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The Civil Society-State Relations in China Reflected through the Genetically Modified Rice Debate

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International Relations

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Declaration

I, Yanyan JIANG, declare that this thesis is a result of my research investigations and findings. Sources of information other than my own have been acknowledged and a reference list has been appended. This work has not been previously submitted to any other university for award of any type of academic degree.

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Abstract

This study examines the civil society-state relationship in China through the debates on genetically modified rice. Due to the various types of civil society organizations and groups, this thesis take environmental non-governmental organizations (ENGOs) as the primary research objectives. As the forerunner of the anti-GM campaigns, ENGOs played significant role in promoting public participation into environmental governance. By examining how these organizations mobilize adherents and obtain resources through strategic framing, it concludes the role and characteristics of ENGOs in China.

Furthermore, through the analysis of the relational and functional aspects of ENGOs, this study attempt to describe their contributions on the emergence of pluralistic civil society and the state-society relations. Rather than stick to the relatively static western concept of civil society, this study acknowledge the embedded complexity within the socio-political context in China. Apart from the concept of civil society and strategic framing theory, this thesis use institutional theory to account for the dynamics of organizations and the relations between civil society and the state.

Keywords: civil society, strategic framing, public participation

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Any errors are mine alone.

Acronyms and abbreviations

AMM	Allied Ministerial Meeting
CCAP	Center for Chinese Agricultural Policy
CCP	Chinese Communist Party
CCTV	China Central Television
CPC	Chinese People's Congress
CPPCC	Chinese People's Political Consultative Conference
EIA	Environmental Impact Assessment
EU	European Union
ENGO	Environmental Non-Governmental Organization
FAO	Food and Agriculture Organization
FON	Friends of Nature
GDP	Gross domestic product
GM	Genetically Modified
GAQSIQ	General Administration of Quality Supervision, Inspection and Quarantine of China
GONGO	Government-organized Non-governmental Organization
INGO	International NGO
IRRI	International Rice Research Institute
ISAAA	International Service for the Acquisition of Agri-biotech Applications
MEP	Ministry of Environmental Protection
MOA	Ministry of Agriculture
MOC	Ministry of Commerce
MOCA	Ministry of Civil Affairs
MOST	Ministry of Science and Technology
NDRC	National Development and Reform Commission
NIQA	National Inspection and Quarantine Agency
NGO	Non-Governmental Organization
NHFPC	National Health and Family Planning Commission of China
PRC	People's Republic of China
UN	United Nations
US	United States
UNCED	UN Conference on Environment and Development
UNESCAP	United Nations Economic and Social Commission for Asia and the Pacific
WHO	World Health Organization
WWF	World Wildlife Fund for Nature

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1. Introduction

As an emerging power, China is assuming a more prominent and active role in global affairs (Hurrell & Sengupta, 2012; Ren, 2017). With increasingly influential status in international issues, the political salience of China attracted researchers and scholars to estimate whether it accord with the newly acquired role. One of the most effective criteria to measure the credibility of a state is the governance mechanisms. According to United Nations Economic and Social Commission for Asia and the Pacific (UNESCAP, 2005), there are eight major characteristics for good governance (Fig. 1). Among those characteristics, participation was listed in the number one place as the cornerstone of good governance (UNESCAP, 2005). This thesis aims to shed some light on the civil society-state relations in China through evaluating the public participation of the Genetically modified (GM) rice issue. Furthermore, this thesis speaks to students and scholars who concerned about the environmental issues and social-political conditions in China.

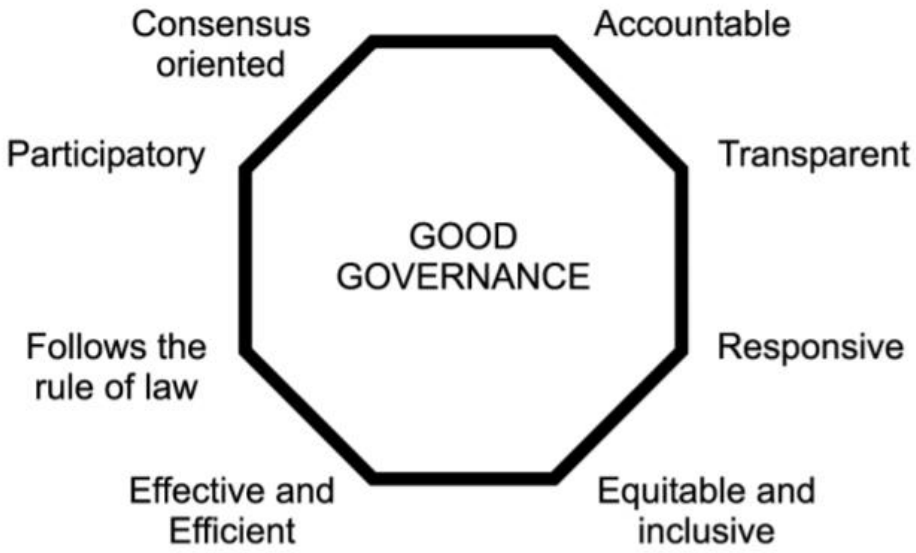

Figure 1. Eight major characteristics of good governance.

Source: UNESCAP (2005)

1.1 Why the genetically modified (GM) rice debates happened in China?

Genetic modification (GM) is the molecular biological technique to transfer genes between different organisms through isolation, cloning, recombination and insertion of genetic

material (Zhao & Ho, 2005). *Bt* (Bacillus thuringiensis)[1] rice is one type of genetically modified (GM) rice with inserted *Bt* genes to resist the primary pests (Shelton, Zhao, & Roush, 2002). The two *Bt* rice lines named *Bt* Shanyou 63 and Huahui 1 were developed by Huazhong Agricultural University, China (C. Lu, 2010). Both of the two *Bt* rice lines have obtained biosafety certificates from the Ministry of Agriculture(MOA) in 2009 (Table 1), and received renewed certificates in 2014, but neither of them have approved for commercial planting till today (Y. Li, Hallerman, Liu, Wu, & Peng, 2016).

Table 1. Approval Database of GM rice in China (ISAAA)

Name of GM rice line	Developer	Gene Introduced	Function	GM Trait
Bt Shanyou 63	Huazhong Agricultural University (China)	cry1Ab[2]	Confers resistance to lepidopteran insects by selectively damaging their midgut lining	Lepidopteran insect resistance
		cry1Ac[3]	confers resistance to lepidopteran insects by selectively damaging their midgut lining	Lepidopteran insect resistance
Huahui-1	Huazhong Agricultural University (China)	cry1Ab	confers resistance to lepidopteran insects by selectively damaging their midgut lining	Lepidopteran insect resistance
		cry1Ac	confers resistance to lepidopteran insects by selectively damaging their midgut lining	Lepidopteran insect resistance

This chapter will highlight the contextual conditions of this study. Through the public-private collaboration with research institutes and universities, China has developed several lines of transgenic rice with the potential to increase yield as well as to decrease the application of pesticide (Y. Li et al., 2016). Estimated by Dr. Jikun Huang from the Center for Chinese Agricultural Policy (CCAP), genetically modified(GM) rice increased yield by 2% to 6% and

[1] *Bt* (Bacillus thuringiensis): a Gram-positive, soil-dwelling bacterium, commonly used as a biological pesticide. Spores and crystalline insecticidal proteins produced by B. thuringiensis have been used to control insect pests (Lemaux, 2008).

[2] cry1Ab: is a crystal protein produced by the bacterium Bacillus thuringiensis *(Bt)* during sporulation

[3] cry1Ac: is a crystal protein produced by the bacterium Bacillus thuringiensis *(Bt)* during sporulation.

reduced insecticide application nearly by 80% based on the extensive filed trials (J. Huang, Hu, Rozelle, & Pray, 2005; James, 2007). Even with such alleged prosperous potential, the biotechnology of *Bt* rice has not been transformed into productivity, and this stagnated commercialization process set background for this study. There are wide range of issues relevant to GM rice, such as environmental biosafety, intellectual property rights, famers' income, and inter-state trade (C. Lu, 2010).

1.1.1 Political factor: the single-party regime in China

Different political regimes lead to distinct patterns of policy-making process. Characterized by the centralization of decision making and reliance on coercion, the authoritarian system of China underwent several social unrests since its establishment in 1949 (Nathan, 2017). As the largest single-party state, China provides fertile soil for social activities. Compared with the industrial democratic countries, the semi-authoritarian political regime of China provides an interesting context for social movement study (Ho, 2007). Sprung from Marxist-Leninist ideas of man's domination over nature, China's environmental policy was hampered by ideological constraints and centrally-planned economic before 1970s (Ho, 2001). China has been criticized for its culture of state secrecy and limited space for public participation into public affairs (W. Li, Liu, & Li, 2012). Within such socio-political context, the state plays a dominant role in the policy-making process. However, the postponed commercialization of GM rice indicates the crucial role of Chinese civil society in shaping state policy.

Apart from the strong dominance of state agencies, the far-reaching party-state also has profound influence on social media and Internet. As the voice of the government, most of the influential media are owned by the Party and state agencies, such as China Central Television and provincial-level Party newspapers (Nathan, 2017). As commented by Stalley and Yang (2006), most of the media reports on environmental events are positive superficial stories such as tree-planting scene. Similarly, China adopt state-centred approach to regulate the Internet through blocking "harmful" foreign content, Internet policing, and other multi-layered censorship (Jiang, 2010). The politicized media was constrained by government and thus failed to provide all round information to the public. Due to the misinformation and misconception

from the politicized media and other sources, Chinese consumers are unable to obtain unbiased scientific information. What is worse, stakeholders like farmers, bioethicists and environmental groups were excluded from the opaque process of biosafety evaluation spearheaded by the agricultural ministry (Qiu, 2008). For instance, as the chief expert of the Ministry of Environmental Protection of China and chief Scientist in School of Life and Environmental Sciences, Minzu University of China, Xue Dayuan has been repeatedly exclude from biosafety committees of GM crops assessment due to his conservative attitude toward GMOs (Qiu, 2008).

Thus, the disclosure scope of GM crops is relatively low in China, and was constrained by the regulatory system, evaluation guideline, technical standards, and the approval results of security certificates (Keeley, 2006; Liu, Kang, & Li, 2011; Qiu, 2008). The public do not have enough participation in terms of the policy-making process due to its obscure procedure. Such low level of transparency have reinforced the scepticism about GM rice within the civil society. As commented by David Just, an economist at Cornell University in Ithaca, New York, "China is trying very hard to keep the lid on with rather opaque process" (Qiu, 2008). There are few disclosures on the safety evaluation data of GMOs and the supervision of GMOs due to the protection of state secrets and confidential information of the applicants (Liu et al., 2011). The lack of transparency of Chinese policy-making process and limited resources of transgenic breeding techniques lead to the public's distrust to the government.

In this case, the concerns of GM rice from the public and consumers are often not answered by the government. Without a proactive authority to provide timely response, the GM rice issue was hidden behind the veil. Insufficient communication between the state and the public sharpened the puzzlement and misunderstanding of the public, especially the ones without biological or agricultural knowledge. Against this background, civil society is frustrated with the decisions made behind the closed doors (W. Li et al., 2012). Departure from such kind of grievances, individuals and groups are likely to be mobilized to initiate or join anti-GM activities.

1.1.2 Social factor: the crucial importance of rice as the main staple food in China

As one of the main staple food for over half population in China, rice is closely related

with people's daily life with symbolic importance (Chen, Shelton, & Ye, 2011; Qiu, 2008). Moreover, rice is the staple food for more than half of the global population (Demont & Stein, 2013). China grew 29.3 million hectares of rice in 2006, which equivalent to 20% of the total planting area through the world (James, 2007). According to the statistics of Food and Agriculture Organization of the United Nations (FAO), the cultivation area of rice in China was 30,449,860 hectares in 2016, which equals to more than 16% of the total amount throughout the world. Thus, the safety of GM rice has drawn extensive concern about its long-term influence to human health and environment.

In the process of rapid urbanization and industrialization, how to meet people's demand for food has always been a close concern of Chinese government. On one hand, the long-standing contradiction between the swelling population and limited arable land is becoming more and more prominent. According to the statistics of National Bureau of Statistics of China, the population has reached 1382.71 million till the end of 2016. What's worse, the water shortage, severe environmental problems and the reduction of arable land also put pressure on the food issue. There was a decrease of 4.73 million hectares of arable land from 1978 to 1996, within which, 2.23 million hectares were lost in the coastal provinces where is the most densely populated region in China (H. Yang & Li, 2000).

On the other hand, the traditional hybrid breeding technology has entered into bottleneck due to the narrow genetic diversity in China (Peng, Tang, & Zou, 2009). China is the first country to commercialize hybrid rice in the world and made great achievements in increasing yield with this innovation (Guohui & Longping, 2003). According to the statistics of the Food and Agriculture Organization of the United Nations (FAOSTAT, 2019), China's total rice production decreased from 1998 to 2010 after the biggest harvest in 1997. As the largest producer and consumer of rice, China has extensively promoted the hybrid breeding technology in the past decades, which improved the yield output, but the potential prospect is uncertain (Qiu, 2008; Y. Wang, Xue, & Li, 2005). Under this circumstance, the pro-GM scientists appealed that transgenic technology is in urgent need to solve the food inadequacy problem (J. Huang, Hu, van Meijl, & van Tongeren, 2004; Keeley, 2006).

1.1.3 Agent factor: the emerging environmental NGOs (ENGOs) in China

Since the reform and opening up policy in the late 1970s, various socioeconomic and cultural changes took place, numerous non-governmental organizations (NGOs) have sprung up in China (Büsgen, 2006; Ho, 2007; J. Lu & Chan, 2016). Chinese government adopt 'development takes priority' principle after the implementation of reform and opening up policy, the rapid economic growth has brought about various environment problems include but not limited to air and water quality degradation, deforestation, and soil erosion (W. Li, 2006; Xie, 2012). Under this circumstance, a large number of environmental protection NGOs emerged in China (Stalley & Yang, 2006), include Friends of Nature, Global Village, Green Home Volunteers, and China Environmental Protection Foundation, etc. It was only after the 1990s, the central government became serious to combat environmental degradation (Ho, 2001). Over the years, public participation has been increasingly institutionalized in environmental decision-making due to the highly visible environmental degradation and associated health problems in China (W. Li et al., 2012).

Meanwhile, the popularization of internet provides efficient channel for information propagation. It is easier for people to constitute shared identities and attitudes through online interactions. Besides, the higher environmental awareness and increased concern about health and living conditions of the public also gave impetus to the emergence of Chinese civil society. As pointed out by W. Li et al. (2012), heightened public awareness of environmental degradation and increasing anxieties over health drive Chinese civil society to strive for more political space to influence state policies. The inadequate capacity and achievements of state inspired the civil society to be involved in state policy-making process. Non-governmental actors have become influential players in shaping policy and influencing public affairs as strong opponents to blindly economic growth oriented decisions.

To sum up this part, The increasingly severe environmental conditions along with the gradual openness of public space for discussion and debates provided fertile soil for the emergence of ENGOs (Stalley & Yang, 2006). Moreover, the growth of ENGOs drove the development of Chinese civil society as the most vital actors in environmental governance. Though Chinese government plays a vital role through the process of rice production (Peng et

al., 2009), the political decision-making process about the commercialization of GM rice is intervened by multiple factors. The altering politics of strict control and toleration of civil society organizations lead to the specific features of ENGOs in China (Ho, 2001) and thus influenced their behaviour in the anti-GM debates.

1.2 Thesis outline and research questions

This study looks into the dynamic interplay between civil society and the state through the GM rice issue, which consists of seven chapters with the following contents. This first chapter introduces the factors involved with the emergence of Chinese civil society and its potential role in the GM rice debates. Moreover, this part also summarize the thesis structure to provide an overview of the whole study. The second chapter describes the motivation of topic choice and on-going debates about GM rice, which establishes a historical context to unfold the research. The third chapter illustrates the theoretical framework and key concepts to guide the analysis. Chapter four describes the research methods and clarify the potential constrains and shortcomings of content analysis approach. The fifth chapter will present and analyse the findings based on the institutional theory to answer the research questions. The sixth chapter discussed the civil society-state relations through institutional theory. The final chapter will summarize the whole thesis and give some reflections after the research process.

Objectives: Through examining the key events of GM rice debates and the outcome of social activities to understand the civil society-state relations in China. Based on the website of Greenpeace[4], Utopia (wuyouzhixiang)[5], and other influential media outlets to investigate the mechanism of anti-GM activities and their active role in state policy-making process.

Research questions:

Research question: How civil society influenced state politics in the case of anti-GM Rice debates?

Sub-research question 1. What mechanisms have been used by the environmental NGOs in

[4] Greenpeace: a non-governmental environmental organization with offices in over 39 countries and an international coordinating body in Amsterdam, the Netherlands.

[5] Utopia (Wu You Zhi Xiang): a political and economic review website (www.wyzxsx.com) founded in 2003, which attracted numbers of high-profile devotees, including Marxist scholars and retired government officials.

China to mobilize supporters?

Sub-Research question 2: What is the embedded role and characteristics of ENGOs in China?

To answer the main research question, two sub-research questions will be answered in the findings and analysis part respectively: chapter five and chapter six. During this process, how the environmental NGOs portray themselves is critical for the outcome of anti-GM rice debates. The efficiency of mobilizing mechanisms such as strategic framing, resource mobilization and other relevant causal mechanism are decisive factors in the anti-GM rice activities. Whether their propositions can be adopted by the central authorities, is highly depends on their legitimacy, and overall utilization of the following ideational and interpretive issues:

- The mobilization of popular support through Strategic framing
- Resource acquisition through interdependent relations with state agencies
- Legitimize anti-GM campaigns through close relations with international NGOs and citing international treaties

2. Background and on-going debates about GM rice

Transgene technology has been an extremely controversial topic in the international community since its birth in 1974. Countries hold distinct attitudes and implement different policies due to their respective culture, historical experience and economic condition. In the past two decades, the most obvious confrontation is the regulatory polarization between the United States and the European Union (EU). Without scientifically proof to verify the potential risk of genetically modified organisms (GMOs), the United States adopt "essentially equivalent principle" and voluntary labelling strategy as the largest exporter of GMOs (Phillips & McNeill, 2000). The U.S. tries to balance risk with public health and benefits in terms of the assessment and regulation of potentially harmful substances (Shelton et al., 2002).

On the contrary, the European Union embraced the 'precautionary principle' and mandatory labelling to regulate GM products (Moschini, 2015). This precautionary principle puts more emphasis on avoiding any potential risk and less emphasis on assessing any potential

benefits, which was criticized by some researchers and policymakers as unscientific due to its limitation of innovative technology (Shelton et al., 2002). Resulted from such divergent regulatory systems, various GMO products have been commercially produced and marketed in the US, but were strictly limited into the EU markets (Anderson & Jackson, 2003). Against this background, China's stance toward GMOs is not clear enough and somewhat intermediate between the U.S. and the EU.

2.1 Current knowledge gap based on literature review

After current literature review, the current knowledge gap is mainly lies three aspects. The first one is the lacking of connections between political science and natural science. Most of the scholars analysed the benefits and potential risks of GM rice through relevant trials and investigations based on the perspective of biological science. The scientific principle of GM rice has been introduced in many articles, but the analysis of its social and political consequences is not sufficient. Most of current study is focused on the natural science discipline, and only a few scholars corelated China's GM rice issue with political science. As an interdisciplinary study, this thesis aims at explaining the civil society-state relations through the GM rice debates in China, which will connect social science with natural science. Through the analysis of anti-GM rice campaigns to figure out its impact on the political decision-making process.

The second knowledge gap lies in the analysing approach on civil society-state relationship in China. There is still relatively little understanding about the dynamics of the civil society-state relations in China, albeit its increasingly important role on the international political stage (Büsgen, 2006). Thus, a context-specific and up-to-date study of the institutional growth of ENGOs and their contributions to the development of civil society is in need to unpuzzle the civil society-state relations in China. Distinct from the unsatisfactory top-down approach with limited involvement of civil society, anti-GM rice campaigns bring about political change in a bottom-up approach. Like other social actions, politics is embedded in social structures where interests groups take collective actions to accomplish certain goals (Davis & Thompson, 1994). The existing researches on Chinese civil societies are predominantly based on the notion of a state-society dichotomy and top-down structures, which

overlooked the endeavour of social organizations for institutional legitimacy and pluralism. As correctly noted by Büsgen (2006), the research on China's NGOs lack of clarity on the nature of these organizations and their potential impact on civil society-state relations.

The third gap lies in the empirical broader context of the civil society campaigns in China. The existed studies include the anti-incinerators campaigns of the site selection of municipal solid waste (Y. Huang, Ning, Zhang, & Fei, 2015; Johnson, 2013; Lang & Xu, 2013), anti-dam projects environmental protests (Buesgen, 2008; Chan & Zhou, 2014; Matsuzawa, 2011), anti-industrial wastewater disposal projects campaigns (Jian & Chan, 2016), and other collective activities, but the existed study of GM-rice campaign is relatively limited. All of these collective activities showed the increasing influence of civil society in China, but most of them are in local range. By contrast, the GM rice issue is more widely influential because of the crucial importance of staple food.

As correctly noted by Stalley and Yang (2006), even study the ENGOs *per se* can reach to different conclusions between examining the activist leaders compared with examining the prospective supporters. Rather than the mainstream dichotomy approach, a multi-level perspective is need. The shifting complexities of socio-political context, the institutional fluidity, and the ambiguity of policy-making process in China should be taken into consideration to develop a more comprehensive explanations to account for its civil society-state relations (Saich, 2010). This thesis attempts to take a small step toward the goal to fully understand the civil society-state relations in China.

2.2 Huge investment into the research and development of GM rice

This section aims to explain why the central government promoted the commercialization process of GM rice through awarding biosafety certificates to the two *Bt* rice lines between 2009 to 2014. The transgenic crops are required to pass through three phases of trials required by China's bio-safety procedures: field, environmental release and pre-production trials before put into commercialized production (Y. Wang et al., 2005). The moratorium of GM rice commercial production lead to intense imbalance between the investment and benefits. In other words, China possess world leading GM rice technology and practical demanding to solve food problems, but technology has not been transformed into

productivity.

According to Zhao and Ho (2005), Chinese government displays a deeply contradictory position in terms of biosafety regulation and management. This is not incidental, but embedded in the particular national condition of China. With the pressure to feed one fifth of the world's population with less than half of the world's per capita average of arable land, China zealously embraced GM technology in the 1980s and 1990s (J. Huang & Peng, 2015). Since then, China devoted huge research budget in biotechnology but has not granted permits for the commercial production of most GM crops (Zhao & Ho, 2005). During 2001 to 2005, China invested $1.2 billion into biotech research and development, within which, about $120 million is devoted to GM rice programs (Jia, Jayaraman, & Louet, 2004). With the generous budget from government, the research of GM rice has made notable progress.

With the worldwide largest biotech rice program, some scholars forecast that China has the potential to profit US $ 4 billion from biotech rice each year (James, 2007). The foreseeable benefits from GM rice in improving yielding productivity and reducing pesticide enabled this agricultural technology as a national strategy. In July 2013, 61 academicians of Chinese Academy of Sciences and Chinese Academy of Engineering jointly requested the government to promote the commercialization of GM rice. However, the unpredicted risks of GM rice to human and environment triggered various anti-GM campaigns, which influenced the policy-making process. Chinese policy-makers adopt cautious and conservative approach in face of the anti-GM activities despite the huge investment in GM rice research.

2.3 The ongoing debates about GM rice in China

In concurrence with the development of agricultural biotechnology, the debates about GM rice between the pro-GM and anti-GM groups attracted public attention in China (J. Huang & Peng, 2015). This issue has been particularly controversial due to the increased public concerns on human health and the environment. The debated on GM rice became a highly contentious after the award of biosafety certificates to the *Bt* rice lines in 2009, and became particularly hot during the Chinese National People's Congress in March 2010 (C. Lu, 2010). With extensive involvement from various actors, the debates on GM rice between different discourse coalitions has turned into intense debate on state policy (Keeley, 2006).

The most typical example is the fierce debate between two Chinese celebrities: Fang Zhouzi and Cui Yongyuan. Fang Zhouzi is an expert in chemical biology and a famous anti-fraud activist, who supports the commercialization of GM food. Cui Yongyuan is a well-known former host of China Central Television (CCTV), current member of Chinese People's Political Consultative Conference (CPPCC), and staff of Communication University of China, who oppose to the GM food. Cui Yongyuan has 20,440,000 followers in his Sina microblog. He posted many reports and videos on his widely read micro-blog, which urged the public to discuss the anti-GM rice topic on the Internet and fostered a shared grievance and identity. The debate has heated up since Cui Yongyuan claimed that he spent 500,000 yuan ($82,342) travelled to the US and conducted documentary investigation[6] on GM food and declared that the US mainstream scientists do not agree on the safety of GM food (Global Times, 2013). Cui revealed the entangled interests between the pro-GM scientists and the transnational biotech companies, which resulted in elevated levels of anger against the GM rice project proponents. Through the anti-GM debates, Chinese civil society showed their concern about the relationship between food, health, and environment at a broader level.

In the academia field, the pioneer in developing transgenic rice verities is Zhang Qifa, who led scores of researchers and students in his rice genomics and biotechnology laboratory at Huazhong Agricultural University in Wuhan (Stone, 2011). His achievements in GM rice research made him the Public Enemy Number One to a band of anti-GM activists (Stone, 2011). Another scientists in favour of biotechnology such as Huang Dafang, former director of the Biotechnology Research Institute of the Chinese Academy of Agricultural Sciences (CAAS) in Beijing. Huang Dafang once claimed that: 'Using GM rice is the only way to meet the growing food demand' (Qiu, 2008). Since the Chinese government issued safety certificated to two GM rice varieties in November 2009, Zhang Qifa and other pro-GM researchers have come under increasing fire from the anti-GM activists (Stone, 2011). The analysis part will unfold the debates between Zhang and the anti-GM activists.

Apart from Cui Yongyuan, there are diverse actors in the anti-GM camp, such as environmental NGOs, celebrities, and nationalist Maoists in the government (Steinhardt & Wu,

[6] Available from YouTube: https://youtu.be/IbrfJ0pTEHk

2016). Moreover, the scientists with cautious attitude toward GM rice also contributed to the anti-GM rice campaign. For instance, Xue Dayuan expressed his concern about GM rice: "The consequences would be unthinkable if large-scale cultivation of GM rice were not properly regulated" (Qiu, 2008). The proponents and opponents have numerous collisions particularly incited by the awarding of biosafety certificate to the two *Bt* rice lines in 2009.

All in all, the pro-GM and anti-GM camps have clashing views on the issues relevant to the commercial adoption of GM rice, including food safety, biosafety regulation, public acceptance, and ecological risk assessment (Y. Li et al., 2016). The supporters portray GM technology as an engine to boost productivity, and beneficial promoter to human health and environment protection. Whereas, the opponents refute these alleged advantages based on their findings. This thesis will analyse the counterpart arguments to spark critical thoughts of the issues relevant to the commercialization of GM rice in China. The anti-GM rice activities are led by elites such as NGO officials, entrepreneurs, academics, journalists, and some government officials.

The intensified public debate on genetically modified rice attracted the attention of people from all backgrounds with the following questions:

2.3.1 Whether China has food security problem?

Advocators of GM rice claimed that the rice yields of traditional varieties have stagnated even as use of pesticides and fertilizers has risen sharply (Stone, 2011). The scientists in favour of biotechnology asserted that transgenic technology is the most effective way to solve China's food problem (J. Huang et al., 2004). They attributed China's food problem to the vast population and scare cultivated land per capita (H. Yang & Li, 2000). Moreover, they asserted that the commercialization of GM rice can facilitate cultivation and improve agronomic performance (Demont & Stein, 2013; J. Huang et al., 2004).

On the contrary, the anti-GM rice part has corresponding counter arguments. In terms of the decreasing cultivated land and food security problem, anti-GM part pointed out the problem of inadequacy and inaccuracy of statistical data. Chinese local officials often underreport cultivated land to evade taxes and exaggerate political career achievements of feeding their

people with limited land (Hill, 1997). To a large extent, the supporters of anti-GM rice campaign were out of the discontented with local government. Driven by "political performance", many local governments put gross domestic product (GDP) growth in the first place rather than focus on public welfare (Steinhardt & Wu, 2016). Such kind of data problems lead to deterred systematic studies of changes in cultivated land in China (H. Yang & Li, 2000). Furthermore, they pointed out that most of the studies on the substantial welfare that may be generated by GM technologies are estimated based on *ex ante* impact assessments, which ignored some significant factors such as the intellectual property rights (Demont & Stein, 2013).

Thy key points of food problem debate is whether the number of the arable land and the gap between supply and demand has been exaggerated intentionally. If so, the transgenic technology is not in urgent need to solve the so-called food problem. According to the statistics on Table 2 (FAOSTAT, 2019), the overall trend of rice production in China from 2010 to 2017 is steadily increasing. Thus, the argument that China has serious food problem is not very convincing. In this case, the public feel curious about the intention behind the active biotech scientists who advocate the commercialization of GM rice, and the entangled interests among the stakeholders.

Table 2. Production quantity of rice (paddy) in China (mainland) from 2010 to 2017 (FAOSTAT, 2019)

Domain	Area	Element	Item	Year	Value	Unit
Crops	China, mainland	Production	Rice, paddy	2010	195760992	tonnes
Crops	China, mainland	Production	Rice, paddy	2011	201000896	tonnes
Crops	China, mainland	Production	Rice, paddy	2012	204235900	tonnes
Crops	China, mainland	Production	Rice, paddy	2013	203612192	tonnes
Crops	China, mainland	Production	Rice, paddy	2014	206507400	tonnes
Crops	China, mainland	Production	Rice, paddy	2015	212142000	tonnes
Crops	China, mainland	Production	Rice, paddy	2016	211094000	tonnes
Crops	China, mainland	Production	Rice, paddy	2017	212676000	tonnes

2.3.2 Whether GM rice is safe for human health and environment?

Only when GM rice is accepted by consumers, the so-called benefits can be materialized. The GM rice supporters attribute the stagnated commercialization of GM rice to the low level of understanding and acceptance of GM crops by Chinese consumers (Y. Li et al., 2016). In this case, understanding how consumers perceive the safety of GM rice is critical for the development of agricultural biotechnology (J. Huang & Peng, 2015). The pro-GM camp support the "essentially equivalent principle" of the United States.

The most well-known example is the provitamin A-rich 'Golden Rice'[7], a biotech genetically-modified rice that contains enhanced levels of Vitamin A, beta carotene and iron bio-availability to improve the nutrition and wellbeing of people (Brookes & Barfoot, 2003; James, 2011). The proponents of GM rice illustrate that 'Golden Rice' convey nutrition benefits to people who suffer from vitamin A deficiency (VAD). They were optimistic to materialize the biotechnology to alleviate hunger and malnutrition. However, Greenpeace strongly condemned the 'Golden Rice' trial conducted by Tang et al. (2012), which was approved by Tufts Medical Centre in the U.S.. Greenpeace condemned this research as irresponsible and risk the health of Chinese school children. They appealed Chinese government to examine the legitimacy of this experiment, and provide medical and legal assistance to the affected children[8].

In terms of the risk on environment and biodiversity, GM contamination to wild and nonmodified rice and the adverse effects on nontarget organisms the core concerns. On one hand, the pro-GM scientists declared that *Bt* rice poses a negligible risk to the environment and benefit for conserving biodiversity. According to James (2011), biotech is a land saving technology with higher productivity of current arable land and help preclude deforestation thus protect biodiversity in forests. Moreover, they point out the potential of GM rice to reduce the usage of pesticides and fossil fuels, which also contribute to a reduction of greenhouse gases (James, 2011). Most of the *Bt* rice lines have high resistance to target pests in laboratory and field trials.

To summarize, the GM rice promoters articulated the GM rice with profound prospects

[7] Golden Rice: a type of GM rice developed by Syngenta, a leading transnational agriculture technology company.

[8] Available online: https://www.greenpeace.org.cn/golden-rice/, Reveal the secrets behind 'Golden Rice'.

with the superiorities of pest resistance, healthier food and more environmentally compatible production. Contrarily, the anti-GM rice activists conceive sceptical attitudes to those promising features on the grounds that if the GM rice enter into commercial plant, the impact to environment is irreversible (Qiu, 2008). No matter in the scientific field or in daily life, the debate on GM rice is persisted, particularly after the issue of safety certificates for the two GM rice lines in 2009. Considering the existing approvals of the two *Bt* rice lines, it seems that GM rice is nudging toward commercial planting, but till today, there is no signal about the commercialization.

2.3.3 Whether China possess full-fledged regulatory system?

The pro-GM rice part claim that Chinese government has devoted considerable attention to the public policy and has relatively well-developed regulatory system for risk assessment and manage of genetically modified rice (Y. Li et al., 2016). To support this argument, Y. Li, Peng, Hallerman, and Wu (2014) pointed out that China has developed a comprehensive regulatory framework to regulate GMOs and related products. In the administrative aspect, effective plant genetic transformation systems and genome research centres have been established, including the establishment of Office of Agricultural Genetic Engineering Biosafety Administration (OGEBA) in 1996 and the Allied Ministerial Meeting (AMM) in 2002. Incorporated with representative from different ministries, AMM is responsible for the examination and approval of the major policies and regulations of agricultural GMOs. It seems that China has relatively well-designed regulatory framework both in national and local level (Fig. 2) (Y. Li et al., 2014). But how about their actual enforcement capacity, which is the focal point of anti-GM camp.

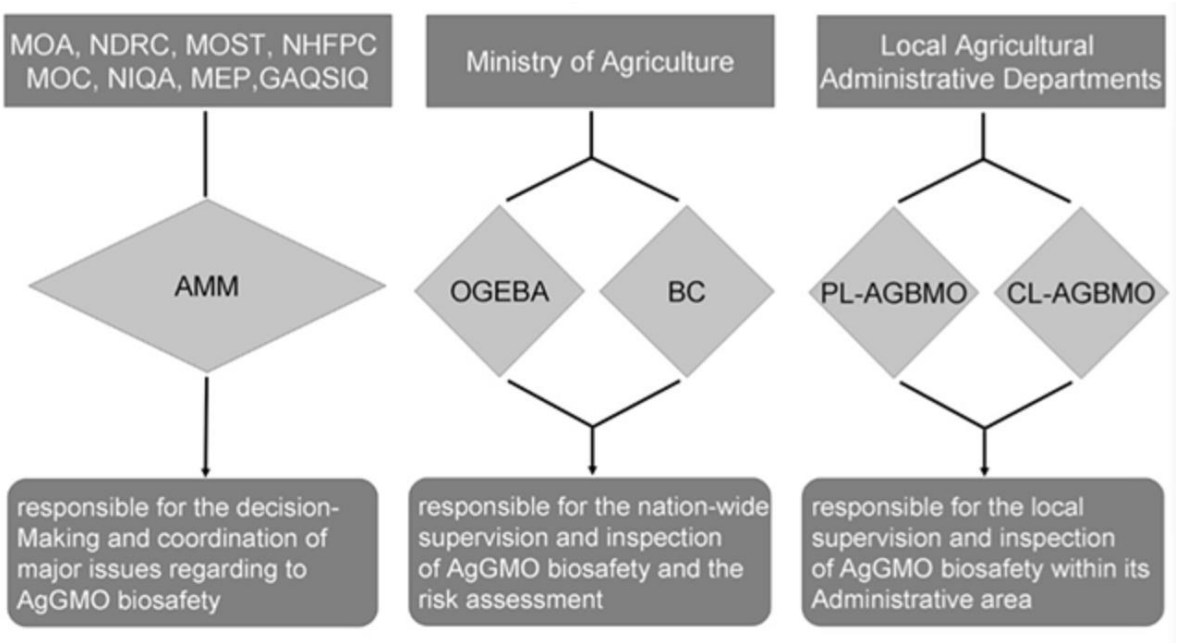

Figure 2. Regulatory framework for regulating biosafety of agricultural GMOs and related products in China (Y. Li et al., 2014).

The Ministry of Agriculture (MOA); the National Development and Reform Commission (NDRC); the Ministry of Science and Technology (MOST); the National Health and Family Planning Commission of China (NHFPC); the Ministry of Commerce (MOC); the National Inspection and Quarantine Agency (NIQA); the General Administration of Quality Supervision, Inspection and Quarantine of China (GAQSIQ); the Ministry of Environmental Protection (MEP); the Allied Ministerial Meeting (AMM); the Office of Agricultural Genetic Engineer Biosafety Administration (OGEBA); the National Agricultural GMO Biosafety Committee (BC); the Province-level Agricultural GMO Biosafety Management Office (PL-AGBMO); the County-level Agricultural GMO Biosafety Management Office (CL-AGBMO)

The most powerful rebuttal from the anti-GM part is the inundate illegal planting of GM rice in South China. As pointed out by Brookes and Barfoot (2003), unapproved planting of GM rice might occur driven by profit. In fact, there are multiple factors relevant to the illegal planting of GM rice in China. Greenpeace conducted four investigations on the seed market and agricultural technology station in Hubei province from February to April 2005. They collected 25 samples and sent them to be tested by an laboratory named Genescan Analytics GmbH in Germany (Keeley, 2006). The types and sources of the samples consist the following categories: First, rice seeds collected from the seed market, agricultural technology station, and farmers of Hubei province. Second, rice seedlings collected from farmers of Hubei province. Third, rice ready for sale from wholesalers from Hubei and Guangdong provinces.

Table 3: Test results of Greenpeace's investigation on illegal planting of GM rice in China, 2005 (official website of Greenpeace)

Sample type	Number of samples	Number of samples tested as GM rice	Number of samples tested as *Bt* rice
Rice (Guangzhou)	21	2	1
Rice (Hubei)	3	3	3
Rice seed(Hubei)	9	9	8
Rice seedling(Hubei)	3	3	0
Total	36	17	12

Though, China has taken significant strides towards a regime with strong awareness of environmental protection (Stalley & Yang, 2006; Van Rooij, 2010), there are still various deficiencies particular in the enforcement aspect. Based on the test results, Greenpeace claimed that GM rice has been illegally planted in Hubei and Guangdong province. They traced the sources of the illegal planted GM rice seed and revealed this fact to the media. Based on this fact, Greenpeace claim that the regulatory capacity China is not adequate to oversight the GM rice industry due to the illegal cultivation and sale of GM rice. There are various investigation reports in the official website of Greenpeace, which exhibited the regulatory weakness, most notably in enforcement.

3. Theoretical Framework

This chapter outlines the theoretical framework of the thesis, includes the concept of civil society, strategic framing theory and institutional theory to conceptualize the findings. In the very beginning, I planned to use social movement theory to explain the anti-GM rice activities in China. However, mind was changed during the literature review period, when recognized the lack of sustained contentious collective action, which is supposed as a necessary element of social movement (Tarrow, 2011). The civil society activities is relatively loose and fragmented in China (Stalley & Yang, 2006), thus it is not quite feasible to use social movement theory. The absence of widespread contention along with the growing importance made the environmental protests interesting objects to study on.

Consequently, this thesis attempt to adopt the organizational analysis framework to

explore the institutional interdependence relationship between Chinese civil society and the state. The contents of civil society refer to different types of associations which represent various interests. There are broad sphere of civil society, including organizations, associations, groups, clubs, unions etc. This thesis will mainly focus on the ENGOs in China as the typical agent to shed some light on the civil society-state relations in contemporary China. The theoretical plan is to investigate how Chinese civil society are constrained and make use of the state. The empirical aim is to demonstrate the civil society-state relations in the case of GM rice debates.

3.1 Concept of Civil Society

In political science, civil society is one of the most complex concepts with blurred boundaries and encompassing contents (Perinova, 2005). Before apply the concept of 'civil society' into contemporary contexts, it is necessary to outline its changing meanings over the years and compare the distinct arguments of different scholars. The civil society theory can be traced to the seventeenth century when the philosophers held different understandings of the relationship between state and society. Hobbes, Locke, and Rousseau conceptualized civil society as build upon a social contract between a strong society and relatively weak state (C. Hsu, 2010). Later on, Hegel and Marx insisted that civil society is the product and preserver of capitalism (C. Hsu, 2010).

Traced to its European origins, civil society is the synonym of the bourgeoisie, which signified the expanded influence of the self-conscious social groups (Cox, 1999). From this point of view, the interests within civil society is universal, which was challenged by Karl Marx who embrace a variety of conflicting interests (Cox, 1999). As a classic liberalist, Alexis De Tocqueville conceptualize civil society as an autonomous area of liberty which separated from state power and market forces. He pointed out that civil society is in opposite position with state, and serves as the key to democracy though voluntary social and political associations (C. Hsu, 2010). De Tocqueville's civil society theory provide explanatory framework for the fall of communist regimes in Central and Eastern Europe due to the subversive individual dissidents and mobilized social groups. Rooted In the Western neoliberal assumptions in which private initiatives privileged to state actions, the civil society framework consider the government as

the problem, and argue that state power should be constrained by non-state actors (C. Hsu, 2010).

In the 1980s, the concept of 'civil society' resuscitated in East Europe, when the grassroots seek for emancipation from the unbearable political situations through carving out a 'free zone' to associate and express their sentiments (Charles, 1978). After the collapse of the Soviet bloc, the term of 'civil society' became popular among the intellectuals and scholars in China (Timothy Brook & Frolic, 2015; Xiaoguang & Heng, 2008). In this case, civil society is considered as the antonym of authoritarianism, through which, individuals and groups set out to challenge unresponsive states to struggle for a better world (Chandhoke, 2007).

In contrast, Gramsci thought historically and dialectically, he conceptualize 'civil society' as the shaper of the state, as well as shaped by the state (Cox, 1999). In his thinking, civil society is on one hand the realm grounded in the existing social order based on the understanding of the *status quo.* And on the other hand, serve as the emancipatory potential agent of new social order (Cox, 1999). The essence of Gramsci's thinking is to base on the condition and to change the world to improve humanity and social equity (Cox, 1999).

Although there is no commonly agreed definition, the following features are widely reflected in the various interpretations: it is a 'space' or 'arena' where associations and social network form independently from the state for the sake of public action and debate, based on shared interests, values, and needs (Büsgen, 2006). The two different aspects of civil society were summarized by Büsgen: the relational aspect and the functional aspect. To be specific, civil society actors are independent from the state with the function to promote public participation based on the principle of pluralism of actors (Büsgen, 2006). It is of crucial importance to capture diversity when analysing civil society in non-western socio-political contexts.

A large number of researchers rejected the concept of 'civil society' as an analytical framework for Chinese NGOs due to their limited autonomy (Büsgen, 2006). Most studies assess Chinese civil society-state relations through frameworks based on the assumption of a dichotomy relations, and come to the conclusion that Chinese NGOs lack of independence and

cannot be considered as autonomous civil society (Büsgen, 2006). This study cannot agree on such rejections based on the above mentioned repertoires and outcomes of anti-GM rice campaigns. The practical significance of ENGOs and other actors cannot be counteracted by the hybrid feature of Chinese social organizations. The dismiss of China's social associational actor as civil society overemphasized the insufficient autonomy but overlooked the comprehensive situation.

3.2 Strategic framing mechanisms

As Entman (1993) put it, the analysis of frames illuminates how human consciousness was influenced by the transfer of information. During this process, the power of communication text was described through the framing mechanisms. Strategic framing is the mechanism through which the civil society foster group identities and motivate collective actions to facilitate the civil society-state communication (Smith, 2002). The strategic process refers to the deliberative, utilitarian, and goal directed frameworks which were developed and deployed to achieved specific purposes (Benford & Snow, 2000). The core functions of the frames are the "organizing" and "structuring" work to project knowledge ahead and guide the structure of incoming events (Reese, 2007). In Entman's often cited article, framing essentially involves *selection* and *salience*, and the process to frame is to highlight the salience of item with selected documents and some aspects of a perceived reality (Entman, 1993). As suggested by Reese (2007), framing's value lies in its potential to bring disciplinary perspectives together, this thesis takes framing as a provocative model bridges the field of communication and political sciences.

This thesis choose strategic framing theory the describe civil society activities in virtue of its functions to define problems, diagnose causes, make moral judgements and suggest remedies (Entman, 1993). The analysis part will unfold how the civil society organizations apply the knowledge of these functions into the GM rice debates. Throughout the framing process, ENGOs and other civil society actors decided what to say with the guidance of frames (often called schemata) that organize their belief system (Entman, 1993). The strategies used during the framing process can be divided into the following three sets, through which, the campaigners strategically frame the antagonists under the fragmented authoritarian political context (J. Lu & Chan, 2016).

3.2.1 Highlight some aspects of information about the described item or debated issue

The first tactic is to highlight and emphasize some aspects of information about the described item or debated issue to make it more noticeable, sensible and memorable to the public (Benford & Snow, 2000; Entman, 1993). In this way, the information receivers are more tend to perceive the highlighted information and integrate it into their cognition. As noted by Gamson and Modigliani (1989), public discourse is carried on in various forums, and it is crucial important to think of a set of discourses that interact in complex ways. In terms of the GM rice issue, Different stakeholders invent their own clever catchphrases through their own frames. Scientists use journals, seminars and other academic patterns to make discourse, and the governments officials use statements and policy documents to discourse the issue. The two camps of GM rice debates also have their own approaches discourse their arguments, including not but limited to the media, Internet.

3.2.2 Construct collective identity

The second one is collective identity, which works as a flexible framing strategy during the mobilizing process (J. Lu & Chan, 2016). To be specific, to establish human relationships based on shared common interests and existing social ties (Charles, 1978). A similar viewpoint also has been put by Smith (2002), identification with a group is a necessary component of collective action, common values should be defined to construct collective identities during the identity-building process. Such kind of shared identities and ideologies among activists and the public are essential to promote sense of unity and group solidarity to achieve certain goals. The primary mobilizing grievance and dominant narrative of environmental NGOs campaign was anchored in public concerns about the potential impact of human health which are closely related to people's daily life. A second and much more exclusive type of grievance was the fear of worse living condition that the and environment might be destroyed if GM rice enter into commercial planting.

As Diani (2000) put it, mutual identification and solidarities are likely to generate better mobilization outcomes. The analysis part will explore how the campaigners relate the perceived risk on human health and environment to potential participants and enhance their grievances using the collective identity framing. In this way, the protesters accumulated potential collective

resources to initiate protests based on the collective identities. Besides the potentiality to increase the efficiency of participant recruitment, collective identity framing is also with critical significance to reduce the risks of repression by the authorities (J. Lu & Chan, 2016).

3.2.3 Orientate to targeted individuals or groups

The third strategy is adopt corresponding frameworks to mobilize targeted individuals and groups. The audience effects in communication studies can be applicable here to explain why and how the target of the message (framework) can affect the form and content of the message (Benford & Snow, 2000). There is no unified form of participants, but varies in different educational backgrounds, beliefs, interests and values. In this case, different patterns of mobilizing mechanisms should be adopted to appeal multiple participants. As the potential adherents to social activities, the targeted audience (participants) are significant contextual factors to explain the diversified and modified frameworks according to fit certain circumstances (Benford & Snow, 2000). From the study of Walsh, Warland, and Smith (1993), the framing strategies to appeal wider publics are of crucial significance in determine the outcome of protests mobilization.

These three sets of strategic framing are dynamic process and often overlapped with each other, which also be affected by the embedded socio-cultural context (Benford & Snow, 2000). As pointed out by Steinhardt and Wu (2016), the campaign model based on alliance of social elites and citizens can be transformative. The proactive campaign in the name of the environment against the national wide commercialization of GM rice project proved to be successful. Chinese civil society actors used an array of strategies to mobilize participatory resources, professional resources and build transnational networks to oppose the commercialization of GM rice, which will be illustrated in the findings and analysis chapter.

3.3 Institutional theory

Moved away from research with overly rationalistic explanations of organizational behaviour, institutional theory contributed a lot to explain the dynamics of organizations owing to its recognition of the embeddedness in specific cultural and political contexts (Frumkin & Galaskiewicz, 2004). In this case, the specific societal-political of China will be took into

consideration as the research background of this thesis. On one hand, it is effective to account for how the state play as the driver to initiate the structural transformation of civil society organizations. On the other hand, institutional approach can explain the role and characteristic of Chinese civil society with its emphasis on legitimacy and satisfying behaviour. To be specific, how they construct and portray their roles within the institutionalized rules and procedures is crucial for their survival and downfall.

Institutional approach examine NGOs and state agencies as organizations in the field consists of all the firms that produce similar services or products (C. L. Hsu & Jiang, 2015). As the main component of Chinese civil society, ENGOs are not puppets of the state, neither do they harbour the goal of democratic reform or revolution. Thus, the civil society framework and the state corporatism approach are inapplicable to account for the state-civil society relations in China (C. L. Hsu & Jiang, 2015). Nevertheless, institutional theories offer a fruitful way to look at Chinese NGOs as organizations and the ways they emerge, compete for survival, and collapse embedded in certain structural and cultural system (C. Hsu, 2010; C. L. Hsu & Jiang, 2015). This thesis aims to assess to what extent ENGOs play a role in the formation of a civil society in China, and what kind of civil society-state relations they promote.

Rather than the hostile dichotomy, the relationship between Chinese ENGOs and the state is institutionally interdependent. The institutional backgrounds such as work experience, beliefs and expertise of the founders have strong influence on the strategies of ENGOs and their relations with the state (C. L. Hsu & Jiang, 2015). To build alliances with state actors or choose to evade state attention are distinct orientations to the state. C. L. Hsu and Jiang (2015) point out that ENGOs founded by former party-state bureaucrats are competent and inclined to build alliances with state actors, whereas the ENGO founders without such experience adopt sate avoidance strategies.

Cases in Europe and North America have generated many classic theories in institutional research, where the state play a much smaller role than in the PRC (C. L. Hsu & Jiang, 2015). In China, the government regulate and monitor the NGOs through legal framework, registration and administrative management to guarantee the state power. The legal framework monitoring the registration and administration of NGOs is evolving with the current system based on the

concept of ‘dual management’ (M. Wang, 2001). However, the advocacy and lobbying role of these NGOs seems to be low under the authoritarian rule (Perinova, 2005). Aware of such limitations, the ENGOs behave wittingly to avoid conflict with the state.

In ‘disciplined partnership’ with the state, Chinese NGOs enjoy a modicum of autonomy (Chamberlain, 1998). The civil society actors advocate institutional change through demanding optimizing of existing legal and regulation procedures and system. To seek for survival and legitimacy, Chinese civil society adopt the routines and structures defined by the state.

Chinese NGOs are at an early stage of development and are challenged by many organizational problems, but have won considerable acceptance from the state and the public through portrayed role of social problem resolver (M. Wang, 2001). The anti-GM rice ENGOs articulate their campaigns in name of environmental protect to generalize their activities. Through this mechanism, the ENGOs construct their role as problem solver to mobilized the public to participate into their activities because the environmental issues are closely related to people’s daily life. Though state agencies play a critical role in bringing about institutional changes of civil society organizations through exerting institutional pressure on funding, registration and operation (Frumkin & Galaskiewicz, 2004). The government also need civil society organizations to share the responsibilities for social welfare. Thus it can be seen that the state and civil society are locked in a mutually reinforcing game of moves and countermoves (Frumkin & Galaskiewicz, 2004).

With its emphasis on the interactions between institutional organizations, the institutional approach has unique advantage to explain the complicated relations between Chinese civil society and the state without underestimates the dominant power of the state. Based on this useful approach, it is understandable how state and the civil society negotiate and collaborate with each other to achieve their own strategic goals. The emergence of ENGOs as a new institutional field can be explained by the conjunction of China’s political conditions, international NGOs (INGOs), mass media and internet (G. Yang, 2005).

4. Research methodology

This chapter outlines the research design, sampling approach, and data analysis methods. Based on documentary sources, this thesis examines the civil society-state relations through the GM rice debate. This thesis employ case study approach and content analysis for data collection and analysis.

4.1 Mixed research methods

None of the aforementioned data collection resource can encapsulate all possible contexts. Only the qualitative research alone is not sufficient to examine the target issue, thus, a mixed methods approach was taken for its advantage in triangulation and completeness (Bryman, 2016). To be specific, this study use embedded qualitative and quantitative research methods with qualitative research as the priority. In this case, quantitative approach was used to test the qualitative one and enhance the findings.

In terms of triangulation, the discourse and arguments of between the pro-GM and anti-GM camps were cross-checked by the statistics from official websites of state agencies and other organizations. If there is inconsistency or divergence, re-examination is needed to identify the reasons behind and sustain the accurate data.

Another advantage of mixed research methods is the completeness of data collection to answer the research questions (Bryman, 2016). In this way, the two research methods can shore up the weakness of each other and fill gaps mutually. This study aims to gather two kinds of data: use quantitative data to introduce GM rice from natural science perspective, and to compare the arguments from the two camps based on qualitative data. Through this mixed approach, both textual and numeric data can be collected from the fairly heterogeneous set of sources.

Albeit the above mentioned advantages, challenges also existed in the mixed research methods, for instance, how to appropriately design and conduct the research dovetail to the research questions (Bryman, 2016). Furthermore, take into consideration that how to integrate mixed methods through the whole process, particularly when discuss and present the findings.

4.2 Case study approach

ENGOs and their involvement in the GM rice debates since 2009 when the two Bt rice

lines were rewarded biosafety certificates. Through examining the anti-GM rice activities (what), motivations (why), strategic framings (how), and the impacts, this study attempts to illustrate the role and characteristic of ENGOs and their significance in civil society-state relations in China. There are two reasons for selecting the anti-GM rice campaign as a case-study. One is the crucial importance of rice as the staple food in China, and the another is its closely connection with environmental issues. Case-study design entails the detailed and intensive analysis of a single case (Bryman, 2016)

This thesis analyse anti-GM campaigns through focusing on campaigner strategies and outcomes. To be specific, how citizens in these cases were mobilized and the factors contributing to campaign outcomes. Moreover, the case-study will analyse the government's response to anti-GM campaigns and the debates. I collected data from the Chinese Core Newspapers Database, through keywords searches of "GM rice".

Through the case study of ENGOs in the anti-GM rice campaigns, this study plans to gain a greater appreciation of the motivations and strategies of the involved actors. With selective information and perceptions of particular groups, this thesis does not claim to give an objective picture of the all ENGOs in China, nor does it allow generalizations over the state of China's civil society.

4.3 Content analysis: documents as sources of data

Content analysis is a very flexible method can be applied to the analysis of various document both in qualitative and quantitative way, including printed or online words, texts, images and videos (Bryman, 2016). Such kind of flexibility is the reason why this thesis choose content analysis approach to analyse the different types of data. The best-known definition of content analysis is Berelson (1952) take content analysis as a research technique to generate objective, systematic and quantitative description of the manifest content of communication (as cited in Bryman, 2016). From this definition, the two qualities of content analysis were apparently put forward: to be objective and systematic. As correctly noted by Bryman (2016), adhering to these two principles can help researchers to achieve results with as few subjective bias as possible. Content analysis can be applied into quantitative research as well as qualitative research.

The main resources of data is the websites of environment NGOS, government and other relevant institutions. Besides, it draw on academic and mass media publications, photographic evidence, internet websites, and mobile phone-based social media.

Among the heterogeneous set of sources of data, this thesis mainly focus on the following four types of sources: The first one is official statistics and documents from state agencies and international institutions. The second source is documents deriving from the websites of social organizations, such as Greenpeace and Utopia (Wu You Zhi Xiang). The third type is mass-media and social network platforms, includes newspapers, magazines, television programmes, blogs and online forums. Besides, academic articles and journals also provide plenty of data.

In terms of official statistics and documents from state agencies and international institutions. Target resources include Ministry of Civil Affairs of China (MOCA), FAOSTAT and UNESCAP. State agencies and other official organizations can provide a great deal of information which are potential significant for social researchers. For instance, to understand the growth of social groups, the statistics from MOCA have been consulted. While the data from FAOSTAT helped to illustrate the historical and current rice yield as well as a holistic picture of China's agriculture. Besides, the state policy documents and international treaties from domestic state agencies and international institutions provided authoritative documents for the analysis part.

The second resource is data deriving from the websites of social organizations. Such kind of resource consists of the documents like annual reports, mission statements, press releases and public relations material, as well as other documents, all of these are in public domain and accessible for researchers (Bryman, 2016). The primary social organizations include the Beijing-based office of Greenpeace[9], Utopia (Wu You Zhi Xiang)[10], Beijing Yilian Legal Aid and Research Centre of Labour[11]. The homepage of the first two websites provide searching function through keywords. When input the keyword of "transgene", there is 2900 items in

[9] Website: http://www.greenpeace.org.cn/ , the Beijing office operates as a branch of Greenpeace Hong Kong (Keeley, 2006).

[10] Website: http://www.wyzxwk.com/

[11] Website: http://www.yilianlabor.cn/index.html

Greenpeace, and 4373 items from Utopia (Wu You Zhi Xiang). The search result is 68 items and 89 items respectively when use "genetically modified rice" as keywords. There is no searching function in the website of Beijing Yilian Legal Aid and Research Centre of Labour, but the all of the 11 items in the special column are about GMOs. All of these reports, articles and other contents provided abundant data for this study.

Mass-media and social network platforms serve as the third source to be referred to. During this process, data was collected from the websites, social media posts and similar virtual documents. Data was collected from both official and unofficial online media, to compare the similarities and differences, thus to generate dialectic viewpoint through different discourses. In terms of newspapers, a useful platform is the National Knowledge Infrastructure (CNKI)[12], which provide systematic archives of the influential newspapers. Scholars and students can search information through the classification according to discipline, name of newspaper and research level combined with keywords. Besides newspaper, video data was collected from the influential platforms such as YouTube, and Chinese local platforms such as Youku[13] and iQIYI[14]. Moreover, the social network platforms such as blogs and online forums provide massive information, which provide convenient access to observe how the public discuss the GM rice issue. To ensure the quality of potential material, this study use Chinese local engine (Baidu) and international search engine (Google) to locate keywords, which provide a wider access to the Web (Bryman, 2016).

Last but not least, three kinds of academic articles and journals can be distinguished. The first consist of agricultural and biotechnological studies, which investigate how GM rice was developed and its scientific principle and impacts. The second type of articles stem from the broader field of civil-society relations, particularly the evolving of ENGOs in China. This kind of articles analyses how ENGOs use strategic framing to mobilize the public against the

[12] National Knowledge Infrastructure (CNKI): the most comprehensive gateway of knowledge in China, with core users ranging from top universities, research institutes, government think-tanks and other enterprises. Accessible online: https://www.cnki.net/

[13] Website of Youku: https://www.youku.com/

[14] Website of iQIYI: https://www.iqiyi.com/

commercialization of GM rice. Other studies also discuss the embedded characteristics of ENGOs in China and how they deal with the relationship with the state agencies. Thirdly, a number of documentary, and articles on environmental campaigning strategies in the context of China and international scope have been studied. Besides, references cited in the studies led to further relevant work, methodologically use content analysis of publications like interview videos, annual reports, websites, or press releases.

4.4 Generic purposive sampling approach

Then the sampling strategy of data should be clarified, because not all the data can be used into the analysis part. Through generic purposive sampling process, samplings is conducted purposively but not necessarily to generate theory (Bryman, 2016). This approach is quite flexible, which can be employed in a sequential or in a fixed manner to select the cases to address the research questions. Before sampling, this thesis generate three categories to guide the collection and selection of data.

The first one is time period, this study mainly focus on the documents during the period from 2004 to 2019. In 2004, the *Bt* rice finished the three-year pre-production trails in 17 villages in Hubei and Fujian provinces (Chen et al., 2011). In the same year, Huang Jikun and his colleagues presented a paper to the State Council to promote the commercialization of GM rice (J. Huang et al., 2004). In the same year, Greenpeace began to focus on GM rice campaign through series of activities such as rice tour in Yunnan province and press conference (Keeley, 2006). Greenpeace's arguments against GM rice and their questioning about the conflicts of interests among the researchers were published in the front-page article in Southern Weekend and *China Daily* (Keeley, 2006), which are the most influential newspapers in China. Thus, the 2004 indicates the GM rice debates became widely influential topic, and was taken as the starting year of data collection.

The second sampling criterion is the influence in academia and society, namely their representativeness in certain field. For articles, the number of citations can indicate the impact of a piece of work within its field, this thesis mainly refer to the articles with more than 30 citations except for the ones published after 2015. The same principle applies to other data sources, blogs and videos with relatively more comments and click rate are more representative

to be researched on.

The third sampling standard is the significant actors as chief objectives. As mentioned in the ongoing debates part, there are various actors in the GM rice debates, include different types of groups and individuals. For groups, the active actors include NGOs, research institutes, universities and other social organizations. The influential individuals consist of scientists, scholars, celebrities and leaders of the above mentioned groups. This thesis mainly focus on the arguments of significant actors, such as ENGOs, scientists and celebrities with certain social influence.

To sum up, content analysis has its advantages and disadvantages. Through recovering the debates between pro- versus anti-GM rice in China, data was collected from various resources, such as the official websites of state agencies, civil society organizations, mass media and social platforms. The most appealing advantages include its flexibility to be applied to verities of unstructured information, the transparency allows for follow-up studies, and possibility to track changes over long time spans (Bryman, 2016). However, content analysis also suffers from certain limitations, such as the difficulty to ensure authenticity, credibility and representativeness due to the selection of documents, and sometimes accused as atheoretical due to the emphasis on measurable content (Bryman, 2016).

4.4 Reflections about the research methods

Due to the long distance from Norway and China, it is difficult to do face to face interview to collect data. Besides, my limited social ties and personal relations constrained myself from conducting other types of research approaches such as questionnaire and investigation. Thus, this thesis mainly uses data from official websites, and some of them has been selected and interpreted by other scholars. Through content analysis methodology, secondary data may have biased the result of this study, especially when the original source is not available to make triangulation. As such, this thesis inevitably touches upon the quite disputable and complex civil society-state relations and GM rice issues in a very cursory way. Given the variety of sources of data and their respective limitations, this thesis cannot provide more than an exploratory examination of the issue.

5. Findings and Analysis: mobilization of anti-GM activities through strategic framing theory

This thesis will prioritize depth over breadth due to the huge and growing numbers of NGOs in China. Environmental NGOs are the earliest and most active sectors on Chinese civil society since the reform policy in 1979, and will be the primary research objects (Ho, 2007). Influential studies on Chinese NGOs have been carried out by Peter Ho, Carolyn L. Hsu, and Timothy Hildebrandt which are useful for this thesis. This chapter will analyse how the civil society actors mobilize the public through strategic framing.

As mentioned in the previous chapter, anti-GM rice constituencies include environmental NGOs, activist-minded scientists, university professors, and relatively progressive media outlets. They initiate or participate anti-GM rice campaigns individually or collectively. As correctly noted by Van Rooij (2010), the organizer's ability to framing and use political and organizational resources to mobilize followers is decisive to the outcome of environmental campaign. This part will probe how environmental NGOs articulate strategic frames to motivate the public into anti-GM rice campaigns through strategic framing theory, and probe their role and characteristics based on institutional theory.

The aborted commercialization of GM rice indicate the success of anti-GM rice campaigns. When exploring the factors led to this achievement, framing strategies are of particular importance. Within the civil society, different frames can mobilize various levels of public participation into distinct forms of activities (Martens, 2006). From the constructivist perspective, frames were regraded s relatively benign resources and accessible tools to social actors (Gamson & Modigliani, 1989). Through different channels of participation, the public engage in anti-GM campaigns via legitimized and institutionalized ways.

While traditional claim-making routines were drew on by the majority of protests in China, environmental NGOs adopt innovative repertoires to frame issues of public concern (Steinhardt & Wu, 2016). It is of crucial importance to underscore the mixture of traditional and new repertoires adopted by ENGOs. The following section sketches the frameworks of

anti-GM rice mobilization, which have been adopted by the ENGOs, and other GM rice concerned actors.

5.1 Scientific uncertainty frame

Genetic technology has been proclaimed as the third technological revolution following the industrial and computer revolutions (Abelson, 1998), yet, its deployment and impact have been controversial (Shelton et al., 2002). Transgenic technology is depicted by its promoters as the most powerful instruments to food problem in China, which is at the heart of the pro-GM rice arguments. Yet, the anti-GM activists brought forward the scientific uncertainty on human health and biodiversity. As pointed out by Keeley (2006), different sides take distinct positions on whether the promising results reflect 'realistic' on-farm conditions. The underlying rationale is that without concrete scientific proof of absolute safety, any kinds of policy to promote the commercialization of GM rice were rendered unjustified. Without a scientific consensus on the safety of GM rice, more research and trails is needed to verify the potential impacts on human health and ecology.

In terms of biodiversity, the anti-GM part argued that the gene pool of wild rice may be contaminated, thereby disrupt the protection of biodiversity. It is estimated that about 120,000 distinct rice varieties exist today after centuries of cultivation and farmer selection, among which, about 80,000 varieties are preserved in Genetic Resources Centre of International Rice Research Institute (IRRI) (Khush, 1997). With 40,000 varieties in the gene banks, China is the biodiversity centre of rice, and is the hometown of many rice varieties. Moreover, unmodified crops can also be contaminated through cross-pollination by the gene flow of GM rice (Qiu, 2008). Thus the anti-GM activists argued that the rice varieties will be decreased if GM rice is ratified for commercial planting China.

Besides, the threaten to biodiversity and environment also lies in the connection between GMOs and pesticides. the surge in genetically engineered crops in the past few decades is one the main drivers of increased pesticide use and chemicals in agriculture. The risk of outbreak of secondary pest and the increased use of toxic herbicides like Roundup. Glyphosate, the active ingredient of RoundUp, was reclassified as a probable carcinogen by the World Health Organization. Moreover, secondary pests may become new threaten to *Bt* rice according to the

experience of *Bt* cotton . As noted by Wei Wei, an ecologist at CAS's Institute of Botany, secondary pests became new threats when target pest was controlled by *Bt* cotton, which is unforeseen before enter into commercialization (Stone, 2011).

As for the potential risk on human health, the anti-GM camp claim that short-term animal studies cannot prove that the GM rice are safe for human beings (Qiu, 2008). As warned by Liu Bing, an expert on science and society in Tsinghua University in Beijing: "If there were a health risk, we would be heading for a major disaster" (Qiu, 2008). In the ongoing debates chapter, other potential impact on human health has also been discussed.

It is important to understand the risks and benefits of *Bt* plants on human health and environment, but the science of risk assessment is not easily explained to the general public (Shelton et al., 2002). Captured the inherent scientific uncertainty of GM rice, the anti-GM rice activists questioned some of the assumptions used by the GM proponents. As pointed by Meek and Keese (2006), the acknowledgement of uncertainty carries negative connotations that have the potential to undermine the confidence about GMOs. To support the scientific uncertainty framework, ENGOs primarily quoted scientists and experts sceptical on GMOs to point out that the safety of GM rice was scientifically unproven and should be suspended from commercialization. Moreover, some anti-GM figures portrayed pro-GM rice scientists as being driven by personal interests and cast doubt on their research reports. Through depicting the pro-GM rice scientists as biased and driven by self-interests, the grassroots were influenced to query the alleged benefits of GM rice.

Civil involvement is easily triggered by the perception of potential risk on human health and the environment (Martens, 2006). The scientific uncertainty lead to Chinese consumers' uncertain attitudes toward GM foods, thus contributed to the uncertainty of policy makers on how to proceed with biotechnology policies (J. Huang, Qiu, Bai, & Pray, 2006). With the core argument that the commercialization of GM rice pose risk to environment and human health, the ENGOs visualized the dreadful consequences. The uncertainty rhetoric worked as a dominant frame in the anti-GM debated, which reminded the public to cast doubt on the alleged benefits of GM rice. Furthermore, they appeal the government to perform robust and credible biosafety and environmental risk assessments before make sound decisions. Such demand for

solid scientific data also cater to the consumers' need to clarify their uncertainty about GM rice.

5.2 **The social responsibility frame**

The GM rice debate is not only a technical issue but also social issue closely relevant to people's daily life. ENGOs and other anti-GM rice actors depict their aims as protecting the environment for the public good of the society, for fear of the irreversible consequences on human health, environment, and food sovereignty. As recommended by Shelton and Sears (2001), scientists have the obligation to conduct their work carefully and present their findings in a nonsensational fashion, while media and public agencies and those who oppose or advocate a specific technology should document the consequences. But most of the scientists in China are reluctant to communicate with the public.

As recorded by Stone (2011) and other online forums in China, Professor Zhang Qifa delivered a lecture on the functional rice genome and boosting crop yields at China Agricultural University in November 2010. As academician of Chinese Academy of Sciences, and professor of Huazhong Agricultural University, He was queried by the audience whether he has illegally distributed transgenic seeds to farmers. He refused to answer that question, and was accused as a traitor by a woman. This experience is not a special case, Zhang was often assailed wherever he give lectures and received vituperative e-mails almost every day (Stone, 2011).

Here another anti-GM actor need to be mentioned: Utopia (Wu You Zhi Xiang), which is the flagship website of the New Left academic group (Freeman III & Yuan, 2012). Utopia activists espouse nationalist sentiments and denounced GM crops through disrupting scientific meetings, gathering signatures on open letter, and calling for the revocation of the safety certificates of GM rice (Stone, 2011). Utopia and its allies see themselves as standing up to corruption and special interests, their heated attacks slowed the commercialization of GM rice. With explicit contempt to GM rice, Utopia posted multiple articles and essays on its website to make their voice heard by the officials (Stone, 2011). They pointed out the potential threaten of foreign patent technology involved in genetically modified rice to China's food sovereignty. Based on this, they describe their motivation as patriotic to defend the food sovereignty against American-owned biotech companies and describe the GM food supporters as "traitors" (The

Economist, 2013).

Greenpeace also asserted that planting GM rice could drive up the cost of seeds because the patent of some GM rice strains in China is owned by foreign countries (Stone, 2011). Without fully independent GM technology, the commercialization of GM rice could pose potential risk on China's food sovereignty. Through this mechanism, the anti-GM group promoted the potential risk to human health and environment as a general concern for the whole country that demands changing of top-level policy (Steinhardt & Wu, 2016). At times, anti-GM campaign sponsors connected the spread of GMOs with peaceful evolution to evoke the threaten from the U.S. and the transnational biotechnological corporations such as Monsanto. Moreover, ENGOs highlighted the irreversible consequences of ratifying the commercialization of GM rice, which will be catastrophic to China and even the whole world.

This strategic advocacy in the name of defending food sovereignty linked citizens won extensive support from diverse backgrounds but does not necessarily prove that Chinese civil society has evolved into a stage with unified mass movement. The ENGOs, other social organizations and public figures have their own routines and did not formatted united network with each other. During the debates, the anti-GM activists were portrayed as overly emotional, lacking of biotechnical expertise, and motivated by irrational concerns or self-interests by the GM supporters. Cui Yongyuan criticized the GM rice proponents as arbitrary and overlooked the welfare of ordinary people.

Within this frame, the public acknowledge that they are responsible for protecting the environment not only for themselves but also for their descendants. The primary reasoning device of social responsibility frame is the acknowledge that GM rice poses severe risk to society. Against this background, ENGOs emphasize that civil society should actively take responsibility on the issue. They appealed the scientists, the media, the general public and the policymakers play their rightful roles in the dialogue about GM rice in a more thoughtful manner (Shelton & Sears, 2001). As argued by Warwick and Ortolano (2007), compared with inactive citizens, the active civic activities can promote more compliance and stronger enforcement of policy and regulations.

5.3 Regulation and legislation frame

Compared with the rapidly evolving gene technology, legislative and regulatory responses often lag behind (Meek & Keese, 2006). The issue of "illegal planting" was employed to frame their demand that GM rice should not be commercialized. To protect people and the environment from potential harm from the use of gene technology, full-fledged regulatory and legislative system is highly demanding in China. As consumers, the public citizens are depicted as the most powerful assets to prevent the commercialization of GM rice. As pointed out by J. Huang et al. (2006), consumers' attitude toward GM foods is of crucial importance to food manufacturers and retailers, the biotechnology industry and decision makers.

It is worth mention that the environmental knowledge and legal consciousness of Chinese consumers is relatively low two decades ago, which constrained their capacity to safeguard their legal rights when violations occurred. Along with the rapid economic growth and improvement of living standard, Chinese consumers are increasingly aware of the impact of food security on their health and quality-of-life (Martens, 2006). Chinese citizens now proactively to voice their concerns than before, which has created significant challenges for government authorities.

With the prerequisite of Chinses ordinary citizens' increased awareness of their legal rights, the campaigners employed 'rights upholding' approach to mobilize the public to protect their legitimate rights (G. Yang, 2005). In practice, anti-GM rice activists expressed the need for more transparent and effective channels for public participation. They request the government to release the GM rice relevant information to the public domain for comments. Against this backdrop, China has promulgated Environmental Impact Assessment (EIA) law to promote public involvement in decision-making process, which can be considered as a step forward in the institutionalisation of public participation (Martens, 2006). According to the EIA law, consultation with the public is required for initiation of environmental policies and projects (Xie, 2012). The actual performance of this instrument has been queried due to the complicated administrative procedures for approval (Mao & Hills, 2002; Martens, 2006).

China's state policy of sustainable development was utilized as protective umbrella by

environmental NGOs (G. Yang, 2005). In this case, moral appeals were integrated into this frame through pleading the state not to risk the public interest. “Not to harm the environment” as basic principle of sustainable development. The anti-GM activists request the state to open accurate information and assessment process of GM rice so that the public can be included in the policymaking process. As recommended by Martens (2006), consumers should take responsibility for their personal share in collective environmental problems, particularly through raising environmental awareness. If the ENGOs are to cultivate shared interpretations and promote collective actions, they must help the public make connections between GM rice problem and daily life.

In practical experience, the aforementioned frames were employed in hybrid way rather than separately. Different actors present different framings as the construction of frames is derived from their knowledge, social identities, and overall backgrounds (Martens, 2006). All of those factors resulted in different manners of resource mobilization, scope of activities and corresponding social influences. Furthermore, framing effects on internet and media coverage would be of core interest.

In practice, the anti-GM rice camp highlighted the potential risk of GM rice through frameworks of scientific uncertainty to make the potential harm more noticeable. Meanwhile, collective identity was constructed through the social responsibility frame, based largely on the shared awareness of civil rights to health and better environment as well as the motion to defend food sovereignty and protect the welfare for their descendants. Besides, targeted participants were located through legislation and regulation framework, include but not limited to the students, intellectuals and other groups with higher legal consciousness and civil rights awareness. Through rationalizing the strategic use of such frameworks, the most immediate outcome of the anti-GM rice campaign was the suspended commercialization of the GM rice till present. Another profound impact is that it increased public awareness and promoted participation into the political agenda. According to Prof. Lamont C. Hempel’s view in his book *Environmental Governance,* both the government and civil society can partake environmental governance through formal and informal institutions (Hempel, 1996).

To sum up, toward their explicit campaign goals of resisting the commercialization of

GM rice, ENGOs brought about changes in the relationship between state and civil society through non-confrontational, boundary-spanning or legal framework (G. Yang, 2005). The anti-GM rice campaign is comprised of different fields of actors based on informal and highly personalized connections. When the state fails to react properly or not comply with public opinion, the civil society play a role in the state policy-making process. The evidence strongly suggests that the successful mutual reinforcement between elite advocacy and mass protests was the result of strategic framing, through which the ENGOs mobilized adherents, acquired resources and received sympathy from the elite (Benford & Snow, 2000).

6. Discussion: civil society-state relations in China from the perspective of institutional theory

This chapter reflect on the implications of the findings to illuminate the research questions. The access to participate in state decision-making process cannot be taken for granted, it was subject to how the ENGOs voice their concerns and how they legitimate their claims. The campaign mobilizers helped to promote public participation and information disclosure. Those who took part in the anti-GM rice activities did so for issues that could affect not only themselves but also millions of unknown citizens and the future of the entire country. Thereafter, the role and characteristic of environmental NGOs will be stressed, and how they seek growth by manoeuvring between party politics and other institutional fields.

6.1 The role and characteristics of environmental NGOs in China

After having assessed the strategies of the anti-GM rice campaign in the previous part, this sub-chapter looks at the roles and characteristics of the ENGOs. Environmental issue is among the most popular NGO work in China (C. L. Hsu & Jiang, 2015). Since the founding of Friends of Nature (FON) in 1994, numerous environmental non-governmental organizations (ENGOs) emerged in China (G. Yang, 2005). Environmental NGOs as an emerging and potentially significant socio-political phenomenon with substantial policy implications. Stand at the forefront of Chinese socio-political landscape, ENGOs played a significant role through waves of environmental protests against major development projects protests since the mid-

2000s (Steinhardt & Wu, 2016). As pointed by G. Yang (2005), the environmental NGOs in China can be divided into seven types as shown in Table 4.

In 1992, China's participation of the UN Conference on Environment and Development (UNCED) marked a gradual shift to the 'sustainable development', from then on, environmental issues have been prioritized in the political agenda (Ho, 2001). The main environmental NGO of anti-GM campaign, the Chinese branch of Greenpeace, publicly declared its opposition to the commercialization of GM rice. This chapter examines how they are shaped by existing socio-political structure and limited channels for public participation.

Table 4：Main Types of Environmental NGOs in China (G. Yang, 2005)

Organizational Type	Registration status	Examples
Registered NGOs	Registered as social organizations or private, non-profit work units	Friends of Nature (FON); Green River
Non-profit enterprises	Registered as business enterprises but operate as non-profit organizations	Global Village of Beijing; Institute of Environment and Development
Unregistered voluntary groups	Unregistered organizations that function as NGOs	Green Earth Volunteers
Web-based groups	Unregistered groups that operate mainly through the internet	Green-Web; Greener Beijing
Student environmental associations	Registered with campus Youth Leagues yet function and perceived as NGOs	Sichuan University Environmental Volunteer Association
University research centres/institutes	Affiliated with institutions of higher learning but operate as NGOs	Centre for Legal Assistance to Pollution Victims, China University of Political Science and Law
Government organized NGOs (GONGOs)	State-owned NGOs (SONGOs)	China Environmental Science Association

6.1.1 The interdependent relationship with state agencies

A striking feature of environmental NGOs in China is the strategic interdependent relations with the state. Some advocates participated in the anti-GM activities but were cautious not to call for protests directly and publicly. Deviate from environmentalism in the West and the ex-socialist states in Eastern and Central Europe, ENGOs in China do not openly confront the government (Ho, 2001). Playing limited oppositional roles, many ENGOs and influential public figures have close organizational links to state agencies. As mentioned above, the anti-GM celebrity Cui Yongyuan is a member of CPPCC, he condemned the Ministry of Agriculture's weak supervision of GMOs during the two sessions (Lianghui)[15] in 2014. Cui proposed the GM crops issues during the agenda, brought forward his concerns on public information release, regulatory system. He presented several suggestions to the government regarding the GMOs.

The boom of social organizations is resulted from the retrenchment of the state and acknowledged significance of civil society by the central authorities (Ho, 2001). The diverse types of ENGOs mentioned in Table 4 reflected the organizational adaption to the regulative framework for the registration and management of social organizations (G. Yang, 2005). Though argued that strict government control lead to the docility of China's ENGOs, Peter Ho pointed out that the co-operation relations between ENGOs and the government allows China's environmental leaders an avenue of influence (Ho, 2001, 2007). Followed a different path from the radical environmental movements, China's environmental community has less incentive for larger political change (especially democratic reforms) (Stalley & Yang, 2006).

Through the symbiotic relationship, Chinese ENGOs maximize the benefits and minimize state penetration (Saich, 2000). Rather than endeavoured to bring down the communist regime, ENGOs chose to work and effect institutional change from with the bureaucratic system (Ho, 2001). Neither the government nor the ENGOs alone should dictate environmental policy (W. Li, 2006).

[15] Two sessions (Lianghui): the National People's Congress(NPC) and the Chinese People's Political Consultative Conference(CPPCC), hosted in every March

6.1.2 Fragmented and peaceful contention in various forms

The environmentalism in China attracted more attention from scholars and policy makers, and most scholars deem that Chinese green community lack confrontational element (Stalley & Yang, 2006). In other words, Chinese environmental movement is relatively fragmented despite the growing significance of environmental campaigns (Xie, 2012). As pointed out by Ho (2001): "Those who openly oppose the central government, establish national civil organizations, or stage protest demonstrations are treading a fine line." The political climate proved decisive in shaping the size and power of the ENGOs. Thus, they strategically use non-confrontational methods without directly challenging state legitimacy. In order to avoid being labelled as 'political' activists, Chinese environmentalists refrain from too openly criticizing or confronting the state (Saich, 2000). There are multiple historical events support this claim, such as the repression of the Falun Gong Sect. Thus, the environmentalism in China is fragmented and highly localized to comply with specific political context (Ho, 2001).

Among the factors lead to the fragmented feature of ENGOs in China, the most relevant reasons are the short history of ENGOs in China, the authoritarian political context (Xie, 2012). Chinese government has instituted a system of legal registration to control social organizations for fear that empowered social actors could threaten its political monopoly (Hildebrandt, 2011; Thornton, 2013). The current Regulations for the Administration and Registration of Social Organization[16] was implemented since 1998 and was amended in 2016, which requires social organizations must have a sponsoring institution within the government and forbids them from establishing branch offices. Those organizations failed to registered rely on informal ties to operate, which are less sustainable due to their precarious legal status (Hildebrandt, 2011). Embedded in the specific political environment in China, the ENGOs are closely structured by the restrictive administrative and regulatory system. Beside relatively few institutional arrangements and opportunities for political participation, the capacities of ENGOs also constrained by limited access to information. Chinese authorities reluctant to release the information flows to the public, especially those of significant political sensibility (Xie, 2012).

[16] Available online: http://www.mca.gov.cn/article/gk/fg/shzzgl/201812/20181200013490.shtml

Worse still, the organizations which failed to register under MOCA had no legal status.

The anti-GM ENGOs phrase their motivation as a noble starting point, for sake of the environment and human health. In this way, the campaign gathered extensive support to safeguard the intangible value belonging to the public. Differs from the radical forms of contention such as mass demonstrations, rallies and parades happened in the history of China, ENGOs avoid confrontational clash with the government (G. Yang, 2005). As pointed out by Ho (2001), Chinese green activists profess a 'female mildness', with safe distance from the central government. The general tendency has been to shy away from radical tactics. Unlike the environmentalism acted as channel for popular protest endeavoured to bring down the communist regimes in ex-socialist states in Eastern and Central Europe, ENGOs in China do not harbour the ambition for fundamental political reforms (Ho, 2001).

There is no persistent network to link China's scattered protests and campaigns into a unified or systematic pattern (Stalley & Yang, 2006). Among all the environmental protection NGOs, the Green Peace is the forerunners in terms of the anti-GM rice campaigns(Keeley, 2006). Though Friends of Nature and other NGOs were also involved in the campaign, but did not affiliate themselves closely with the emerging network. Another influential anti-GM group is Utopia (Wu You Zhi Xiang) with different starting points from Greenpeace, their emphasis is to defend the food sovereignty of China. Despite with such fragmented feature, the burgeoning ENGOs still implies a significant strengthening of civil society in China (Ho, 2001).

6.1.3 Symbiotic relationship with international NGOs (INGOs)

In the late 1990s, many international NGOs (INGOs) began to launch projects or offices in China, including Greenpeace, the World Wildlife Fund for Nature (WWF), and Friends of the Earth (Hong Kong) (G. Yang, 2005). From that time, Chinese NGOs began to cooperate with (INGOs) through the simplest form of receiving funding, and later on through joint campaigns, publications, statements and exchange visits (Schroeder, 2008). Those transnational cooperation have helped new-born NGOs cultivated skills and gained capacities for social movements. Thus, it is necessary to find out whether there is international linkages with other non-state organizations. If so, what is the underlying influence to China's anti-GM rice activities?

GM rice is a broad issue in the global sphere rather than China's domestic problem due to its closely relevance with food security, biodiversity, and other global issues such as inter-state business. With the increasingly close interrelations with transnational environmental NGOs, the scope of anti-GM rice activities expanded in China. Chinese civil society extended their environmental concerns beyond pollution with a long-term vision. In order to bridge connections between local problems with global processes, ENGOs must develop strategic frames to help activists appreciate global interdependencies and shared fate (Smith, 2002). Channelling local problems to the appropriate international bodies is an effective way to affiliate to global political arenas. Such global network of affiliates structured transnational perspective into ENGOs' routine operations with a broader organizational agenda. The most effective way to bridge local levels issue with global agenda is by channelling international information to local public.

Greenpeace invoked the *Cartagena Protocol on Biosafety to the Convention on Biological Diversity*[17] to connect China' biodiversity issue with international convention. On August 08, 2000, China signed this protocol, and responsible for fulfilling relevant international obligations as one of the signatory nations. The article 23 (Public Awareness and Participation) of the Protocol stipulates the Parties shall promote and facilitate public awareness, education and participation of biodiversity issue, as well as ensure the public's access to information and consult the public in the decision-making process (Cartagena Protocol, 2000). Through integrating national GM rice issue into the broader global biodiversity, this protocol served as international legal framework and brought pressure on Chinese government.

The growth of inter-state communication and the advent of globalization has strengthened the connections between domestic NGOs and transnational NGOs. Chinese government welcome international funding and assistance but cautious with excessive

[17] *The Cartagena Protocol on Biosafety to the Convention on Biological Diversity*: an international agreement which aims to ensure the safe handling, transport and use of living modified organisms (LMOs) resulting from modern biotechnology that may have adverse effects on biological diversity, taking also into account risks to human health. It was adopted on 29 January 2000 and entered into force on 11 September 2003. Available online: https://bch.cbd.int/protocol

intervention. Even though, cautious political liberalization might be brought to China through vibrant transnational markets and cooperation (Martens, 2006). The patterns of Chinese environmental NGOs conform the external influences of INGOs. The transnational networks enable Chinese NGOs with global horizon and experience. International aspirations and practices enabled ENGOs with better capacities to formulate and implement policy advocacy approaches. Besides, the closer ties with international environmental community are vital for Chinese environmentalists for financial support, information and expertise (Martens, 2006).

Through exchange, China's environmentalists adopted, interpreted and implemented the frames and know-how from global discourse among Chinese citizens (Martens, 2006). Within the transnational networks, actors draw lessons from each other and develop their own repertoires within their own national boundaries (Diani, 2000). Through combining these imported knowledge with China's domestic conditions, ENGOs stimulate opportunities and capacities to advocate public participation. The close relationship with INGOs allows ENGOs in China to develop a shared language of resistance, strategies and objectives (Smith, 2002).

6.1.4 Effective utilize of Internet and mass media

Despite the intervene from the state mentioned in the single-party regime part, mass media and Internet has been effectively utilized by Environmental NGOs. In face of cumbersome approval procedures to conduct field activities, ENGOs resort to more flexible methods through the Internet and mass media. Chinese ENGOs' high degree of affinity with the internet reflects their adaptation to China's regulatory system when it is difficult for them to register (G. Yang, 2005). Without the license to launch activities as legitimate NGOs, non-registered social groups and organizations are much more dependent on the Internet and media.

To cope with the opportunities and constraints, innovative tactics such as online petitions, setting up websites for information dissemination, and public presentations produced positive campaign results (G. Yang, 2005). They publicize environmental information, mobilize supporters, network with peer and international organizations, and organize activities through internet in forms of email, electronic newsletter and chatting groups (G. Yang, 2005, 2007). All of these communication technologies enabled social organizations and individuals to set up polyadic interactions between concerned actors (Diani, 2000). Apart from searching collecting

information online, ENGOs spread crucial information on the websites, which are easily accessible for the public (Diani, 2000). The advantages of the Internet include higher disseminate speed, lower cost and wider range of influence to launch campaigns.

For the mass media, environmental issues are news-worthy and politically safe with the obedience to sustainable development policy (G. Yang, 2005). Through reporting environmental news, media attracted more readers and improved reputation. The extensive coverage of ENGOs reflects the close ties between ENGOs and media, both of them are influenced by the changing political system in China (G. Yang, 2005). Such kind of reciprocal relationship between the media and ENGOs promoted mutual reinforcement of policy advocacy and civil society activities.

Through the effective utilize of the internet and media, ENGOs made their claims resonated with broader public which are not accessible from the state. They actively brought the GM rice issue to a much wider attention, and provided spaces for different stakeholders to be involved into the debates. Embedded in the constraining socio-political terrain, environmental NGOs have carved out a field of existence in China despite the challenges they face (G. Yang, 2005).

Undoubtedly, all of these notable characteristics have their merits. As pointed out by W. Li et al. (2012): “Those well-educated and well-off Chinese citizens know how to legitimize their concerns as well as how to mobilize broad societal support for counter measures against decisions that threaten valuable ecological systems, human health and property.” In all, all of these characteristics and roles of ENGOs in China were shaped by the dynamic factors in the specific political context in China. The conjunction conditions political, mass media, internet, and international NGOs can best explain the rise of ENGOs in China (G. Yang, 2005).

6.2 Civil society-state relations in China

The primary challenges in researching on the civil society-state relations in China lies in the tensions between the relatively static and intrinsically western concepts of civil society and the highly context-specific socio-political conditions in China (Büsgen, 2006). The vibrant growth of the associational sector in China was not totally recognized as genuine existence of

civil society by scholars. But it is too arbitrary to deny the increasingly significant role of civil society actors in the national policy-making process, particularly in the environmental issue. This study assess China's civil society-state relations through the above mentioned relational sector and functional contributions of ENGOs towards promoting public participation, debate and pluralism.

Due to the numerous types of social actors, this thesis mainly based on the role and characteristics of ENGOs to infer the civil society-state relations in China. Through the anti-GM rice debates, ENGOs have had remarkable success in affecting national policies. This study will shed light on the evolving organizing mechanisms of civil society to gain political space for public participation in GM rice issue. China's socio-political context presents both opportunities and constraints for ENGOs.

The above mentioned empirical evidence indicated that Chinese civil society have multiple opportunities to be involved into state policy-making process though with certain restraining factors. The proximity between social organizations and the state not necessarily to be seen as constraints, but also has enabling aspects (Büsgen, 2006). As for the question whether autonomy is an indispensable component of civil society, scholars hold distinct opinions. Diamond (1999) and White (1994) take autonomy to be part of the attributes of the civil society, whereas, T Brook and Frolic (1997) and Hall (1995) pointed out that the state-civil society relations is interrelated and more reciprocal than autonomous from each other. Such kind of complex state-civil society relationship include conflict, compromising and cooperation co-exist in contemporary China. Thus, it is one-sided to depict Chinese social organizations as state-led and un-political.

The thesis agree with the critiques pointed out by Büsgen (2006), the dominant frameworks relied heavily on a *relational* analysis to assess Chinese civil society but failed to capture the *functional* aspect of what they did in promoting public participation. In the post-Mao era, Chinese government has both decentralized and decreased in size, particular since the reform and opening up policy in 1978 (C. Hsu, 2010). Market-oriented economy replaced centrally-planned socialist model since the implementation of reform and opening up policy proposed by Deng Xiaoping. Under this circumstance, the civil society emerged in China since

the early 1980s for the following reasons. On one hand, the reform policy provided grater space for social organizations to fill the gaps where the state cannot meet its responsibilities. Chinese civil society has developed by leaps and bounds over the past two decades, particular in the field of environment field (Steinhardt & Wu, 2016).

Shifted from state dominated planned economy to profit-driven market economy, the Chinese government faced tremendous challenges including the lacking of intellectuals due to the ten-year cultural revolution, the shortage of experience, technology and resources. The living standards have been improved apparently in the southeast China, but the uneven benefits also lead to huge gap between the rich and the poor. Such consequences are easily give rise to social unrest and other new problems. Therefore, non-government actors are taking active role in the arenas of poverty alleviation, educational equality, social welfare and environment protection, etc. The civil society-state relations in China represent a realm where authoritarian and democratic features co-exist (Perinova, 2005).

On the other hands, the opening up policy strengthened the inter-state exchange in economy, education, culture, and politics. Through the connections with transnational civil society (TNCS), China's civil society actors localized the international norms with domestic political realities (Kaufman, 2012). Along with the rapid economic growth rate, the burgeoning middle-class began to advance social justice and human rights through dialogue with the state. Without doubt, the shift to market-based economy provided a stimulus for the growth of civil society (Perinova, 2005). From 1978 to 1989, students and intellectuals took advantage of the relatively lax government regulations to establish various associations (C. Hsu, 2010). Though the decentralization of state role was originally aimed at the sphere of economics, it has been expanded to the social realm and boosted the flourishing of civil society (Perinova, 2005).

Apparently, the shift to market-based economy provided a stimulus for the growth of civil society in China (Perinova, 2005). Without a definite statistical number, China has witnessed an explosion of social organizations within the last three decades. Though NGO not equals to civil society, it plays a crucial role as the main component of civil society. According to Chandhoke (2009), civil society agents, particularly the non-governmental sector are widely recognized as the 'transmission belt' to deliver social goods, empower citizens and raise issues

of public concern, and monitor the decision-making process (Chandhoke, 2009; Saich, 2000). Thus, the NGOs are benefit for establishing pluralized states, and were encouraged by donor organizations, multilateral agencies, and somewhat, the government (Chandhoke, 2009).

Although Chinese government has acknowledged the need of civil society organizations as intermediate between state and the public to increase the effectiveness of policy measures (Ho, 2001), the CCP appears reluctant to allocate ample space for such social organizations to participate in arenas of environmental policymaking (Martens, 2006). Constrained by the resources and power, it is difficult for ENGOs to play a centric role in the environmental management in China. The civil society is used by the state to preserve the regime, and meanwhile, they exploit resources from the state to defend their interests *vice versa* (Perinova, 2005).

In order to be involved in the 'political mainstream', Chinese civil society has aligned their activities toward complementing the tasks of governmental agencies (Xie, 2012). Contemporary environmental challenges demand higher capacity from Chinese government to deal with the issue. As pointed by Martens (2006), the current defective regulatory and bureaucratic system cannot fulfil the obligation to monitor and guide environmental field. Under this circumstance, public involvement should be encouraged to the environmental management enterprise (Martens, 2006). Through all these mobilizing framework, the public could easily infer the foreseeable influence to human health and the environment. Through analysing the compositions, legal framework, sources of funding, and international connections of ENGOs to interpret their roles and goals.

The government is not omnipotent and faces several challenges in terms of environment governance, including streamlining regulatory framework, enhancing the institutional capacity of governments, and improving monitoring system (W. Li, 2006). Chinese government has endorsed public participation and formulated environmental laws and regulations, which set a favourable context for organizing environmental activities (W. Li et al., 2012). The social organizations work within institutional structures and cultural frameworks

To sum up, as stated by Büsgen (2006): "civil society needs to be understood in its

specific context". The far-reaching reforms in the early 1980s lead to the government's contradictory attitude towards civil society organizations. On one hand, the downsizing of government apparatus created social and political space for civil society to share the responsibilities with state organs. From this point of view, NGOs and other social organizations were welcomed by Chinese state. On the other hand, reforms and transitions brought up tremendous changes to Chinese society. To sustain the party-state dominance, Chinese government exercise a high degree to control over social organizations to maintain social and political stability. State is part of the problem and the solution to the emergence and growth of civil society in China's hierarchical political system (Büsgen, 2006). Disagree with the dichotomy-based view of civil society-state relations, this study coincides with Michael Büsgen's approach to view civil society as an areana of inter-dependent linkages rather than an independent one (Büsgen, 2006).

7. Conclusion

The conclusions of this thesis should be described as tentative due to the limitations mentioned in the research methods chapter. To some extent, the Chinese state is unclear about the exact path of development for the ENGOs, as the social changes unleashed from the reforms were initially unforeseen by the government (Ho, 2001). Similarly, the emerging environmental NGO field is not fully independent with the embedded interrelationship in China's institutional context (G. Yang, 2005). But ENGOs has constituted a field where the public can organize and participate into various contention and voice their concerns to the authority (G. Yang, 2005). In this sense, the ENGOs serve as the mediator between the state and civil society. They addressed the underlying political and social causes and promoted transparency and accountability of China's political system. Moreover, ENGOs helped to expand civil society as a role model for other types of social organizations to jointly constitute the organization basis for a vibrant civil society (G. Yang, 2005).

As pointed out by W. Li (2006), the relationship between development, the environment, and sustainability has become the most concerned issue for policymakers and the general public. The decision-making has always been highly concentrated in China, but the environmental

NGOs succeeded in mobilizing the public to influence the policy. The anti-GM campaigns have partly undermined the government's top-down, non-consultative approach to biotechnology management. The CCP's goal of maintaining social stability, while the civil society demands for more participatory policy styles. Albeit with limited space, ENGOs opened up channels for citizens to participate into state policy-making process (G. Yang, 2005). The project of GM rice commercialization has been shelved till present, which is a testament to the anti-GM movement's success.

Rather than responding passively to public claims on an ad hoc basis, Chinese government is called for a more systematic change in government decision-making. In face of major projects that have aroused high level of concerns in society, Chinses government imposed moratorium so as not to irritate the public. In order to achieve optimal outcomes, the government should step in toward a more efficient, effective, and accountable environmental governance.

Thus, how to actively engage the mass support and enhance the legitimacy of public policies is a question for the Chinese government (W. Li et al., 2012). To construct pluralistic and active society, the state should provide a platform to enable the civil society to enjoy sufficient right to know and participate into public affairs. It remains an open question of whether Chinese civil society can gain more political space on other societal issues. The public participation of environmental affairs is a topic worthy of further investigation, to examine the potential likelihood for the civil society to articulate environmental grievances and participate in the environmental policy-making process.

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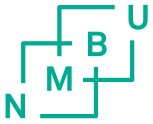

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