial values (i.e., entrepreneurship, accountability, fundraising skills, innovative solutions, partners collaboration, planned strategies, result targets, stakeholder engagement, and others), the more its capacity to craft collective identity and to shape

hegemony in governance contexts increases. In other words, the legitimacy of the international NGO in GMO hegemony is influenced not only by a conducive opportunity structure, but also by its organizational aspects (market-based model and adoption of managerial values). As a powerful actor in GMO hegemony, the interviewee from International NGO 1 highlighted the "competition" aspect of large NGOs that have a market-based model:

> The large NGOs, at some point, end up competing with each other. I think it does not happen between International NGO 1 and International NGO 2 because they are very complementary and have cooperation at the international level ... We reserve the right not to agree with each other. Large NGOs compete for status, compete for appeal, compete for everything, compete for visibility ... So it's a competition, a great competition between organizations that have a very similar profile ... I think it does not happen with International NGO 1 and International NGO 2 because they have different profiles. They are very complementary.

However, although this type of international NGO increases its political opportunities in GMO governance as it speaks the same dominant language of other powerful actors (i.e., states, corporations, foundations, and so on), some civil society actors do not recognize them as being "close" to the people (see Fisher, 1997), as highlighted by the UK Leader of International Social Movement 1:

> Those campaigners need to listen to the farmers because they can become very, very disconnected. And I've been to so many meetings dominated by a lot of people from NGOs and the meeting was going on and on about this and they were talking a language that nobody could really understand, except the people in the NGO world or in the campaigning world … I'm not saying it was a bad thing what people were doing. I would, sometimes, go to ones where it's like a group of different NGOs maybe fighting GM … and it's amazing how they don't understand the reality of the farmers on the ground … Because, it's really really really important for your organization that it has representative voices of organization of land workers or peasants, you know. And it's not NGOs or, other people from other sort of campaigning organizations or corporations or anything, trying to represent the voice of its own.

From the analysis of the articulation of "food security", I argue that civil society cannot be taken as a unified group representing "people's interests", especially in the international domain. In Brazil, all local social movements interviewed for this study highlighted the International Social Movement 1 as their most representative voice in

GMO governance. That is, International Social Movement 1 “speaks the same language” as they do. As mentioned by the Coordinator and Campaigner of Local Social Movement 6 from Brazil:

> Our articulation with the issue of agricultural models and the issue of GMOs begins with International Social Movement 1 ... We are not closely engaged with any NGO in particular, but we did on day 3 a preview of a mobilization of social movements in which International NGO 2 was with us and was also saying that we do not want more transgenics in Brazil ... We have enough in common with International NGO 3 on this issue ... We have links with International NGO 3... But the International Social Movement 1 is our main representative... [the movement] managed to create a space for us in FAO … even in Rome, which was just to follow all the debates as listeners, right?

Likewise, interviewees from the UK highlighted that this international social movement strengthens resistance against GMOs combatting the widespread discourse of “food security”. This has been one of the most significant flags of International Social Movement 1 around the world. The positions of this international movement against GMOs are widely identified by civil society actors in GMO resistance, which attracts more local engagement “from the margins” (peasants, quilombo communities, indigenous people, religious groups, and others) and consequently enlarges the counterhegemonic movement in GMO governance. In Brazil, the representation International Social Movement 1 in GMO resistance is very powerful among those groups since their demands have been neglected for years (locally and internationally). Thus, the issues articulated by International Social Movement 1 are fundamental to spread the need to resist GMOs in local contexts and to shape and reshape a counterhegemonic identity in GMO governance.

Finally, the discourse of “ecological agriculture” has also been tightly connected to sustainability. Among others, the floating signifier of sustainability encompasses different discursive resources, such as food sovereignty; agroecology; organic food; feminism; family farmers; connection to the land and cultural heritage, protection of animal and human health.

As pointed out in Tables 7 and 8, ecological agriculture is a floating signifier that has been articulated only among actors who resist GMO hegemony. Thus, no international civil society actor supporting GMO hegemony articulates this signifier, as it is seen by GMO supporters as a “radical” discourse in the global food system, particularly through

its articulations of “food sovereignty” and “agroecology”. Unlike the defence of food security and the commodification of life, the concept of food sovereignty emphasizes peasant and indigenous forms of agriculture, prioritizes local and national economies and markets, focuses on organic products and the practice of agroecology in agriculture, and is completely against of corporate control of the global food system as the solution to tackle hunger in the world.

In the UK, since the 1990s, “ecological agriculture” has been mainly articulated by International NGOs in the defence of organic food (non-GMO and without any kind of pesticide) against what they call “Frankenstein Foods”. In recent years, the demand for food sovereignty and agroecology in the country was triggered by initial actions of International Social Movement 1 in 2013. For the Research Director and Editor of Local NGO 1 in the UK, those who support GMO hegemony should use their voice to embrace organic food and agroecology:

> What they [civil society actors that support hegemony] should do is just stand up and say GM soy entails mass spraying of pesticide and people are contaminated and people’s food crops are contaminated, their animals are contaminated. We cannot support that. And if they really want to work with industry, they can work with them to do things like shift over to agroecological practices, to reduce the use of pesticides. There are many things that they could do. But they chose to go for the money.

In Brazil, the articulations of “ecological agriculture” are also grounded in the non-use of pesticides and the promotion of organic food and agroecology against GMO hegemony. I would like to highlight that, in the field research in Brazil, I found that, usually, the farmers do not feed their animals with non-organic food because they consider that animals tend to reject it naturally:

> The farmers themselves have refused to use GMOs because one thing we observed, which is quite interesting, is that for everyday use, farmers have reported that their animals do not like to eat GMOs. For example, if you give GMO corn to the chickens they will not eat, if you give it to the pigs, they will not eat ... They think that it is maybe because the animals do not like the smell.

Additionally, a strong civil society network in Brazil called “Permanent Campaign Against Pesticides and For Life” articulates the non-use of pesticides in order to resist GMO hegemony. International Social Movement 1 is one of the main organizers of this campaign across the country.

In Rio+20, the People's Summit (a parallel event running outside the formal remit of the summit) was the main event of global civil society (including local NGOs, international NGOs, indigenous and quilombo communities and religious groups) (Guimarães and Fontoura, 2012). In the People's Summit Final Declaration, these civil society actors highlighted that:

> Amid several global crises, we are living the financial stage of capitalism: the alliance between corporations and the speculative markets.
>
> The companies in the agribusiness and the global food system are the main causes of environmental and social crises and increase hunger in the world.
>
> Food sovereignty is only possible with ownership over the land and sovereignty over seeds. (People's Summit, 2012: 8)

It must be noted that in Rio+20, International Social Movement 1 was the most important voice in the articulation of "ecological agriculture" against GMO hegemony, followed by International NGO 2, International NGO 3, and International NGO 4. Those actors were not only the main defenders of this signifier but were also the main organizers of the People's Summit that turned to be a remarkable civil society's representation during Rio+20.

In 2013, during the first March Against Monsanto in the UK, also a moment of strong representation of civil society in the GMO field of struggle, International NGO 2 worked together with the people engaged in that movement to organize this global initiative against the multinational Monsanto and the whole GMO industry:

> This single march may be insufficient to stop the beasts, but at least it will show the world population is organizing against their abuses and will not stop until succeeding! It's your choice whether to join us for those few hours on the 12th October for a better future for humanity and for the environment! (Campaigner of International NGO 2)

From those examples, we can say that, within "ecological agriculture", international civil society actors have articulated food sovereignty particularly in order to combat corporate control of the global food system, as highlighted by the UK Leader of the International Social Movement 1:

> There's a lot of anti GM campaigners within International Social Movement 1. I mean, it's a quite important issue, really. Mostly from the sense of control, more than anything, because of the food sovereignty. It's not necessarily the danger of the technology or that the danger of technology is an issue that

> most people would be concerned about, but the issue of who controls the food system, who controls food in farming and what control the farmers themselves have and the control that consumers have over what they put into their bodies. So, … the multinationals really want to have control over what seed is planted and who the money from that seed goes to … Because a lot of the food sovereignty principles are about who controls the farming system. That's what the sovereignty idea is. It is about control.

The second most widespread type of "ecological agriculture" is "agroecology". Through the years, agroecology has been referred as science, a movement, and an agricultural practice (Wezel et al., 2009). In Brazil, agroecology started as a social movement in response to the agricultural modernization introduced during the "Green Revolution" that provoked environmental degradation and social exclusion of small farmers. The movement then spread agroecology as a method of cultivation focused on agro-ecosystem management without using external inputs (Fontoura and Naves, forthcoming). Thus, all food produced through agroecology farming is also organic.

The field research revealed that agroecology represents the main alternative to the agribusiness practices, not only in Brazil and in the UK, but globally. That explains why the International Social Movement 1, the largest international grassroots movement in agriculture (The Guardian, 2013) has signed a statement highlighting agroecology as a solution for small farmers facing food crisis. This suggests that the international call for food sovereignty is beginning to take root in networks of agroecology practiced by small producers.

Moreover, other international civil society actors against GMOs, such as the international NGO Third World Network (TWN), are now promoting "ecological agriculture" worldwide by articulating food sovereignty and agroecology at the same time:

> Agroecology is necessary for social and ecological transformation and is the best solution to ending hunger and ensuring climate change resilience and environmental sustainability. […]
>
> For indigenous people and peasants, agroecology is regarded as a way of life. It frees people from the dangers of chemical pesticides and fertilizers and brings communities together in the creation of their own solutions to conserve soil and water, and produce healthy food and healthy communities. "A social and political project and methodology enacted at the base in rural communities" which always involves "participatory and local decisions about what, how and when to produce", it advances the peasant struggle for productive resources and self-determination. In a nutshell: "Food sovereignty is the concept. Agroecology is the plan of action." (TWN, 2015)

Considered one “victory” against GMO hegemony in Brazil, through the articulation of “ecological agriculture”, International Social Movement 1, International NGO 2 and International NGO 3 gained a close support from local NGOs and local social movements that resist GMOs which culminated in the formulation of the National School Feeding Programme (Pnae) in 2009, and the National Plan for Agroecology and Organic Production (PLANAPO) in 2013. The Pnae foresees the use of at least 30% of the funds for school feeding to purchase food items directly from family farming and rural family entrepreneurs or their organizations. The policy gives priority to those from agrarian reform settlements, indigenous communities, and quilombolas. For small-scale family farmers, the Pnae opens an alternative market to their products and encourages small farmers to produce organic food through agroecological practices (Pnae, 2015). As pointed by the Researcher, Campaigner, and Tutor of Local NGO 7:

> But what does this policy do? It seeks to use its instruments to encourage [small-scale farming], since the school feeding plan says that at least 30%, I think that it’s at least 30%, must come from family farms and if on top of that it’s agroecological [the government] will pay more ... The Pnae has a method, it has a way of buying food, it has a method of buying seeds from farmers, right?, to strengthen native seeds ... but to buy corn seed, for example, since [the government] released the transgenic corn, then it will only buy if the seed has been tested to prove it is not transgenic ... So you see that this concern has been incorporated now into public policy ... We say that one of the missions of Pnae is to became a model to influence more public policies in Agroecology.

Considered as another “victory” for civil society actors against GMOs in Brazil, the PLANAPO aims to promote agroecology as a model of production for successful poverty alleviation in Brazil, based on cooperative and family farming and economic organization (PLANAPO, 2013).

Both public policies were conceived with the broad participation of civil society (formal and informal) and unions. International Social Movement 1 was the main international civil society actor during the negotiations and formulation of Pnae and PLANAPO.

Within the defence of “ecological agriculture”, strongly articulated by International Social Movement 1, we also find the engagement with the “feminist movement” in agriculture. Thus, “feminism” is also articulated in order to build resistance in GMO governance and new achievements around feminist articulations are already noticeable in some social movements in Brazil, since many women are now leading the practices

against GMOs among small farmers in the country, as noted by the Campaigner and Tutor of Local NGO 5 in Brazil:

> we realize this, the transmission of this initiative comes from women concerned about food. When she works in her family garden [without pesticides or herbicides] and the garden or plot starts producing and her production starts running and, you know, this has an impact on the family, then the husband starts to realize that this type of farming can actually produce and without wasting money in poison. Then after a while, they [husband and wife] start to tell other neighbours to do the same and… little by little other family farmers convert to Agroecology.

In GMO governance this is also highlighted in the engagement of International Social Movement 1, International NGO 2 and International NGO 3 in the World March of Women against GMOs: "You will see us [International NGO 2] together, International Social Movement 1 and The World March of Women… in some international events in the EU and sometimes we will build a collective action" (President of International NGO 3 in Brazil).

Finally, although the need for "ecological agriculture" is still not hegemonic in GMO governance, its articulation by civil society actors has grown through the years and gained an important space in FAO. In September 2014, the international institution organised the International Symposium on Agroecology for Food Security and Nutrition in Rome, Italy (FAO, 2015). As one of the most important institutions in the global food system, this FAO's Symposium endorses the increasing role of the international articulation of this signifier in international civil society's counterhegemonic strategy in the GMO field of struggle.

To sum-up the conclusions of this research results on the diversified strategies of international civil society actors in GMO hegemony, in Table 9 and in Exhibit 7, I detail the floating signifiers investigated in this section, the chains of equivalence and difference constructed around them, some important historical contingencies, and the (formal and informal) international civil society actors within the process of GMO governance.

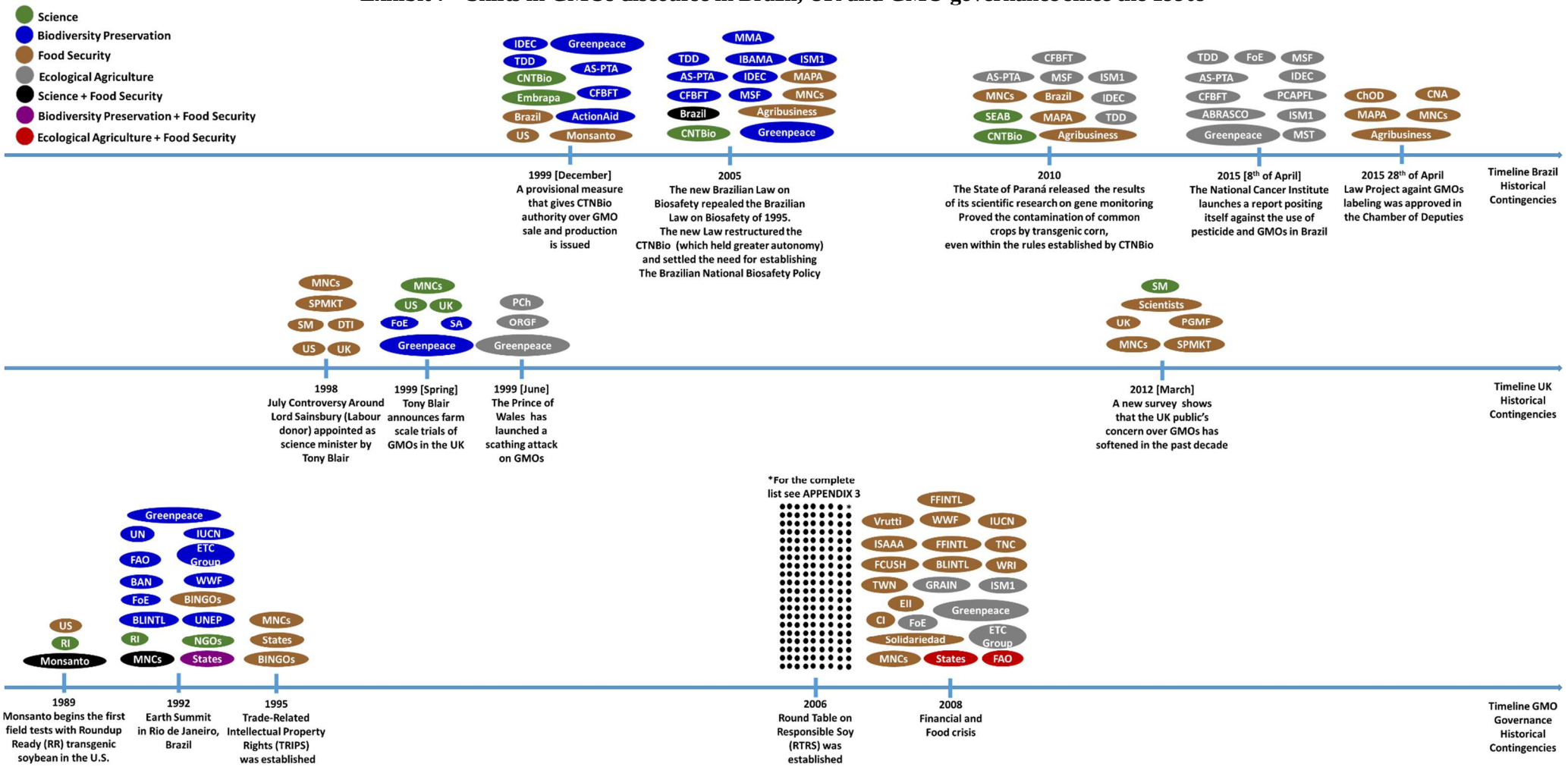
Table 9 - Discrimination of the main international civil society actors in GMO hegemony and resistance

	Hegemony	Resistance (Formal and Informal)
SCIENCE		
Mainly since the early 1990s		
Science		**Formal way of organizing:** ▪ Biodiversity Action Network ▪ Birdlife International ▪ ETC Group ▪ Friends of the Earth International ▪ Greenpeace ▪ International Union for Conservation of Nature (IUCN) ▪ WWF
Mainly after 2000		
Science	**Formal way of organizing:** ▪ Birdlife International ▪ Conservation International ▪ Earth Innovation Institute ▪ Fauna & Flora International ▪ Fundación para la Conservación y el Uso Sustentable de los Humedales ▪ International Service for the Acquisition of Agri-biotech Applications (ISAAA) ▪ Vrutti ▪ World Resources Institute ▪ WWF ▪ International Union for Conservation of Nature (IUCN)	**Formal way of organizing:** ▪ ETC Group ▪ Friends of the Earth ▪ Greenpeace ▪ Third World Network
SUSTAINABILITY		
Mainly since the early 1990s		
Biodiversity Preservation		**Formal way of organizing:** ▪ Birdlife International ▪ Conservation International ▪ Earth Innovation Institute ▪ ETC Group ▪ Friends of the Earth ▪ Genetic Resources Action International (GRAIN) ▪ Greenpeace ▪ International Union for Conservation of Nature (IUCN) ▪ The Nature Conservancy ▪ Third World Network ▪ World Resources Institute ▪ WWF

Food Security	**Formal way of organizing:** ▪ Birdlife International ▪ Conservation International ▪ Earth Innovation Institute ▪ International Union for Conservation of Nature (IUCN) ▪ International Service for the Acquisition of Agri-biotech Applications (ISAAA) ▪ The Nature Conservancy ▪ World Resources Institute ▪ WWF	**Formal way of organizing:** ▪ ETC Group ▪ Friends of the Earth ▪ Genetic Resources Action International (GRAIN) ▪ Greenpeace ▪ Third World Network
Mainly after 2000		
Biodiversity Preservation	**Formal way of organizing:** ▪ Birdlife International ▪ Conservation International ▪ Earth Innovation Institute ▪ International Service for the Acquisition of Agri-biotech Applications (ISAAA) ▪ International Union for Conservation of Nature (IUCN) ▪ The Nature Conservancy ▪ World Resources Institute ▪ WWF	**Formal way of organizing:** ▪ ETC Group ▪ Friends of the Earth ▪ Genetic Resources Action International (GRAIN) ▪ Greenpeace ▪ Third World Network **Informal way of organizing:** ▪ International Social Movement 1 (anonymity guaranteed in this study)
Food Security	**Formal way of organizing:** ▪ Birdlife International ▪ Conservation International ▪ Earth Innovation Institute ▪ Fauna & Flora International ▪ Fundación para la Conservación y el Uso Sustentable de los Humedales ▪ International Service for the Acquisition of Agri-biotech Applications (ISAAA) ▪ International Union for Conservation of Nature (IUCN) ▪ Solidaridad ▪ The Nature Conservancy ▪ Vrutti ▪ World Resources Institute ▪ WWF	**Formal way of organizing:** ▪ ETC Group ▪ Friends of the Earth ▪ Greenpeace ▪ Genetic Resources Action International (GRAIN) **Informal way of organizing:** ▪ International Social Movement 1
Ecological Agriculture		**Formal way of organizing:** ▪ ETC Group ▪ Friends of the Earth ▪ Genetic Resources Action International (GRAIN) ▪ Greenpeace ▪ Third World Network **Informal way of organizing:** ▪ International Social Movement 1

Source: The author

Exhibit 7 - Shifts in GMOs discourse in Brazil, UK and GMO governance since the 1990s



AS-PTA - Family Farming and Agroecology, local NGO
ABRASCO - Brazilian Association of Collective Health
BAN - Biodiversity Action Network
BINGOs - Business and Industry Nongovernmental Organizations
BLINTL - Birdlife International
CFBFT - Campaign for a Brazil Free of Transgenics
ChOD - Chamber of Deputies
CI - Conservation International
CNA - Confederation of Agriculture and Livestock of Brazil
CTNBio - General Coordination of the National Biosafety Technical Committee
DTI - The Department of Trade and Industry
EII - Earth Innovation Institute

EMBRAPA - Brazilian Agricultural Research Company
FAO - Agriculture Organization of the United Nations
FCUSH - Fundación para la Conservación y el Uso Sustentable de los Humedales
FFINTL - Fauna & Flora International
FoE - Friends of the Earth
GRAIN - Genetic Resources Action International
IBAMA - Brazilian Institute of Environment and Renewable Natural Resources
IDEC - Brazilian Institute of Consumer Protection, local NGO
INCA - The National Cancer Institute
ISAAA - International Service for the Acquisition of Agri-biotech Applications
ISM1 – International Social Movement 1
IUCN - International Union for Conservation of Nature

MAPA - Ministry of Agriculture, Livestock and Supply
MMA - Ministry of Environment
MNCs - Multinational Corporations
MSF - Movement of Small Farmers
MST - The Movement of Landless Peasants
NGOs - Nongovernmental Organizations
ORGF - Organic Farmers
PCAPFL - Permanent Campaign Against Pesticides and For Life
PCh - Prince Charles
PGMF - Pro-GM Farmers
RI - Research Institutes
SA - Soil Association, local social movement

SEAB - Secretary of Agriculture of the State of Paraná
SM -Science Minister
SPMKT - Supermarkets
TDD - 'Terra de Direitos', Land Rights NGO
TNC - The Nature Conservancy
TWN – The Third World Network
U.S. - The United States of America
UK - United Kingdom
UN - United Nations
UNEP -United Nations Environment Programme
WRI - World Resources Institute
WWF - World Wide Fund for Nature

Source: The author

Therefore, based on the elements discussed in this section 4.2 and on table 9 and Exhibit 7, I argue that, in order to craft collective identity to support or resist GMO hegemony, some international civil society actors build chains of equivalence and difference through the articulations around "science" and "sustainability" (biodiversity preservation, food security and ecological agriculture) in order to shape an unified demand (sustained by institutions, material and discursive sources), or hegemony, in GMO governance.

Understanding the diversified strategies adopted by international civil society actors also demonstrates that historical contingencies can promote a moment of discontinuity which allows international civil society actors to rearticulate and rethink their strategies and also to diffuse new ideological elements that will bind their claims and articulations (pro and against GMOs). This is better illustrated in Exhibit 7, where I highlight the shifts in GMO discourse in Brazil, UK and GMO governance in a timeline from the 1990s to 2015. Exhibit 7 shows that historical contingencies also promote the emergence of new floating signifiers in order to resist or to support GMO hegemony. Every key articulatory moment signals the shift or the continuity of some actors around one specific discourse. The effectiveness or lack thereof of those articulatory strategies around specific discourses can be identified by the number of actors that becomes attached in the hegemonic or counterhegemonic chain over time (although stability is never fully achieved). For instance, in 2006, the articulations around the big discourse of "science" plus "food security" by hegemonic actors in GMOs attracted more actors to the GMO hegemonic chain.

Finally, Exhibit 7 illustrates with whom the actors articulate. As an example, the involvement of some international NGOs with International Social Movement 1 against GMO hegemony can be observed in 2008 in the articulations around "ecological agriculture". That is, depending on the historical contingency, international civil society actors will articulate floating signifiers to craft a common identity that will support or resist GMOs. They then articulate these signifiers with governments, the private sector, policymakers, research institutes, and other –often marginalized– grassroots voices.

Moreover, it is possible to conclude that, in order to craft a common identity, international civil society actors in GMO resistance cancel their differences for a collective purpose. As an example, although International NGO 2, International NGO 3, and International NGO 4 are formal resistance organizations and are closer to formal

market-based ways of organizing and to managerialist values, they quite often engage informal International Social Movement 1 against GMO governance (a more radical, grassroots, and loosely organized civil society actor).

Thus, it can be affirmed that the establishment of these alliances between formal and informal international civil society actors around a floating signifier ("ecological agriculture," for example) are fundamental for the creation of a counterhegemonic identity to resist GMOs more effectively (as demonstrated by the implementation of PLANAPO policy in Brazil). Through these articulations international NGOs against GMOs can increase the number of actors in a bigger collective identity construction (since International Social Movement 1 is the world's biggest social movement and also encompasses pulverized, fragmented, and informal grassroots voices) and also improve their ways of actions to promote some concrete resistance through discourse and material articulations among international institutions. On the other hand, these alliances can also be beneficial to informal International Social Movement 1 as they enhance the chances of social movements of being heard in GMO governance, since they will be involved with some already legitimized international NGOs in the GMO "field of struggle".

Summing up, in GMO governance contexts, in order to craft resistance, informal and formal actors tend to cancel their differences to strengthen their demands and positions (i.e. in FAO, in CBD, in EU, in UN). However, International Social Movement 1 explains that these engagements with some international NGOs "must be undertaken in responsible ways. The terms of collaboration must be agreed on in advance. And the International Social Movement 1 must do what it can to ensure that the credibility and trust of our peasant movement is not jeopardized by failure on our part to fulfil our undertakings" (International Social Movement 1, 2000b). In so doing, some international NGOs also turned to claim for a more critical agenda so that they can keep their international representation, legitimacy, interlocution, and accountability in GMO governance.

5 CONCLUSIONS

This research underlines that, since the beginning of the technological manipulation of the transgenic seeds in the 1950s, which eventually led to the release of the first GMO in the U.S. for commercialization in 1994, until 2015, different actors and institutions have actively articulated their positions, demands, concerns and interests around "GMOs". Through the years, GMO governance has established a dynamic "field of struggle" that has direct impacts on the global food system and, consequently, the lives of humans and animals, as well as the environment. Thus, GMO governance entails social, environmental, and economic aspects in a continuously field of contestation.

Within GMO governance, distinct civil society actors play different roles and they often have conflicting and in some cases contradictory positions. Among them, I have paid special attention to international civil society actors because of the significant role they play in endorsing or resisting transgenic seeds worldwide. Thus, my research question has been stated in the following terms: "What are the organizing strategies of international civil society actors, such as NGOs and social movements, in GMOs governance". As pointed out in the Introduction, by "organizing strategy" I understand the way these international civil society actors articulate and position themselves in GMO governance. To do so, I drew on a neo-Gramscian discourse approach on hegemony, based on the studies of Laclau and Mouffe (1985) and conducted empirical research from 2011 to 2015 in Brazil and in the UK.

Neo-Gramscian discourse theory gives a systematic explanation and provides key theoretical elements to understand how both resistance and consent are articulated by international civil society actors in GMO governance. The central point of the neo-Gramscian discourse approach is to analyse how actors articulate their distinct positions and ideological elements within different discourses in order to craft a collective identity. This common identity shared by some actors will be articulated in the process

of hegemony formation. Therefore, hegemony results from the actors' articulation of a chain that connects discourses, material capabilities and institutions, which are channels of order stabilization (where the two previous elements become intertwined). However, resistance to hegemony can always arise, particularly in "historical contingencies" where the actors find an opportunity to rethink their strategies and restructure hegemonic relations. This theoretical lens enables me to approach the strategies of international civil society actors in GMOs governance in further detail as to the ways in which those actors organize their hegemonic struggles.

After introducing the theme, the object of analysis and the research question and main contributions of this study, I presented a theoretical review that guided my investigation on the social phenomenon under investigation and set the main theoretical background in which my arguments and research results were supported. Afterwards, I described the research design, the data collection, and analysis, the site selection of the study and the methodological and research limits of this thesis.

In addition to explaining the dynamics of the strategies adopted by international civil society actors in GMOs governance, I provided a brief overview of GMOs as a field of struggle from its beginning but focusing especially in the 1990s when the process of hegemonic formation became clearer. This account served as the basis to map the main actors in this field formation, the resource mobilization, the discovery and exploitation of political opportunities ("historical contingencies"), the main discourses ("floating signifiers") articulated among the actors to construct a collective identity in order to attract new potential allies around "GMOs" ("nodal point"), and the institutions and international regulations within this processes that enable hegemony to emerge and consolidate into meaningful and durable hegemonic links.

A first aspect of GMO hegemony that must be mentioned is that from the beginning the existence of GMOs, as a product of advancements in biotechnology as scientific field (mainly in research institutes, corporate laboratories, and universities based in the U.S.), has been accompanied by scientific justifications. It means that, since the beginning of GMOs governance, "science" has been articulated by the actors to enhance the importance of "GMOs" and get support of new players and institutions to legitimize their existence. The first actors to articulate "science" in hegemony formation were powerful actors that heavily invested in transgenic seeds research, including multinational corporations in the U.S. (such as Cargill's, and the ones purchased by

Monsanto - AgriCetus, Calgene Inc., Asgrow Agronomic, DeKalb Genetics Corporation and Delta & Pine Land Company); U.S. philanthropic organizations (Rockefeller, Carnegie and Ford foundations) and their large investments in U.S. universities; and, the U.S. government. After the U.S., other industrialized countries followed with more research on genetic plant breeding. Therefore, the emergence of GMOs from scientific research conducted by powerful actors has influenced the strong articulations around "science" in the field of struggle formation up to the present. Even those who have tried to resist GMOs over the years since the creation of transgenics and their initial commercialization endorse their claims through the articulations of "science", in their case alleging the potential risks posed by GMOs to human and animal health and to the environment.

For my analysis, I take 1989 as the first "historical contingency" in GMO governance, the year Monsanto started the first field tests with RR transgenic soybean in the U.S. This triggered the debates around "GMOs", their benefits (from "science"), and how they could enhance food productivity worldwide and, by doing so, improve agriculture and the global food system (more food exportation and importation as well as the involvement of more actors in the global food supply chain), contribute to the global economy and to fight the battle against hunger. Thus, from then on, it started to become clearer that Monsanto, the U.S. government and U.S. research institutes were articulating not only science in the beginning of hegemonic formation, but also the need to increase food trade based on transgenic seed.

These powerful actors would then enhance their articulations from this "historical contingency", not only at the local level but also in the international domain, in order to build a GMO hegemony that would represent a socio-political situation based on their dominant idea of what reality is. However, as pointed out above, according to neo-Gramscian discourse analysis, every process of hegemony formation entails challenges and struggles. This would in turn expand the market share of GMOs and get the support from other actors in the private sector (such as other laboratories in biotechnology and seed studies, other companies and supermarkets chains), in the public sector (such as global policymakers and governments), as well as among civil society actors (including international civil society actors).

In 1992, the process of GMO hegemonic formation became visible during Rio-92 when different actors discussed the creation of CBD and the need for an international Protocol

on Biosafety to avoid the possible negative impacts of the increase of transgenic seeds worldwide. This historical contingency showed that, for an array of actors (i.e., NGOs, state representatives, multinational corporations, industrial lobby), GMOs would, indeed, be a widespread reality in the near future of global-scale agriculture and global food systems. However, there were still many doubts about the safety of releasing this technology into the environment. While powerful actors were articulating "science" and "food security" (especially around increasing food productivity) to endorse GMOs during this Summit (such as biotech multinational corporations, like Monsanto; industrial lobbyists, like the BINGO EuropaBio; and the U.S. government), others were articulating "biodiversity preservation" to resist them, which culminated in the first discussions on international biosafety regulation under the CBD. This group was formed by international environmental NGOs and some state representatives from developing countries.

Rio-92 was a very significant "historical contingency" in GMO governance, not only because it represented an "open opportunity" for different actors to articulate into different agendas, highlighted by the emergence of "biodiversity preservation", but also because of its relevance in global environmental governance as a whole. This Summit was the main opening of international forums to include new issues caused by stress situations within the ecosystem at the planetary level. All governments were seriously concerned about the fact that the main reason for the continuous depredation of the global environment was the unsustainable patterns of consumption, and consumption itself, particularly in industrialized countries. This was a great opportunity to examine the impacts of releasing GMOs into ecosystems. I argue that this, in part, explains why GMOs were grabbed by the "environmental governance" agenda and became mostly resisted (from then onwards) by international environmental NGOs and not, for instance, by health and human rights civil society actors (that are also affected by "GMOs"). Moreover, it explains why the articulation of "biodiversity preservation" is mostly often referenced as "sustainability". GMOs governance has been, from that "historical contingency", articulated under the big discourse of "sustainability" as the broader signifier encompassing "biodiversity preservation" and "food security", and, although they entail distinct discursive elements, they both claimed to be concerned with global "sustainability".

Furthermore, this "strategy rethinking" aspect of Rio-92 was noticeable in the strong articulations carried out by the hegemonic group to endorse, three years later, the creation of the TRIPS Agreement on patent rights under the WTO. Thus, I argue that, the establishment of the TRIPS Agreement in 1995 was another relevant "historical contingency" in the process of hegemony formation. A strong chain of equivalence was formed around "food security" to support GMOs and to resist the chain of difference created by the opposing group that got together in Rio-92. Multinational corporations, BINGOs and some powerful states were keen to approve TRIPS right after the conception of CBD in Rio-92. Therefore, the TRIPS approval was remarkable event for all the actors within GMO governance because it confirmed that GMOs were a reality and that the biotech corporations would promote an industrialized agriculture based on GMO cultivation and commercialization. The first GMO (by the biotechnology company Calgene) had already been released in 1994 for commercialization in the U.S., and one year after the TRIPS, Monsanto released the RR soy to the market in the U.S. In terms of volume, the RR soy creation would disseminate the GMO market worldwide and promote a huge surge of GMO hegemony (particularly in terms of the material resources that would be gained through GMO commercialization and the patent rights associated with each GMO sold). Therefore, from a neo-Gramscian perspective, TRIPS provided a conducive opportunity structure for hegemonic actors in GMO governance to articulate the discourse of "food security" and the material capabilities within the international institution of WTO as their channel of order stabilization. On the other hand, the actors against GMOs had to rethink their resistance strategies to face the growth of GMO hegemony.

After that, through the years, GMO hegemony enhanced its chain of equivalence by the articulation of "science" and "food security," carried out by powerful actors, which attracted new players (multinational corporations, NGOs, industrial lobbyists, states, institutions, consumers, and others), new resource mobilization and new markets, consolidating thus the process of consent around GMO governance. Thus, although some actors continued articulating against GMO hegemony (such as the EU and some international NGOs, like Greenpeace), particularly under the CBD and the Cartagena Protocol, an "apparent" discursive unity in favour of GMOs was consolidated. As pointed out in section 4.1, from 1996 to 2003, the world area planted with GMOs rose from 3 million to 67.5 million hectares (James, 2003) under the powerful discourse of

increasing food productivity. This strong articulation of "GMOs" around "food security" by hegemonic actors generated high profit for large international conglomerates in the biotechnological market.

This "apparent" discursive unity of GMO hegemony was even more visible in 2006 when RTRS was established. For me, this was a central "historical contingency" in GMO governance since it highlighted that hegemonic actors were no longer articulating "science" and "food security" separately. Quite to the contrary, they were articulating one powerful discourse that arose from the combination of those two. Thus, GMOs were no longer a matter of "science" or "food security" but a combination of both, which meant that GMOs could be a real solution to feed the world population and increase food productivity (i.e., from the strong support of the agribusiness sector in the U.S., Canada and Latin America) if scientific tests conducted on each locality where GMOs were grown could prove that GMO soy cultivation was a "responsible" activity (that is, environmentally correct, economically feasible and socially appropriate). The combination of "science" plus "sustainability" becomes a single powerful discourse in order to legitimize a dominant socio-political situation at the level of global governance.

Furthermore, I argue that the RTRS also showed the importance of civil society in the construction of hegemony, as stated in neo-Gramscian discourse analysis. RTRS clearly connects the "relations of force" (material, institutional, and discursive) across three levels of mutually constitutive political activity: global order, civil society, and the state (Gill, 1998). In this way, civil society actors are fundamental for hegemony as their relatively autonomy offers the vital ideological "ground work" that allows the reproduction of the economy and the state (Spicer and Böhm, 2007). The articulation of "science" and "food security" was possible thanks to the support of civil society actors and their strategies to articulate and craft a collective identity around one discourse that become the pillar for hegemony formation.

Within this "historical contingency" different international civil society actors legitimized the cultivation and trade of GMOs soy through their articulations in the hegemonic chain of equivalence. The most important civil society actors in RTRS are still international environmental NGOs (see Table 5 and Table 9). As previously mentioned in 4.1, the WWF Position Statement on GMOs highlights that, as a member of the RTRS it aims to work on sustainability setting standards for commodities, including GMO-based products, on the precautionary principle and on risk analysis

studies conducted in each location of RTRS action. In other words, WWF does not openly endorse GMO soy, but it assumes that these soybeans can be an option if their sustainability and absence of risk are guaranteed.

On the other hand, the RTRS represented a big challenge for those against GMOs within GMO governance and their way of action and opposition strategies, which also confirms it as one key "historical contingency". The ever-growing power of hegemony in GMO governance was now evident to them, and had become a greater challenge; for this reason, their strategies had to be rethought in order to attract more actors in a more effective opposition. The most relevant international civil society actors in GMO resistance were international environmental NGOs (e.g., Greenpeace, Friends of the Earth, and ETC Group).

Two years later, the international financial and food crisis of 2008 was a historical contingency that demanded new hegemonic and counterhegemonic articulations within GMO governance and at the same time mobilised new actors, actions, institutions, discourses and strategies. For resistance actors, it was a special opportunity to challenge dominant groups through the construction of organizational capacity and new networks in order to build a collective identity and achieve their goals. From this group, some international civil society actors reframed their strategies in this "historical contingency" through new linkages; new discourse articulations and patterns of identification to connect previously separate groups into a common purpose.

Moreover, from this "historical contingency," international environmental NGOs and International Social Movement 1 actively articulated the discourse of "ecological agriculture" at the level of GMO governance, in order to set a new alternative agenda to tackle world hunger disconnected from corporate solutions and led by peasants, indigenous people, and other grassroots and marginalized voices from the global food system. They claimed that "ecological agriculture" would be the real shift towards sustainability and food access. Within this floating signifier, they also highlighted agroecology; feminism; food sovereignty; organic food; animal and human health; connection to land; cultural heritage, and others.

From those within GMO hegemony the defence of a global "ecological agriculture" was impossible without corporate engagement, and because of that, it was considered a "radical" discourse against GMOs. This vision around "ecological agriculture" was also shared by the international pro-GMO environmental NGOs (i.e., those in RTRS) and,

more specifically, those in favour of the "food security" discourse. However, for civil society actors against GMOs, it turned to be an important way to enlarge resistance and to strengthen their chain of difference.

This "historical contingency" also marked the key role of International Social Movement 1 in this resistance agenda as the leading figure of the articulations around "ecological agriculture" with the international environmental NGOs: Greenpeace, Friends of the Earth and ETC Group. Differently from the articulations around "food security", "ecological agriculture" has been advocated by some marginalised voices in the global food system (i.e., peasants, indigenous people, small-scale farmers, and others), which enhances those groups' positions and demands at the international level. On the other hand, they empower GMO chain of difference in terms of number of people engaged, because International Social Movement 1 is the world's largest social movement.

After discussing this first aspect of my research results, I focused on international civil society actors and their diversified strategies to sustain or resist GMO hegemony. I first investigated the shifts in GMO discourse in Brazil and in the UK since the 1990s in order to understand the dynamic of discourse articulations in local contexts and identify the international civil society actors involved. I also discussed the role of those actors in national hegemonic and counterhegemonic formation around "GMOs". Lastly, I explored the connection between international civil society actors and the "relations of force" (material, institutional, and discursive) that articulate "GMOs" in a cross-level of political activity: global order, civil society, and the state.

In both countries (Brazil and the UK), international civil society actors have been key in "GMO" articulations to support or to resist transgenics. However, in terms of local mainstream media representation, the international civil society actors that are against GMO hegemony were easier to identify than the ones that support it. On the other hand, in Brazil, international civil society actors in the GMO agenda were less mentioned in the mainstream media than in the UK. In other words, in Brazil, the actions against GMOs are not directly reported by media sources, while in the UK they are more visible.

In terms of media representation, in both countries, international civil society actors in GMO hegemony are almost never named in the news, which highlights that most of their actions and strategies to support transgenics nationally and internationally happen

"behind the scenes"; or, "behind public opinions' scenes". It means that, in terms of strategy, those international civil society actors in GMOs hegemony do not seek to call the attention of local public opinions as their main target to endorse the spread of transgenics, but prefer to act more at the level of GMO governance (i.e., at the EU, FAO, WTO, CBD, and in RTRS meetings) closely connected to multinational corporations, state representatives, and international institutions with low public visibility. Local interviewees in the UK and Brazil pointed International Service for the Acquisition of Agri-biotech Applications (ISAAA), The Nature Conservancy, and International NGO 1 as the main international civil society actors (in this case, all three international NGOs) in GMO hegemony.

Within the resistance side in GMO governance, in Brazil, Greenpeace was the first international civil society actor in GMO resistance, being also the first actor that called the attention of civil society towards the discussion of the possible negative effects of transgenic seeds in the environment in the 1990s. At that time, Greenpeace had a leading position in "biodiversity preservation" and "science" articulations against GMOs. However, as shown in Table 7, every hegemonic formation is dynamic and through the years, other international civil society actors engaged in the chain of difference around GMOs in Brazil, especially after key historical contingencies. Through the years, Friends of the Earth and International Social Movement 1 joined the cause to fight transgenics in the country and Greenpeace left its leadership role after the historical contingency of 2005, when the new Brazilian Law on Biosafety came into force. This contingency was considered "a defeat" for some actors within the Brazilian chain of difference on "GMOs", but, on the other hand, for others that was a key moment to rethink their strategies of resistance. For them, from that moment onwards, all that led to their reservations about GMOs would now happen and in a legal and authorized way. That is why they needed to rethink their actions to strengthen their views and enlarge mobilization against transgenics. The Social Movement 1 and three local NGOs led this resistance group.

From that point onwards, they decided to stress the need for "ecological agriculture" as the most viable alternative to GMOs. To do so, they focused on the articulations with many local social movements, indigenous communities, quilombolas, small-scale farmers, feminist movements, and other grassroots voices and local NGOs. The support of International Social Movement 1 was essential in terms of local persuasion and

diffusion of ideological elements (such as the benefits of organic foods; the values of the agroecological practice; the need of more feminism movements in agriculture; the claims of food sovereignty and less corporate dependency in agriculture; etc.) that would grab those resistant actors into a common identity and boost the chain of difference. This shift in discourse articulation (from "biodiversity conservation" to "ecological agriculture") and the focus on engaging with more grassroots actors, turned out to be, through the years, more effective in terms of building a more powerful counterhegemonic movement. Thus, although it is still tough to resist GMO hegemony in Brazil in 2015, some "victories" have been achieved, as the implementation of public policies oriented by the ecological agriculture discourse.

In the UK, resistance was also led by Greenpeace in the 1990s in order to oppose the very pro-GMO government in the UK and its strong articulations around "science" and "food security". Greenpeace started articulating "science" and "biodiversity preservation" and the possible negative effects of GMOs on the environment. Along with Greenpeace, the international environmental NGO Friends of the Earth and the local social movement Soil Association led the debate to resist GMOs from civil society. Right after their claims around "biodiversity preservation", they started to articulate the need for "ecological agriculture" focusing on the importance of organic food to human and animal health. In 1999, after the Prince of Wales declared himself to be completely against GMOs and biotech corporations, these actors reinforced their articulations around "ecological agriculture" with public opinion and local NGOs. Greenpeace led this strategy too, which turned to be effective around the country, and they formed a strong mobilization against GMOs. As an example, after some time, the big supermarket chains that were endorsing GMOs and "food security" discourse in the beginning decided to step back on transgenics because of high rejection from consumers.

The historical contingencies in the mid-1990s, with the strong pressure of Tony Blair (UK Prime Minister at the time) in the beginning of GMO discussions in the UK and this Prince of Wales initiative, highlighted the cross-level of political activity from a neo-Gramscian approach: global order, civil society, and the state. The UK (as a key state in GMO governance) and its articulations with and against international civil society actors on transgenics regulations and public opinion showed that, the "relations of force" (material, institutional, and discursive) are intertwined in complex and dynamical hegemonic and counterhegemonic formations.

Moreover, the Prince of Wales historical contingency in the UK demonstrated that to build collective resistance against "food security" through the articulations of "ecological agriculture" it was necessary to ground the arguments in ideological elements within this discourse (such as that agriculture should be organic and based on ecological principles) in order oppose the strong ideology behind "food security" (such as the biotechnology is the future of agriculture, GMOs would increase food production and solve food insecurity). Therefore, "ideology" is essential in the process of discourse articulation as it is the "cement" of the social formation. It is also clearer through the investigation of historical contingencies.

Furthermore, "ecological agriculture" was articulated by some international civil society actors in the UK earlier than in Brazil. It started in the late 1990s, while in Brazil this discourse against transgenics was mainly articulated after 2010. However, in Brazil, "biodiversity preservation" was articulated in the early 1990s while in the UK only in the late 1990s. I argue that the different moments of the beginning of these articulations around "ecological agriculture" and "biodiversity preservation" have to do (among other reasons) with: a) geopolitics (the GMO agenda in the UK started focusing on "food security" because of economic geopolitical interests with the U.S.; and Brazil articulated "biodiversity preservation" first because of its leading role in Rio-92 and because of its concern about the increase in illegal GMO imports from Argentina); b) the articulation of media and public opinion (unlike Brazil, in the UK "ecological agriculture" was immediately articulated in the mainstream media); c) the central role of agribusiness actors in Brazil; d) the country's biodiversity (Brazil is considered one of the "megabiodiverse" countries and, consequently, "biodiversity conservation" was the first major discourse articulated to resist GMO hegemony); d) degree of urbanization of "ecological agriculture" within the GMO field of struggle (in the UK, "ecological agriculture" started mainly in urban areas, and in Brazil, the need for an "ecological agriculture" started particularly in the countryside).

Finally, from the data presented in the first section of the research results and this first empirical section focusing on the international civil society actors in GMO governance, I argue that some international environmental NGOs (i.e., Greenpeace and Friends of the Earth) in GMO resistance, were fundamental in taking the claims against transgenic seeds from the governance level to the local level in the beginning of GMO hegemony formation in the 1990s. They mainly articulated "science" and "biodiversity

conservation". On the other hand, in the late 2000s, International Social Movement 1 became the most powerful voice in leading the articulations of "ecological agriculture" to oppose transgenics from the governance to the local level.

These findings strongly suggest the need for further studies on civil society (especially in terms of resistance) since they demonstrate the dynamic process of main locus of action. That is, differently from most of the international environmental NGOs against GMOs, such as Greenpeace and Friends of the Earth, Social Movement 1 was launched to bring the demands of social movements from the local to the global level. Consequently, its legitimacy to represent civil society comes from farmers' organizations at the local level. On the other hand, some of the big international environmental NGOs like Greenpeace and Friends of the Earth started their pathways by setting their positions against international issues (for instance, those two started in the 1970s fighting nuclear energy and nuclear weapons). Thus, their discourse articulations (in this case, around GMOs) is first set at the governance level in international forums and then at the local level. Social International Movement 1 moves differently, first articulating locally and then acting globally. Furthermore, to phrase it in terms of the theoretical framework adopted for this thesis, I would like to argue that in GMO resistance, formal international civil society actors are highly focused on discourse articulations internationally while informal international civil society actors are highly focused on discourse articulations at the local and regional level. Once again, I argue that this dynamic explains why we should avoid generalizations about civil society as a homogeneous group.

The last issue addressed in the research results refers to the organizing strategies applied by the international civil society actors to articulate the floating signifiers ("science"; "biodiversity conservation"; "food security" and "ecological agriculture" - these three under the big discourse of "sustainability") within the nodal point of "GMOs".

Since the beginning of GMO formation, North-America multinational corporations and the U.S. government have articulated "science" discourse to legitimize the use of transgenic seeds in global agriculture. Following those actors, international civil society actors have also largely articulated "science" in GMO governance, but not only endorsing it, but resisting too. They usually rely on scientific arguments and scientific research to engage with international institutions, state representatives, public opinion, private sectors, and others. Among civil society actors, international environmental

NGOs are widely recognized as the most reliable "science" source in this field of struggle. However, although all of them articulated "science" in order to resist hegemonic alliances before the implementation of the Cartagena Protocol (especially against the arguments of multinational corporations that transgenics were risk-free), some of them changed their positions right after the Protocol came into force. Thus, from then on, some international environmental NGOs started to articulate "science" to support hegemony, which can be explained by the growing power of "food security" as a floating signifier in GMO hegemony and its capacity to grab actors from GMO resistance. In other words, more recently, it has been more difficult to differentiate one actor from another in GMO governance through the articulation of "science" since most of the actors articulate it. Because of that, some international environmental NGOs turned to decrease their focus on "science" and decided to stress their positions through other more effective signifiers in order to build a collective identity against or pro-GMOs.

The articulation of "sustainability" by international civil society actors is more complex as it encompasses the articulation of three discourses: "biodiversity preservation", "food security", and "ecological agriculture". First, I highlight that some international civil society actors articulated "biodiversity preservation" in antagonistic ways to resist GMOs since the release of Cartagena Protocol in 2003. Through the investigation, I found that, if a civil society organization promotes biodiversity preservation and, at the same time supports GMO hegemony, those NGOs and other resistant actors will describe it as "their enemy". In the end, the actors that most articulate this floating signifier are, on the one hand, International NGO 1 and ISAAA (to support GMO hegemony) and, on the other hand, International Social Movement 1 and International NGO 2 (to resist GMO hegemony) (as shown in Table 9). In Exhibit 7, the timeline on GMO governance illustrates the importance of this discourse in the historical contingency of Rio-92 (articulated by some international environmental NGOs) in the formation of an international chain of difference to oppose transgenics.

Secondly, I pointed out that "food security" became the most powerful discourse articulated by some international civil society actors to endorse GMO hegemony. On the other hand, other international civil society actors also articulate "food security" but in an antagonistic way to craft resistance in GMO governance. This dominant discourse in GMO hegemony

entails other powerful discursive resources, such as green economy, agriculture productivity, feeding world's population; food commodities; global markets, and others.

The power of this discourse in GMO hegemony was highlighted in the historical contingency of the RTRS. The establishment of this multi-stakeholder forum represented the materialization of the ideology behind the discourse of "food security" that puts GMOs as one key solution to tackle global food hunger. Additionally, as illustrated in Exhibit 7, in RTRS the articulations around one big discourse from the combination of "science" plus "food security" attracted more international NGOs to engage in the pro-GMO chain of equivalence, which endorsed the view of the dominant actors in GMO governance (such as Monsanto, DuPont Nutrition Biosciences ApS, Carrefour, Sainsbury's Supermarkets, Nestlé, Unilever, the U.S. government, and others). The main international NGOs in this chain of equivalence are: Conservation International, Earth Innovation Institute, Fauna & Flora International, Fundación para la Conservación y el Uso Sustentable de los Humedales, Solidaridad, The Nature Conservancy, Vrutti, World Resources Institute, and International NGO 1.

On the other hand, the RTRS also marked the strong antagonistic articulations of a common "enemy" creation around "food security" in order to build a common collective counterhegemonic identity. That is, some international civil society actors started to advocate that "food security" had been disseminated by the same actors that had commodified nature and increased social disruption and environmental damage worldwide. The notion of "food security" has become so unacceptable to those that resist GMO hegemony that if an actor endorses the claims around "food security" it will be considered an "enemy" too. Thus, "food security" has been strongly articulated by some international NGOs (as International NGO 2, 3 and 4) and International Social Movement 1 (the most important opposition to this discourse) in order to establish a division of "us" against "them" in an antagonistic relation. Moreover, within this antagonistic articulation, these international civil society actors argue that one of the main reasons why international NGOs from RTRS engage with multinational corporations and other dominant actors in "food security" is fundraising. For them, most of the international NGOs that endorse GMOs receive large quantities of funding from those corporations.

Thus, I conclude that the more the international NGO embraces market-based model and managerial values (i.e., entrepreneurship, accountability, fundraising skills, etc.) in

a more formally organized way, the more they enhance their capacity to build collective identity and to shape hegemony or counterhegemony in GMO governance and, arguably, also in global governance contexts as a whole. In other words, the legitimacy of an international NGO in GMO governance depends not only on conducive opportunity structures, but also on its organizational capacity. In this way, international NGOs move closer to the ways of organizing and to the rhetoric the dominant actors.

Finally, the third discourse articulated under "sustainability" is "ecological agriculture". Unlike the other discourses articulated in GMO governance, "ecological agriculture" has only been articulated by those who oppose GMOs. For the international civil society actors that sustain GMO hegemony, "ecological agriculture" is considered a "radical" discourse, especially because of its claims in defence of "food sovereignty" and "agroecology". Within those discourses resources, "ecological agriculture" empowers peasant and indigenous forms of agriculture, puts small farmers in the centre of the food system, local and national markets, organic products, the practice of agroecology in agriculture and advocate against corporation control in the global food system. As mentioned before, International Social Movement 1 is the most important international civil society actor followed by International NGO 2, 3 and 4.

The fact that only those that resist GMOs articulate the discourse of "ecological agriculture" turned out to be an effective strategy by some international civil society actors. It can be exemplified at the local and international levels. In Brazil, two so-called "victories" by GMO resistance were the formulation of the Pnae in 2009 and the PLANAPO in 2013. At the international level, the organization in 2014 of the International Symposium on Agroecology for Food Security and Nutrition by the FAO in Italy and the engagement of The World March of Women in GMOs chain of difference highlight that the power of this discourse has increased in GMOs opposition.

The organizing strategy of articulating "ecological agriculture" by international environmental NGOs and international grassroots movements was beneficial for both types of civil society actors in GMOs resistance: (formally organized) international NGOs and (informally organized) international social movements. Considering the strong power of GMO hegemony, international NGOs (especially International Environmental NGOs) needed to attract more actors that would join the collective identity against transgenic seeds. Therefore, the engagement with the largest international grassroots movements in agriculture was fundamental to strengthen their

claims to resist GMOs and to get closer to the voices “from the margins” of the global food system (such as peasants, quilombo communities, indigenous people, religious groups, and others). Likewise, although these international grassroots movements usually do not engage with international NGOs, they started new alliances with some of them in GMO governance in order resist the growth of GMOs worldwide, as well as to get their demands listened to in global realms (i.e., in CBD, in EU, in FAO, in UN).

Hence, I argue that the growing leading role of some informal civil society actors (civil society actors with informal way of organizing - see exhibit 2) in GMO governance through the International Social Movement 1 is something that tends to be intensified through the years and to cause more disruptive moments in GMO hegemony. Consequently, it will demand new articulations from the dominant groups in order to limit the growing articulations of resistance. Considering that, nowadays, social formation is very dynamic, I would venture to say that the articulation of a new nodal point can always emerge and new collective identities can also be constructed and accommodate new actors, new institutions, new discourse resources, and new demands.

To sum-up, after presenting these research results, I conclude that the main organizing strategies applied by the international civil society actors are influenced by two central historical contingencies in GMO governance (see Exhibit 8): 1) First Multi-stakeholder Historical Contingency; and 2) “Supposed” Hegemony Stability. These two historical contingencies in GMO governance encompass deeper hegemonic articulations and, because of that, induce international civil society actors to rethink the way they articulate and position themselves in GMO governance.

Exhibit 8 - International Civil Society Actors' Main Organizing Strategies in GMO Governance

Source: The author

In Exhibit 8, I illustrate how the First Multi-stakeholder Historical Contingency (in this case, Rio-92) was central because it showed to the international civil society actors that GMOs were a global issue and that they would become a reality in the near future. This fact highly influenced them to decide whether to engage in this theme or not, and more than that, to make the first decisions as to which "discourse" they should articulate to craft a collective identity (to support or resist GMOs). Again, this is not a rational/deliberate act, but from this moment onwards, international civil society actors knew, because there was no way back on GMOs, that they would have to keep articulating one discourse or not in the international agenda, and if they should introduce a new one or not.

Thus, from this first moment, international civil society actors in resistance and in hegemony of GMO governance were formally organized and represented by international NGOs. In terms of the organizing strategy they applied, new discourses were introduced to resist or support hegemony.

The articulations follow this pathway in this first historical contingency moment: from the global to the local level. Since it was just the beginning of GMO Governance formation, the collective identity coalescing those actors was still unclear and the chains of equivalence and difference around one discourse were small. Consequently, the

associations with other actors (such as multinational corporations, international organizations, policymakers, and research institutes) were still fragile. From that moment onwards, all international civil society actors started their journey to articulate discourses and expand their actions and effectiveness.

In this way, I suggest that a more profound analysis of this historical contingency is key in international studies using neo-Gramscian theory. So, because of that, I claim that further research on international civil society actors grounded on this discourse approach should take this particularity into account, especially when problematizing the theoretical category of 'historical contingency'.

I also argue that the second central key historical contingency is when the "supposed" hegemony stability got clearer (in this case, when they started to articulate food security and science together in the release of the RTRS). From that moment onwards, there is no doubt (among all international civil society actors) that hegemony, as a discursive formation, was staked out at the governance level. That is, hegemony is more clearly highlighted by forms of power by consent supported by institutions, intellectual, moral, and political kind of leadership, or authority in GMO governance.

After this contingency, international civil society actors will then rethink their organizing strategies and positions in order to endorse or resist hegemony. However, differently from the first central historical contingency, resistance will be organized formally and informally and will be represented by international NGOs and International Social Movement 1. Hegemony, in turn, will continue to be articulated in a more formally organized way and by international NGOs.

In terms of organizing strategy, the actors will face strong antagonistic articulations and resistance will be intensified by the construction of a common enemy. Moreover, resistance actions will follow a different pathway. It will be now articulated from the local to the global.

As a result, the collective identities (in hegemony and resistance) will be clearer and more easily identifiable, which means that chains of equivalence and difference will be bigger and more robust. This is also possible because more actors will have joined the articulations around new discourses, whether to support or to resist hegemony. Therefore, the associations with other actors will be stronger than ever, with new

political actions of the institutions involved and the international civil society actors seeking a conducive opportunity to restart the hegemonic process.

Drawing from the relevance of this second central historical contingency, I argue that future research on international civil society actors with a neo-Gramscian discourse approach should take this historical contingency also as another key moment of hegemonic formation that must be taken into account.

Therefore, I argue that the organizing strategies of international civil society actors will be conditioned to those two privileging political moments in the structuration of GMO governance. Thus, depending on one of those moments, they will apply one specific way of action and engagement of discourse articulation, such as: new discourse articulation to capture the attention of people and institutions; endorsing new plural demands; increasing collective visibility; facilitating material articulations; sharing a common enemy identity; and spreading new ideological elements among the actors in the field of struggle.

This again highlights the important role played by international civil society actors in the GMO field of struggle at the global governance level. That is, in any discursive formation, international civil society actors shape and reshape discourse articulations in order to enjoy some degree of economic and political leverage, resulting in some marginal changes achieved from new resources distribution and new institutional connections.

In this sense, I argue that, more than "weaker groups" (Abercrombie, Hill and Turner, 1980; Levy, 2008), international civil society actors are key actors in GMO governance and I might say, from the neo-Gramscian perspective, in global governance issues as a whole. Every system-stabilizing process in global governance (such as, climate change, human rights, fresh water, etc.) will rely on international civil society actors to reinforce or to oppose the apparent universality of the dominant ideology within international institutions. Thus, it also poses an important agenda for future research on international civil society actors also in different fields of struggle at the global level.

Furthermore, I claim that, research on transnational social movements should move beyond the understanding that international civil society actors are part of a homogeneous "transnational social movement" that supports the dominant actors' agenda. Rather, from this thesis, I defend that international civil society actors differ from each other and that

they usually act in a very dynamical way in distinct governance contexts. Thus, it is possible to observe a large international NGO supporting hegemony in one particular issue while resisting it in another one. These practices stress that social formation processes go beyond the old base/superstructure dialectics.

I also suggest more future research using neo-Gramscian discourse analysis to better understand the role of other civil society actors in the hegemonic process (such as: some co-ops, foundations, think tanks, and others), as well as the role of other public and private actors. Additionally, I believe that there is a need for more studies based on neo-Gramscian discourse analysis in other fields of struggles (such as water security, ocean preservation, climate change, among others) and more research on hegemony construction focused on often largely marginalized countries in global governance, particularly outside the West.

Finally, I believe that with this thesis I have contributed to neo-Gramscian discourse analysis and, moreover, to the fields of Organization Studies (that has paid little attention to the "international" aspect of civil society actors and the growing intersection between movements, corporations and society), as well as International Business and International Management (that often investigate "civil society" in a homogenous way and that have largely ignored the discussions about how multinational companies and other powerful actors have been resisted in multiple ways).

Likewise, I suggest that those fields should refer to international NGOs that articulate discourses in global environmental governance issues as "IENGOs" (international environmental NGOs) and not only ENGOs (environmental NGOs) or only INGOs (international NGOs), which has been used most commonly in those fields as well as in International Relations and Environmental Politics. Thus, from this study, I conclude that, the best way to refer to that type of NGO is "IENGOs", since the acronyms "INGOs" or "ENGOs" are, in my view, simplistic and can hide important practices of those organizations.

I end these conclusions by recognizing that all those explanations and results above are the outcome of this doctoral thesis. In this sense, I stress that they are open to contestations and encompass some limitations (most of them pointed in section 3.4). In my opinion, the main challenge of this study lies in the investigation of a complex contemporary international phenomenon in two different local realities (in Brazil and in the UK) with also complex "collective wills" and with a plurality of actors.

REFERENCES

Abercrombie, N., Hill, S., and Turner, B. (1980). *The dominant ideology thesis*. London: George Allen & Unwin.

Agroecologia e Alternativas Ecológicas. (2010). *Contaminação por transgênicos põe em risco o meio ambiente e viola o Direito dos Agricultores.* Available at <http://agroecologiaealternativasecologicas.blogspot.com.br/2010_04_01_archive.html> Accessed on 7 Sept 2014.

Allain, J., Nascimento-Schulze, C., and Camargo, B. (2009). As representações sociais de transgênicos nos jornais brasileiros. *Estudos de Psicologia*, 14(1): 21-30.

Alvesson, M. and Kärreman, D. (2000a). Varieties of discourse: On the study of organizations through discourse analysis. *Human Relations,* 53(9): 1125-1149.

Alvesson, M. and Kärreman, D. (2000b). Taking the linguistic turn in organizational research: Challenges, responses, consequences. *Journal of Applied Behavioural Science*, 36(2): 134-156,

Alvesson, M. and Kärreman, D. (2011). Decolonializing discourse: Critical reflections on organizational discourse analysis. *Human Relations*, 64(9): 1121-1146.

Andrée, P. (2005). The Cartagena Protocol on Biosafety and Shifts in the Discourse of Precaution. *Global Environmental Politics*, 5(4): 25-46.

Andrée, P. (2011). Civil society and the political economy of GMO failures in Canada: a neo-Gramscian analysis. *Environmental Politics*, 20(2): 173-191.

Arendt, H. (1958). *The human condition.* University of Chicago Press, Chicago.

Arsenault, C. (2015). *Europe's food fight shifts after GM crop vote.* Available at <http://uk.reuters.com/article/2015/01/26/us-food-europe-gmo-idUKKBN0KZ1OI20150126> Accessed on 3 Apr 2015.

Arts, B. (1998). *The political influence of global NGOs: case studies on the climate and biodiversity conventions.* Utrecht: International Books.

Arts, B. (2002). "Green alliances" of business and NGOS. New styles of self-regulation or "dead-end roads"? *Corporate Social Responsibility and Environmental Management*, 9: 26-36.

Arts, B. (2005). Non-state actors in global environmental governance: new arrangements beyond the state. In Koenig-Archibugi, M; Zürn, M. (Orgs.). *New Models of Governance in the Global System: Exploring Publicness, Delegation and Inclusiveness*, New York: Palgrave.

Arts, B. and Mack, S. (2003). Environmental NGOs and the Biosafety Protocol: a case study on political influence. *European Environment - The Journal of European Environmental Policy*, 13(1): 19-33.

AS-PTA. (2000). *Por um Brasil livre de transgênicos.* Available at <http://aspta.org.br/campanha/boletim-35-16-de-outubro-de-2000/> Accessed on 7 Sept 2014.

AS-PTA. (2012). *Sementes transgênicas liberadas comercialmente no Brasil.* Available at <http://aspta.org.br/campanha/confira-aqui-os-produtos-que-podem-chegar-a-sua-mesa-apesar-da-falta-de-testes-adequados-de-seguranca/> Accessed on 7 Sept 2014

Banerjee, S. B. (2003). Who Sustains Whose Development? Sustainable Development and the Reinvention of Nature. *Organization Studies*, 24(1): 143-180.

Banerjee, S. B. (2011). Voices of the Governed: towards a theory of the translocal. *Organization*, 18(3): 323-344.

Banerjee, S. B. (2012). A Climate for Change? Critical Reflections on the Durban United Nations Climate Change Conference. *Organization Studies*, 33(12), 1761-1786.

Baum, W. (1986). *Partners against hunger: Consultative Group on International Agricultural Research*. Washington, D.C.: World Bank.

BBC (1996). 1996: First GM food goes on sale in UK. Available at <http://news.bbc.co.uk/onthisday/hi/dates/stories/february/5/newsid_4647000/4647390.stm> Accessed on 5 May 2015.

BBC (1999). Business: GM food policy to stay. Available at <http://news.bbc.co.uk/2/hi/business/330210.stm> Accessed on 5 May 2015.

BBC (1999a). Sci/Tech: Gene-altered food 'safe to eat'. Available at <http://news.bbc.co.uk/2/hi/science/nature/278994.stm> Accessed on 5 May 2015.

BBC (1999b). UK: Prince sparks GM food row. Available at <http://news.bbc.co.uk/2/hi/uk_news/357665.stm> Accessed on 5 May 2015.

BBC (1999c). Sci/Tech: Europe's GM battles. Available at <http://news.bbc.co.uk/2/hi/science/nature/392490.stm> Accessed on 5 May 2015.

Beech, N. (2008). On the Nature of Dialogic Identity Work. *Organization*, 15(1): 51-74.

Benthien, P. (2010). *Transgenia agrícola e modernidade: um estudo sobre o processo de inserção comercial de sementes transgênicas nas sociedades brasileira e argentina a partir dos anos 1990-2010.* PhD Thesis - Instituto de Filosofia e Ciências Humanas, Universidade Estadual de Campinas, Campinas.

Berry, J. (1999). The rise of citizen groups, in T. Skocpol and M. Fiorina (Eds.), *Civic engagement in American democracy*. Washington: Brookings Institution Press and Russell Sage Foundation.

Betsill, M. and Corell, E. (2001a). NGO influence in international environmental negotiations: A framework for analysis. *Global Environmental Politics*, 1(4): 65-85.

Betsill, M. and Corell, E. (2001b). A Comparative Look at NGO Influence in International Environmental Negotiations: Desertification and Climate Change. *Global Environmental Politics*, 1(4): 86-107.

Beyers, J. (2004). Voice and access: Political practices of European interest associations. *European Union Politics*, 5(2): 211-40.

BINGOs (2015). Glossary of climate change acronyms. Available at <http://unfccc.int/essential_background/glossary/items/3666.php> Accessed on 01 Jul 2015.

Blaug, R. (1998). The tyranny of the visible: Problems in the evaluation of anti-institutional radicalism. *Organization,* 6(1): 33–56.

Böhm, S. (2006). *Repositioning organization theory.* London: Palgrave.

Böhm, S. and Dabhi S. (Eds.) (2009). Upsetting the offset: the political economy of carbon markets. London: Mayfly.

Böhm, S., Misoszky, M. and Moog, S. (2012). Greening capitalism? A Marxist critique of carbon markets. *Organization Studies*, 33(11): 1617-1638.

Böhm, S., Spicer, A., and Fleming, P. (2008). Infra-political dimensions of resistance to international business: A neo-Gramscian approach. *Scandinavian Journal of Management*, 24, 169-182.

Boli, J. and Thomas, G. (1999). *Constructing world culture:* International non-governmental organizations since 1875, Stanford: Stanford University Press.

Boström, M. and Hallström, K. (2010). NGO Power in Global Social and Environmental Standard-Setting. *Global Environmental Politics*, 10(4): 36-59.

Brown, A. and Coupland, C. (2005). Sounds of silence: Graduate trainees, hegemony and resistance. *Organization Studies*, 26(7): 1049–1069.

Buechler, S. (1990). *Women's Movements in the United States:* Woman Suffrage, Equal Rights and Beyond. New Brunswick, NJ: Rutgers, UniversityPress.

Bumpus, A. G. and Liverman, D. M. (2008). Accumulation by decarbonization and the governance of carbon offsets. *Economic Geography*, 84, 127–155.

Burgerman, S. (2001). *Moral victories: How activists provoke multilateral action.* Ithaca: Cornell University Press.

Business Insider. (2015). The EU has approved the first GMO crops since 2013. Available at <http://www.businessinsider.com/r-eu-approves-first-new-genetically-modified-crops-since-2013-2015-4> Accessed on 5 May 2015.

Campolina, A. and Gonçalo, J. (2001). Transgênicos em debate. Available at <http://www.teoriaedebate.org.br/materias/sociedade/transgenicos-em-debate?page=full> Accessed on 7 Sept 2014.

Campos, P. (2003). Biossegurança e sua dinâmica legal. Available at <http://www.direitonet.com.br/artigos/exibir/1120/Biosseguranca-e-sua-dinamica-legal> Accessed on 7 Sept 2014.

Cavalli, S. (2001). Segurança alimentar: a abordagem dos alimentos transgênicos. Available at <http://www.scielo.br/scielo.php?pid=S1415-52732001000400007&script=sci_arttext> Accessed on 7 Sept 2014.

Centre for Food Safety. (2005). Monsanto vs US Farmers, United States, January. http://www.centerforfoodsafety.org/files/cfsmonsantovsfarmerreport11305.pdf> Accessed on 7 Sept 2014.

Christmann, P. and Taylor, G. (2006). Firm self-regulation through international certifiable standards: Determinants of symbolic versus substantive implementation. *Journal of International Business Studies*, 37: 863-878.

Clapp, J. (2003). Transnational Corporate Interests and Global Environmental Governance: Negotiating Rules for Agricultural Biotechnology and Chemicals. *Environmental Politics*, 12(4): 1-23.

Clark, A. (2001). *Diplomacy of Conscience*: Amnesty International and Changing Human Right Norms. Princeton: Princeton University Press.

Clarke, G. (1998). Non-governmental organizations (NGOs) and politics in the developing world. *Polit. Stud.* 46(1): 36-52.

Collucci, C. (2015). Resíduos de agrotóxicos estão presentes até no leite materno. Available at <http://www1.folha.uol.com.br/colunas/claudiacollucci/2015/04/1615841-residuos-de-agrotoxicos-estao-presentes-ate-no-leite-materno.shtml> Accessed: 3 Apr 2015.

Conservation International (2012). Megadiversity: the 17 Biodiversity Superstars. Available at <www.conservation.org/documentaries/Pages/megadiversity.aspx> Accessed on 31 Aug. 2012.

Conservation International (2015). Food: Agriculture and Fisheries. <http://www.conservation.org/what/pages/food-agriculture-and-fisheries.aspx> Accessed on 5 May 2015.

Contu, A. and Willmott, GMOs. (2003). Re-embedding situatedness: The importance of power relations in learning theory. *Organization Science, 14:* 283–296.

Convention on Biological Diversity (CDB). (2006). *Global Biodiversity Outlook 2*. Montreal: United Nations.

Convention on Biological Diversity (CBD). (2015). List of parties. Available at <https://www.cbd.int/information/parties.shtml> Accessed on 5 May 2015.

Cooper, R. and Burrell, G. (1988). Modernism, postmodernism and organizational analysis: an introduction. *Organization Studies*, 9(1): 91-112.

Coupland, C. and Brown, A. D. (2004). Constructing organizational identities on the web: The case of Royal Dutch/Shell. *Journal of Management Studies*, 41, 1325–1347.

Cox, R. (1981). Social Forces, States and World Orders: Beyond International Relations Theory. *Journal of International Studies*, 10: 126-155.

Cox, R. GMOs. (1995). Critical political economy, in Hettne, B. (Ed.). *International Political Economy. Understanding Global Disorder*. London: Zed Books.

Cox, R. GMOs. (1997). A perspective on globalisation, in Mittelman, J. GMOs. (Ed.). *Globalisation Critical Reflexions*. Boulder, CO: Lynne Rienner.

Creed, W. E. D., Scully, M. A., and Austin, J. R. (2002). Clothes make the person: The tailoring of legitimating accounts and the social construction of identity. *Organization Science*, 13: 475–496.

Crossley, N. (2002). *Making sense of social movements.* Buckingham, UK: Open University Press.

Dalton, R. J., Kuechler, M., and Burklin, W. (1990). The Challenge of the New Movements. In R. J. Dalton and M. Kuechler (Eds.), *Challenging the Political Order: New Social and Political Movements in Western Democracies* (pp. 3-20). Oxford UK: Oxford University Press.

Davis, G. F. and McAdam, D. (2000). Corporations, Classes and Social Movements. In B. Staw and R.I. Sutton (Eds.), *Research in Organizational Behavior*, Oxford UK: Elsevier Science.

Davis, G. F. and Thompson, T. A. (1994). A social movement perspective on corporate control. *Administrative Science Quarterly*, 39(1): 141–174.

De Bakker, F., Den Hond, F., King, B., and Weber, K. (2013). Social movements, civil society and corporations: Taking stock and looking ahead. *Organization Studies*, 34(5-6): 573-593.

Dellagnelo, E., Böhm, S., and Mendonça, P. (2014). Organizing resistance movements: the contribution of political discourse theory. *RAE-Revista de Administração de Empresas*, 54(2): 141-153.

Depledge, J. (2000). Rising from the ashes: The Cartagena Protocol on Biosafety. *Environmental Politics*, 9(2): 156-162.

Derrida, J. (1978), *Writing and Difference*. London: Routledge and Kegan Paul.

Downes, W. (1984), *Language and Society*. London: Fontana.

Dubuisson-Quellier, S. (2013). A market mediation strategy: How social movements seek to change firms' practices by promoting new principles of product valuation. *Organization Studies*, 34(5-6): 683-703.

Earth Negotiation Bulletin. (2012). *A Summary Report on the Second Session of the Conference of the Parties to the Convention on Biological Diversity.* Available at <http://GMOs.iisd.ca/vol09/enb09320e.html> Accessed on 10 Apr. 2012.

ECO (2006). *CBD's de facto Moratorium on Terminator Technology Under Fire* . Available at <https://www.cbd.int/doc/external/cop-08/ma-eco-2006-03-21-newsletter.pdf> Accessed on 5 May 2015.

Edelman, M., Weis, T., Baviskar, A., Borras Jr, S., Holt-Giménez, E., Kandiyoti, D., and Wolford, W. (2014). Introduction: critical perspectives on food sovereignty. *The Journal of Peasant Studies*, 41(6): 911-931.

Edwards, M. (2004). *Civil Society*, Polity, Malden, MA.

Egelston, A. (2013). *Sustainable Development: a history*. Ed. 1. Springer: Netherlands.

Elliott, C. (2003). Representations of the intellectual: Insights from Gramsci on management education. *Management Learning*, 34(4): 411–427.

EMBRAPA (2015). *Cronologia do embargo* . Available at <judicialhttps://www.embrapa.br/documents/1355202/1529289/Cronologia_do_Embargo_Judicial_da_Soja_Transg%C3%AAnica.pdf/a6c56275-aaf6-496f-b3c5-2670491ae0e6> Accessed on 5 May 2015.

Escobar, A. (1995). *Encountering Development:* The Making and Unmaking of the Third World, 1945–1992. Princeton, NJ: Princeton University Press.

Etc Group. (2011). *Who will control the Green Economy?* Available at <http://www.etcgroup.org/sites/www.etcgroup.org/files/publication/pdf_file/ETC_wwctge_4web_Dec2011.pdf> Accessed on 5 May 2015.

EtcGroup. (2003). *La technologie Terminator, cinq ans plus tard.* Available at <http://www.etcgroup.org/fr/content/la-technologie-terminator-cinq-ans-plus-tard Accessed: 5 May 2015.

EtcGroup. (2007). *The world's Top 10 seed companies*. Available at <http://GMOs.etcgroup.org> Accessed on 10 May 2007.

EtcGroup. (2012). *Who will control the Green Economy?* Available at <http://GMOs.etcgroup.org/sites/GMOs.etcgroup.org/files/publication/pdf_file/ETC_wwctge_4web_Dec2011.pdf> Accessed on 3 Oct. 2012.

EuropaBio (2015). *Facts about Biotech in Europe.* Available at http://www.europabio.org/facts-about-biotech-europe> Accessed on 5 May 2015.

European Commission. (2010). *A decade of EU-funded GMO research*. Available at<http://ec.europa.eu/research/biosociety/pdf/a_decade_of_eu-funded_gmo_research.pdf> Accessed on 5 May 2015.

European Council of the European Union (2015). *New GMO rules get final Council approval.* Available at <http://www.consilium.europa.eu/en/press/press-releases/2015/03/150302-new-gmo-rules-get-approved/> Accessed on 5 May 2015.

Fairclough, N. (1992), Discourse and Social Change. Cambridge: Polity Press.

Fairclough, N. (1995). *Critical discourse analysis*. London: Longman.

Falkner, R. (2000). Regulating Biotech Trade: the Cartagena Protocol on Biosafety. *International Affairs*, 76(2): 299-313.

Faria, A. and Guedes, A. (2010). "Introduction: What is International Management?", in Guedes, A. and Faria, A. (Eds.), International Management and International Relations: a critical perspective from Latin America, Routledge, New York.

Fauna and Flora International (2015). Working across sectors. Available at <http://www.fauna-flora.org/initiatives/working-across-sectors/> Accessed on 1 Jul 2015.

Finger, M. (1994). NGOs and transformation: beyond social movement theory. In: T. Princen and M. Finger (eds.) *Environmental NGOs in World Politics:* Linking the local and the global, London and New York: Routledge, pp. 48-68.

Fisher, W. (1997). "Doing good? The politics and anti-politics of NGO practices. Annual Review of Anthropology, 26:439-464.

Fitzgerald, K. and Rodgers, D. (2000). Radical social movement organizations: A theoretical model. *The Sociological Quarterly*, 41(4) (Autumn, 2000): 573-592.

Floriani, A. (2015). *Empresa investe US$ 4 bilhões em pesquisas com OGMs.* Available at <http://www.terra.com.br/reporterterra/transgenicos/monsanto.htm> Accessed on 5 May 2015.

FoE. (2000). *Contaminated GM Crops The 'accidental' release of GM oilseed rape into the UK countryside*. Available at <http://www.foe.co.uk/sites/default/files/downloads/contaminated_gm_crops.pdf. accessed 18 May 2000.

Fontoura, Y. and Guedes, A. (2013). Governança global e transferência de política: influências do Protocolo de Cartagena na Política Nacional de Biossegurança. *Revista de Administração Pública (Impresso)* 47(1): 3-23.

Fontoura, Y. and Guedes, A. International environmental NGOs in GMOs: rethinking resistance in international business. *Critical Perspectives on International Business*. (forthcoming).

Fontoura, Y. and Naves, F. *Movimento agroecológico no Brasil:* A construção da resistência na abordagem neogramsciana. (forthcoming).

Food and Agriculture Organization (FAO). (2002). FAO Commission on Genetic Resources for Food and Agriculture, "Potential Impacts of Genetic Use Restriction Technologies on Agricultural Biodiversity and Agricultural Production Systems:

Technical Study,: Prepared by the Ninth Regular Session, Rome, 14-18 October 2002. Available at the Internet: ftp://ftp.fao.org/docrep/fao/meeting/015/aj627e.pdf> Accessed on 5 May 2015.

Food and Agriculture Organization (FAO). (2011). *The State of Food Insecurity in the World:* How does international price volatility affect domestic economies and food security?. Rome: FAO.

Food and Agriculture Organization (FAO). (2013). *An Introduction to the Basic Concepts of Food Security.* Available at <http://www.fao.org/docrep/013/al936e/al936e00.pdf> Accessed on 01 Jun 2013.

Food and Agriculture Organization (FAO) (2015). *Final Report for the International Symposium on Agroecology for Food Security and Nutrition.* http://www.fao.org/3/a-i4327e.pdf> Accessed on 5 May 2015.

Food Standards Agency (2013). *GM labelling.* Available at <https://www.food.gov.uk/science/novel/gm/gm-labelling> Accessed on 5 May 2015.

Foucault, M. (1985), *The Archaeology of Knowledge*. London: Tavistock.

Foucault, M. (1990), *History of Sexuality*. Harmondsworth: Penguin Books.

Friedman, E., Hochstetler, K. and Clark, A. (2005). Sovereignty, Democracy and Global Civil Society: State-Civil Society Relations at UN World Conferences, SUNY Press, Albany.

G1. (2015). *Brasil lidera consumo de agrotóxicos no mundo e Inca pede redução do uso.* Available at <http://g1.globo.com/bemestar/noticia/2015/04/brasil-lidera-consumo-de-agrotoxicos-no-mundo-e-inca-pede-reducao-do-uso.html .Accessed: 5 May 2015.

Gamson, W. A. and Modigliani, A. (1989). Media discourse and public opinion on nuclear power: A constructionist approach. *American Journal of Sociology,* 95: 1–37.

GENET-news. (2008). *EU panel OKs 2 genetically modified corn products.* Available at <http://www.genet-info.org/information-services/news/en/18656.html> Accessed on 19 Aug 2014.

Genome British Columbia (2007). *Terminator Technology for GM crops.* Available at <http://www.genomebc.ca/education/articles/terminator-technology/> Accessed on 19 Aug 2014.

Geras, N. (1990). *Discourses of extremity: Radical ethics and post-Marxist extravagances*. London: Verso.

Gill, S. (1998). New constitutionalism, democratisation, and global political economy. *Pacifica Review*, 10 (1): 23–40.

Glass, V. (2010). *Brasil quer afastar precaução ambiental de agrocombustíveis.* Available at <http://reporterbrasil.org.br/2010/10/brasil-quer-afastar-precaucao-ambiental-de-agrocombustiveis/> Accessed on 19 Aug 2014.

Globo Rural (2014). *Milho milagroso – promessas duvidosas dos transgênicos*. Available at <http://pratoslimpos.org.br/?tag=milho-transgenico> Accessed on 19 Jan 2015.

Glynos, J. and Howarth, D. (2007). Logics of critical explanation in social and political theory. London: Routledge.

GM Education. (2012). *A brief history of genetic modification.* Available at <http://www.gmeducation.org/faqs/p149248-a-brief-history-of-genetic-modification.html> Accessed on 01 May 2015.

GMO Compass (2015). *Genetically modified plants:* Global cultivation on 174 million hectares. Available at<http://www.gmo-compass.org/eng/agri_biotechnology/gmo_planting/257.global_gm_planting_2013.html> Accessed on 01 May 2015.

GMO Free Regions (2015). http://www.gmo-free-regions.org/fr/past-conferences/food-democracy-april-2009/programme/safeguard-clause.html> Accessed on 19 Aug 2014.

GMWatch. (2014). *The film WWF doesn't want you to see.* Available at <http://GMOs.gmwatch.eu/latest-listing/1-news-items/13705-the-film-wwf-doesnt-want-you-to-see> Accessed on 01 Jan 2014.

Gordenker, L, Coate, R., Jönsson, C., and Söderholm, P (1995). *International Cooperation in Response to Aid:* NGOs, the UN, and Global Governance. Boulder: Lynne Rienner.

Gramsci, A. (1971). *Selection from prison notebooks.* London: Lawrence & Wishart.

Grant, D., Hardy, C., Oswick, C., and Putnam, L. (Eds.) (2004). *The Sage handbook of organizational discourse.* London: Sage.

Greenpeace (2003). *GM Farm scale trials* . Available at <http://www.greenpeace.org.uk/files/pdfs/migrated/MultimediaFiles/Live/FullReport/6035.pdf> Accessed on 19 Aug 2014.

Greenpeace (2004). *Soja transgênica no Brasil - Contaminação e royalties.* Available at <http://www.greenpeace.org.br/transgenicos/pdf/contaminacao.pdf> Accessed on 19 Aug 2014.

Greenpeace (2007). *Justiça volta a proibir CTNBio de liberar comercialização de milho transgênico.* Available at <http://www.greenpeace.org/brasil/pt/Noticias/justi-a-volta-a-proibir-ctnbio/> Accessed on 19 Aug 2014.

Greenpeace (2015). *Greenpeace Jobs*. Available at <http://www.greenpeace.org /international/en/about/jobs/greenpeacejobs/and http://www.greenpeace.org/seasia /ph/Global/seasia/report/2001/8/genetic-engineering-the-hidde.pdf> Accessed on 01 Jun 2015.

Greven, M. (2006). Some Considerations on Participation in Participatory Governance. In: B. Kohler-Koch, B.; Rittberger, B. (Orgs.) *Debating the Democratic Legitimacy of the European Union.* Lanham: Rowman and Littlefield.

Grice, A. (2013). *GM crops: Public fears over 'Frankenstein food' may be easing, Independent poll reveals. The Independent.* Available at <http://www.independent.co.uk/news/uk/politics/gm-crops-public-fears-over-frankenstein-food-may-be-easing-independent-poll-reveals-8728832.html> Accessed on 4 Jan 2015.

Guedes, A. (2010). International Political Economy, Management and Governance. In: Guedes, A.; Faria, A. (Orgs.) *International Management and International*

Relations: A Critical Perspective from Latin America. New York and London: Routledge.

Guedes, A. and Faria, A. (2010). Introduction: What's international management? In: Guedes, A.; Faria, A. (Orgs.) *International Management and International Relations: A Critical Perspective from Latin America*. New York and London: Routledge.

Guimarães, R. P., Fontoura, Y. and Runte, G. (2011). Time to act: Understanding earth system governance and the crisis of modernity. *Earth System Governance Working Paper No. 19*. Lund and Amsterdam: Earth System Governance Project.

Guimarães, R.P. and Fontoura, Y. (2012). Desenvolvimento Sustentável na Rio+20: discursos, avanços, retrocessos e novas perspectivas. Cadernos EBAPE.BR, 10(3): 565-568.

Gupta, A. (2002). Global Sustainable Development Governance: Institutional Challenges from a Theoretical Perspective. *International Environmental Agreements*: Politics, Law and Economics, 2: 361-388.

Gupta, A. and Falkner, R. (2006). The Influence of the Cartagena Protocol on Biosafety: Comparing Mexico, China and South Africa. *Global Environmental Politics*, 6(4): 23-55.

Gusfield and Joesph, A. (1994). *The Reflexivity of Social Movements: Collective Behavior and Mass Society Theory Revisited.* Pp. 58-78 in New Social Movements, edited by Larana, Johnston, and Gusfield.

Habermas, J. (1984-1987). *The Theory of Communicative Action*. (2 Volumes). Translated by ThomasMcCarthy. Boston: BeaconPress.

Hardisty, J. (1999). *Mobilizing Resentment:* Conservative Resurgence from the John Birch Society to the Promise Keepers. Boston: Beacon Press.

Hardy, C., Lawrence, T. and Grant, D. (2005). Discourse and collaboration: The role of conversations and collective identity. *Academy of Management Review*, 30: 58-77.

Hardy, C., Palmer, I. and Phillips, N. (2000). Discourse as a Strategic Resource, *Human Relations*, 53(9): 1227-47.

Haworth, N. and Hughes, S. (2003). International Political Economy and Industrial Relations. *British Journal of Industrial Relations*, 41: 665-682.

Heffernan, W. (1999). Biotechnology and mature capitalism. In: D.P. Weeks, J.B. Seglken, and R.W.F. Hardy, eds. *World food security and sustainability: the impacts of biotechnology and industrial consolidation.* Ithaca, NY: National Agricultural Biotechnology Council. Report 11: 121–136.

Hegel, G. (1821/2002). Phenomenology of spirit. New York: Oxford. University Press.

Herdt, R. (2005). Treaties, Intellectual Property, Market Power, and Food in the Developing World. *Proceedings of the American Philosophical Society*, 149(4): 487-514.

Herring, R. (2006). Why did "operation cremate monsanto" fail?: Science and Class in India's Great Terminator-Technology Hoax. *Critical Asian Studies*, 38(4): 467-493.

Hiatt, S. and Park, S. (2013). Lords of the Harvest: Third-Party Influence and Regulatory Approval of Genetically Modified Organisms. *Academy of Management Journal*, 56(4): 923-944.

Hickman, L. (2013). *Should the UK now embrace GM food?.* The Guardian. Available at <http://www.theguardian.com/environment/blog/2012/mar/09/genetically-modified-food-uk-embrace> Accessed on 4 Jan 2015.

Hill, R. and Sendashonga, C. (2006). Conservation Biology, Genetically Modified Organisms, and the Biosafety Protocol. *Conservation Biology*, 20(6).

Hirsch, P. (1986). From ambushes to golden parachutes: Corporate takeovers as an instance of cultural framing and institutional integration. *American Journal of Sociology*, 91: 800–837.

Hobbes, T. (1651/1985). *The leviathan*, Penguin, London.

Holsti, O. R. (1969), Content Analysis for the Social Sciences and the Humanities. Reading: Addisson-Wesley.

Howarth, D. and Stavrakakis, GMOs. (2000). Introducing discourse theory and political analysis. In Howarth, D, Norval, A, and Stavrakakis, GMOs. *Discourse theory and political analysis: identities, hegemonies and social change.* Manchester: Manchester University Press.

Hunt, S. A., Benford, R. and Snow, D. (1994). *Identity Fields: Framing Processes and the Social Construction of Movement Identities*. Pp.185-08 in New Social Movements, edited by Larana, Johnston, and Gusfield.

IDEC. (2015). *A luta do Idec contra os Transgênicos.* Available at <http://www.idec.org.br/consultas/dicas-e-direitos/a-luta-do-idec-contra-os-transgenicos> Accessed on 3 Apr 2015.

IDEC. (2015). *Fim da rotulagem dos alimentos transgênicos: diga não!* Available at <http://www.idec.org.br/mobilize-se/campanhas/fim-da-rotulagem-dos-alimentos-transgenicos-diga-no> Accessed on 3 Apr 2015.

Inglehart, R. (1990). *Values, Ideology and Cognitive Mobilization in New Social Movements*. Pp.43-66 in Challenging the Political Order, edited by Dalton and Kuechler.

International Service for the Acquisition of Agri-biotech Applications (ISAAA). (2014). ISAAA Brief 46-2013: *Executive Summary*. Available at <http://www.isaaa.org/resources/publications/briefs/46/executivesummary/> Accessed on 4 Jan 2015.

International Service for the Acquisition of Agri-biotech Applications (ISAAA). (2015). *ISAAA in Brief*. Available at <http://www.isaaa.org/inbrief/default.asp> Accessed on 4 Jan 2015.

International Social Movement 1 (2000a). *Biodiversity and Genetic Resources.* Available at <http://viacampesina.org/en/index.php/main-issues-mainmenu-27/biodiversity-and-genetic-resources-mainmenu-37/389-biodiversity-and-genetic-resources12> Accessed on 1 Jul 2015.

International Social Movement 1 (2000b). *Draft International Social Movement 1 Position Paper: International Relations and Strategic Alliances,* discussed during the III International Conference in Bangalore.

International Social Movement 1 (2004). Debate on Our Political Positions and Lines of Actions: Issues proposed by the ICC- International Social Movement 1 for regional and national discussion in preparation for the IV Conference, in IV International Social Movement 1 Conference: Themes and Issues for Discussion, pp. 45-58.

James, C. (2003). *Preview: Global status of commercialized transgenic crops: 2002.* International Service for the Acquisition of Agri-Biotech Application Brief. Ithaca, NY: ISAAA.

Jarosz, L. (2011). Defining World of Hunger: scale and neoliberal ideology in international food security policy discourse. *Food, Culture & Society,* 14(1): 117-139.

Jenkins, C. (1998). Channeling Social Protest: Foundation Patronage of Contemporary Social Movements. In *Private Action and the Public Good,* edited by W. Powell and E. Clemens. New Haven: Yale University Press.

Joachim, J. (2007). *Agenda-Setting, the UN, and NGOs*: Gender Violence and Reproductive Rights. Washington DC: Georgetown University Press.

Joachim, J. and Locher, B. (2009). Introduction: Transnational activism in the EU and the UN. In: J. Joachim and B. Locher (eds.) *Transnational Activism in the UN and the EU,* p. 1-18. London and New York, Routledge.

Johnston, H., Larana, E. and Gusfield, J. (1994). *Identities, Grievances and New Social Movements*. Pp.3-35 in New Social Movements, edited by Larana, Johnston, and Gusfield.

Jones, C. (2006). Why organizational discourse analysis doesn't need Ernesto Laclau, Seventh International Conference on Organizational Discourse. Amsterdam, Netherlands, July 26-28.

Jones, C. and Spicer, A. (2005). The sublime object of entrepreneurship. *Organization,* 12 (2): 223–246.

Jordan, W. (2014). *Many in Britain still sceptical of GM foods.* YouGov UK. Available at <https://yougov.co.uk/news/2014/02/21/many-britain-remain-sceptical-gm-foods/> Accessed on 4 Jan 2015.

Kaldor, M. (2003). *Global Civil Society*: An Answer to War. Cambridge: Polity Press.

Keck, M. and Sikkink, K. (1998). *Activists Beyond Borders:* Advocacy Networks in International Politics. Ithaca and London: Cornell University Press.

Keohane, R.; Nye, J. (2001). *Power and Interdependence*. New York: Longman,.

Klandermans B. (1991). New Social Movements and Resource Mobilization: The European and American Approaches Revisited. Pp.17-44 in Research on Social Movements, edited by Rucht.

Klandermans, B. (1994).*Transient identities? Membership Patterns in the Dutch Peace Movement.* Pp.168-184 in New Social Movements edited by Larana, Johnston, and Gusfield.

Klandermans, B. and Tarrow, S. (1988). *Mobilization into Social Movements: Synthesizing European and American Approaches*. Pp.1-38 in International Social Movement Research, Vol.1, From Structure to Action, edited by Klandermans, Kriesi and Tarrow.

Klimechi, R. and Willmott, H. (2011). Hegemony. In: M. Tadajewski, P. Maclaran, E. Parsons, and M. Parker (eds.) *Key Concepts in Critical Management Studies.* Los Angeles: Sage, pp. 130-134.

Kloppenburg, R. (1988). *First the seed:* The political economy of plant biotechnology (1492-2000). Cambridge: University Press.

Kourula, A. and Laasonen, S. (2010). Nongovernmental Organizations in Business and Society, Management, and International Business Research: Review and Implications From 1998 to 2007. *Business & Society*, 49(1): 35-67.

Kraemer, R., Whiteman, G. and Banerjee, B. S. (2013). Conflict and Astroturfing in Niyamgiri: The Importance of National Advocacy Networks in Anti-Corporate Social Movements. *Organization Studies*, 34(5-6): 823-852.

Krebs. (2000). *GM Foods in the UK between 1996 and 1999:* Comments on "Genetically Modified Crops: Risks and Promise" by Gordon Conway. Available at <http://www.ecologyandsociety.org/vol4/iss1/art11/> Accessed on 7 Sept 2014.

Krimsky, S. and Wrubel, R. (1996). Agricultural biotechnology and the environment: science, policy and social issues. Chicago, IL: University of Illinois Press.

Lacerda, D. (2014). Rio de Janeiro and the divided state: analysing the political discourse on favelas. *Discourse and Society*, 26(1): 74-94.

Laclau, E. (1991). *Community and Its Paradoxes:* Richard Rorty's "Liberal Utopia".in M.T. Collective. Community at Loose Ends. Minneapolis, University of Minnesota Press.

Laclau, E. (2005). *On populist reason*. London: Verso.

Laclau, E. (2006). Why constructing a people is the main task of radical politics. Critical Enquiry, *Critical Inquiry*, 32(4), 646-680.

Laclau, E. and Mouffe, C. (1982). "Interview", *Socialist Review*, No. 55.

Laclau, E. and Mouffe, C. (1985). *Hegemony and socialist strategy*. London: Verso.

Laclau, E. and Mouffe, C. (1987). "Post-Marxism Without Apologies", *New Left Review*, 166.

Larana, E., Johnston and, H. and Gusfield, J. (1994). *New Social Movements:* From Ideology to Identity. Philadelphia PA: Temple University Press.

Levy, D. (2008). Political Contestation in Global Production Networks. *Academy of Management Review*, 33(4): 943–963.

Levy, D. and Newell, P. (2000). Oceans Apart? Business Response to Global Environmental Issues in Europe and the United States. *Environment*, 42(9): 8-20.

Levy, D. and Scully, M. (2007). The institutional entrepreneur as modern prince: The strategic face of power in contested fields. *Organization Studies*, 28: 971–991.

Levy, D. L. and Egan, D. (2003). A Neo-Gramscian approach to corporate political strategy: Conflict and accommodation in the climate change negotiations. *Journal of Management Studies*, 40: 803-830.

Levy, D. L. and Newell, P. (2005). A Neo-Gramscian approach to business in international environmental politics: An interdisciplinary, multilevel framework. In

D. L. Levy, and P. Newell (Eds.), *The business of global environmental governance* (pp. 47–69). Cambridge, MA: MIT Press.

LobbyWatch. (2015). *Lord David Sainsbury*. Available at http://www.lobbywatch.org/profile1.asp?PrId=116> Accessed on 22 Jun 2015.

Locher, B. (2007). *Trafficking in Women in the European Union*. Wiesbaden: VS Verlag für Sozialwissenschaften.

Maguire, S. and Hardy, C. (2006). The Emergence of New Global Institutions: A Discursive Perspective. *Organization Studies*, 27(1): 7-29.

Maia Filho, R. (2010). *Conflito entre as determinações da convenção sobre a diversidade biológica e as regras do acordo TRIPS*. Available at <http://funag.gov.br/loja/download/906-Conflitos_Entre_a_Convencao_sobre_a_Diversidade_Biologica_e_o_Acordo_TRIPS.pdf> Accessed on 7 Sept 2014.

Marris, C. (2001). *Public views on GMOs: deconstructing the myths.* Available at <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC1083956/> Accessed on 5 May 2015.

Martens, K. (2002). Mission Impossible? Defining Nongovernmental Organizations. *Voluntas: International Journal of Voluntary and Non-profit Organizations*, 13(3): 271-285.

Martens, K. (2006). Institutionalizing societal activism within global governance structures: Amnesty International and the United Nations system. *Journal of International Relations and Development*, 9: 371-395.

Massarani, L. (2013). O que pensam os pequenos agricultores da Argentina sobre os cultivos geneticamente modificados? *Ambiente & Sociedade*, XVI(3): 1-22.

McAdam, D. (1996). 'Conceptual origins, current problems, future directions' in Comparative perspectives on social movements: Political opportunities, mobilizing structures, and cultural framings. D. McAdam, J.D. McCarthy and M.N. Zald (eds.). Cambridge: Cambridge University Press.

McAdam, D. and Boudet, H. (2012). *Putting Social Movements in Their Place:* Explaining Opposition to Energy Projects in the United States, 2000-2005. New York: Cambridge University Press.

McAdam, D. and Kloos, K. (2014). *The Origins of Our Fractured Society:* Racial Politics and Social Movements in Post-War America. New York: Oxford University Press.

McAdam, D., McCarthy, J. and Zald, M. EDS. (1996). *Comparative Perspectives on Social Movements:* Political Opportunities, Mobilizing Structures, and Cultural Framings. Cambridge: Cambridge University Press.

McAdam, D., Tarrow, S. and Tilly, C. (2001). *The Dynamics of Contention*. New York and London: Cambridge University Press.

McCarthy, M. (2000). *Honey has been contaminated by GM crops, claims Friends of the Earth.* Available at <http://www.independent.co.uk/environment/honey-has-been-contaminated-by-gm-crops-claims-friends-of-the-earth-276244.html> Accessed on 7 Sept 2014.

McMichael, P. (2009). A food regime genealogy. *The Journal of Peasant Studies*, 36(1): 139-269.

Melucci, A. (1989). *Nomads of the Present:* Social Movements and Individual Needs in Contemporary Society, edited by John Keane and PaulMier. Philadelphia PA: Temple University Press.

Melucci, A. (1996). *Challenging codes:* Collective action in the information age. Cambridge: Cambridge University Press.

Mercer, C. (2002). NGOs, civil society and democratization: a critical review of the literature. *Progress in Development Studies*, 2(1): 5-22.

Millstone, E. and Van Zwanenberg, P. (2003). Food and Agricultural biotechnology policy: How much autonomy can developing countries exercise? *Development Policy Review*, 21(5-6): 655-667.

Ministério do Desenvolvimento Agrário - MDA. (2013). *Grupo de Estudos em Agrobiodiversidade planeja ações para 2013.* Available at <http://www.mda.gov.br/sitemda/noticias/grupo-de-estudos-em-agrobiodiversidade-planeja-a%C3%A7%C3%B5es-para-2013> Accessed on 5 May 2015.

Mintzberg, H. and Srinivas, N. (2009). Juxtaposing helpers and doers: a framework of non-governmental organizations in development. *Community Development Journal*, 38(4): 614-626.

Misoczky, M. C., Flores, R. K. and Böhm, S. (2008). A práxis da resistência e a hegemonia da organização. *Organizações & Sociedade*, 45: 181-194.

Mittelman, J. (2000). *The Globalization Syndrome*. Transformation and Resistance. Princeton, NJ: Princeton University Press.

Mohan, G. (2002). The disappointments of civil society: the politics of NGO intervention in Northern Ghana. *Political Geography*, 21(1): 125-54.

Monsanto (2015). *Why Does Monsanto Sue Farmers Who Save Seeds?* Available at <http://www.monsanto.com/newsviews/pages/why-does-monsanto-sue-farmers-who-save-seeds.aspx> Accessed on 5 May 2015.

Moreira, R. (2000). Críticas ambientalistas à Revolução Verde. *Estudos Sociedade e Agricultura*, 15: 39-52.

Moses, K. (2013). *GM crops: UK environment secretary to push for relaxation of EU rules.* Available at <http://www.theguardian.com/environment/2013/jun/12/gm-crops-environment-secretary-relaxation-rules> Accessed on 5 May 2015.

Motion, J. and Leitch, S. (2009). The transformational potential of public policy discourse. *Organization Studies*, 30: 1045–1061.

Mouffe, C. (1984). *Towards a Theoretical Interpretation of 'New Social Movements'*, in: Hanninen, S. and Paldán, L. (eds.) *Rethinking Marx*, Argument - Sonderband AS 109, Berlin, pp. 139-143.

Mouffe, C. (1999). Deliberative Democracy or Agonistic Pluralism. *Social Research*, 66(3): 745-758.

Mouffe, C. (2013). *Agonistics:* Thinking the World Politically. London and New York: Verso.

MST. (2015). *Mais de 60 entidades enviam carta contra o PL que acaba com rotulagem de transgênicos.* Available at <http://www.mst.org.br/2015/05/08/mais-de-60-entidades-enviam-carta-contra-pl-que-acaba-com-rotulagem-de-transgenicos.html> Accessed on 5 May 2015.

Mueller,C. McC. (1994). *Conflict Networks and the Origins of Women's Liberation*. Pp. 234-263 in New Social Movements, Edited by Larana, Johnston, and Gusfield.

Nanz, P. and Steffek, J. (2004). Global Governance, Participation and the Public Sphere. *Government and Opposition*, 39(2): 314-35.

National Centre for Biotechnology Education (NCBE). (2015). *EU and UK regulations. European Union and UK regulation of genetic modification and GM-derived food products.* Available at <http://www.ncbe.reading.ac.uk/ncbe/gmfood/regulations.html>Accessed on 01 Jan 2014.

Natural Society (2015). *Farmers Are Starting To Ditch GMO Soybeans.* Available at <http://naturalsociety.com/farmers-are-starting-to-ditch-gmo-soy-beans/> Accessed on 5 May 2015.

Neil F. and Doug McAdam. (2012). *A Theory of Fields.* New York: Oxford University Press.

Neslen, A. (2015). *GM crops to be fast-tracked in UK following EU vote.* Available at <http://www.theguardian.com/environment/2015/jan/13/gm-crops-to-be-fast-tracked-in-uk-following-eu-vote?CMP=share_btn_link>Accessed on 01 May 2015.

Nodari, R. and Guerra, M. (2001). Avaliação de riscos ambientais de plantas transgênicas. *Cadernos de Ciência & Tecnologia*, 18(1): 81-116.

O'Neill, K. (2009). The Environment and International Relations.Cambridge University Press: New York.

Occupy Monsanto. (2013). *CNN: Millions protest genetically modified food, Monsanto, organizers say.* Available at <http://occupy-monsanto.com/cnn-millions-protest-genetically-modified-food-monsanto-organizers-say/>Accessed on 01 Jan 2014.

Ogbor, J. (2001). Critical theory and the hegemony of corporate culture. *Journal of Organizational Change Management*, 14(6): 590–608.

Otto, B. and Böhm, S. (2006). ""The people" and resistance against international business: The case of the Bolivian "water war"". *Critical Perspectives on International Business*, 2(4): 299-320.

Parker, M. (2002) *Against Management:* Organization in the Age of Managerialism. Cambridge: Polity.

Patel, R. (2007). *Stuffed and starved.* Markets, power and the hidden battle over the world's food system. London: Portobello Books.

Patel, R. (2009). Food sovereignty. *The Journal of Peasant Studies*, 36(3): 663-706.

Peci, A., Vieira, M. and Clegg, S. (2009). Power, Discursive Practices and the Construction of the Real. *Electronic Journal of Knowledge Management*, 7: 377-386.

Pelaez, V. and Poncet, C. A. (1998). A Monsanto e a Engenharia Genética: Acumulação de Competências e Gestão do Risco. *Revista de Economia*, n. 22, Curitiba: Editora da UFPR.

People's Summit. (2012). *Final Declaration*. Available at <http://cupuladospovos.org.br/en/2012/07/final-declaration-of-the-peoples-summit-at-rio20/> Accessed on 03 Nov. 2014.

Pereira, L., Fontoura, Y. and Fontoura, C. (2013). Strategic CSR shifts towards adaptive food governance under environmental change: a comparison between South African and Brazilian retailers. *Revista de Gestão Social e Ambiental*, - RGSA, São Paulo, 7(1): 100-112, jan./abr.

Phillips, N. and Malhotra, N. (2008). Taking social construction seriously: Extending the discursive approach in institutional theory. In R. Greenwood, C. Oliver, K. Sahlin and R. Suddaby (Eds.), *The Sage handbook of organizational institutionalism*, (pp. 276–298). London: Sage.

Phillips, P.W.B. and McNeill, H. (2000). *Labeling for GM foods: Theory and practice. AgBioForum*, 3(4): 219-224. Available at <http://www.agbioforum.org/v3n4/v3n4a07-phillipsmcneill.htm> Accessed on 5 May 2015.

Plano Nacional de Agroecologia e Produção Orgânica (PLANAPO). (2013). http://www.mda.gov.br/portalmda/sites/default/files/ceazinepdf/cartilha-lt_PLANO_NACIONAL_DE_AGR-379811.pdf> Accessed on 5 May 2015.

Plows, A. (2008). Social Movements and Ethnographic Methodologies: An Analysis Using Case Study Examples, *Sociology Compass*, 2(5): 1523-1538.

Pnae (2015). *Alimentação Escolar.* Available at <http://www.mda.gov.br/sitemda/secretaria/saf-ali/sobre-o-programa> Accessed on 1 Jul 2015.

Potter, J. and Wetherell, M. (1987). D*iscourse and Social Psychology: Beyond Attitudes and Behaviour*. London: Sage.

Poulter, S. (2004). *Britain defies fears over GM sweetcorn.* Available at <http://www.dailymail.co.uk/health/article-259937/Britain-defies-fears-GM-sweetcorn.html> Accessed on 5 May 2015.

Poulter, S. (2013). American 'Frankenstein food' company pulls plug on plans to put GM crops on British dinner tables because there is no appetite for the produce. Available at <http://www.dailymail.co.uk/news/article-2335231/GM-giant-gives-Frankenstein-Food-Europe.html> Accessed on 5 May 2015.

Princen, T. (1994). *NGOs: creating a niche in environmental diplomacy*. In: PRINCEN, T.; FINGER, M. (eds.) Environmental NGOs in World Politics: Linking the local and the global. London and New York: Routledge.

Randel, J. and German, T. (1999). *European Union. In Stakeholders:* Government-NGO Partnerships for International Development, edited by I. Smillie and H. Helmich, pp. 263-277. London: Earthscan.

Rao, H., Calvin M. and Mayer Z. (2001). *Power plays: How social movement and collective action create new organizational forms*. Research in Organizational Behavior 22: 237–281.

Rao, H., Phillipe M. and Rodolphe D. (2003). Institutional change in Toque Ville: Nouvelle cuisine as an identity movement in French gastronomy. *American Journal of Sociology*, 108(4): 795–843.

Rauber, I. (2004). *La transformación social en el siglo XXI:* camino de reformas o de revolución. Pasado y Presente XXI, [s.l.], jun.

Reardon, T., Timmer, C., Barrett, C. and Berdegue J. (2003). The rise of supermarkets in Africa, Asia and Latin America. *American Journal of Agricultural Economics*, 85(5), 1140–6.

Rede de Agricultura Sustentável (RAS). (2015). *Transgênicos - Organismos Geneticamente Modificados.* Available at <http://www.agrisustentavel.com/trans/crono3.htm> Accessed on 5 May 2015.

Reimann, K. (2006). A View from the Top: International Politics, Norms and the Worldwide Growth of NGOs. *International Studies Quarterly*, 50(1): 45-67.

Reimann, K. (2001). *Late Developers in Global Civil Society:* Domestic Barriers, International Socialization and the Emergence of International NGOs in Japan. PhD Dissertation, Harvard University.

Richardson, J. (2012). *How Corporations like Monsanto have Hijacked Higher Education*. Available at <http://www.alternet.org/story/155375/how_corporations_like_monsanto_have_hijacked_higher_education> Accessed on 05 May 2015.

RIO+20. (2012). RIO+20/ United Nations Conference on Sustainable Development. Available at <http://www.rio20.gov.br/en.html> Accessed on 5 May 2015.

Rio+20 People's Summit (2012). Final Declaration of the People's Summit in Rio +20. <http://rio20.net/en/propuestas/final-declaration-of-the-people%E2%80%99s-summit-in-rio-20> Accessed on 03 Nov. 2014.

Roseneil, S. (1995). Disarming Patriarchy: Feminism and Political Action at Greenham. Buckingham: Open University Press.

Rosset, P. M. Sosa, B. M., Jaime, A. M. R., Lozano, D. R. A. (2011). The Campesino-to-Campesino agroecology movement of ANAP in Cuba: social process methodology in the construction of sustainable peasant agriculture and food sovereignty. *The Journal of peasant studies*, 38:161-191.

Rothenberg, S., and Levy, D. (2012) Corporate Perceptions of Climate Science: The Role of Corporate Environmental Scientists. *Business and Society*, 51(1): 31-61.

Round Table on Responsible Soy (RTRS) (2015). Somos mais de 180 membros em todo o mundo promovendo a produção de soja responsável. Available at <http://www.responsiblesoy.org/pt/quienes-somos/members/?nombre&lang=pt&busca=busca&pais&categoria=59> Accessed on 5 May 2015.

Round Table on Responsible Soy (RTRS). (2014). *About RTRS*. Available at <http://www.responsiblesoy.org/quienes-somos/que-es-la-rtrs/?lang=en>Accessed on 10 Jan 2014.

Rucht, D. (1988). *Themes, Logics and Arenas of Social Movements: A Structural Approach.* Pp. 305-328 in International Social Movement Research,Vol.1, From Structure to Action, edited by Klandermans K. and Tarrow.

Rucki, S. (2011). Global Economic Crisis and China's Challenge to Global Hegemony: A Neo-Gramscian Approach. *New Political Science,* 33(3): 335-355.

Sacks, H. and Schegloff, E.A. (1979) 'Two Preferences in the Organization of Reference to Persons in Conversation and Their Interaction', in G. Psathas (ed.) *Everyday Language: Studies in Ethnomethodology*, pp. 15–21. New York: Irvington.

Sarfati, G. (2007). The Third Chessboard: How the Multinational Companies influence International Environmental Governance. Available at <http://www.2007amsterdamconference.org/Downloads/AC2007_Sarfati.pdf> Accessed on 5 May 2015.

Sauer, S. (2008). *Agricultura familiar versus agronegócio*: a dinâmica sociopolítica do campo brasileiro. Brasília: Embrapa Informação Tecnológica.

Save the Children. (2015). http://www.savethechildren.org/site/c.8rKLIXMGIpI4E/b.6115947/k.8D6E/Official_Site.htm> Accessed on 5 May 2015.

Scheller, F. (2006). *Entenda como funciona a organização mundial do comércio.* Available at <http://g1.globo.com/Noticias/Economia_Negocios/0,,AA1267788-9356,00-ENTENDA+COMO+FUNCIONA+A+ORGANIZACAO+MUNDIAL+DO+COMERCIO.html> Accessed on 5 May 2015.

Schenkelaars, P. (2011). Drivers of Consolidation in the Seed Industry and its Consequences for Innovation. COGEM, Netherlands.

Scherer, A. G. and Palazzo, G. (2011). 'The new political role of business in a globalized world: a review of a new perspective on CSR and its implications for the firm, governance, and democracy'. *Journal of Management Studies,* 48:4, 899-931.

Scholte, A. (2004). Civil Society and Democratic Accountability, Government and Opposition. *Government and Opposition*, 39(2): 211-233.

SeedQuest. (2015). *Germplasm.* Available at <https://www.seedquest.com/keyword/seedbiotechnologies/primers/germplasmresources/introduction.htm> Accessed on 5 May 2015.

Selsky, J., Spicer, A. and Teicher, J. (2003). Un-Australian!": Discursive and institutional interplay in the Melbourne port dispute of 1997–98. *Journal of Management Studies*, 40: 1729–1760.

Shiva, V. (2001). *Biopirataria:* A pilhagem da natureza e do conhecimento. Petrópolis: Vozes.

Shiva, V. (2005). Biodiversidade, Direitos de Propriedade Intelectual e Globalização. In: B. Santos (eds.), *Semear outras soluções:* os caminhos da biodiversidade e dos conhecimentos rivais, Rio de Janeiro: Civilização Brasileira, pp. 319-340.

Shiva, V. (2013). *The Seeds Of Suicide: How Monsanto Destroys Farming.* Available at <http://www.globalresearch.ca/the-seeds-of-suicide-how-monsanto-destroys-farming/5329947> Accessed on 7 Sept 2014.

Shiva, V. Ramprasad, V. P., Hagde, Krishnan, O., and Holla-Bhar, R. (1995). *The Seed Keepers.* New Delhi: The Research Foundation for Science, Technology and Natural Resource Policy.

SINDAG. Sindicato Nacional da Indústria de Produtos para Defesa Agrícola. Available at <http://GMOs.sindag.com.br/noticia.php?News_ID=2147> Accessed on 20 de jan. 2011.

Sklair, L. (2002). The Transnational Capitalist Class and Global Politics: Deconstructing the Corporate-State Connection. *International Political Science Review*, 23(2): 159-174.

Solidaridad (2015). *SOY.* Available at <http://www.solidaridadnetwork.org/supply-chains/soy> Accessed on 1 Jul 2015.

Spicer, A. and Böhm, S. (2007). Moving Management: Theorizing Struggles against the Hegemony of Management. *Organization Studies*, 28(11): 1667-1698.

Spicer, A. and Sewell, G. (2010). From national service to global player: transforming the organizational logic of a public broadcaster. *Journal of Management Studies,* 47(6): 913-943.

Srinivas, N. (2010). The phenomenon of NGOs: a lateral reading from Latin America. *Critical Perspectives on International Business,* 6(23): 116-127.

Stavrakakis, Y. 1997, 'Green Ideology': a discursive reading, *Journal of Political Ideologies*, Vol.2. No. 3, pp.259-279.

Sullivan, S., Spicer, A. and Böhm, S. (2011). Becoming Global (Un)Civil Society: Counter-Hegemonic Struggle and the Indymedia Network. *Globalizations*, 8(5): 703-717.

Tarrow, S. (1994). *Power in Movement:* Social Movements, Collective Action, and Politics. Cambridge: Cambridge University Press.

Tarrow, S. (2001). Transnational politics: contention and institutions in international politics'. *Annual Review of Politics Science*, 4: 1–20.

Teegen, H. (2003). International NGOs as global institutions: Using social capital to impact multinational enterprises and governments. *Journal of International Management*, 9: 271-285.

Teegen, H., Doh, J. and Vachani, S. (2004). The importance of nongovernmental organizations (NGOs) in global governance and value creation: An international business research agenda. *Journal of International Business Studies*, 35: 463-483.

Terra de Direitos (2015). *Senado consulta população sobre PL que acaba com rotulagem de transgênicos.* Available at <http://www.mst.org.br/2015/05/27/senado-consulta-a-populacao-sobre-o-pl-que-pretende-acabar-com-a-rotulagem-de-transgenicos.html> Accessed on 7 May 2015.

The organic and non-GMO report. (2010). *EU regions call for non-GMO feed, food labels.* Available at <http://www.non-gmoreport.com/articles/mar10/non-gmo_feed_food_labels.php> Accessed on 7 Sept 2014.

Third World Network (TWN) (2015). *Agroecology:* A Proven Plan of Action to Ensure Food Security and Sovereignty. http://www.twn.my/title2/susagri/2015/sa398.htm> Accessed on 5 May 2015.

Thuswohl, M. (2008). *Governo libera comercialização de milho transgênico.* Available at <http://www.cartamaior.com.br/?%2FEditoria%2FMeio-Ambiente%2FGoverno-libera-comercializacao-de-milho-transgenico%2F3%2F14023> Accessed on 5 May 2015.

TNC (2012). *SOJA:* Boas práticas agrícolas e certificação socioambiental - A caminho da sustentabilidade. Available at <http://www.tnc.org.br/nossas-historias/publicacoes/boas-praticas-agricolas-e-certificacao-socioambiental.pdf> Accessed on 1 Jul 2015.

Tokarnia, M. (2015). *CTNBio aprova comercialização de eucalipto transgênico*. Available at <http://agenciabrasil.ebc.com.br/pesquisa-e-inovacao/noticia/2015-04/ctnbio-aprova-comercializacao-de-eucalipto-transgenico> Accessed on 5 May 2015.

Torfing, J. (1999). *New theories of discourse: Laclau, Mouffe, and Zizek*. Oxford: Blackwell.

Torfing, J. (2005) Discourse theory: achievements, arguments and challenges, in: Howarth, D. and Torfing, J. (eds.) *Discourse theory in European politics: identity, policy and governance*, Palgrave Macmillan: Basingstoke, 1-32.

UEA/MORI. (2004). *Public Perceptions of Genetically Modified Food and Crops, and the GM Nation?* Public Debate on the Commercialisation of Agricultural Biotechnology in the UK. Main Findings of a British Survey. Available at <http://psych.cf.ac.uk/understandingrisk/docs/survey_2003.pdf> Accessed on 3 Mar 2015.

UK FOOD GROUP. (2013). *Members.* Available at <http://www.ukfg.org.uk/membership/> Accessed on 3 Mar 2015.

Uldam, J. and McCurdy, P. (2013). Studying Social Movements: Challenges and Opportunities for Participant Observation. *Sociology Compass*, 7(11): 941-951.

United Nations (UN). (2000). Cartagena Protocol on Biosafety to the Convention on Biological Diversity: text and annexes. Montreal: United Nations.

Van Bommel, K. and Spicer, A. (2011). Hail the Snail: Hegemonic Struggles in the Slow Food Movement. *Organization Studies*, 32(12): 1717-1744.

Van Der Heijden, GMOs. (2002). Political Parties and NGOs in Global Environmental Politics. *International Political Science Review*, 23(2): 187-201.

Van Dijk, T. A. (Ed.) (1997). *Discourse as structure and process: A multidisciplinary introduction*. Volume 1 & 2. London: Sage.

Van Huijstee, M. and Glasbergen, P. (2010). Business-NGO interactions in a multistakeholder context. *Business and Society Review*, 115(3): 249-284.

Vasconcelos, L. (2006). *Agricultura - Quanto custa o rótulo.* Available at <http://www.ipea.gov.br/desafios/index.php?option=com_content&view=article&id=1121:reportagens-materias&Itemid=39> Accessed on 5 May 2015.

Vaughan, A. (2012). Public concern over GM food has lessened, survey shows. The Guardian. Retrieved 3 April 2015, from http://www.theguardian.com/environment/2012/mar/09/gm-food-public-concern.

Veloso, T. (2014). *CNA projeta alta de 3,56% no PIB do agronegócio em 2013. Valor.* Available at <http://www.valor.com.br/agro/3369216/cna-projeta-alta-de-356-no-pib-do-agronegocio-em-2013> Accessed on 3 Mar2014.

Vidal, J. and Sample, I. (2003). *5 to 1 against GM crops in biggest ever public survey.* Available at

<http://www.theguardian.com/science/2003/sep/25/sciencenews.highereducation> Accessed on 5 May 2015.

Viola, E. and Franchini, M. (2012). Os limiares planetários, a Rio+20 e o papel do Brasil. *Cadernos EBAPE.BR*, 10(3): 470–491.

Wall Street Journal (WSJ). (2012). *Monsanto Posts Loss, Lower Seed Sales*. Available at <http://online.wsj.com/article/SB10000872396390444223104578034152088015068.html> Accessed on 5 Oct 2012.

Wapner, P. (1996). Environmental Activism and World Civic Politics. Albany: SUNY Press.

Welch, C. (2005). Estratégias de resistência do movimento camponês brasileiro em frente das novas táticas de controle do agronegócio transnacional. *Revista NERA (UNESP)*, 8: 35-45.

Wetherell, M., Taylor, S. and Yates, S. J. (Eds.) (2001). *Discourse as data:* A guide for analysis. London: Sage.

Wilkinson, J. et. al. (2005). *A Monsanto e Os Transgênicos: reflexos para a agricultura familiar.* Available at <https://www.academia.edu/3081097/A_Monsanto_e_Os_Transg%C3%AAnicos_reflexos_para_a_agricultura_familiar> Accessed on 5 May 2015.

Willmott, GMOs. (2005). Theorizing contemporary control: Some post-structural responses to some critical realist questions. *Organization*, 12: 747-780.

Wiser, G. M. (2008). Transparency in 21st century fisheries management: Options for public participation to enhance conservation and management of international fish stocks. *Journal of International Wildlife Law & Policy*, 4(2): 95-129. Available at <http://www.tandfonline.com/doi/abs/10.1080/13880290109353977> Accessed on 1 Jul 2015.

Woller, G. and Parsons, R. (2002). Assessing the community economic impact of nongovernmental development organizations. *Nonprofit and Voluntary Sector Quarterly*, 31(3): 419– 428.

World Trade Organization (WTO). (2012). *Agreement on Trade-Related Aspects of Intellectual Property Rights.* Available at <http://GMOs.wto.org/english/tratop_e/trips_e/t_agm0_e.htm> Accessed on 10 Oct. 2012.

World Trade Organization (WTO). (2015a). *Members and Observers.* Available at <https://www.wto.org/english/thewto_e/whatis_e/tif_e/org6_e.htm> Accessed on 5 May 2015.

World Trade Organization (WTO). (2015b). *Sanitary and phytosanitary measures.* Available at <https://www.wto.org/english/tratop_e/sps_e/sps_e.htm> Accessed on 5 May 2015.

World Wide Fund for Nature (WWF). (2012). *WWF's position on genetically modified organisms (GMOs). Available at* <http://awsassets.panda.org/downloads/wwf_position_statement_on_gmos_december_2012.pdf> Accessed on 1 Jul 2015.

Wright, C., Nyberg, D. and Grant, D. (2012). “Hippies on the third floor”: Climate Change, Narrative Identity and the Micro-Politics of Corporate Environmentalism. *Organization Studies*, 33(11): 1451-1475.

Wright, O. (2015). *EU regulations on genetically modified crops prevent Britain's agricultural progress, say MPs.* Available at <http://www.independent.co.uk/news/uk/politics/eu-regulations-on-genetically-modified-crops-prevent-britains-agricultural-progress-say-mps-10070605.html> Accessed on 5 May 2015.

Yaziji, M. and Doh, J. (2009). NGOs and Corporations: Conflict and Collaboration (New York: Cambridge University Press).

Yaziji, M. and Doh, J. (2013). The Role of Ideological Radicalism and Resource Homogeneity in Social Movement Organization Campaigns against Corporations. *Organization Studies*, 34(5-6): 755-780.

Žižek, S. (2006). Against the Populist Temptation, *Critical Inquiry*, 32(3): 551-574.

APPENDIX 1 - LIST OF TERMINATOR PATENT HOLDERS IN 2003

Company/Institution (followed by name of original assignee)	Patent (or application) number	Date Issued
Syngenta -- application	US20010022004A1	filed: 21 March 2001
Syngenta	US 6,362,394	26 March 2002
Syngenta (Zeneca)	US 6,228,643	8 May 2001
Syngenta (Novartis)	US 6,147,282	14 Nov. 2000
Syngenta (Novartis)	US 5,880,333	9 March 1999
Syngenta (Zeneca)	US 5,808,034	15 Sept. 1998
Syngenta (Zeneca)	WO9738106A	16 Oct. 1997
Syngenta (Zeneca)	WO9735983A2	2 Oct. 1997
Syngenta (Zeneca)	WO9403619A2 and A3	17 Feb. 1994
DuPont (Pioneer Hi-Bred)	US 6,297,426	2 Oct. 2001
DuPont (Pioneer Hi-Bred)	US 5,859,341	12 Jan. 1999
Delta & Pine Land/USDA	US 5,723,765	3 March 1998
Delta & Pine Land/USDA	US 5,925,808	20 July 1999
Delta & Pine Land/USDA	US 5,977,441	2 Nov. 1999
BASF (ExSeed Genetics, L.L.C./Iowa State University)	WO9907211	18 Feb. 1999
Monsanto	WO9744465	27 Nov. 1997
Cornell Research Foundation	US 5,859,328	12 Jan. 1999
Purdue Research Foundation (with support from USDA)	WO9911807	11 March 1999

Source: EtcGroup, 2003

APPENDIX 2 - LIST OF TRANSGENIC SEEDS RELEASED IN BRAZIL IN 2012

Species	Trade Name	Event/Characteristic	Company	Year of release
Soybean	Roundup Ready	glyphosate herbicide (epsps)	Monsanto	2005
	Cultivance	imidazolinone herbicide group / BPS-CV127-9 (AHAS)	BASF/Embrapa	2009
	Liberty Link	glufosinate ammonium/ PAT(A2704-12)	Bayer	2010
	Liberty Link	glufosinate ammonium / PAT(A5547-127)	Bayer	2010
	Bt RR2	MON 8770 1(Cry1Ac) x MON 89788 (cp4-epsps / glyphosate)	Monsanto	2010
Corn	Liberty Link	Finale - herbicide (glufosinate ammonium) / pat(T25)	Bayer	2008
	YieldGard / MON810	Bt cry1Ab (insecticidal toxin)	Monsanto	2008
	Bt11	Bt cry1ab / pat (T25) glufosinate ammonium	Syngenta	2008
	GA21	glyphosate (mepsps)	Syngenta	2008
	Roundup Ready 2 (NK 603)	glyphosate (cp4-epsps)	Monsanto	2008
	Herculex (TC 1507)	Bt cry1f / (pat T25) Finale (glufosinate ammonium)	Dow/DuPont	2008
	MIR 162	Bt (Vip3Aa)	Syngenta	2009
	Bt11 x GA21	Bt (Cry1Ab) / pat (T25) glufosinate ammonium x (mepsps) glyphosate	Syngenta	2009
	MON 810 x NK 603	Bt Cry1Ab x glyphosate (cp4-epsps)	Monsanto	2009
	MON 89034	Cry1A.105 + Cry2Ab2	Monsanto	2009
	TC 1507 x NK 603	Bt Cry1f x glyphosate (cp4-epsps)	Dow	2009
	MON 88017	glyphosate (cp4-epsps) e Bt Cry3Bb1	Monsanto	2010
	Bt11 x MIR 162 x GA21	Cry1Ab x vip3Aa19 (inseticidal toxin) x mepsps (glyphosate)	Syngenta	2010
	MON 89034 x NK 603	Cry1A.105 + Cry2Ab2 x glyphosate (cp4-epsps)	Monsanto	2010
	MON 89034 × TC1507 × NK603	Bt (Cry1A.105 + Cry2Ab2) x Bt Cry1f x glyphosate (cp4-epsps)	Monsanto + Dow Agroquímica	2010
	TC 1507 x	Cry1f-pat / CryyAb /	DuPont/Pioneer	2011

	MON 810 x NK 603	cp4-epsps		
	TC 1507 x MON 810	Cry1f / Cry1Ab	DuPont/Pioneer	2011
	MON 89034xMON 88017	Cry1A.105-Cry2Ab2 / Cp4-epsps-Cry3Bb1	Monsanto	2011
Cotton	Bollgard (MON 531)	Bt cry1Ab	Monsanto	2005
	Liberty Link	glufosinate ammonium herbicide (pat TA25)	Bayer	2008
	Roundup Ready (MON 1445)	glyphosate (cp4-epsps)	Monsanto	2008
	WideStrike	Bt Cry1f/Cry1ac x pat (TA25) glufosinate ammonium	Dow	2009
	Bollgard 2 (MON 15985)	Bt Ccry1Ac + Cry2Ab2	Monsanto	2009
	MON 531 x MON 1445	Bt Cry1Ac x glyphosate (cp4-epsps)	Monsanto	2009
	Glytol (GHB614)	glyphosate (2mepsps)	Bayer	2010
	TwinLink	T304-40 / GHB119 / glufosinate ammonium	Bayer	2011
	MON 88913	Cp4 epsps – tolerante a glyphosate	Monsanto	2011
Bean	Embrapa 5.1 / RNA interference	rep (AC1) – Resistant to Golden Mosaic Virus	Embrapa	2011

Source: Adapted from AS-PTA (2012)

APPENDIX 3 - LIST OF RTRS MEMBERS IN 2015

Member	Country	Constituency
Colgate Palmolive	U.S.	Industry, Trade & Finance
Feed Alliance	France	Industry, Trade & Finance
Jumbo Supermarkten B.V.	Netherlands	Industry, Trade & Finance
Marfo BV	Netherlands	Industry, Trade & Finance
AAPRESID	Argentina	Producers
AB Agri	U.K.	Industry, Trade & Finance
AB Fortum Värme samägt med Stockholm stad	Sweden	Industry, Trade & Finance
Access Development Services	India	Civil Society
ADM	U.S.	Industry, Trade & Finance
Agrex do Brasil SA	Brazil	Producers
Agrifirm	Netherlands	Industry, Trade & Finance
AHOLD	Netherlands	Industry, Trade & Finance
Akzonobel	Netherlands	Industry, Trade & Finance
Aliança da Terra	Brazil	Civil Society
Alligare Gestão Empresarial	Brazil	Observers
Amaggi	Brazil	Producers
Amsterdam Capital Trading BV	Netherlands	Industry, Trade & Finance
APDC	Brazil	Producers
Arla Foods amba	Denmark	Industry, Trade & Finance
ASA	India	Civil Society
ASDA	U.K.	Industry, Trade & Finance
Ashish seed producer co.	India	Producers
Asociación de Productores de Oleaginosas y Trigo- ANAPO	Bolivia	Producers

Atria Scandinavia	Sweden	Industry, Trade & Finance
Axfood	Sweden	Industry, Trade & Finance
Baltic Control Brasil Ltda.	Brazil	Observers
Bayer CropScience	Brazil	Industry, Trade & Finance
Bhatiya Samruddhi Fiance-BASIX	India	Civil Society
BIJAWAR PRODUCER COMPANY LTD	India	Producers
BioMar Group	Denmark	Industry, Trade & Finance
Bunge	U.S.	Industry, Trade & Finance
Bureau Veritas Certification (BVQi Argentina S.A.)	Argentina	Observers
BVRio	Brazil	Observers
C.I.V. Superunie B.A.	Netherlands	Industry, Trade & Finance
Canadian Seed Institute	Canada	Observers
Caramuru Alimentos S.A.	Brazil	Industry, Trade & Finance
Cargill	Brazil	Industry, Trade & Finance
Carrefour	France	Industry, Trade & Finance
CBL – Dutch Food Retail Association	Netherlands	Industry, Trade & Finance
Cefetra	Netherlands	Industry, Trade & Finance
Celso Carlos Roquetto	Brazil	Producers
CERT ID Certificadora LTDA	Brazil	Observers
China Soybean Industry Association	China	Producers
Cono Cheesemakers	Netherlands	Industry, Trade & Finance
Conservation International	U.S.	Civil Society
Control Union Certification	Brazil	Observers
Coop Sweden AB	Sweden	Industry, Trade & Finance
COOP	Switzerland	Industry, Trade & Finance

Cooperl Arc Atlantique	France	Industry, Trade & Finance
Cotecna Inspeccion Argentina S.A.	Argentina	Observers
Cytasa	Paraguay	Producers
DADA DARWAR PRODUCER COPANY LIMITED	India	Producers
Danpo A/S	Denmark	Industry, Trade & Finance
DAP	Paraguay	Producers
De Heus Voeders B.V.	Netherlands	Industry, Trade & Finance
Decarbonize Limited	U.K.	Observers
Delhaize Group	Belgium	Industry, Trade & Finance
Deloitte	Argentina	Observers
Denofa	Norway	Industry, Trade & Finance
Dow AgroSciences LLC	U.K.	Industry, Trade & Finance
DuPont Nutrition Biosciences ApS	U.S.	Industry, Trade & Finance
Earth Innovation Institute	Brazil	Civil Society
EticAgro	Argentina	Observers
EUVEPRO	Belgium	Observers
EWOS	Norway	Industry, Trade & Finance
Facultad de Agronomía de la Universidad de Buenos Aires	Argentina	Observers
Fauna & Flora International	U.K.	Civil Society
FEDIOL	Belgium	Industry, Trade & Finance
FEFAC	Belgium	Industry, Trade & Finance
ForFarmers	Netherlands	Industry, Trade & Finance
FOSFA	U.K.	Observers
FrieslandCampina	Netherlands	Industry, Trade & Finance
Fromageries Bel SA	France	Industry, Trade & Finance

Fundação de Apoio a Pesquisa do Corredor de Exportação Norte (FAPCEN)	Brazil	Producers
Fundação MATO GROSSO	Brazil	Producers
Fundación Moisés Bertoni	Paraguay	Civil Society
Fundación para la Conservación y el Uso Sustentable de los Humedales	Argentina	Civil Society
Fundación Vida Silvestre	Argentina	Civil Society
GEBANA	Brazil	Producers
Gebr Van Beek Group	Netherlands	Industry, Trade & Finance
Gesco consorzio cooperative	Italy	Industry, Trade & Finance
GLENCORE GRAIN	Netherlands	Industry, Trade & Finance
GMP+ International	Netherlands	Observers
Grain Farmers of Ontario	Canada	Producers
GREENLAB SERVICIOS ECOLOGICOS ROSARIO SRL	Argentina	Observers
GreenPalm Ltd.	U.K.	Observers
GROAN	Netherlands	Industry, Trade & Finance
Grupo Los Grobo	Argentina	Producers
Grupo Lucci	Argentina	Producers
Grupo Santander Brasil	Brazil	Industry, Trade & Finance
Guyra Paraguay	Paraguay	Civil Society
Hardol agriculture marketing and producer company private limited shivpuri	India	Producers
HKScan	Finland	Industry, Trade & Finance
Holly Gibbs	U.S.	Observers
Hong Sheng Cooperative	China	Producers
HSBC Holdings plc	U.K.	Industry, Trade & Finance

IBEROL	Portugal	Industry, Trade & Finance
ICA AB	Sweden	Industry, Trade & Finance
IDEP	Argentina	Observers
IDH – The Sustainable Trade Initiative	Netherlands	Observers
IFC	U.S.	Industry, Trade & Finance
Inspec Group S.R.L.	Argentina	Observers
Instituto Centro Vida – ICV	Brazil	Civil Society
Instituto ETHOS	Brazil	Civil Society
INSTITUTO GENESIS /IGCERT	Brazil	Observers
Khajuraho Producer Company	India	Producers
Khujner Agriculture	India	Producers
Kingdom of The Netherlands	Netherlands	Observers
KLM Royal Dutch Airlines	Netherlands	Industry, Trade & Finance
Lantmännen	Sweden	Industry, Trade & Finance
LavKush Crop Producer Company Pvt. Ltd.	India	Producers
Louis Dreyfus	Switzerland	Industry, Trade & Finance
LSQA S.A.	Uruguay	Observers
Madhya Bharat Consortium of Farmer Producers company limited (MBCFPCL)	India	Producers
Marks & Spencer	U.K.	Industry, Trade & Finance
Meat Friends Roosendaal B.V.	Netherlands	Industry, Trade & Finance
MEGA Tierernährung GmbH & Co. KG	Germany	Industry, Trade & Finance
Mesa Tecnológica de oleaginosos	Uruguay	Observers
Migros	Switzerland	Industry, Trade & Finance
Mills DA	Norway	Industry, Trade & Finance
Molinos Rio de la Plata S.A	Argentina	Industry, Trade & Finance

Monsanto	Brazil	Industry, Trade & Finance
Morrisons Supermarkets PLC	U.K.	Industry, Trade & Finance
Moy Park France	France	Industry, Trade & Finance
MSU	Argentina	Producers
MVO	Netherlands	Industry, Trade & Finance
Nando's Chicken Land	U.K.	Industry, Trade & Finance
Natuur & Milieu	Netherlands	Civil Society
NESTE OIL	Finland	Industry, Trade & Finance
NESTLÉ	Switzerland	Industry, Trade & Finance
NEVEDI	Netherlands	Industry, Trade & Finance
Nidera B.V	Netherlands	Industry, Trade & Finance
Noble Argentina	Argentina	Industry, Trade & Finance
Nutreco	Netherlands	Industry, Trade & Finance
OSI Food Solutions Europe	Germany	Industry, Trade & Finance
OVID	Germany	Industry, Trade & Finance
Proforest	U.K.	Observers
RABOBANK	Netherlands	Industry, Trade & Finance
Raisio	Finland	Industry, Trade & Finance
RED FLINT SRL	Argentina	Observers
Responsible Bizz	Netherlands	Observers
Ruchi Soya Industries LTD	India	Industry, Trade & Finance
Sainsbury's Supermarkets	U.K.	Industry, Trade & Finance
Samarth Kisan	India	Producers
Schouten Europe B.V.	Netherlands	Industry, Trade & Finance
SCHUTTER ARGENTINA S.A.	Argentina	Observers
Scientific Certification Systems	Argentina	Observers

SECO	Switzerland	Observers
Selecta	Brazil	Industry, Trade & Finance
SGS	Argentina	Observers
Shell	U.K.	Industry, Trade & Finance
Sindicato Rural de Luís Eduardo Magalhães	Brazil	Producers
Sironj Crops producers	India	Producers
SLC Agrícola	Brazil	Producers
Sobeys Inc.	Canada	Industry, Trade & Finance
Solidaridad	Netherlands	Civil Society
SRIJAN	India	Civil Society
Storteboom	Netherlands	Industry, Trade & Finance
Supercargo – Superintendência e Comercio Alimentar, Lda	Portugal	Observers
Svenska Foder AB	Sweden	Industry, Trade & Finance
Swedish Dairy Association	Sweden	Industry, Trade & Finance
Syngenta	Brazil	Industry, Trade & Finance
Tesco Plc	U.K.	Industry, Trade & Finance
The Centre for Advanced Research & Development	India	Civil Society
The Co-Operative Group	U.K.	Industry, Trade & Finance
The Nature Conservancy	Brazil	Civil Society
UNILEVER	Netherlands	Industry, Trade & Finance
Vandemoortele NV.	Belgium	Industry, Trade & Finance
Vanden Avenne Commodities	Belgium	Industry, Trade & Finance
Vicentin S.A.I.C.	Argentina	Industry, Trade & Finance
VION N.V	Netherlands	Industry, Trade & Finance

Vippy Industries Limited	India	Industry, Trade & Finance
Vrutti	India	Civil Society
W&R Barnett Ltd	Irlanda	Industry, Trade & Finance
Waitrose	U.K.	Industry, Trade & Finance
Wilmar International	Singapore	Industry, Trade & Finance
World Resources Institute	U.S.	Civil Society
WWF	Brazil	Civil Society
Dandong Lao Dongbei Agri-Husbandry Co., Ltd	China	Industry, Trade & Finance

Source: Adapted from RTRS (2015)