

Civil networks as a force to challenge the dominant food system

The case of the Network in Defence of Maize in Mexico



Thesis submitted by

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I, Karol Yañez Soria, confirm that the work presented in this thesis is my own. Where information has been derived from other sources, I confirm that this has been indicated in the thesis.

*The fact that capitalism is in crisis
does not mean it will roll to a point of collapse.
It is 'stuck' , but could remain stuck for a long time
in a degenerative form...
It is a decayed phase,
and one where the ruling order
readies to defend itself to the death
—and drag humanity to grave with it.
The conclusion therefore remains:
"if you don't hit it, it won't fall"
(Biel, 2012: 150).*

To my mom,

Laura Soria Vieyra,

*who passed away while I was writing this thesis and
who awakened passion and calling to work issues of social justice in me.*

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Abstract

The principal question of this research is: How do civil networks, composed by social movements, become a counterforce faced with the dominant food system beyond their more apparent ways of operation? This thesis refers to 'civil networks' based on the Network Society notion of Castells (2004) who argues that in a globalised world power is built and enforced in networks. Castells' insights are used as a starting point to unveil civil networks' underpinning logics. Additionally, other authors as Pellin's theory on networks' resistance to tackle climate change as well as Sitrin and Esteva's analysis of new social movements in Latin America are reviewed.

The research looks into the case of the Network in Defence of Maize (NDM), a social movement contributing to preventing the spread of GMO contamination of *criollo* maize and GMO legal approval in Mexico. It is worth noting that in this context maize represents a sacred symbol linked to Mexican culture, uniting diverse organisations/individuals to defend their ways of living and territories.

The thesis examines three sub-questions: What are the achievements and defeats of the NDM? How does the NDM succeed in their objectives? Why has the NDM developed potential to challenge the dominant food system? The food sovereignty framework is used as the analytical tool concerned with identifying the achievements of the NDM on challenging the dominant food system as well as improving peasants' living conditions. The second question argues that collective learning as process and outcome is at the core of civil networks' dynamics. Networks as organisational forms become merely the infrastructure to disseminate innovative knowledge into transformative actions on the ground. Finally, this thesis pinpoints the spirit and essence of civil networks as counterforce to networks of power based on the construction of collective identities among peasants-indigenous people and activist-researchers who make of the struggle their way of life in dignity.

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Acronyms

ANAA	Asamblea Nacional de Afectados Ambientales (National Assembly of the Environmentally Affected)
ANEC	Asociación Nacional de Empresas Comercializadoras de Productos del Campo (National Association of Commercial Enterprises of Field Crop Products)
CASIFOP	Centro de Análisis Social, Información y Formación Popular (Centre of Social Analysis, Information and Popular Formation)
CBD	Convention on Biological Diversity of the United Nations
CECCAM	Centro de Estudios para el Cambio en el Campo Mexicano (Centre for Studies on Rural Change in Mexico)
CENAMI	Centro Nacional de Ayuda a las Misiones Indígenas (National Centre for the Aid to Indigenous Missions)
CEPA	Consejo de Ejidos en Contra de las Presas (Council of <i>Ejido</i> and Communities in Opposition to Dams)
CND	Convención Nacional Democrática (National Democratic Convention)
CNI	Congreso Nacional Indígena (National Indigenous Congress)
CNOC	Coordinadora Nacional de Organizaciones Cafetaleras (National Coordination of Coffee Growers Organisation)
CNPA	Coordinadora Nacional del Plan de Ayala (National Coordinator of the Ayala Plan)

COA	Colectivo por la Autonomía (Collective for the Autonomy)
CONABIO	Comisión Nacional para el uso del Conocimiento y la Biodiversidad (The National Commission of Natural Protected Areas in Mexico)
CONASUPO	Compañía Nacional de Subsistencias Nacionales (National Company for Popular Subsistence)
CoP	Community of Practice
DICONSA	Centro de Distribución de CONASUPO (Distribution System of CONASUPO)
EZLN	Ejército Zapatista de Liberación Nacional (Zapatista Army of National Liberation)
FAO	Food and Agriculture Organisation of the United Nations
GEA	Grupo de Estudios Ambientales (Environmental Studies Group)
GMO	Genetically Modified Organism
IKS	Indigenous Knowledge Systems
IMF	International Monetary Fund
INECC	Instituto Nacional de Ecología y Cambio Climático (National Institute of Ecology and Climate Change)
INGO	International Non-governmental Organisation
INMECAFE	Instituto Mexicano del Café (Mexican Coffee Institute)
IPCC	Intergovernmental Panel on Climate Change

MAPDER	Movimiento Mexicano de Afectados por las Presas (Affected by Dams Mexican Movement)
MG	Misión de Guadalupe (Mission Guadalupe)
MOCAF	Red Mexicana de Organizaciones Campesinas Forestales (Mexican Network of Peasants Forest Organisations)
MUP	Movimiento Urbano Popular (Urban Popular Movement)
NAFTA	North American Trade Agreement
NDM	Red en Defensa del Maíz (Network in Defence of Maize)
NGO	Non-governmental Organisation
OECD	Organisation for Economic Co-operation and Development
PESA	Special Programme for Food Security in Mexico
PPT	Permanent Peoples' Tribunal
PRI	Partido Revolucionario Institucional (Institutional Revolutionary Party)
PROCEDE	El Programa de Certificación de Derechos Ejidales y Titulación de Solares (The Programme for the Certification of <i>Ejido</i> Land Rights and the Titling of Urban House Plots)
REMA	Red Mexicana de Afectados por la Minería (Mexican Anti-mining Network)

SAGARPA	Secretaría de Agricultura, Ganadería, Desarrollo Rural, Pesca y Alimentación (The Secretariat of Agriculture, Livestock, Rural Development, Fisheries and Food)
SAP	Structural Adjustment Programs
SEMARNAT	Secretaría de Medio Ambiente y Recursos Naturales (Secretariat of Environment and Natural Resources)
Syl	System of Influence
TNC	Transnational Companies
UCCS	Unión de Científicos Comprometidos con la Sociedad (Union of Scientists Committed to Society)
UDHR	Universal Declaration of Human Rights
UN	United Nations
UNAM	Universidad Nacional Autónoma de México (National Autonomous University of Mexico)
UNEP	United Nations Environment Program
UNORCA	Unión Nacional de Organizaciones Campesinas Autónomas (National Union of Autonomous Regional Peasant Organisations)
UNOSJO	Unión de Organizaciones de la Sierra Juárez de Oaxaca (Union of Organisations of the Sierra Juarez of Oaxaca)
WB	World Bank
WHO	World Health Organisation of the United Nations
WTO	World Trade Organisation

Glossary of local terminology

Criollo maize Traditional maize cultivated in Mexico, a centre of origin of this crop, with 59 races and around 23,000 varieties.

Ejido Area of communal land utilised for agriculture, in which community members have individual access to a parcel to grow food, either for self-consumption or commercialisation. Access to communal land is a right granted in the Mexican constitution for both, indigenous people and peasants. The *ejido* system was introduced within the Agrarian Land Reform after the Mexican Revolution in 1910.

Farmers Big landholders who produce food for commercialisation, usually for exports and by using industrialised ways of agriculture.

Indigenous Peoples of Mexico that trace roots back to populations and communities that inhabited this region prior to the arrival of the Spanish conquerors. They domesticated the first *criollo* maize crops. Nowadays, indigenous communities continue producing maize by using their traditional/low-input agricultural methods mostly for self-consumption.

Milpa Traditional food production system developed by indigenous communities across Mexico and Central America. It is a low-input multi-crop system that includes the combined growth of maize (*zea mays*), beans (*phaseolus*) and courgette (*cucurbita*), each of them helping one another to restore soil nutrients.

Peasants

Small-medium landholders (2-5 ha) who produce food mostly for self-consumption, but also for commercialisation. They generally use low-input agricultural methods. Peasants are of mestizo origins, who are those people of Mexico resulting of the mixed race between Spaniard and Indigenous-Americans after the Spanish conquest.

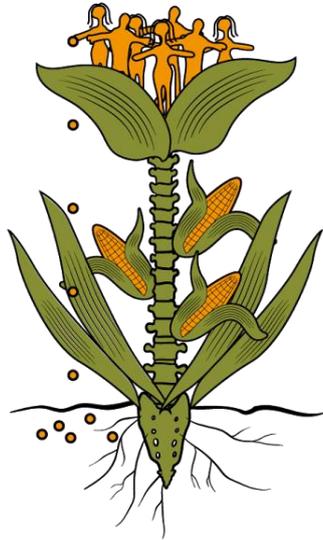
Silent struggle

The way in which Zapatistas called to their struggle after unsuccessfully attempting negotiate their rights with the Mexican state. The silent struggle refers to fighting through the construction of alternatives on the ground to the neoliberal model of development in order to achieve dignity of life.

Zapatistas

Members or supporters of the Zapatista Army of National Liberation (*Ejército Zapatista de Liberación Nacional*), a recognized social movement in Mexico working for social justice and agrarian reform.

Chapter 1: Introduction



Antecedents and research contribution

1.1 Introduction

Dealing with food crisis is crucial as it threatens the very survival of humanity. People have been able to survive without oil but not without water or food. If humanity seeks to ensure food provision for present and future generations, the dominant unsustainable model of industrialised production-consumption needs to be addressed.

This introductory chapter focuses on understanding the salient and less visible factors leading to food crisis. It also explains how the dominant food system—that originated the crisis—has adapted and expanded over time. The objective of exploring the roots of the food crisis is to visualise potential solutions that might challenge the dominant system. One of these solutions comes with the work of civil networks, aiming at bringing balance to the power structure that surrounds the dominant food system. This thesis specifically looks into the case of the Network in Defence of Maize (NDM) in Mexico that has prevented the spread of GMO maize contamination, as well as its legal-commercial entrance to the country. Previous accomplishments make of this case an important subject of analysis for academics, for other civil networks addressing similar issues, and for development and environmental planners. Lastly, this chapter presents the main contribution of the thesis, in which I argue that civil networks have a unique essence and spirit. It is based on civil networks' capacity to construct collective identities and co-produce original knowledge among peasants-indigenous people and activist-researchers. As a result, they generate alternatives to development that dignify their life. These strategies allow civil networks to grow, evolve and become strong enough to reverse the expansion of the dominant food system in Mexico.

1.2 Factors leading to food crisis

The food crisis is a term that has recently raised economic, political, social and environmental concerns across the world. Although it is not a new issue, the fact the food prices increased drastically from 2006 to 2008 raised the profile of the subject. In the 1970s a peak in prices was also registered, which also stranded a food crisis. The main cause of this episode was a shock in the crude oil prices, which led to reduced food production. This food crisis was mostly linked to food supply shortages facing a rapid growing population in developing countries. However, the current scenario is different when compared to the previous one; the 2008 food crisis is more complex to explain. It is interrelated to different issues such as biofuel production, financial speculation and climate change events (FAO, 2009 b). Moreover, some of these factors are related to food demand versus supply of it as in previous crisis (notably biofuel demand), which according to FAO may have longer and lasting effects (Ibid, 2009 b).

The unprecedented increase in prices of basic staples from 2006 to 2008 was of nearly 80%. Prices went down by roughly 50% during 2009, but they did not return to previous levels. After the 1970s' food crisis, prices rose and remained stable for nearly 30 years with no significant changes. Prices increases of 2007-2008 are predicted to continue growing over the next decades (OECD, 2011); furthermore, they are uncertain and volatile, which is significantly different from the past crisis. Nowadays, the complexity of the food system is determined by the following interrelated elements that are no longer controlled merely through stock management and productivity increases.

Financial speculation and privatisation of food stocks

Financial speculation and privatisation of stocks are two fundamental factors linked to the current food price increases. With the downturn in the real estate market, a flow of funds moved into agriculture in 2008. This made the food system vulnerable to market fluctuations. On the one hand, if speculators and institutional investors get returns on their investments they will inject financial liquidity into agricultural production. On the other hand, this situation might go in the opposite direction. For example, excessive levels of speculation can result in non-sense fluctuations in commodity prices, especially when investors try to gain from future changes in food prices. This scenario makes food prices subject to volatility and to inappropriate allocation of the resources within the food system; e.g. Retaining food stocks for speculation in markets whilst those stocks would be food for people (FAO, 2009 b).

Additionally, Patel (2007) explains how during the food crisis transnational companies (TNCs) benefited from it. They have become the owners of food stocks; therefore, they are deciding whether to sell or to keep them in order to gain from future fluctuations in food prices. "Meanwhile millions go hungry, corporate profits increased; for example, during the food crisis Cargill saw profits increase by 30% in 2007 and Monsanto' s profit increased by 44%" (Shiva, 2008:106). Moreover, the recent introduction of intellectual property rights over certain seeds further threatens social polarisation. Today four TNCs control 50% of the world food market driven by profits versus social welfare (Otero, 2008). Food prices have become subject to market conditions in which few players decide when to sell, when to stock, or when to produce; which is incompatible with the constant flow of food that humans require to satisfy their basic needs.

Biofuels production

Another factor increasing food prices is the energy system to which the food system is linked. On the one hand, the industrial way of food production is intimately related to energy price fluctuations; it uses fertilisers and transport as main inputs. On the other hand, the shift in the use of food staples (mainly maize) for the rapid growth of biofuel production is now significantly influencing food prices. In fact, according to FAO (2009 b), the production of biofuels was the critical factor contributing to the food crisis. 30 out of 40 million tons of maize (produced in 2007 in the US) were used for biofuel (FAO, 2009 b). Biofuel demand is the largest source of new demand on food seen in decades. Furthermore, the discussion of this issue goes beyond the amount of grains used to produce energy, but rather the amount of land required to grow staples for biofuel that displaces the production of other nutritional food for humans. Almost one third of the land used for industrial agriculture is now destined for biofuels (Dale et al. 2010). The issue of fuels versus food production continues at the core of policy makers with no substantial change in the panorama. The European Parliament Research Service (EPRS) has just recently (2014) emphasised: "Land use change continues being an indirect way of increasing food prices as land previously dedicated to consumer food production is shifted to plants for energy production... this situation needs further considerations" (EPRS, 2014:3).

Climate Change

Climate change events have become more recurrent. In 2008 in Australia, which is one of the largest world food exporters, a harsh drought contributed to price increases (FAO, 2009 b). Moreover, climate change events will continue impacting the uncertainty of the food supply. For example, the floods in Pakistan in 2010

destroyed 2.4 million ha of unharvest crops and provoked damages estimated at \$5.1 billion (FAO, 2011 b). Another case is the severe drought in the north of Mexico in 2011—the most severe in the last 70 years. It contributed to reducing the food production in the country by 40%, with almost two million ha destroyed, one million head of cattle dead and financial losses overpassing \$1.3 billion (The United Nations Office for Disaster Reduction—UNISRD, 2012).

What is more, climate change threatens the main natural assets for food production. It causes soil erosion, loss of biodiversity and reduces water availability. Despite difficulties and inaccuracies inherent to computer models, different scientists and international organisms such as the IPCC (2007) and FAO (2008) agree that one of the most likely impacts of climate change on food production will be the availability of water. Researchers also agree that slight increases of temperature from 1 to 2°C might result in longer periods of drought, reduction of rainfall and more intensive rains causing soil erosion (May, 2008). This could impact drastically on patterns of food production, which in cold waters might be beneficial, but in regions such as India and Africa, where higher indices of poverty exist, the most negative impacts will be seen (Ibid, 2008).

Environmental degradation: water, land and biodiversity

In addition to previous factors, the degradation of environmental resources to produce food will contribute to exert even more pressure over the current food crisis. Resources such as water, land and biodiversity are showing clear limits to the food production system. These limits are hereby explored and illustrated, rather than exhausted.

Water is essential for food production —1 ton of grains require on average 1000 tons of water (Brown, 2005: 98). As a matter of fact, 70% of the world's fresh

water is used for agriculture; mainly for the industrialised way of food production that uses chemical fertilisers. Plants require from five to ten more amounts water to process such chemical fertilisers (Shiva, 2008).

Water tables are declining in countries such as China: from 2002 to 2004 it “went from being essentially self-sufficient in wheat to being the world’s largest importer” as a result of a drop in water supply for irrigation in the North region (Brown, 2005:102). China’s wheat harvesting dropped nearly 80 million tons, which is equal to the grain exports of Canada, Australia and Argentina—three out of the four major world food exporters, together with the US.

On top of that, the use of fertilisers has not only demanded a greater amount of water use, but fertilisers have also become an important source for water pollution. A clear example is the Gulf of Mexico, where water contamination by fertilisers coming from the Mississippi River in the US has resulted in loss of biodiversity—in what has come to be known as the dead zone in the Gulf of Mexico. This phenomenon has diminished the fish resources in the region (Otero, 2008).

Finally, it is important to note that there is an increasing demand on water in urban settlements. An example is India, where falling water tables are drying up 95% of the wells owned by small-landholders peasants due to intensive use of water for subsidised electricity production. This has reduced by half the irrigation capacity of some states (Brown, 2005). Water is a real matter of concern; having a healthy food system will depend on the ability to raise global water productivity and to reduce its use by implementing ecological methods to harvest that go with its natural flow (Biel, 2012).

Land degradation is another issue that may contribute to the food crisis. It is estimated that since 1950 one third of the Earth's soil has been altered from its natural ecosystem due to severe soil degradation (Oldeman et al. 1990 in Pimbert, 2008:27). The use of fertilisers is a main contributor to land degradation by destroying its structure and diminishing its productivity in the long-term. Indeed, fertilisers' productivity is already peaking in countries such as the US. The book *Beyond oil: threat of food and fuel in the coming decades* illustrates how the US would need the double of land and energy to produce the same amount of food in the next 40 years (Gever et al. 1991). More recent studies show that such forecast is accurate; from 1945 to 1995 the amount of energy used in agriculture rose fourfold in the US, whilst the amount of production only increased three times (Pfeiffer, 2004 in Schoijet, 2008). As claimed by Brown (2005), fertilisers have modified the way in which nutrients are absorbed by plants, but they have not increased the rate of the natural process of photosynthesis.

Likewise, the huge pressure of urbanisation on agricultural land plays also a significant role. Historical data shows that road transport grows the double the rate of the economy of any country (Shiva, 2008:52). The US has 16 million ha devoted to roads and parking lots compared with 21 million ha of farm area (Brown, 2005:92). Competition between urbanisation and agriculture is becoming fiercer. Not to mention the competition between rich and poor who cannot afford automobiles and are struggling to obtain enough quality food.

Last, but not least, the industrial model of agriculture that spread monocultures and specialisation of fields together with climate change are accelerating the extinction of a wide range of species. "More natural land has been converted to agriculture since 1945 than during the 18th and 19th centuries combined"

(Pimbert, 2008:26). Loss of biodiversity threatens the future development of new plants and seeds that might be more resistant to environmental changes. It implies a loss of resilience of life to survive on Earth.

Massive hazards

Finally, massive hazards might impact on the vulnerability of the food system. A clear example is the diseases among animal factories. "Chickens are cheap because the risks associated with diseases are ignored in terms of economic decisions until they actually materialise" (Biel, 2012:147). The major current expression of massive hazards is GMOs (Genetically Modified Organisms). GMO risks are not well known and their production and consumption have been approved in some regions of the world. Current studies show evidence of their threats. Scientists found that rats exposed to small amounts of transgenic maize developed mammary tumours and severe liver and kidney damage as early as four months in males and seven months in females (Natural News, 2012). This research, led by Gilles-Eric Seralini of the University of Caen, was the first study to examine the lifetime effects of eating GMOs. It is rather surprising how these types of investigations were not conducted before the GMO maize spread was approved (Ibid, 2012). These externalities reflected either in sudden epidemics or in chronic diseases will add pressure over the food system.

1.3 Less visible factors of the food crisis

The following factors are not usually directly linked to the food crises; nevertheless, they also increase the vulnerability of the food system. First, food has completely shifted to becoming a mere commodity versus a fundamental human right in a context of increased poverty levels (mostly in urban centres).

Second, the outputs of the food system have shifted from undernourishment to malnutrition, a phenomenon that hides the real impacts of the food crisis. And third, the food production system is not only damaging the environment in its production side (under the industrialised model of production), but it is also damaging the environment in its disposition side—when food becomes waste.

Food as a commodity versus a basic human right

Urbanisation of poverty becomes an issue when the UN predictions say that by 2050 population of cities will almost double, reaching 6 billion people. These people will mostly live in poverty, which increases the amount of people who will not be able to afford to buy food (Dubbeling, 2010). In fact, one of the sectors most affected by the food crisis in 2008 was the poor living in cities, as they can neither produce nor buy food. Studies show that the urban poor may have spent between 60% and 80% of their incomes on food during the past food crisis (Ibid, 2010).

However, the problem goes beyond an increased level of urban poverty. It is based on the relationship between food crisis and poverty; namely, the lack of monetary means to buy food. Explaining the food crisis as an increase of prices clearly places food as a mere commodity and not as a basic human right, which is a main root cause of the problem. Food is now subject to market mechanisms with highly fluctuating prices but most importantly, it can only be accessed by those who can afford it. Hines (2000:214) points out that food security has shifted from the concept of being “self-sufficient to buying food from the international markets” . In the same line, Shiva (2002:20) claims that food security has shifted into having resources to buy food versus the “capacity to produce, being

ecologically resilience and economically efficient to provide safe and nutritious food to consumers” .

Patel (2007) captures this problematic in what he argues to be the root cause of the food system crisis: power inequality. Only few actors have the capacity to decide over the system, whereas millions of people starve, and more recently overeat.

Unless you are a corporate food executive, the food system is not working for you. If you are one of the world's rural poor dependent on agriculture for your livelihood —and roughly half the global population of 6 billion fall into this category—you are likely to be one of the starved. If you are an urban consumer, whether an affluent metropolitan or slum-dwelling industrial labourer, you are likely to be one of the stuffed, suffering from obesity or other diet-related ills (Ibid, 2007:25).

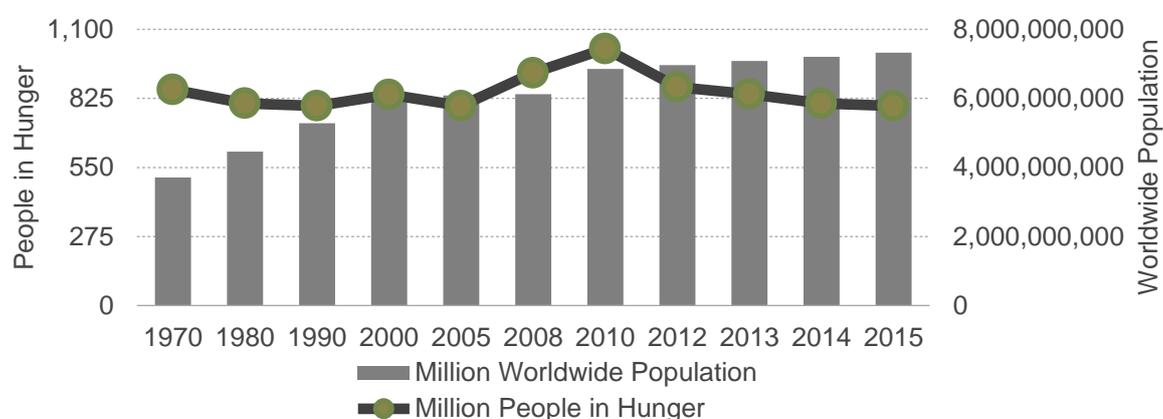
In addition to this problem, the ability to respond to shocks and stresses faced with more complex circumstances to address the food system relies on human capacity to diffuse agricultural knowledge. Migration of entire communities to cities reduces the skills around the world to grow food based on ecological bases. Biel (2012:147) points out that “a widely distributed capacity and a plurality of responses—known as redundancy in systems theory, are the basis for solving new complex problems” , which is being threatened.

From undernourishment to malnutrition

Undernourishment is a lack of sufficient amount of dietary energy requirements and it is commonly referred as ‘people in hunger’ (FAO, 2008). The number of people in hunger has not dropped substantially since 1970. The average has remained in 851 million over the last decades regardless of the apparent stability of food prices (up to the crisis of 2006-2008). Despite the fact that it is

indisputable that the proportion of people in hunger has been reduced by 50%, the world population has almost doubled—from 3.7 to 7.2 billion (from 1970 to today), thus the actual number of people in hunger remains the same. Moreover, during times of price volatility, it increases drastically. E.g. Between 2009 and 2010 the number of undernourished people in the world rose up to 170 million over the 851 million in average (See Graph 1).

Graph 1. Millions of people in hunger versus worldwide population



Source: Graph built by the author based on WORLD-METERS (2015), UN (2013), FAO (2008), FAO (2009), FAO (2010), FAO (2011), FAO (2012), FAO (2013), FAO (2014) and FAO (2015 a)

More importantly, undernourishment has shifted to malnutrition, which might also be caused by not eating sufficiently, but it is a wider concept. Malnutrition can also be the result of an unbalanced diet and it is commonly translated into obesity and hidden hunger (FAO, 2008). Both of these issues signify a lack of access to adequate quality of nutritious food versus merely food quantity. Obesity is the result of a lack of adequate quality of nutrients whereas hidden hunger is the deficit of micronutrients such as zinc, iron, vitamin A, iodine and selenium (Barilla Institute for Food and Nutrition, 2012). Malnutrition has reached

a much higher number of people in the world than undernourished one. More than a billion people are obese and the population with hidden hunger equals two billion people. Both, obesity and hidden hunger, increase the risk of population with heart diseases, diabetes and hypertension, and with mental development deficits, respectively (Ibid, 2012).

In addition, obesity is becoming a new marker of poverty in a growing number of people. For example, in Brazil and Mexico economic inequality is a primary cause of undernourishment and obesity (WHO, 2015). Similarly, studies carried out in India show that income inequality has the same effect on the risk of being overweight as it has on the risk of being underweight. Specifically, for each standard deviation increased in income inequality, the odds of being underweight increases by 19% and the odds of being obese increases by 21%. In summary, the increasing numbers of the poor in more nations are directly related to the increasing numbers of overweight people. These individuals are prone to consume affordable, yet highly caloric meals such as fast and processed foods (Ibid, 2015). The food access is being hidden by measurements in quantity versus quality, which is vital to sustain a healthy population in the world.

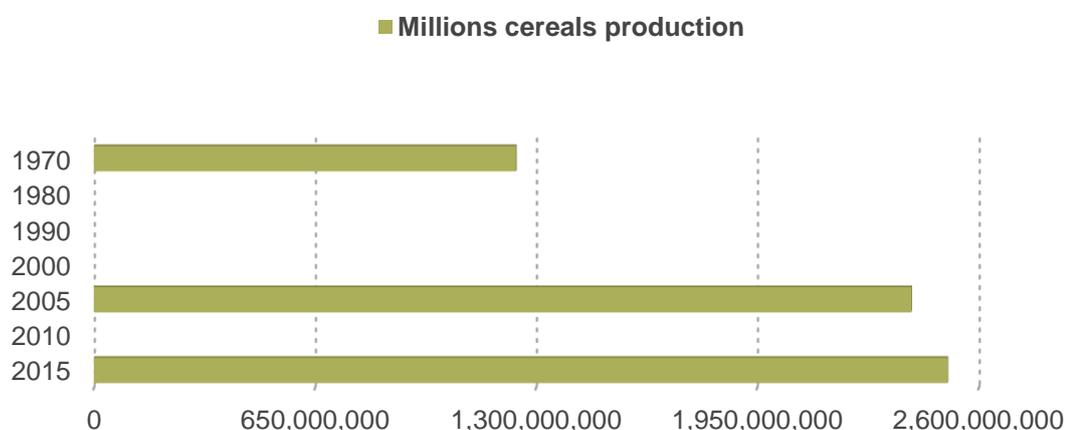
Levels of food wastes

According to the UNEP report (2011) on food waste, with the amount of food wasted by industrialised countries, nearly 800 million people in hunger could be fed. As detailed by Stuart (2012), the food system becomes highly inefficient when looking at its entire closing loop. Two out of nine parts of food production go directly to rubbish bins (food that is thrown away at home, restaurants or supermarkets, mostly in the developed countries). Other two out of nine parts will likely end up in the oceans and rivers; these correspond to faeces generated by livestock fed on maize, wheat or soya. Finally, one out of nine parts of food is

lost during the harvest stage. This food waste is caused mainly by a lack of adequate infrastructure and unmet standards on quality imposed by large supermarkets (based on uniformity of food versus nutritional aspects). In the end, five out of nine parts of the total world food production is wasted.

Up to now, regardless of the energy crisis, climate change and other issues such as environmental degradation, food production has been more than sufficient to feed the world. Stuart (2012) claims that countries such as the US produce up to four times their nutritional requirements; in fact, today, food production across the world doubles the average population’s food demand (Ibid, 2012). As a matter of fact, a constant increase of grains production is observed from 1970 to date (from 1.24 to 2.15 billion tons) (See Graph 2).

Graph 2. Production of cereals (in millions)



Source: Graph built by the author based on: FAO (2015 b) and GRID Arendal (2014)

In sum, the food issue has not reached the point of being ruled by a Malthusian perspective, without the capacity to produce enough food for the population. The real matter of concern is around the issue of food distribution and allocation,

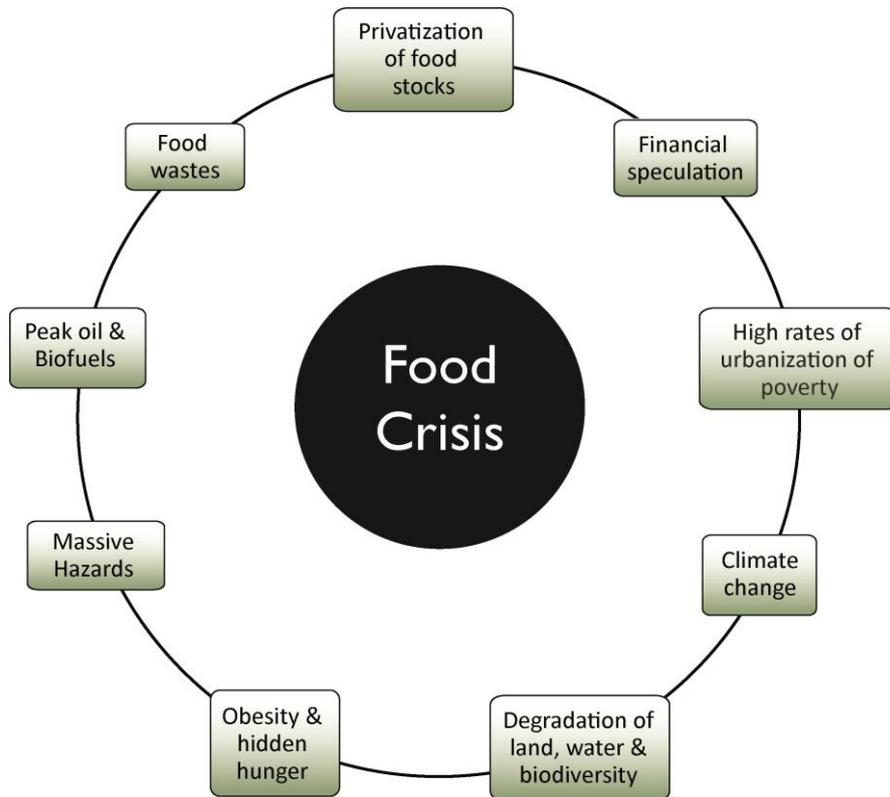
as well as around the vast quantities of food being wasted. What is more, the latter poses an environmental burden, as food waste usually ends up in landfills, oceans or rivers.

Closing remarks of the salient and less visible factors of the food crisis

The disruption of natural ecological systems due to the dominant industrialised model of food production-disposition might oblige humanity to deal with what could result into a real crisis: a lack of food supply versus the present food price increases. In terms of systems' theory, a crisis is when a body has lost its equilibrium, hence its capacity of self-regeneration, making the system prone to collapse. In terms of peak oil, crisis is when oil production reaches its peak only to start declining, while the cost of extraction surpasses its benefits (Schoijet, 2008). In terms of food, the crisis is shaped by both, a peak in productivity of highly industrialised agricultural systems and the lack of equilibrium with the natural assets to produce food.

On the other hand, the food crisis is intimately related to an unbalance of power in society. In words of Biel (2012), the food crisis is neither related to a lack of technology nor a lack of available resources, but the accumulation of power in certain sectors of society that produce wealth inequality distribution. Power inequality is expressed in hunger, obesity, poverty, environmental degradation and violence (Ibid, 2012). Lastly, Holling (2001) claims that all of these issues diminish the capacity of the entire humanity to improve its life's conditions now and in the future.

Figure 1: The salient and less visible factors driving the food crisis



1.4 Expansion of the dominant food system

The expansion of the dominant food system is rooted in the intrinsic nature of the global-capitalist economic system: a continuous growing and accumulation circuit, seen as the basic structure for achieving the progress of humanity (Schoijet, 2008). From a simple perspective, such circuits function through the accumulation of capital, production and consumption. The different elements may be in balance with one another, but not necessarily with the ecological system of the Earth. In fact, today, the advent of imminent peak oils and climate change are clear manifestations of the ecological limits of the Earth.

Moreover, the capitalist system also diminishes the social systems. Biel (2012:170) sustains that the institutional condition of this system to survive has been the appropriation of resources by the few through the exercise of power. This process is manifested in “breaking up the ideological and organisational systems of those people whose resources are to be extracted” . The capitalist system implies the depletion of both, the natural resources of the Earth and the self-consumption of society. The latter is observed in massive loss of livelihoods, increase of violence and reduction of human capacity to adapt when faced with more severe shocks and stresses.

McMichael (2009) analyses social-power inequalities throughout the capitalist human history by using the case of the global dominant food system. In doing so, he identifies four main periods, which he calls ‘food regimes’ : industrialisation of food, green revolution, corporate regime and the greening of the corporate regime (*See Table 1*). In each of these regimes he underlines the power discourse used to shift from one period to the next, allowing the capitalist system to expand over time.

Table 1: Food regimes

	Industrialisation of food regime (1870- 1950)	Green Revolution regime (1950- 1970)	Corporate regime (1980- 2000)	Greening of corporate regime (2005-?)
Salient features of the global food system	Engineering of food production to feed the British —the shop of the world	Imports and exports regulations under the US domination — industrialised way of production	Supermarket revolution- high value/quality food to affluent consumers versus cheap calorific meals to low-income consumers. TNCs dominate world food production	Co-optation of emerging alternatives? Such as organic, fair trade, etc.
Social impacts of the global food system	Use of 'disposable labour' (a modern form of slavery) to produce food in colonies to feed the growing industrialised countries	The Third World shifted from self-sufficient to self-reliant in imports of food —mainly managed by the US as food aid after the World Wars	Second wave of destruction of the food production capacity in 'developing countries' — massive land grabbing and exploitation of other resources. Massive migration to urban centres	Food dependency, vulnerability to global forces, continuous increase of poverty and hunger

Source: Built by the author based on McMichael (2009)

The first food regime corresponds to the 'industrialisation of food' (from 1870 to 1950), which meant the industrialisation of the powerful nations such as Britain at the expense of colonies producing cheap food with cheap labour—a new form of slavery in the 'Third World' (Chomsky, 2003). This phase is followed by a regimen of transition (from 1950 to 1970), which is referred to as the 'Green Revolution', also known as the period of food aid. It implied an adaptation of the capitalist system to a global food market. The discourse used in this period of adaptation was the one of necessity for restructuring the production forces of capitalism after the World Wars. Countries such as the US introduced industrialized ways of production that generated a surplus of food to aid countries in Africa, as well as to sell its cheap food to developing countries. Under these mechanisms the US changed the rules of the food system inserting it to the market logics. It meant a transition for developing countries from being self-reliant to being dependent on global food chains (McMichael, 2009).

The 'Green Revolution' regime signified not only the introduction of mechanisation of "rudimentary" ways of agriculture, but also the impoverishment of millions of farmers around the world. "In South America, for example, while there was an 8% increase per capita in food supplies, the number of hungry people actually increased by 19%" (Lappé et al. 1998 in Otero, 2008:36). The main explanation is based on the displacement of "inefficient" peasants who were overcome by the introduction of unaffordable technology that required fewer people. This caused migration of peasants to cities that could not cope with high rates of population growth, making them vulnerable to poverty. This phase gave way to the most recent food regime, called by McMichael (2009) the 'Corporate Food Regime' (from 1970 to 2005). This is characterised by the expansion of the food system into a global market where the states were surrendered to its rules:

The corporate food regime completed the institutionalisation of mechanisms and norms of the global regulation rendering all states—some being more equal than others and subject to retaliation for unfair trade practices...where national sovereignties would be subordinated to an abstract principle of membership in the state system that sanctions corporate rights of free trade and investment access (McMichael, 2009:149).

During this phase the World Trade Organisation (WTO) legitimised rules of unfair trade among countries. More recently this type of trade is legitimised under free trade agreements happening all around the world between developed and developing countries. This regime increased the number of peasants displaced from their territories who either became consumers of cheap food or cheap labour. The discourse used to make the transition between the 'Green Revolution' and the 'Corporate Food Regime' was the necessity of breaking up the state barriers to allow higher economic growth for the developing countries (McMichael, 2010). Nevertheless, the result has been the contrary and levels of poverty have increased. Biel (2012) explains that poverty will always be the result of exporting disorder to a sink, meaning the depletion of developing countries as a reciprocal concomitant to the process where the core builds on its own. He also adds that both, consumers and cheap labour are essential to sustain the capitalist system; which to survive has learnt to manage the global population suffices not necessarily to consume but to serve the system as needed (Ibid, 2012).

Finally, this corporate regime is also characterised by an increase of standardised food from 'Wal-Mart'. This refers to a supply of non-quality foods for the masses that cannot afford quality foods. It has resulted in an increased disconnection of humans with food which McMichael (2009) calls 'food from nowhere'. McMichael (2009) claims that a next regime is emerging (from 2005 to the coming years); however, it is yet another adaptation of the capitalist

system. It is based on the 'greening' process of the corporate regime, which is appropriating food alternatives such as fair trade and organic production.

Fortunately, he also claims that a new food system is emerging from the grassroots' communities, which might take over the corporate regimes. A real change in the system can only be based on grassroots alternatives of development based on ecological models of production and social justice. The change in the system will depend on the resistance power of those communities (Ibid, 2009).

1.5 Expansion of the dominant food system—The case of Mexico

In Mexico, as in various countries, political parties have been unable to stop or even seriously challenge the expansion of the export oriented mono-cropping, the destruction of a polyculture family based, the expansion of free trade agreements and more recently, the penetration of GMO seeds. This section reviews the factors contributing to the expansion of the dominant food system in this country, which has been the 'guinea pig' of the neoliberal policies in the world with the Green Revolution¹ introduced in the 1950s as a clear example (Patel, 2007). More recently, one of the most important struggles against the dominant food system is the entrance of GMO seeds, which threaten the conservation of the traditional maize with around 23,000 varieties of seeds that position to Mexico as the world's reservoir of this crop. The analysis focuses on the period correspondent to the global corporate regime in which the neoliberal agenda has been strongly imposed.

¹ Mexico was the first developing country to adopt the 'Green Revolution' in 1950 with the aim to shifting from rural to urban development (Patel, 2007).

The economical restructure of Mexico in the 1970s

In Mexico, from 1940 to 1970, peasants and workers were part of vertical syndicates with a head designated by a political party in office within the political parties. This form of social organisation was due to the fact that the government held an important role in all development projects. In the specific case of the food system, the state controlled all the parts of the supply chain, including: inputs (fertilisers, land access and seeds), productive projects and commercialisation of basic products. Peasants and indigenous people had right to access communal lands, known as *ejidos*², where to produce food and other crops. Government financed the store chain CONASUPO³ that offered guaranteed and affordable prices to consumers and payment of basic products to peasants. Government played a central role in financing rural development and ensuring a stable food market for the country—mainly for basics such as beans, maize and rice.

² *Ejidos* are registered within the Mexico's National Agrarian Registry, which were introduced as an important component of the Agrarian Land Reform in Mexico after the Revolution of 1910. An *ejido* is an area of communal land utilised for agriculture, in which community members have individual access to a parcel to grow food, either for self-consumption or commercialisation. Both, indigenous people (the original inhabitants of Mexico before the Spaniard conquest) and peasants (mestizo food producers) have right to the *ejido* system within the Mexican constitution. Nowadays, indigenous communities and small-medium peasants (with access on average to 2-5 ha) produce food by using ecological-traditional forms of agriculture and mostly for self-consumption. With the reform of the constitution in 1992, the *ejido* system became subject to the market conditions, it meant these lands could be sold or rented. This has allowed to agribusiness (also called farmers in Mexico to differentiate them from peasants) to be able to buy these lands and use them to produce food for exports by using industrialized ways of agriculture (de Ita, 2005).

³ CONASUPO: Compañía Nacional de Subsistencias Nacionales (National Company of Popular Subsistence)

During the same period, from 1940 to 1970, agriculture in Mexico grew by 5% yearly, but in 1970 the restructuring of the capitalism world economy impacted the economies of developing nations in different ways (Castells, 2004). In Mexico, one of the consequences was that the cease of state funding for the rural development (Interview with de Ita, Head of CECCAM, Mexico, 2012). Neoliberal policies emerged from international organisations such as the World Bank in accordance with the powerful nations and the Structural Adjustment Programs (SAP). SAP mechanisms would lend money to developing countries in order for these to avoid stopping their economic growth. Mexico was one of the first countries subjected to these mechanisms and as a result it incurred into a huge debt during the following decade in the 1980s together with an economic recession (Patel, 2007).

By the beginning of the 1980s Mexico declared in bankrupt, unable to pay its debt and the Mexican Peso was devaluated. A strong wave of neoliberal policies was commenced in 1982. The state started a privatisation process of all subsidies along with the supply chain. It removed CONASUPO stores that maintained a stable system of prices to producers and consumers. It also cut subsidies in inputs such as seeds and fertilisers managed by the state-owned DICONSA⁴. The budget for productive agricultural projects was reduced by more than 50% and the remaining budget was oriented to big producers who were usually located in the north of the country (Avila et al. 2011). This led to the division of the country into two: the north in the on-going process of industrialization and the south driven into impoverishment. Agriculture became mostly industrialised in the north with the introduction of more technology under the Green Revolution approach (machines, fertilisers and highly consuming water irrigation systems).

⁴ Centro de Distribución de CONASUPO (Distribution Centre of CONASUPO)

Moreover, during the 1980s, the introduction of *maquila* (low cost manufacturing) in the Northern border between Mexico and the US allowed US companies to manufacture in Mexico with its cheap labour. This impacted the level of migration from the south to the north of the country, as agriculture in the south became less viable. Towards the end of this decade, Ernesto Zedillo, the Mexican president in turn, announced that 18 out of 20 million people living in rural areas were pushed into extreme poverty. What is more, this number did not reflect the total number of rural poor people in Mexico as millions migrated to the US (Ibid, 2011).

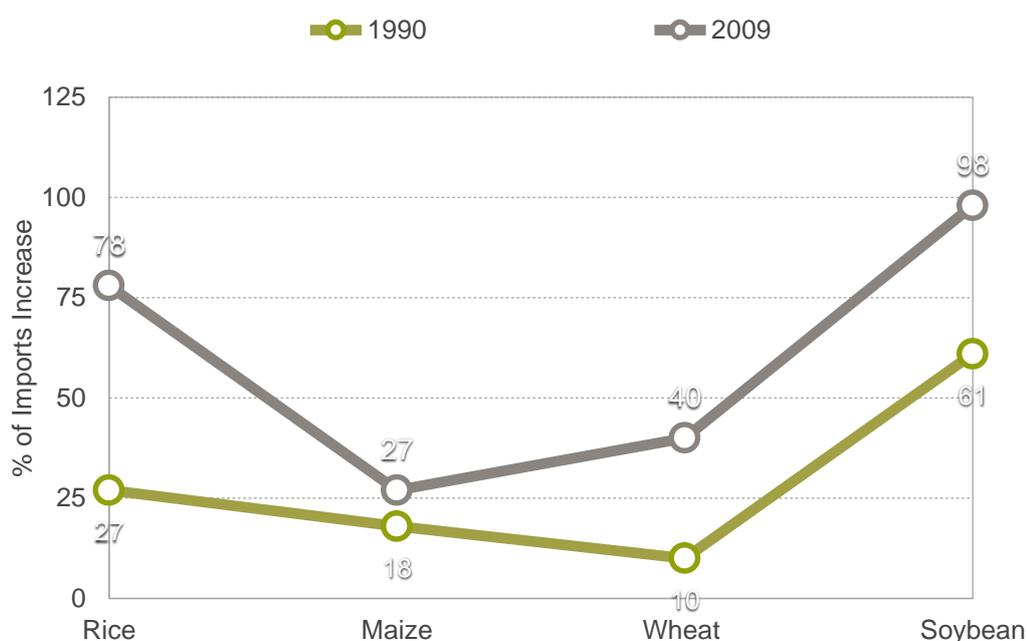
NAFTA impacts into the Mexican food system (1994 to date)

In 1994 the NAFTA, the first free trade agreement among developed and developing countries (under unfair conditions), was signed between Mexico, the US and Canada. The NAFTA represented a loss of capacity for Mexico to produce its own food (Avila et al. 2011). The philosophy of the NAFTA, specifically concerning the food system, was a systematic shift from the state support to the smallholder peasants, even to provide a basic protection of their rights, to support the big landowners (farmers) and corporations legally and financially (Rosset, 2008). The NAFTA reduced all restrictions on commerce for the US and Canada, which impacted prices of subsidized agricultural products from these countries, and consequently Mexican producers. Small and medium landholders peasants (with an average access to land from 2-5ha and 10-12ha respectively) could not compete and more peasants were forced to leave their lands and migrate to the shanty towns of Mexico or the US.

A visible impact of the NAFTA over the food system is observed in the food dependence—the loss of food sovereignty for Mexico (*See Graphic 3*). Mexico

became one of the principal exporters of vegetables and fruits in the world while it imported basic staples.

Graph 3. Imports of cereals in Mexico after the NAFTA



Source: Built by the author based on CEDRSSA (2011)

Imports of rice almost tripled—2.8 times; imports of wheat increased 4 times and imports of soybeans 1.6 times. It is worth noting that the production of maize remained almost stable as indigenous and peasant communities resisted being absorbed by the neoliberal regimen. Growing maize for self-consumption became a way of resistance as it is intimately linked to the Mexican culture (Interview with de Ita, Head of CECCAM, Mexico, 2012). This issue is thoroughly explored in following chapters of this thesis.

The NAFTA was interlinked with other mechanisms such as land privatisation under the reform of the Article 27 of the Mexican Constitution, the increase of

drug production and the high rates of immigration of Mexican peasants to the US. All these mechanisms combined affected the food system in the country and beyond, and contributed to the increasing impoverishment of Mexico.

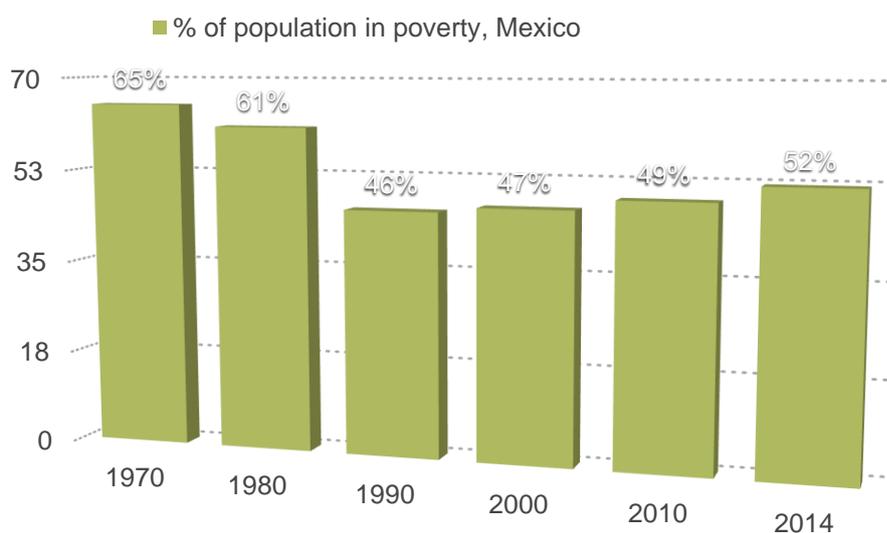
The Land Reform in 1992 allowed corporations and agribusiness to take over the best agricultural lands in order to produce export commodities in Mexico. In some parts of the country this reform had no impact, mainly in the south of Mexico, where the *ejido* land system continued operating as a way of social resistance. It is important to note that in any case the land reform removed the protection of communal rights. Under the reform, land could be sold or rented to national or international investors. Therefore land access became determined by the ability to compete, buy or rent in defiance to the right of access to communal lands (Ibid, 2012).

The deterioration of the food production capacity in Mexico was also influenced by the increasing trend of drug production. The combination of government support removal from the agricultural sector during the 1980s and the agricultural products becoming a commodity in the market imposed conditions under which some peasants found drug production more profitable as opposed to growing food. Producing drugs offered up to 300% higher revenues than growing maize after the NAFTA (La Jornada, 1996).

Finally, the lack of employment in rural areas and low wages in cities contributed to the increasing rate of immigration to the US. It is worth noting that the NAFTA focused on free trade of commodities, and not humans. In 1993 the US introduced Draconian anti-immigration laws for people, but not for companies hiring them as low-wage labour. While this made migrants more vulnerable, it allowed American companies hiring them to increase their revenues (Cornelius, 2001). Consequently, Mexico became economically dependent on remittances,

making its economy extremely vulnerable to the US and global economic changes (Ibid).

Graph 4. Poverty rates in Mexico after the NAFTA



Source: Built by the author based on INEGI (2014)

The overall result of the NAFTA, linked to other issues such as the land reform, drugs and the high immigration rates to the US were reflected in deeper social inequality and increasing poverty levels in Mexico. Up to 1990 the percentage of the population in poverty in Mexico had experienced a decreasing trend (See Graph 4). However, since 1990 onwards, specifically since 1994, the poverty levels have been continuously increasing. Nowadays, 60 out of 117 million people live in conditions of poverty with less than \$2.0 a day (OCED, 2014a). Furthermore, according to CONEVAL (2010) the Gini index⁵, inequality has remained unaltered

⁵ Gini Index: measurement of statistical dispersion that represents the income distribution of a nation's inhabitants. It is the most commonly used measure of social-economic inequality. It shows the difference between the 10% top and 10% low-income sectors of the population of a given country (OECD, 2014).

since 1994 and increased since 2008 (impacted by the increase of prices of food in the world). Mexico is located at the top of the OECD Gini index (2014), positioning it as the country with the highest social inequality of all.

More recently, the food system concerns in Mexico have included the discussion of the legal introduction of GMO maize. Since the beginning of the 2000s, the introduction of the GMO maize has become one of the main topics of social resistance (Gaalaas, 2015). From social movements' viewpoint the resistance aims at protecting Mexico as the most important centre of origin of maize (with nearly 23,000 varieties) as well as the communities who cultivate it. According to international treaties, to which Mexico is linked, GMO contamination is prohibited in centres of origin as they might cause the disappearance of landscapes of important crops for humanity (Niels and Pritchard, 2011).

A centre of origin is a place where a group of people have firstly grown a variety of the seeds with their distinctive characteristics. Centres of origin are also known as the Vavilov centres of ecological diversity, in the name of Nikola Vavilov who identified 8 of these regions in the beginning of the XX century. The importance of conserving centres of origin is rooted to access knowledge on how to increase resilience of crops facing climate change and diseases as well as to avoid genetic erosion—all of these aspects importantly contributing to the world's food security. In Mexico only 20% of the agricultural varieties grown in the country in 1930 were still being cultivated by the end of the century; the potential of reducing them might be accelerated through the GMO introduction (Ibid, 2011).

On the other hand, Mexico is among the countries with the highest rates of obesity in the world (OECD, 2014b). Rates of obesity and overweight have rapidly

risen by 174% in Mexico over a decade—from 1989 to 1999—(Rivera et al. 2002). This issue is related to an increase of sugar food content (specifically soda), as well as to higher intakes of processed/street food (Ibid, 2012). What is more, obesity rates in Mexico are related to an increase of social inequality and poverty (OCED, 2014).

Finally, it is important to emphasise the role of the state as a main mediator in removing barriers under the NAFTA agreement, neoliberal policies and regulations that have been introduced in Mexico favouring TNCs and other big consortiums. All of these mechanisms supported the expansion of the dominant food system in the country, as well as their consequences (Avila et al. 2011).

1.6 Civil networks, a challenge to the dominant food system

Manuel Castells (2004) argues that since the introduction of the Internet in the 1970s, we live in the era of Network Society whose structure and power is built through networks. He defines 'networks' as flexible social structures conformed by multi-nodes that act autonomously; they communicate and remain linked together by the same 'programmes' , to which Castells refers as values and aims of these social forms of organization (Ibid). This author rejects the idea about single elite dominating the world; instead he argues that power is built and enforced by 'networks of power' . Networks of power are those networks that exercise power through their programmes or through their 'switches' . The switches are the linkages among networks with different values and aims. Examples of networks of power are financial institutions, businesses, corporations, criminal networks, media, governments and others, who work under their own programmes but are switched to increase their power.

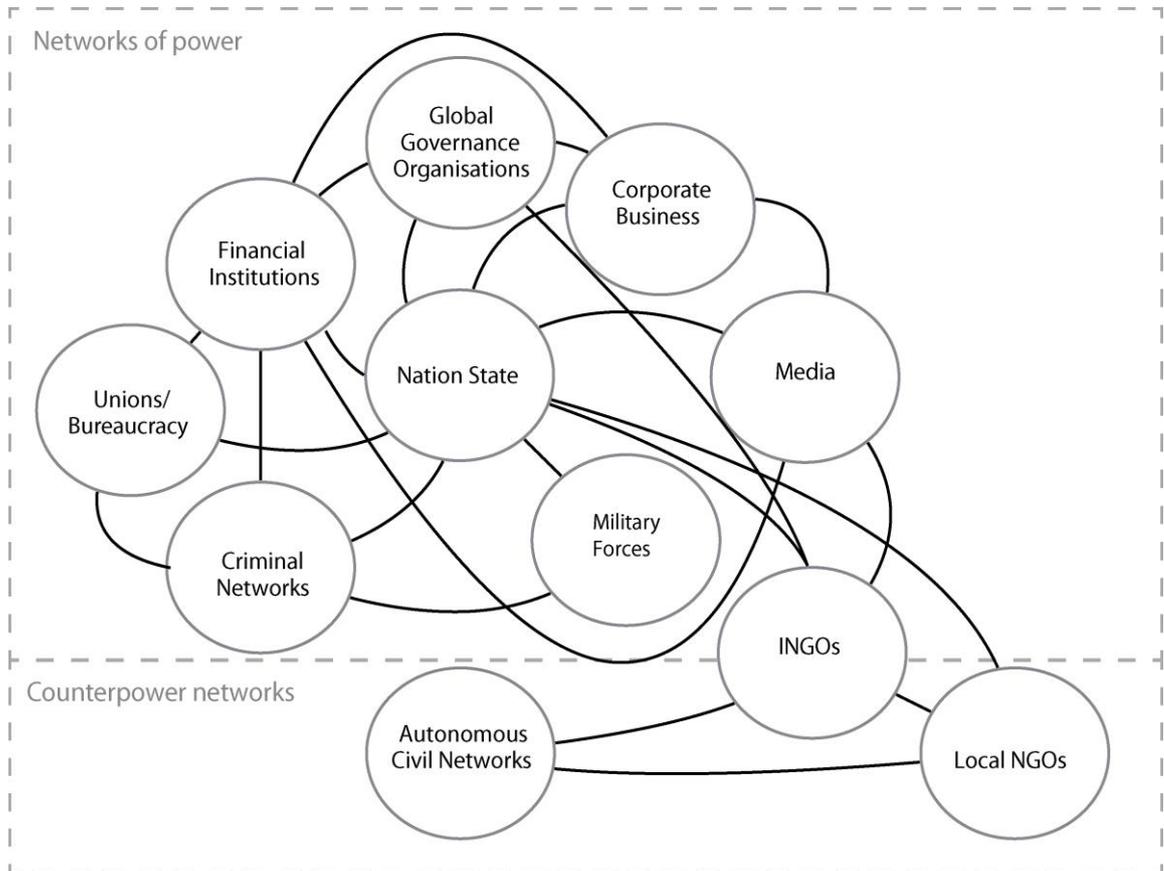
Ultimately, a network of networks in The Network Society act together to enforce values and aims at a global scale. He illustrates this by the following:

The global financial market can be seen as autonomous of any major institution, because of the size, volume and complexity of the flow of capital that circulate in its network, and because of the dependence of its valuation criterion on unreadable information turbulences. Nevertheless it is influenced by political decisions and regulations. Another example is media that constitute a plural ground, however biased in ideological and political terms. And the capitalist class, it does have some power, but not the power, as it is highly dependent on both the dynamics of global markets and the deacons of governments in terms of regulations and policies (Castells, 2004:32).

Given the variety of potential origins of the Network Society's domination, it is recognised as a multi-dimensional structure in which diverse networks exercise power under their logics of value making and their different ways of relating to one other. The values prevailing within the Network Society are enforced by the more powerful ones (See Figure 2). In line with previous idea David Harvey (1990) in Castells (2004) reminds us: "Capital has always enjoyed a world without boundaries, so the global financial network has a head start in defining instance of value in the global Network Society" (Ibid, 2004:25).

An important feature to highlight in reference to the Network Society is that nations-states have become the key network to which networks of power need to get switched to in order to exercise power at a global scale. Nation-states continue being the legitimate entity to enforce laws and rules affected by global forces in economic, political and cultural terms in a given territory. Moreover, nation-states are also the entity that legally can enforce the use of military forces against society. In this regard, political parties have become a main switch to all different power networks in order to adapt and expand over time (Ibid, 2004).

Figure 2: The Network Society: power and counterpower networks



Source: Built by the author based on Castells (2004)

The emergence of Internet allowed The Network Society to operate at a global scale. This is not to say that before this technological invention society was not organized in networks, but the microchip technology potentiated networks as an organizational form at a global scale. The Internet infrastructure supports logics of free, diverse and interactive flows of communication without limits of time or distances. It is worth noting that despite Internet exists, not everybody is connected, neither that only technology powers to networks. Internet is the logic and infrastructure, but networks as an organizational form get conformed regardless of technology. Moreover, networks of power operate under logics of inclusion/exclusion, meaning they will include people and territories that add

value to their aims. For example, the drug cartel territories do not operate over the same territories as the industrial or financial corridors of the world. Nothing is dislocated from the larger scale and power networks influence each locality—the global financial system has impacts on each country, either benefiting or excluding it from the global power network (Ibid, 2004).

The fact that networks of power such as corporations had a higher capacity to shift immediately to use Internet as the network's infrastructure does not mean this way of organisation and technology can be used only for the expansion/adaptation of the powerful ones. The Network Society offers the unique potential of free, diverse and interactive flows of communication for society to organise autonomously from the dominant institutions. Therefore, Castells (2004) argues that this might become an opportunity for humanity to face and challenge networks of power towards alternatives to development.

With the possibility of changing the pathway of development, Castells (2004) introduces the idea of 'counterpower networks' to refer to the new social movements. He argues that where power is exercised, resistance to power will always emerge and organise. And the organisational form will have the force to challenge networks of power only through and by networks. In fact, new social movements are no longer organised in political parties or in labour unions, but they are introducing their own values and organizational forms independently from the state. These types of social movements emerged in the 1990s as a result of the implementation of neoliberal policies at a global scale, known as the anti-globalisation movement. Castells (2004) refers to them as 'new social movements for global social justice'. These varieties of organisations and individuals claimed for the first time that social movements were not fighting against their nation-states, but against a global trade system. A system supported

by neoliberal policies imposed by countries such as the US, international governance institutions and financial global markets—all of them switched together (Ibid, 2004).

As Castells (2004) sustains, the anti-globalisation movement originated during the 1970s, when social movements became fundamentally 'freedom' oriented. This made them challenge the common institutions and values of society such as state, church, family, corporations and others. These new social movements were profoundly political, but not oriented to take over the state power. They focused on the autonomy of individuals that permeated most of the cultural elites of the world. The author argues that outcomes of those social movements relied on a change of mind of people. In fact, one of the most visible outcomes of the 1970s was reflected in the woman's role in society, they re-positioned themselves within the common institutions such as the family. Another huge debate introduced by new social movements was the environmental degradation and its limits. They appealed to practically all sectors of society to stop the capitalist logic of devastating the planet and its uncontrollable growth. New social movements advocated for "a transformation of the values of society to promote a culture of diversity and the affirmation of minority rights and ecological solidarity" . Ultimately, these aims meant the reunification of human aims in opposition to the industrial values of growth and consumption at all costs (Ibid, 2004:19).

Castells (2004) concludes that the Network Society has a profound potential to counterbalance networks of power. It is to be achieved due to the autonomous communication held by individuals and organisations independent from the dominant institutions at any level, time or/and distance. On top of this, counterpower networks values are oriented to benefit society at large, rather than to benefit the few (in an inclusion/exclusion logic of networks of power). The

process of challenging power is slow; as these networks are inclusive and their switches are not based on capital accumulation but on seeking more dignified ways of living. An example is the M15 movement in Spain that argues for democracies with no representation where all voices are equally valued. The process takes time: "We go slow as we go far... our most important achievement will be a change in the mind of peoples" (Castells, 2012:45). Moreover, counterpower networks ultimate goal is a cultural change in the long term, whose value will be the following:

The Network Society is a culture of protocols of communication enabling communication between different cultures on the basis, not of shared values, but of sharing value of communication. This is to say: the new culture is not made of content but of process. It is a culture of communication and sharing, for the sake of sharing, as it would always add value to each other (Castells, 2012:40).

By using the Castells' notion of the Network Society, it can be concluded that counterpower networks have a capacity to address the current dominant food system. In line with this view, McMichael (2007) claims that a change of power relations will come from the systematically oppressed. In the case of the food system, it will come from the small-medium scale peasants getting organised around the world. They understand their poverty not as the lack of incorporation into the capitalist system, but as the outcome "of imposing a singular mode of development in a diverse world" . This way of development has been manipulated by power relations and ultimately has deepened global inequality (Ibid, 2007:8).

1.7 Civil networks, the case of the Network in Defence of Maize in Mexico

Gustavo Esteva (2010 a), who studies new social movements in Mexico refers to counterpower networks as 'civil networks of liberation' . By this term Esteva means the shift of mind of social movements from aiming at the state power to struggling for their recognition as autonomous actors. It also implies an organised civil society capable to build political power and generate changes through their daily actions. Esteva also explains that 'networks' is a rather generic term to designate different organisations working under the previously mentioned logic: coalitions, alliances, networks and assemblies. Additionally, Marina Sitrin (2006) and Sitrin and Azzellini (2014) who analyse social movements in Latin America, refer to *horizontalidades* (networks) as the term that does not only imply flat organisational forms—with no hierarchical relations. It rather means direct democracy and a striving for consensus process in which everybody is heard and new relations based on trust and love are created.

This thesis refers to new social movements as 'civil networks' in line with previous authors and Castells (2004). Castells refers to counterpower networks organised autonomously from the state and to a 'networks structure' as being able to challenge the power from the dominant institutions of society while Esteva and Sitrin allude to networks as this 'autonomous civil society' with the capacity to build alternatives to development a and new human relations through their daily actions.

Esteva (2010 a) points out that Mexico is one of the places with the strongest civil networks in the world, linked and constituted under the influence of the *Zapatistas* social movement, who have been recognized as an important

influence for the global movements for social justice taking form in 1990s. They introduced the phrase 'Another world is possible' , meaning social movements are creating (on progress and on continuous assessment) alternatives to the current development on the ground to what they called the 'silent struggle '.

Moreover, Peter Rosset (2008) and Raj Patel (2007) agree that Mexico is a pioneer in experiments of the neoliberal project, with the free trade agreement (NAFTA) in particular. As a consequence, the country has developed strong alternative civil networks constituted precisely as a response to it. Additionally, Baker (2008) argues that Mexico offers a unique constellation of agricultural trade, biotechnology policies, a historical and cultural importance of maize, a diversity of culinary traditions and strong social movements defending one of the most important centres of origin of the world (the maize feeding the human race); making it a fertile territory to explore social resistance and food systems transformations.

A civil network that has worked against the industrial mono-cropping GMO model of food production in Mexico is the Network in Defence of Maize (NDM), who ultimately aims at food sovereignty. The NDM has greatly contributed to preventing the legal entrance and the spread of GMO contamination in Mexico. Its members have started to formally work as a civil network at a national level since 2002, in reaction to the GMO contamination of native maize issue detected in different states between 2000 and 2001. This is an important civil network to be analysed given its 15 year-experience. It is worth noting that maize represents a sacred symbol for indigenous-peasant communities in Mexico. Furthermore, it has become the glue bringing together individuals and a number of organisations in order to develop strategies to challenge the dominant food system. Finally, it needs to be said that the NDM struggle goes far beyond the

defence of maize; its ultimate goal is the defence of indigenous-peasants communities, both producing under ecological-low inputs forms in *ejido* lands that face the threat of being displaced from their territories and the loss of their identity and cultures.

1.8 Research's questions, contribution and structure

Manuel Castells, Gustavo Esteva and Marina Sitrin's insights are used as a starting point to unveil and examine civil networks' underpinning logic to address this thesis' central question: How civil networks, composed by social movements, become a counterforce faced with the dominant food system beyond their more apparent ways of operation? E.g. the number of members, levels of actors, flat organisational forms, among others.

Castells (2012) analyses different examples of social outrages—from 2008 to 2012—and identifies common dynamics of operation for civil networks. (i) Multi-nodal flexible organisations difficult to be co-opted by the state, as they organise and reorganise as needed through a diversity of national/international nodes. (ii) Conformed by autonomous (from the state/political parties) individuals and organisations coordinated by their own flexible flows of communication, resources, vision and contents. (iii) Use symbolic public spaces to show resistance—but they meet in flexible ways as different contexts and needs demand. (iv) Use spaces of dialogue as experiments of direct democracy characterised by self-representation of people.

Additionally, he also identifies two main factors that make civil networks come together. They overcome fear by being together and being capable of generating

hope. The other factor that brings civil network closer is the possibility of achieving a higher goal versus each individual or organisation aim. Higher goals are usually related to overcome crisis and concerns about poverty or corruption (Ibid, 2012). Sitrin (2006) adds that the process of consensus generate strong ties among members that make to individual people to transform and consequently generate social transformation.

Furthermore, Castells (2012) and Esteva (2010 a) identify outcomes and challenges for civil networks. Castells claims that their main outcome is a change of peoples' mind in the long term, which is a potential to build a just world (Ibid, 2012). Additionally, Esteva states that civil networks change life at a local scale by developing alternatives to development that improve the well-being of communities. In fact, this is the main civil networks' outcome and their way of resistance (Ibid, 2010a). In relation to challenges for civil networks, the next step is the formation of switches among network of networks that work separately at present—e.g. those working on women rights, environmental sustainability, labour rights and others. These switches are far from unifying a single value for humanity, but to generate dialogues and intersections that increase counterbalance to networks of power (Ibid, 2012).

Box 1: Civil networks' features, outcomes and challenges

Features:

- i. Multi-nodal flexible organisations difficult to be co-opted by the state, as they organise and reorganise through a diversity of multi-level links.
- ii. Conformed by autonomous (from the state/political parties) individuals/organisations who are coordinated by their own flexible flows of communication, vision, content and resources.
- iii. Use symbolic public spaces to show resistance —but they meet in flexible ways as different contexts and needs demand.
- iv. Use spaces for dialogue as experiments of direct democracy characterised by self-representation and self-growing of people.
- v. Spaces for dialogue generating common knowledge that is transformed into alternatives to development and visions of the world that challenge the dominant system.

Outcomes:

- vi. Changing of mind and values of people in the long term;
- vii. Building alternative to current dominant form of development in the grounds

Challenges:

- viii. Building switches among diverse civil networks for social justice

Source: Built by the author based on Sitrin (2006), Esteva (2010), Castells (2012)

In addition, this thesis also refers authors such as Wheatley and Frieze (2006) as well as Pelling (2011) to build an analytical framework on the evolution process and dynamics of operation of civil networks. These authors identify three levels of evolution for civil networks depending on their type of actions and levels of collaboration. Actions go from resilience (coping to survive actions) to transformation. Transformative actions impact on policies and/or generate new models to current ways of development (Pelling, 2011). In terms of levels of collaboration, civil networks evolve from individuals and teams working together to networks of networks (switches among networks) with higher potential to transform people's social realities and influence values for social justice (Wheatley and Frieze, 2006).

As mentioned before, Castells (2012) explains that civil networks come together to overcome fear and in search of a higher aim, but these two aspects do not explain the glue that makes civil networks evolve and resist over time. In the same line, Wheatley and Frieze (2006) as well as Pelling (2011) identify different stages of evolution for civil networks; nevertheless, further explanation of why civil networks shift from one stage to another is not discussed thoroughly. This thesis contributes to knowledge by offering an insight into the essence and spirit that make civil networks a counterforce facing the dominant food system in the longer term. It does so by explaining what is at the core of civil networks to become stronger beyond their evolution stages, levels of collaboration and other apparent operational forms. In this endeavour the thesis explores a set of three research sub-questions in relation to the NDM.

Principal Question:

How do civil networks, composed by social movements, become a counterforce faced with the dominant food system beyond their more apparent ways of operation?

Sub-Questions:

Q.1 What are the achievements of the NDM? What are its defeats, if any? To what extent has the NDM contributed to food sovereignty in Mexico?

Hypothesis 1: Civil networks are capable of challenging the dominant food system through a variety of actions that stop/reverse mechanisms imposed by networks of power. These actions contribute to one or more of the food sovereignty pillars; hence, contributing to the progress of food sovereignty in Mexico.

Q.2 How does the NDM succeed in their objectives? What are the salient characteristics and evolution stages that enable civil networks to succeed?

Hypothesis 2: Civil networks have the potential to challenge the dominant food system by shifting to higher stages of evolution, meaning building more systematic, integral and multi-level strategies. At the heart of this evolution process is collective learning (as process and outcome), characterised by mutual respect and influence, leaders as catalysers and facilitators, diversity of meeting spaces, networks as the organisational base and the inclusion of linking nodes, specialised knowledge and expert know-how actors.

Q.3 Why has the NDM developed potential to challenge the dominant food system? What is the essence and spirit of civil networks to avoid being co-opted by networks of power? To what extent does the NDM have the potential to challenge power of the dominant food system at present and in the long term?

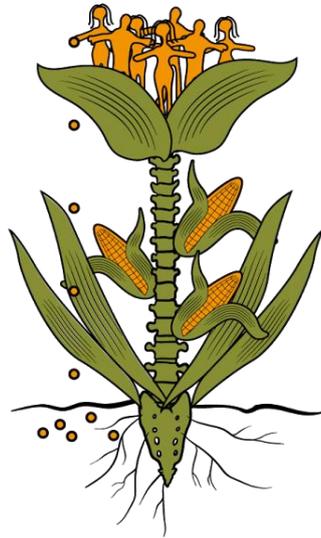
Hypothesis 3: Civil networks' essence and spirit to challenge networks of power are based on the construction of a common identity among diverse and 'opposite' actors. These actors cannot be co-opted as their struggle relies on shaping their own minds and on recreating dignity in their everyday lives (as part of their identity). Therefore, the struggle cannot die unless people themselves are killed or disappeared.

The structure of the thesis is as follows. Chapter 2 shapes the theoretical and analytical framework built in three parts. First, an insight into the food sovereignty framework is discussed including its origins, aims and pillars. This framework is used as an analytical tool to assess the accomplishments of the NDM as well as to observe the improving of living conditions of peasants and indigenous communities. Second, a framework to observe the process of evolution and salient features of civil networks is built. A range of authors working on network social resistances, innovative organisational forms for sustainability and a rights based approach are used. Finally, the thesis pinpoints the spirit of civil networks as a counterforce to power networks. In doing so, this thesis uses insights from the past questions as well as an analysis on the evolution of civil networks, particularly in Latin America.

Chapter 3 presents the methodological tools and processes used to gather and analyse the data for the case study. Diverse tools to collect data were utilised: in-depth, semi-structured interviews and systematised secondary data collection. Participatory observation was used as a method which contributed most to

observe in detail the dynamics of operation of the NDM. Thereafter, Chapter 4 presents an analysis of the achievements and defeats of the NDM and assesses their impact on food sovereignty in Mexico; Chapter 5 explains the dynamics of operation and salient characteristics of the NDM and Chapter 6 analyses the essence and spirit that makes the NDM a counterforce to the dominant food system. In the end, Chapter 7 summaries key learnings and further steps ahead of this research.

Chapter 2: Analytical and theoretical framework



**Examining civil networks
capacity to challenge the
dominant food system**

2.1 Introduction

The transformation of a series of highly unequal power relationships upon which the present system is based is the main challenge of today' s world (Bryant and Bailey, 1997:32).

In order to examine the essence that makes civil networks a force facing the dominant food system, this chapter is organised in three main topics. First, it looks into what civil networks are achieving, namely, identifying tangible outcomes and impacts of their strategies. Then, it seeks to examine how they succeed in their objectives. The objective is to pinpoint the salient features that lead to the consolidation of civil networks over time. Finally, this chapter gives substance to why civil networks become a counterforce to balance power in society.

The first part focuses on outcomes, hence it brings about a framework that helps visualise the kinds of achievements that civil network working on addressing the food system might have. The food sovereignty framework is used as it represents an alternative of development in opposition to the dominant food system as it is built by small and medium scale-peasants to balance power within the global food system (Rosset, 2008; Holt-Gimenez, 2009; Oswald, 2009; Pimbert, 2008). The origins and pillars of the food sovereignty framework are explained and a discussion about the differences between food sovereignty and food security is held to evidence the essential reasons for aiming at food sovereignty.

The second part of this chapter builds an analytical framework to examine the process of evolution and the dynamics of operation of civil networks. This framework answers how civil networks succeed in their objectives. It is based on different viewpoints of authors studying characteristics of operation of social

resistance organised in networks, as well as authors looking into processes to support social change from a rights-based perspective and from indigenous knowledge systems.

The third part of this chapter explores why civil networks managed to become a counterforce to balance power networks. In doing so, this section analyses how power is built and enforced in networks, revisiting the key characteristics of the Network Society and of power itself. In addition, the Network Society theory is linked to literature about Latin American new social movements. The ultimate objective of this analysis is to unveil less apparent features of civil networks that enable them to succeed in the long term as well as balance power within society.

2.2 Food sovereignty: a framework to observe achievements of civil networks

The notion of food sovereignty is perhaps best understood as a transformative process from below that seeks to recreate the democratic political realm and generate a diversity of autonomous food systems based on equity, social justice and ecological sustainability (Pimbert, 2008:3).

Different authors refer to food sovereignty as an alternative way to development faced with the current food crisis, characterised by a constant environmental devastation and persistent disempowerment of people around the world (Rosset, 2008; Holt-Gimenez, 2009; Oswald, 2009; Pimbert, 2008; Douwe, 2009). They agree that food sovereignty has a potential to address different problems linked to the food crisis: growing hunger and malnutrition, increased levels of urbanisation of poverty, environmental degradation, peak oil, climate change, economic and financial crisis. The main argument is that food sovereignty represents a critical response to the current development and modernisation

paradigms. It goes beyond challenging the model of industrial agricultural production, and “involves a radical change in social, cultural, political, and identity factors” (Oswald, 2009). Furthermore, it implies an understanding and redefinition of the rural and urban life as coexisting interdependent and complementary entities (Ibid, 2009).

The following section revisits the origins, aims and essential characteristics of food sovereignty. In this endeavour, differences between the food security and food sovereignty frameworks are unveiled in order to understand the significance of food as a basic human right—a key feature in the food sovereignty approach. Finally, the pillars of food sovereignty are presented to look into the specific types of achievements of civil networks addressing the dominant food system.

2.2.1 Food sovereignty origins and aims

Food sovereignty emerged from small-medium scale peasants who organised internationally in La Vía Campesina in 1993. It was founded in parallel with the anti-globalisation movement, whose spirit was based on a new resistance perspective: a unified struggle against a global trade as opposed to fighting specific nation-states. La Vía Campesina is formed by small-medium scale peasants who understood that the first step towards a different pathway of development was to rid of dependency and oppression by international forces. This was reflected in their claims oriented to the protection of national markets from dumping⁶ practices and the recovery of their capacity to produce food.

⁶ In international trade dumping is the export of a food product by a country/company at a price that is lower in the foreign market than the price in the domestic market. Dumping is usually supported by subsidies in the exporting country and involves substantial export volumes; therefore it has the effect of endangering the financial viability of peasants in the importing country (La Vía Campesina, 1993).

The first food sovereignty definition clearly expresses these claims:

Food sovereignty is the right of peoples and their nations to define their own agricultural policies, without dumping involving third parties. Food sovereignty is the right of each nation to maintain and develop its own capacity to produce its basic foods respecting cultural and productive diversity (La Vía Campesina, 1993).

There is not a unique definition of food sovereignty. Patel (2009) argues that the richness of this term rests precisely in its lack of homogeneity. It accommodates different local experiences and necessities, as well as different alternative models of agriculture built in specific contexts. Moreover, food sovereignty goes beyond the idea of sovereign states; on the contrary, it is about the capacities of local people to construct spaces to impose their visions based on the 'cooperative advantage' versus the 'competitive advantage' of the neoliberal market place (McMichael, 2007).

In sum, food sovereignty is a 'process of development' seeking redistribution of power and ultimately aiming at re-creating equality of conditions within the global food system. This aim converges with the one of civil networks, pursuing balance power and building other values in society. An example of this is explained by Desmarais (2008), who argues that what has made of La Vía Campesina a strong movement over time is its capacity to achieve equality of power within the organisation itself. Its members have generated mechanisms to recognise and include women's and youth's voices within the decision-making processes under conditions of equality (Ibid, 2008).

2.2.2 Food sovereignty versus food security

To better understand the essence of the food sovereignty framework, a comparison with the food security framework is made. Food security is the mainstream perspective in the endeavour to feed people around the world. It was introduced for the first time in the 1970s by international organisations such as the WB and the UN. A core difference between the two frameworks is in relation to their different right to food viewpoints—which is central to this analysis.

The right to food was enacted and protected for the very first time in human history in the Universal Declaration of Human Rights (UDHR) established in 1948:

Everyone has the right to a standard of living adequate for the health and well-being of himself and of his family, including food... (UDHR, Article 25).

Nowadays, a total of 162 countries legally guarantee the right to food either through its enactment in legislative national frameworks or through binding international treaties (Edelman et al. 2014). It is worth noting that the UDHR declaration was made under a political context following the World War II, in which the state was positioned as the provider of rights. This notion has barely changed ever since but the mechanisms to operationalise the right to food are not necessarily congruent with it. Since the beginning of the 1980s Amartya Sen has already been claiming that the right to food implied more than jurisdictional titles enacted by the states. The right to food required a change of power-relations deepening world inequalities. He argued that even at a household level the individual right to food is not guaranteed due to power; e.g. gender inequalities.

In line with these ideas, Joaquin Herrera (2008) proposes a perspective to understand the essence of rights, positioning them within the concept of human

dignity (intimately linked to redistribution of power). He refers to human dignity as the equality of conditions in the access to the tangible and intangible resources (Ibid, 2008). Equality of conditions is the result of peoples' struggles that open spaces to achieve equality in power relationships. In this regard Joaquin highlights the emancipatory nature of rights, explaining that these are neither neutral documents that work by themselves nor aspirations given by means delinked from the specific position of people within the power relations: geographically, socially, economically, politically, culturally and historically. Indeed, he offers an analytical framework—the relational systems—in which the different aspects that might impact power relationships in any given context are detailed (*See Appendix 2 for explanation of each of the relational systems*). He also insists that the context does not determine future pathways of peoples, but it influences their current advantaged or disadvantaged social positions, which are necessary to unveil. Ultimately, he states, human rights are not passive objects but institutional and social actions in order to achieve balance of power in society.

Nevertheless, since the time that food security was introduced in the 1970s when a general increase of food prices and peak oil were pressing issues, its proposal to fulfil the right to food has endorsed the expansion of the global food system. Supporting a mode of production in which food was treated as a mere commodity versus a basic human right or the capacities of people to be fed and live in dignity.

Food security is the availability at all times of adequate world food supplies of basic foodstuffs to sustain a steady expansion of food consumption and to offset fluctuations in production and prices (UN, 1974 cite in FAO, 2003).

The concept of food security has varied through time, but not so its main principle: 'food as commodity' . In 1983, given the Amartya Sen' s perspective

on the access to food, it evolved from the pure perspective of 'availability of food' to include 'access to food' ... ensuring that all people have both physical and economic access to the basic food they need" (FAO, 2003). In the end, the notion of the right to food under this approach continued being powered by the individuals' capacities of purchasing and consuming.

In the following years, the concept of food security has widened to introduce other aspects. In 1986 food security encompassed "having access to enough food for an active healthy life" (FAO, 2003) due to the World Bank's emphasis on the emergence of periods of food insecurity affecting people's health such as natural disasters, household income and others. Finally, in 1996, given international pressures from different organisations, La Vía Campesina among them, the aspect of food preferences was incorporated, appealing to the right of people to have access to 'cultural adequate food'. The most recent definition of food security is as follows:

Food security, at an individual level, household, national, regional and global levels is reached when all people, at all times, have physical, social and economic access to sufficient, safe and nutritious food that meets their dietary needs and food preferences for an active and healthy life (FAO, 2003).

Regardless of its evolution, under this term food remains a commodity. The right to food is far from being conceived as the capacity of people to emancipate and achieve dignity of life. E.g. having equal access to the resources to produce food. In spite of measuring aspects such as availability, access and utilisation, the advocates of food sovereignty claim that food security hides fundamental issues. i. It does not unveil the incapacity of the framework to fulfil the right to food—as it depends on peoples' power of purchasing food from the global markets; ii. It does not question the model of industrial production, supporting unsustainable ecological practices in growing food. iii. It disregards by whom the food is

produced, supporting accumulation of power in the hands of few actors such as multi-national companies—the highly benefited from the global food system operations (Patel, 2007).

While food sovereignty maintains some precepts from food security (including access, preferences and nutrition), it incorporates an essential difference: ‘food as a basic human right’ . This is a political position in which food sovereignty claims for a transformative view of rights. Food as a basic human right is based on the self-determination of nations and people to produce their own food and achieve more equality of conditions in the re-distribution of resources and power within society.

Ziegler, the UN special rapporteur on food security expressed clearly the significance of food as a basic human right:

The right to food is a human right and need to be fulfilled. It protects the right of all human beings to live in dignity, free from food insecurity, hunger and malnutrition. The right to food is not about charity or the ability to buy food, but about ensuring that all people at all times have the capacity to feed themselves in dignity (Ziegler, 2009).

2.2.3 Food sovereignty pillars

La Vía Campesina identifies different pillars on which the framework of food sovereignty is based. These pillars are not isolated, rather they complement one other to endorse the construction of a sustainable food system. This section presents each pillar in order to visualise specific achievements and outcomes of civil networks seeking to address the global food system. This work uses the seven pillars identified by Yap (2012):

1. Food as a Basic Human Right
2. Agrarian Reform
3. Democratic Control
4. Protecting Natural Resources
5. Reorganisation of Food Trade
6. Ending the Globalisation of Hunger
7. Social Peace

1. Food as a Basic Human Right:

This pillar calls upon both, the right to food and food as a basic human right. The right to food stems from the food security definition: it is fulfilled when all people at all times have the physical, social and economic access to sufficient, safe and nutritious food that meets their dietary needs and food preferences for an active and healthy life. The right to food must be fulfilled and must be constitutionally guaranteed.

Nonetheless, having the right merely enacted in legislative bodies is not enough. Neither is the right to food achieved in isolation from other pillars. E.g. producing food under non-ecological practices. Along these lines, food as basic human right implies the self-determination of people to decide holistically over their food systems—intrinsically linked to the right to live in dignity, social justice and ecological practices. Zizek (2009) complements this point by claiming that what makes a difference between truly emancipatory socio-political movements is their active participation to impose, construct and open spaces for the enforcement of their visions versus a re-active populism or the achievement of rights enacted in legislative systems. This is the value and challenge of the food

sovereignty approach, 'constructing and opening spaces for improving conditions of power equality in society' .

Moreover, food sovereignty should be understood as the 'right to a right' , it means that the focus of actions needs to be on finding means versus ends. For example, on getting access and managing of land and other productive resources. Lastly to say, food sovereignty should be closely linked to other productive systems (e.g. industry) as well as to cultural and educational systems. If the work of land is to be revalued, this needs to work closely with other areas of human development (Wittman, 2011).

2. Agrarian Reform:

This pillar has to do with the redistribution and access to land that it is not limited to the few such as the private access enacted by legislative regulations. La Vía Campesina makes recommendations to include decentralised credits and access to land for those who work it. This organisation emphasises that 'land access' is at the centre of the food sovereignty framework.

These recommendations are consolidated thanks to learning from the experience of social movements such as the MST (Landless Workers Movement) in Brazil. The MTS emphasises on the need to move beyond the notion of 'land ownership' to re-conceptualise farmers as guardians of the land (Yap, 2012). Another recommendation can also be found in the progressive policy adopted in Cuba according to which the state has enabled the access to land to produce food. Land access comes together with a series of extended services such as: investment in research for organic/ecological practices, access to seeds and inputs, access to local markets and access to credit schemes (Participant

Observation in the La Vía Campesina international meeting in preparation to the 2013 WSF, DF Mexico, 2012). Cuban Agrarian Reform Law of 1956 and 1963 limit private land ownership and guarantees its access and distribution to those who work it. The constitution also acknowledges that smallholders should have access and personal property of other real state resources necessary to work the land (Yap, 2012).

The process of how and to whom land is to be redistributed needs a refined understanding. For example, today 80% of the 13.3 millions of small-scale peasants cultivate GMOs crops, mainly cotton in China and India (Wittman, 2011). Small-scale food production (by itself) does not guarantee the implementation of ecological practices. Moreover, which kind of land access might deliver the best outcomes is also to be better defined. Open access, public property, individual, communal, cooperatives or collective ownership, all have different merits in different contexts and the best solution may be to recognize the merits of these different property forms and allow for flexibility (Kloppenburg, 2014). Food sovereignty generally assumes a balance among food security, land access and agro-ecology systems; however, this tri-partita combination is not always achieved. Small parcels with democratic land control by peasants may exist, and they may be producing maximum possible output without using agro-ecological practices, employing instead inputs such as chemical fertilizers, pesticides, and GMOs. In other cases peasants following agro-ecological practices might have not enough land and other resources to produce (Burnett and Murphy, 2014) (Holt-Giménez and Shattuck, 2011).

Furthermore, Franco in Wittman et al. (2011) claims that for the food system to work appropriately, incentives concerning the entire food system need to accompany land reforms. These include incentives such as the support to redistribute produced food. "While land redistribution is at the heart of the

agrarian reform, post land (re) distribution support service packages and favourable rural development policies are the soul of it—the two are inseparable” (Ibid, 2011:114).

3. Democratic Control:

Democratic control is precisely the pillar related to the engagement of the different incumbent actors to decide over their food systems: consumers, producers and any other organisation within the different political spaces to take control and decide over the construction and re-construction of food system at all levels. This engagement includes actors from the international governance institutions such as the UN; and more importantly, actors from local communities. The latter are the usually excluded ones, e.g. small-medium peasant producers or local-civil organisations.

Douwe (2009) explains that democratic control can be observed in the formation of social circuits of relations that add equal value from all participants. Within these circuits quality, fairness and ecological practices are flexible attributes of food that are continuously built, improved and defined by all actors. Some measures within this pillar might be the following: capacity of mutual creation of knowledge, shared values, diverse and multi-level actors’ engagement, combinations of trust and distrust, capacity to resolve internal conflicts, levels of autonomy and flexibility in the decision-making processes and levels of stakeholder inclusiveness (Ibid, 2009). It is important to highlight that democratic control is not only about deciding over restricted/limited circumstances (e.g. sell land due to lack of productivity capacity to compete in markets).

Another aspect within the democratic control to consider is the widening of food sovereignty to other food alternatives, mainly to those that seek subsidiary relations between the rural and urban localities. Today more than half of the world population lives in cities and this amount is predicted to increase to approximately 65% by 2050 (UN, 2013). Moreover, to feed their inhabitants, cities depend mostly on food produced in rural areas. Constructing relations between the small-medium rural peasants and people working in urban food alternatives such as urban agriculture, food box schemes, local markets, community supported agriculture, slow food movements and other remain unexplored. This is not to say that one single movement should emerge but it is important to unite efforts to increase the democratic control of actors working in collaboration. Douwe (2009) suggests that all these alternatives happening 'isolated' seem harmless, yet combined; they might change the world panorama.

No single path for implementing food sovereignty exists. It is the task of individuals, communities, cities, regions and nations to determine their own food sovereignty meaning based on their own set of circumstances (Wittman, 2011). Democratic control should imply the opening of new ways forwards that allow just food systems to emerge.

4. Protecting Natural Resources:

Protecting natural resources is linked to the notion of peasants as guardians of the land and of the environment in its holistic nature. Furthermore, it does not only imply protecting natural resources but enhancing them. This pillar is also related to the rediscovering and improving ecological agricultural practices as the main foundation for farming. Shiva (2013a) insists that in addition to growing food, the practice of agriculture is about looking after the Earth. Farmers

independent from the dominant-global system have the capacity to generate beautiful and diverse gardens and landscapes all around the world (Ibid, 2014). Measures for this pillar might focus on aspects such as water and energy use efficiency, biodiversity enhancement, land regeneration and productivity of edible and non-edible products obtained from the farming processes (Douwe, 2009).

Agro-ecology has been the method proposed by food sovereignty to incorporate ecological practices. It is not only a multi-crop production system, but it has to do with community cohesion, identity and wellbeing. Agro-ecology has demonstrated to deliver higher productivity than industrial systems. Yet, the ways of measuring its outcomes are to be better developed and disseminated (Quiroz, 2016). Moreover, agro-ecology requires of important public funds for research in order to double production in 10 years-time (Holt-Giménez and Altieri, 2013). Funds from the private sector are also desirable, still meanwhile private property (patents) do not change their dynamics, these organisations will not shift to invest in other types of production systems (Ibid, 2013).

By the same token, protecting natural resources is intrinsically related to the outright rejection of GMO introduction—under the precautionary principle⁷. Shiva (2013a) adds another reason: GMOs have enabled bio-piracy, the international process of patenting and commercialising indigenous knowledge. She also claims that seeds are the source of life and the ultimate expression of self-organisation on Earth. Likewise, seeds have evolved over millennia with the memory of soil, the natural processes of pollination and photosynthesis, and the knowledge of farmers. Consequently, it results a crime that transnational companies should claim that by adding a toxic gene; e.g. the *Bacillus*

⁷ The precautionary principle, in ecological terms, means avoiding the practice of unknown effects practices over nature. It is better to not make 'gains' of such practices, than to deal with their further negative impacts which is calculated to be at least double costly in later stages.

thuringiensis (Bt) gene to the corn, they have the power to collect earnings from these seeds. Similarly, it could be disputed that the work that Mexican peasants have done over thousands of years to generate a diversity of nearly 23,000 varieties of corn seeds is not an intellectual work. A patent on seeds becomes the mechanism of exclusion from the food system and it prevents farmers from growing, distributing and producing knowledge. It denies them the right to save and exchange their own seeds which translates in a loss of freedom not only for farmers but for all people (Ibid, 2013a).

5. Reorganisation of Food Trade:

The system of food domestic production cannot be based on financial market speculations or as means of accumulating foreign currencies to pay international debts (La Vía Campesina cited in Pimbert 2008:44). It requires growing nutritional food as opposed to a commodity. Peter Rosset (2008) stresses the necessity of rebuilding more local-regional production-consumption food systems, as well as to restore the national grain reserves.

Douwe (2009) offers a perspective of different factors that might serve to analyse this pillar. He states that social identity and belonging constructed by relations among producers and consumers is at the centre of the process. This means that smallholder producers' locations and skills matter, as well as the distinction embodied in food that is transmitted to consumers themselves. The latter enriches their lives through acquiring, preparing, consuming and sharing distinctive products. Aspects to be taken into account are measures such as origin of food, proximity between location of production and consumption, quality, authenticity, freshness and specificity of products —associated with the way of producing, processing and marketing them. All of them articulate the

identity of producers and distinction embodied in food, which nurtures the health of people.

Ending the Globalisation of Hunger

This pillar refers to the cease of practices of multilateral institutions that support unequal conditions for free trade among nations—dumping practices. La Vía Campesina pushes clearly for including principles of ecological practices and social justice within the IFM and the World Bank, whose treaties undermine the food sovereignty of the global south. Food sovereignty is the right of peoples and their nations to define their agricultural policies (La Vía Campesina, 1993).

La Vía Campesina, formed by millions of smallholders, landless workers and artisanal producers, has been influenced by Latin American social movements (Sikkink, 1993). This can be noted in its decision to use 'sovereignty' as the main organisation's motto to reclaim accountability and democratic governance from nation-states surrendered to an international unfair trade system (Ibid, 1993). Furthermore, food sovereignty does not only reclaim accountability of nation-states, but it reclaims the rights of people to live in dignity and to recreate the democratic political realm. In this process, food sovereignty seeks re-gaining the value of real spaces and peoples who are systematically hidden, neglected and subordinated on their rights (Douwe, 2009).

6. Social Peace:

This pillar is related to restriction on using food as a weapon (Yap, 2012). Again, it emphasises the notion of food as a basic human right and a source of nutrition versus any other aim—capital accumulation, foreign debt payment or as a physical weapon itself. To some extent, food has been used as a source to

exercise power over small-scale producers expressed through the exercise of direct physical violence, forced displacements and migration of entire communities because of environmental degradation of territories due to unsustainable ways of producing food.

2.2.4 Limitations of the framework

As already mentioned, the pillars of the food sovereignty framework are complementary, therefore difficult to be practiced in isolation. For example, the right to food is not fulfilled if it implies the depletion of natural resources or if it does not recreate the democratic control of peoples. Under this perspective Yap (2012) identifies a main limitation to the food sovereignty framework: the lack of a clearer relationship among the different pillars. Indeed, he points out that linkages among the pillars and their feedback might be complex and therefore La Vía Campesina makes no explicit discussion on them (Ibid, 2012). Neither is the relationship between urban and rural farming discussed fully by La Vía Campesina. The priorities of food sovereignty have been focused on the rural aspects and Yap (2012) disputes the fact that rural small-medium scale peasants are united in La Vía Campesina without including a growing population of urban peasants around the world. “The harmonisation of urban and rural narratives regarding the global food crisis and an alternative future will strengthen the positions of all producers, through knowledge transfer, increase of political awareness and social cohesion” (Ibid, 2012:23).

Another issue that emerges with food sovereignty is the dilemma of long-trade distance. The industrialized way of production is intrinsically related to GHG (Green House Emissions), deforestation, extreme specialization, among others. Food sovereignty supports small-scale localised agricultural systems. These deliver carbon sequestration, increase of biodiversity and reduce of food

transportation. However, achieving a balance between these two types of systems might be the challenge. Crops such as coffee or chocolate might continue working under long-distance trade chains (as they are produced only in certain regions of the world) (Murray, 2015). What is more, some countries of the world are not food self-sufficient and need of imports to supply their food requirements. On top of that they will be the hardest impacted by climate change negative consequences (e.g. longer periods of droughts or floods). Therefore, the question of how to balance food security with a shift towards localized small-scale food production systems is a matter to be solved. Another concern that emerges with food sovereignty is the systems is not only about producing food, but also about reinvigorating or rebuilding the diverse diets and tastes of people. Urban and rural inhabitants have reduced the amount of foods they eat so it becomes more difficult to define what culturally appropriate is (Clapp, 2014).

Finally, another limitation of the food sovereignty framework is the way of measuring achievements of people working towards this aim. Even when specific pillars are identified, they are observed in qualitative terms rather than in progressive scales. This is due to the fact that food sovereignty does not have a unique definition, neither does each pillar. Pillars are seen as a reference to nurture local conceptions and processes to enhance local food systems. Along these lines, the food sovereignty pillars are a reference to visualise achievements of civil networks working to address the dominant food system and they are used to explain the actual occurrence of a given process versus defining 'how much' has been achieved. The aspect of identifying scales to measure and complement the understanding of the food sovereignty pillars might be a topic for further research and primarily data collection.

2.3 The evolution process and dynamics of operation of civil networks

The main aim of this section is to establish the analytic framework to observe the functioning of civil networks as well as to examine the most salient characteristics leading to the consolidation of their work and achievements. The structure of the section is divided into two main parts.

First, it seeks to understand civil networks' stages of evolution. This analysis is based on Pellings' work (2011) on social resistance organised in network structures to tackle issues of climate change adaptation. He identifies three stages: resilience, transition and transformation. By bringing other authors, these stages are detailed in terms of specific aspects such as levels of collaboration as well as types and target of actions. The transformation stage is the highest one according to this view, which is when civil networks increase their capacity to influence the dominant system on a larger scale. Nevertheless, a zoom is needed to pinpoint factors contributing to a turning point to bring the work of civil networks to higher levels of evolution.

The second part deals with understanding the salient features that contribute to the shift of the work of civil networks to a transformation stage. In doing so, different authors working on resilient ecological systems and social networks structures are analysed. Their views are brought together with perspectives on authors working on social collective change founded on a rights based approach and indigenous knowledge systems. At the end of this section six core elements that contribute to strengthening the civil networks towards higher levels of evolution are identified. These features help consolidate a process of collective learning.

2.3.1 Evolution process of civil networks

Based on viewpoints of socio-ecological systems, Pelling (2011) builds an analytical framework identifying three interrelated stages in the evolution process of civil networks. He describes this evolution process as a journey that increases potential for transformation of values, norms and institutions of the current dominant capitalist system (Ibid, 2011). Three stages are identified in his analysis: resilience, transition and transformation.

Baker et al. (2003) explain that resilience is the intrinsic capacity of socio-ecological systems to maintain their functions when dealing with shocks and stresses, which is critical in the adaptation process of complex systems. In addition, two other factors affect the process of adaptation of complex systems: adaptability and transformability. Adaptability is the capacity of social actors to influence resilience. It means that social systems have the capacity to undertake actions aiming at affecting the resilient level of a system. For example, humans can increase or decrease the levels of resilience of a food production system. If knowledge is generated to enhance the diversity of species within the production system in a multi-crop model of production, the system increases its capacity to resist when facing more severe and frequent climate change events such as drought and floods. On the contrary, if monocultures are grown, the system might decrease its resistance to same events. Finally, transformability is “the capacity to create a fundamentally new system when ecological, economic or social (including political) conditions make the existing system untenable” (Ibid, 2003:5). At this stage diverse groups of people located in different spaces and scales can influence rules, norms and institutions to bring about new practices and ways of living.

In addition to the previous viewpoint, Holing (2001) explains that complex socio-ecological systems can be trapped in maladaptive processes—known as rigidity traps. This means that the novelty, diversity and connectedness of a system become dominated by few levels of it. In social systems this has to do with power accumulation (Ibid, 2001). Biel (2009) explains how the capitalism system has been effective and complex enough to capture power and has got stuck in a rigidly trap, which he calls a parasitic stage of the capitalist system. In fact, he argues that crises of the system (e.g. financial crisis, natural disasters, peak oil, climate change, food crisis) are used as window opportunities for the powerful levels of the capitalism to further accumulate power. This has resulted in increased levels of vulnerability of the whole system (Ibid, 2009).

For example, inequality has worsen in the last 25 years; 2.8 billion people, or 46% of the world population considered as the poorest segment, receives only 1.2% of the worldwide rent, whilst 908 million, 15% of the world population, receives 80% of the worldwide rent (Barry, 2005). In the last 50-60 years, the pervasive effects of the private property have reached levels that go beyond seizing land and raw materials: privatisation of the basics for life, water, seeds, food, animals, plants and knowledge (Ibid, 2005).

Nevertheless, this panorama is not definite or unchangeable. Holling (2001) argues that rigidity traps contain their own seeds of destruction and at some point the peripheral levels (usually the most excluded ones) emerge to take over past functions, structures, values and feedback loops. He also emphasises that the current capitalist system has reached the point in which incremental management improvements are not enough to make the system resilient in many points of the planet, and we are inevitably entering into an era of transformation. Finally, in line with this view Biel (2012) claims:

Although the loss of cultures and bodies of knowledge from the past is perhaps irreversible, what is retained is an inherently human faculty for networking that can reconstitute differentiation and serve to rebuild society from the base (Biel, 2012:171).

Network based organisations represent a potential to counterbalance powerful levels of the dominant system (Castells, 2004). Pelling (2011) analyses the processes in which civil networks reach the transformation stage, at which, he argues, there is more window to influence change of the dominant system. The increase level of influence is characterised as follows:

- i. Resilience stage: characterised by isolated actors working on their own projects/objectives. At this stage individuals start getting stronger. This means becoming more autonomous (independent from political parties) and start generating knowledge for alternatives to development. Nevertheless, demands are still positioned on a survival stage (mainly economically oriented). E.g. reconstruction projects in case of environmental disasters. Projects are more reactive than preventive; neither do they challenge values of the current system as a whole.
- ii. Transition stage: characterised by more strategic and integral actions, bringing different actors to work together in networks. E.g. multi-level of actors from local to international, from diverse backgrounds such as gender, race and others. Networks grow in members and start working systematically toward specific collective aims. This stage start claiming rights versus just demanding support for "isolated projects" .
- iii. Transforming stage: diverse levels of collaboration and actors working together, whose coordinated work increases potential to influence transformation to achieve social justice. This helps understand how the

political, economic, social and cultural global structures affect localities and start generating strategies for change at all levels; human rights are focused on changing current structures rather than fighting for individuals rights. Security focuses on people and sustainable development⁸ rather than nations and armament. Transformation has to do with overthrowing current values/people in power who act on behalf of their interests versus the society at large.

Levels of collaboration of civil networks

Wheatley and Frieze (2006) propose specific levels of collaboration within the evolution process of civil networks: networks, CoP (communities of practice) and Syl (systems of influence). They argue that emergence viewed as the power to influence change only happens through connections, so even when individual actors (people, teams or organisations) work to promote change in their localities, nothing will change at a global scale. Global in this case means 'at a larger scale' , not necessarily the entire planet. They propose the following three-stage model that catalyses connection as the means to achieve change globally. The philosophy of this model is 'act locally, connect regionally, learn globally' (Ibid, 2006).

- i. Networks: its formation starts by discovering pioneering efforts (at individual, organisational or team level) and then searching for ways to connect them. These actions mark the formation of networks. Pelling (2011) argues that initial connections can be influenced by diverse factors, which will always be

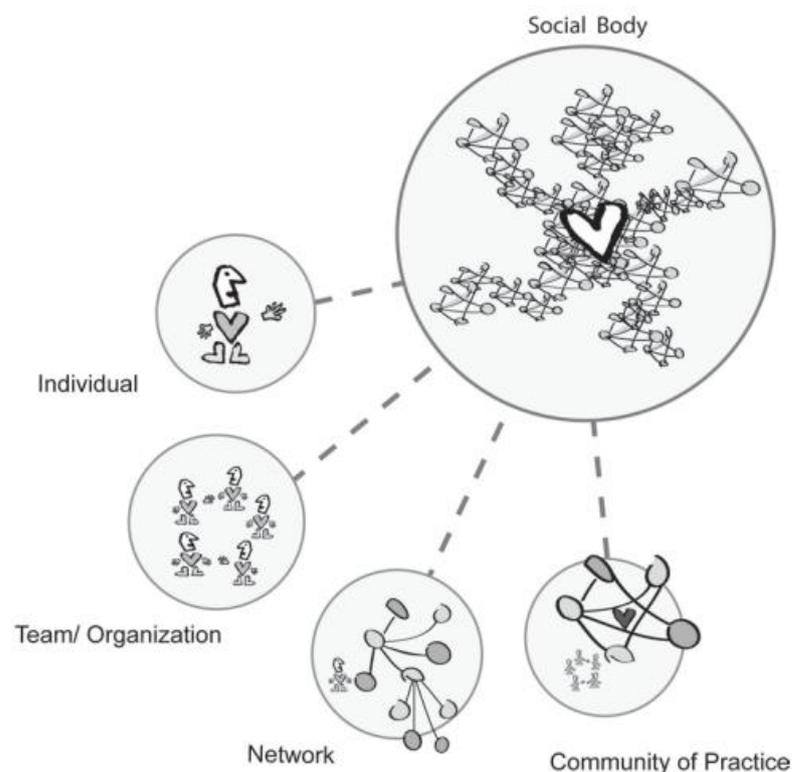
⁸ Sustainable development is the term that Pelling (2011) uses to refer to ecological practices. It is worth noting that this term is used within political ecology by power networks to introduce their own ways of adaptation and mechanism to accumulate power rather than to challenge current values.

related to achieving a higher goal that goes beyond individual interests and organisational objectives. Examples of higher goals include collective action to influence a policy change; collective organisation to overcome a crisis when a physical/environmental risks threat everyone or when an issue challenges the identity/culture of a community, like a forced eviction. The higher goal is what makes individuals connect and interact regardless of their social status, gender, race or any other difference. In the beginning, the process of connection is confusing and random; but as the process evolves, individual actors establish a network, which is just the initial stage of emergence. Networks are based on self-interest; this means that people network together for their own benefit. Networks are characterised by having fluid membership, people move in and out based on how much they personally benefit from participating.

- ii. Communities of Practice (CoP): When networks are conformed, diverse projects and new practices emerge and are executed in collaborative and resourceful forms by their members. During this stage new members are joined, relations are strengthened and new synergies emerge. Ultimately, a key characteristic of this stage is the formation of communities of practice (CoP). These communities are groups of people who systematise the work of networks; they are in charge of guiding process to share resources and knowledge, and leverage even further demands and strategies of the network. CoP are different from networks as they not only share a vision and resources to achieve a common goal but they also extend their work beyond the needs of the community group. They share their knowledge with a wider audience (networks, individuals or other communities of practice) and they generate bonds with other networks or CoP.

iii. Systems of Influence: In the third stage of the evolution process of civil networks emergence cannot be predicted. Emergence is characterised by the combination of different levels of collaboration (individuals, organisations, teams, networks, CoP working at different levels and spaces) in diverse actions. This stage is characterised by the unforeseen appearance of a system that has real power of influence. Pioneering efforts that hovered at the periphery suddenly become the norm. The practices developed by courageous communities become an accepted standard. Emergence is the fundamental scientific explanation how local changes can materialise as global systems of influence. This is an illumination process, in which a network of networks co-ordinately work and gain power to generate change at a larger scale.

Figure 3: Civil networks levels of collaboration



Source: Kaiten et al. (2010:10), based on Wheatley and Frieze (2006)

Finally, Wheatley and Frieze (2006) suggest that the different levels of collaboration do not imply a linear progression but rather an ecosystem of mixed levels participating at each stage of the network evolution process. Ultimately, this thesis uses three categories to identify the stages of civil networks by combining the perspectives of Wheatley and Frieze (2006) and Pelling (2011) as follows:

Table 2: The stages of evolution of civil networks

Authors	Evolution Stages		
Wheatley & Frieze (2006)	Network	Community of Practice	Systems of Influence
Pelling (2011)	Resilience	Transition	Transformation
Evolution stages	Network - Resilience	CoP-transitioning	Syl-transforming

Types and target of actions of civil networks

In the endeavour of understanding networks' dynamics of change, Pelling (2011) further identifies the type and target of actions of civil networks in each stage by performing an analysis of cases of network resistance around the world. This work summaries these learnings along the following lines:

i. **Network-resilience:**

Types of actions: During this phase Pelling (2011) suggests that most of the isolated actions prevail within the surviving scope. Namely, actions oriented to build alternatives to development while keeping livelihoods at individual levels. This approach does not challenge current values or jurisdictional, political and

economic mechanisms of the current dominant system. E.g. claiming funds for reconstruction projects that by large include self-management of projects to improve their food growing systems by using rainwater collection, soil restoration or multi-crop production systems, but at a small scale. During this phase spaces for collective learning or decision-making process are sporadic, random and at a local level to carry out projects.

Target of actions: The target of actions is usually oriented to governments or political parties who are still perceived as the main source to produce and legitimise change.

CoP-transitioning:

Types of actions: networks activate innovative alternatives projects at a more integrated level by coordinating and mobilising common resources. During this phase actions of networks evolve from isolated projects to the integration of projects that make them more strategic in their interventions. E.g. they move from isolated ecological agricultural practices to improving food supply system, linking production, distribution and consumption and nutrition of people. Additionally, the systematisation of spaces for critical reflection and learning at different levels is observed. Demands of rights versus funds are made to governments to start challenging current values (E.g. the demand for change of policies to have access to productive resources such as land or participation within the policy making processes).

Target of actions: Government and other bodies such as TNCs continue being a target of rights' demands, but social struggles start to centre its energy on empowering local communities as main agents of change.

Syl-transforming:

Types of actions: networks develop the ability to re-organise and re-establish functions, objectives and practices to contribute to change at a larger scale. A diverse set of actions can be seen at different levels, from alternatives projects in the local spaces to demand for rights or change of policies at national or international levels. Transformation should be perceived as a progressive process at all levels of the system. Furthermore, the context and perspectives of the observer determine transformation. Actions at this stage challenge and change the current system. E.g. a lobbying's work to change policies or values of society.

Target of actions: address anyone supporting/strengthening the current mechanisms of oppression. Civil networks continue empowering communities through diverse and systematised actions.

Table 3: Characteristics of the stages of evolution of civil networks

Stages	Network-resilience	CoP-transitioning	Syl-transforming
Levels of collaboration	Individuals, Organisations, Teams,	Community of Practice (CoP), Networks	Network of networks
Type of Actions (TyA)	<p>'Isolated' alternative development projects (E.g. experimental lands of agriculture multi-crops systems of production at a small scale)</p> <p>Sporadic spaces for work and collective learning (E.g. local assemblies, workshops)</p>	<p>More integrated, resources and alternative models of development (E.g. more localised sustainable food systems)</p> <p>Systematisation of spaces collective learning (E.g. assemblies at national levels at established times)</p>	<p>Responsiveness and diverse types of actions at all levels (E.g. coordination of actions on interrelated topics as food security, climate change, bio-diversity)</p> <p>Systematisation of work among diverse networks of networks (E.g. PTT or WSF processes)</p>
Target of Actions (TaA)	Government	Communities Empowerment; Government & TNCs	Communities Empowerment; any entity not promoting social justice

Source: Built by the author based on Pelling (2011) and Wheatley and Frieze (2006)

By bringing together the standpoints of Pelling (2011) and Wheatley and Frieze (2006) the main contribution to observe the process of evolution of civil networks is pinpointed. It could be summarised as the increased capacity to influence change at a larger scale based on the cumulative impact of diverse actions

coordinated at multi-levels of collaboration working on systematic spaces. Nevertheless, a major gap is identified in relation to this framework. It is related to the lack of discussion about what the factors might be catalysing the turning point for civil networks to shift from one stage to another. Moreover, Wheatley and Frieze (2006) argue that research of civil networks has been usually focused on the mapping of members' connections or identifying their organisational structures (e.g. core and periphery). This approach normally helps powerful actors attempt co-opting civil networks, although it is not the intention of the researchers. These authors also indicate the need of deeper understanding of reasons why civil networks evolve to higher levels of collaboration—which is the main objective of the next section.

2.3.2 Dynamics of operation of civil networks

Friedmann and McNair (2008) argue that we live in an era of transgression and co-optation, so dispossession of emerging alternatives is a common practice by corporations and states. Alternative ways of development are prone to fail; nevertheless, some are becoming resistant. It is important to understand the factors strengthening them in a sustained way. Furthermore, Sitrin and Azzellini (2014) explain that recent social movements around the world (from 2010 today), regardless their own struggle, share a common feature: they generate social transformation at local scales by experimenting direct democracies versus representative ones. It is in these local spaces where bottom-up democracies are implemented, which is a fundamental process to avoid co-optation of good ideas and people by the powerful entities.

In the endeavour of understanding deeper the key features of such local spaces where direct democracies are being created, different authors coming from diverse perspectives: social-resilient organisations, rights-based approach,

indigenous knowledge systems and new social movements are referred.

Armitage (2008) has consolidated a comprehensive list of diverse characteristics for civil networks to effectively operate according to authors working on socio-ecological resilient systems. E.g. multi-layered, interactive, knowledge pluralism, learning and trust. Furthermore, da Silva et al. (2012) also make an exhaustive analysis of authors working on resilience and distinguish between applicable characteristics—but unrestricted to infrastructure and technology (hard systems) and characteristics applicable to social system (soft systems). Hard systems are redundant, diverse, flexible and safe failure, whereas soft systems are interactive, multi-level, resourceful, networked, responsive, capable to learn, and characterised by knowledge pluralism. On addition, Kaiten et al. (2010) offer an additional angle by highlighting characteristics that construct a collective cohesive body in a sustained way—avoiding the likelihood of being prone to collapse or co-opted.

By making an analysis of all these characteristics (*See Appendix 1 for the detailed analysis and definition of each characteristic*), a common feature to all authors is identified as: collective learning. This process is referred to by the different authors as mutual learning and support, knowledge pluralism, capacity to learn and knowledge capacity (Friedmann and McNair, 2008; Armitage, 2008; da Silva et al. 2012; Kaiten et al. 2010) respectively. This salient feature can be understood as the process of supporting diverse actors learning together to produce collective knowledge, which is later converted into actions that generate spaces of social justice and/or environmental sustainability.

Another finding of this analysis is that most of all other listed characteristics are

focused on giving shape to this process of collective learning. Some of them are more directly expressed such as the case of Armitage (2008) who claims that 'trust' is a feature required for promoting true partnerships, collaborative arrangements and 'critical discussions to increase social capital and learning' . In other cases, the features are not so explicitly referred to contribute to the process of collective learning but the analysis evidences they are interrelated. For example, Kaiten et al. (2010:25) mention 'awareness' as a characteristic that needs to be developed among members of a civil network in order to increase their capacity to remain open to all sources of information and value the inputs by different members. Whole-awareness of the groups heightens the ability of the system to better process information and produce successful strategies (Ibid, 2010). Even when the process of collective learning is not literally mentioned, awareness highlights the importance of participants to absorb different sources of information (which are inputs for a process of learning) in order to produce resonant strategies (which can be seen as outcome of the learning process).

In addition to the previous viewpoints, other perspectives become useful to complement this analysis. One is offered by Herrera (2008) who argues that social changes can only be achieved thanks to a main driver: the development of spaces for critical and collective learning. In addition, Castells (2004; 2012) identifies features of operation of civil networks that are also valuable to this analysis (*See* Box 1 in Chapter 1 of the thesis). Finally, Fre and Dinucci (2003) shed light on a perspective on indigenous knowledge systems (IKS), which in general terms is understood as the knowledge used by local people to make a living in their specific contexts, which needs to be further supported (Ibid, 2003). Furthermore, this type of knowledge becomes relevant to the collective learning since it is an evolving learning process that requires diverse types of inputs, including traditional knowledge. All in all, six principle features are identified as salient and

common to all authors:

1. Collective learning as process and outcome
2. Relations based on mutual recognition and influence
3. Leaders as catalyser-facilitators
4. Diversity of meeting spaces
5. Networks as the organisational base
6. Participants—linking nodes, specialised knowledge and expert know-how actors

1. Collective learning as process and outcome:

By walking, we collectively ask questions, and in this way we move forward in our reflections and actions (Zapatistas, in Sitrin, 2006:86)

Herrera (2008) suggests the process of collective learning has as ultimate aim to generate social changes. The process demands that consciousness be created in people in terms of their own realities within a system of culture, politics, economic differences and jurisdictions. Furthermore, the process of collective learning also requires the inclusion of a wide range of sources of information to generate holistic perspectives as well as root causes of problems (Kaiten et al. 2010). The ultimate objective is to draw and target actions towards social justice, which needs a deep understanding of contexts, histories and power relations.

The process of collective learning is to produce social change (redistribute power within society). In doing so, generation of creative-innovative learning is required, which is to be translated in real alternatives on the ground (Herrera, 2008). Collective learning through consensus-based decision-making creates people themselves anew (Sitrin, 2006). Creativity and innovation can only emerge by bringing together diverse viewpoints. This type of knowledge cannot be

predetermined by universal prescriptions; in fact, this would imply the visions of a group of people imposing their own interests (Herrera, 2008). Collective learning is the result of recognising the value in drawing and building knowledge from multiple sources of information in a constant dialogue—inside out and outside in (Sitrin, 2006). These sources include knowledge by formally trained scientists, policy makers and managers, as well as knowledge generated by resource users—e.g. fishermen, hunters and peasants (Armitage, 2008). It also implies the inclusion of a critical analysis of sources of information at all levels. For example, including the analysis of international sources such as declarations and treaties usually help unveil unequal practices enforced by powerful networks. This also implies including in-depth analysis of local contexts and their histories to understand impacts of those treaties on the ground (Herrera, 2008) (Sitrin, 2006).

In addition, Fre and Dinucci (2003) widely explain that the indigenous knowledge systems have different positive aspects. IKS are efficiently diffused through generations by the communities themselves and are appropriated and adapted to specific regions or contexts that enhance the use and management of natural resources. The IKS systems are not from the past, but their methods and knowledge are continuously developed, improved, tested and adapted. What is more, this type of knowledge effectively includes local inputs, which are less costly and congruent with preserving natural resources of regions. Furthermore, IKS are sufficiently comprehensive, for example, in pastoral practices they include a wide range of veterinary cures as well as a variety of techniques to improve methods for animal' s husbandry. Additionally, these knowledge systems are open to external inputs in order to evolve and improve their methods on top of including 'occidental' perspectives where traditional methods might not be sufficient. Given this view, it is suggested that IKS require being enhanced by collective learning, as a process and outcome. IKS might be improved by modern

scientific approaches rather than substituting them.

2. Relations based on mutual recognition and influence:

The collective learning process implies an inclusion of diverse inputs; therefore it becomes relevant to understanding the type of relationships among participants. Relationships among members are to be based on mutual recognition and respect (Herrera, 2008). In building this types of bonds Kaiten et al. (2010) explain that raising awareness of the cultural context and the worldview by different participants is indispensable. In doing so, participants need present their own background and knowledge in relation to a groups' higher goal. Sustainable development requires complex understanding of problems and solutions. By highlighting that no single participant has the entire picture of a problem, neither its solution, increased awareness of the value of each participant' s input is generated (Ibid, 2010).

Relations among members also imply a mutually influencing relationship, either between two or more actors with different interests. In this process of influence, trust that is underestimated by conventional or top-down management is emphasised as a key feature. Trust allows building strong partnerships and collaborative engagements (Armitage: 2008). In the learning process "single, double and even triple-loops learning" are needed. This iterative process produces individuals with higher level of knowledge constructed with the others views, and therefore with higher interior capacity for further respect and incorporation of other participant's inputs (Ibid, 2008).

Furthermore, Herrera (2008) emphasises that the scientific-formal knowledge creates analysis, separation, individualism and competition. It also generates levels of superiority and inferiority where the 'superior' levels of knowledge are legitimised on the whole. This process of legitimisation of knowledge creates constraints in terms of building conditions of equality in a learning process. Therefore, the focus of the spaces for collective learning should not be on validating a specific type of knowledge or source of information, neither on pointing out the guilty. Rather, the focus is on questioning and scrutinising universalism, norms and values in order to favour the emergence and proposal of new ways forward (Herrera, 2008). Sitrin (2006:10) reinforces this idea by referring a Zapatistas' claim: "to create something different you need to go from below and to the left, where the heart resides" ; to what this author calls politics of love and trust.

Finally, on top of respect and recognition in the process of achieving stronger strategies and actions, Herrera (2008) proposes other principles in the collective learning process (*See Box 2*):

Box 2: Features of relationships within the collective learning process

- i. Recognition and respect for others—increasing awareness of each individual as part of a whole collective body in which everybody's inputs are valuable.
- ii. Reciprocity—giving back to people and nature what we take from them.
- iii. Responsibility—undertaking actions to inform a wider audience whenever damage has been produced to society or the environment. It also implies formulating solutions and actions to address the damage.
- iv. Redistribution—establishing jurisdictional rules as well as political and economic actions that support operating under more equality of conditions—this is what builds human dignity. Without equality of conditions there is no freedom; without freedom there is not equal development. Freedom understood as actions that recognise limits to allow others to exercise their freedom. The more we exercise our freedom, the more others do and the more we find mechanisms to co-exist.

Source: Build by the author based on Herrera (2008)

3. Leaders as catalyser-facilitators:

Moving from authoritative and top-down management is required. In collective processes of learning leadership plays a key role, in which leaders act as catalysers as well as facilitators of the process (Armitage, 2008). Having catalysers involves the presence of individual(s) with the ability to connect participants within the network (Ibid, 2008) in addition to the ability to sense and develop the group energy, commitment and trust around a shared goal (Kaiten et al. 2010). Castells (2012) refers to these participants as specialised nodes that facilitate and

guide the processes of decision-making and information flow within the group. He also argues that spaces of new social movements are to generate new democracies in which self-representation is at its core. Nevertheless, it does not exclude the need of relational and strategic guidance (Ibid, 2012). Moreover, he explains, few nodes of a network become more efficient to analyse/diffuse information. This makes them no more important than the rest of members, but needed to facilitate decision-making processes to take strategic actions (Castells, 2004).

Castells (2012) points to the existence of different methodologies that civil networks implement in their meetings to experiment horizontal consensus such as the use of symbols to make inclusive and effective decisions. Another common feature is the formation of committees—smaller groups of people to discuss diverse topics in depth and formulate strategies at lower levels, which then are brought about to the general assemblies to reach a final consensus. Another common aspect is the creation and assignment of roles that shift on a frequent basis. By and large, the most important aspect of these spaces is the balance of power relationships within themselves (Ibid, 2012) (Sitrin, 2006).

4. Diversity of meeting spaces:

Meeting spaces can take diverse forms, from international to local community or neighbourhood meetings and assemblies. These change over time according to peoples' necessities (Castells, 2012). In times of crisis, civil networks organise on daily basis to reflect and pinpoint actions. However, as the context changes, movements evolve to gather and work into other places and rhythms (generally more dissipated) at the neighbourhood level where the daily life occurs (Ibid, 2012). Civil networks can become systematic and focused on in-depth analysis or

can be spontaneous and confrontational. The latter types of occupations occur when visible power takes over people rights, one example was the Spring Social Movement that in opposition to the government of Cairo called for the occupation of Tahrir Square. As the context changed, the movement evolved and it remains visible in more subtle actions of women who became empowered and took leading roles throughout the occupation (Sitrin and Azzellini, 2014).

Finally, spaces vary from the more formal/visible ones to informal/invisible ones. The more visible ones are usually seen in workshops, assemblies or international forums, whereas the more invisible ones are at local scales, where the daily activities of people take place (Ibid, 2014; Castells, 2012; Pelling, 2011).

Just enough structure necessary to get a job done, no more...to allow information to flow and enable personal connections. Supporting meaningful rhythms for the group including face to face meetings, celebrations, periodic meals together, routine reflection and daily awareness practice is required to organise meeting spaces (Kaiten et al. 2010:25).

5. Networks as the organisational base:

Flexible organisations with multi-layered governance as well as multi-nodes and links play a key role in better coordinating people, improving information flows, synthesising and mobilising knowledge across the system (Armitage, 2008). Furthermore, a network increases distributive benefits and diffuses negative impacts. E.g. projects that are financially deficient become feasible due to the collaboration of diverse inputs, people and resources. In sum, the more connections are made, the more possibilities are created for innovative projects to emerge over time (Ibid, 2010; Armitage, 2008; da Silva et al. 2012).

Responsiveness is another characteristic of networks. It is related to the ability of a network to reorganise and re-establish functions such as the ability to acquire new nodes, sources of information, define new spaces of meetings or quickly identify where to allocate resources according to needs and where strategies have more possibilities to succeed. A network should become proactive rather than reactive (Armitage, 2008; da Silva et al. 2012).

Moreover, Sitrin (2006:56) appeals to *horizontalidades* (horizontalism) not as the organisational form, but as the process in which relationships are constructed with base on different values (such as reciprocity). “We struggle not only for the material things, but for togetherness and for creating relations between *compañeros* (members of the network) in which collectively we can forge a future with new values within our daily life” .

6. Participants —linking nodes, specialised knowledge and expert know-how actors:

As already mentioned at the beginning of this analysis, both the process of collective learning and the output of collective knowledge require a diversity of actors working together. It implies local and international participants with a diverse range of economic, social, environmental interests (Herrera, 2008; Armitage, 2008; Pelling, 2011). Armitage (2008) specifies the necessity to include formal scientific managers as well as resource users such as fishermen and peasants. Fre and Dinucci (2003) emphasise that ‘external occidental’ inputs to IKS became relevant and accepted by local people to enhance their ways of adapting such as in fishing or farming and their ways of living. When the process of enhancing IKS is carried out in an appropriate and inclusive manner, it might generate positive outcomes. What is more, Sitrin (2006) adds, a deep and

transformative knowledge is that one constantly linking both, practice and theory, and vice versa.

Along the same lines Castells (2012) notes that the potential and the desired state of the Network Society lies in a culture that does not consist of content but rather of process in which the sharing is the ultimate value. Global actors nurture local processes in order for these to move at their own pace (Ibid, 2012). The necessity of nodes facilitating and guiding the process was also highlighted in this section. Based on all these perspectives, three kinds of key participants are identified to promote a successful process of collective learning:

- i. Specialised knowledge actors: Whose central role is bringing information from national or international structures, frameworks, policies and other. E.g. treaties, neoliberal mechanisms and their impacts on diverse contexts. This information is provided by specialist professionals or scientists in a determined field. These actors act and learn from the global spectrum, but there are not restrictions in terms of their background. The key is to adopt a larger perspective to the learning process with an in-depth formation in a given field of knowledge (e.g. sociology, biology, politics and others). These actors are expected to support and facilitate the implementation of strategies undertaken by the entire group of participants. E.g. A lawyer can support a process to make a formal demand of rights.
- ii. Expert know-how actors: Two central roles are identified for these types of actors. One is to nurture the process of collective knowledge by sharing their local stories and contexts. E.g. peasants sharing their experiences on climate change impacts in their territories. Another role is to incorporate the collective learning (the output of the process) into their everyday life. These are actions

that transform realities of people and improve their lives in the long term, e.g. improvements in productivity of the traditional methods to grow food.

- iii. Linking nodes actors: these are the catalysers that promote trusting connections between specialised knowledge and expert-know how actors. They call for the process of collective learning and facilitate the conditions to carry it out.

2.3.3 Limitations of the framework

The first part of this chapter identified civil networks' incremental capacity to influence transformation at larger scales. This capacity is supported by three principal non-linear and interrelated factors. One is the increased level of systematised work (e.g. national or international assemblies), the second one is the presence of higher levels of collaboration (e.g. networks of networks) and the third is an expansion to manage diverse types of actions at all levels. The second part of the chapter consists of analysing the core of the maturation process of civil networks to shift to higher levels of evolution, rooted in a process and outcome of collective learning where direct democracy is exercised.

Even though all these features might result in a comprehensive framework of characteristics to consider when supporting civil networks concerned with similar issues or in other contexts, a limitation is observed. This thesis argues that a unique and less visible feature/s prevent civil networks from collapsing/being co-opted over time. Their spirit and essence is what makes them a counterforce facing the dominant system. Underlining such characteristics is the endeavour of the next part of this work.

Finally, all features of civil networks are to be measured in qualitative terms. This thesis aims at collecting evidence that helps broaden the understanding of a process of people working together rather than to quantify it (e.g. to understand what type of inputs are required to archive a collective learning process versus quantifying the number of people participating within the process). This is similar to the food sovereignty pillars; a further expansion to measure quantitate data might become a topic for future research (if required) to complement or detail evidence and findings in subsequent stages of this investigation.

2.4 The essence and spirit of civil networks to balance power in society

We live in the information era—as opposed to the industrial one—identified as the Network Society, whose structure and power are built on global networks powered by the microchip technology (Castells, 2004; 2010; 2012). According to this theory, power relations are the foundation of any society in which the ultimate aim is the control of people' s mind. In the end, shaping what people think dictates the character of institutions, values and the everyday life of people. There are different forms in which power can be accumulated and exercised within the Network Society. The most visible form is the 'networking power' , which operates under a binary logic of inclusion and exclusion. Either a territory/group of people are within the network because it serves their values and aims or they are out because it adds no value to it. E.g. Corporations and transnational companies allow for manufacturing processes to be flexible enough to move wherever labour and resources are the cheapest. This means that power networks change their boundaries of inclusion/exclusion depending on a particular agenda, benefit or opportunity for growth (Ibid, 2004).

Another type of power is recognised within the Network Society known as the 'network power'. It is related to the power exercised by actors defining the protocols of communication, rules, values and aims within a given network. Those who define these parameters act as the gatekeepers to decide who is included and excluded from it. However, it is difficult to fully determine who these individuals might be within the global Network Society are. The reason is the Network Society is multi-dimensional and there are networks of power in financial markets, transnational companies, distribution of goods and services, science and technology, communication media, religion, inter-governmental relations, criminal economies and others. All of these networks have their own ways of influencing power, but linked together is what shapes everyday life of any location (Castells, 2004:22). Ultimately, 'network power' does not stem from a single group of individuals, and this author proposes to examine more closely specific programmes and switches of the different networks of power.

Networks of power exercise power either through their own programmes (values, rules and aims) or through their switches. Switches are the linkages made among networks of power to enhance their power of influence to achieve their aims. This is called 'structural power'; according to Castells, this type of power is greatly accumulated and difficult to break. Examples of programmes and switches are as follows: absence and impossibility of an accurate evaluation of conditions (the programme) of the financial market allows it exercising power over economies of the world, subject to turbulences of information mechanisms. Despite that, the financial market is not totally free; it depends on political decisions-making. Likewise the political decisions-making depends on political processes, which ultimately depend on the media. The media depends on the global financial markets to advertise and also on regulations by governments. Therefore, not linear but circular process of power is exercised within the Network Society.

Domination is unified, but it derives from diverse networks: economic, political, scientific, and cultural. All of these networks of power are organised under their own programmes but relationships among them (switches) are constantly negotiated according to specific contexts and in sophisticated ways (structures) in order to exercise and legitimise power (Castells, 2010).

The ability to influence the conformation of new switches as well as to reformulate aims and values of a given network is called the 'network power making' (Ibid, 2010). To better illustrate this point the intellectual property is shown as an example. Transnational companies lobby the inclusion of rules to protect intellectual property versus the inclusion of environmental aims within forums such as the World Trade Organisation (WTO). Shiva (2013b) explains that in 1995 representatives of Monsanto⁹ positioned GMO patents as distinctive protections of TNCs to increase profits by expanding the business into seeds. This company has networked with different governments to modify rules in order to introduce their protected seeds ever since. They use processes that normally happen behind closed doors, claiming that GMO improve crops yields— 'a necessary intervention when dealing with an increase level of hunger people in the world' . Shiva also sustains that after twenty years of using GMO across the world, the productivity of food systems has not increased. The phenomenon we observe is the appropriation of the peasants' knowledge by the companies that now make revenues. Monsanto claims that by injecting a gene into a seed (e.g. the maize) it has the right to make profits when the seed they used has been improved by peasants throughout thousands of years (Ibid, 2013b).

⁹ Monsanto Transnational Company focuses on the commodity chemicals business and agricultural products.

Networks of power will generate as many switches as needed to achieve their aims. Newell (2009) elucidates this by introducing the concept of 'bio-hegemony power' for the same case of intellectual property rights for seeds. He claims that switches are not only made with states but with diverse actors such as universities in order to set up an agenda to encourage pro-GMO research or with policy-makers at all levels to position GMO as a source of benefit for society:

Power networks of corporations, scientific-experts, agrarian elites and policymakers promote and build consensus in favour of biotechnology...they become identified to promote their own interests in the 'common good of society' which is achieved through an alignment of material, institutional and discursive power in a way which sustains a coalition of forces that benefit from the prevailing model of industrial agriculture (Newell, 2009:38).

From this example, the WTO becomes the space in which dominant actors modify the established programme and; on the other hand, connections and mechanisms to ensure the influence of the programme in different localities become the switches which are trapped in structural arrangements such as policies, regulations, research agendas and others at local levels. Castells (2010) points out to the structural capacity as the most powerful way of exercising power in society. Finally, it should be emphasised that switches might differ in their ways but they all share a common characteristic: they are built on cultural material to generate discourses that shape the minds of peoples and their realities (Ibid, 2010).

Notwithstanding, this author argues that where power is exercised; resistance to it will always emerge. He calls to these resistances counterpower networks, referred in this thesis as civil networks. Their main objective is to reprogram the networks of power or to weaken their switches in order to redistribute power in society; this will depend on their ability to influence power at different levels and contexts. The following section discusses both, how civil networks might hit

networks of power more effectively and what essence and spirit make them expand and challenge the dominant system.

2.4.1 Civil networks versus networks of power

By compiling reflections on the evolution of Latin American (LA) new social movements Stahler-Sholk et al. (2007:11) claim the following: “In the era of globalisation and mobile capital, creating local political and economic autonomy without transforming larger structures may mean that problems caused by those powerful structures are simply displaced to other places not organised in resistances” . Furthermore, these authors also pose a fundamental question, “How much liberation can be achieved with mechanisms of power that seek to rule from below without actually taking power and utilising the state control to achieve their objectives? (Ibid, 2007:6). This is a fundamental question to be addressed in a world in which nation-states continue legitimising the power exercised by powerful networks. In drawing a possible workable way to answer such a question, this section brings together authors studying new social movements worldwide and with particular focus on LA: Sitrin and Azzellini (2014), Patel (2013), Castells (2012), Esteva (2010b), Stahler-Sholk et al. (2007), Gaventa (2006) and Slaughter (2004).

Castells (2004) insists on shaping the mind of people is the lasting and most powerful way of exercising power as opposed to physical torturing of bodies. In the same line, Gaventa (2006:24) expands on the idea by stating that power “is the structural capacity of the powerful to affect the actions and thoughts of the powerless” . In the words of Biel (2012), power can be seen in tangible terms as the capacity of some actors to control nature, people, knowledge and means of production. Finally, when discussing power, it is relevant to examine its nature. According to Liu (2011), power behaves like water which means, power does not

disappear or appear. Rather, power is a flow that can be directed and redirected according to the capacity of actors to do so. Power can be accumulated through a variety of compound actions that direct more power to where it is already being directed. Besides, power can also be frozen and prevented from being re-directed through the imposition of rules, norms and policies (Ibid, 2011).

Understanding the nature of power is important when visualising its redistribution in society. One way is by influencing the programmes toward different aims. For example by introducing aims of social responsibility within the WTO. Yet, powerful networks might co-opt them and use them in their favour. This is illustrated by the case of trans-national companies using social responsibility as a marketing strategy to expand their revenues in opposition to generating in-depth changes in their ways of operation (Castells, 2010).

Another is by weakening or breaking the switches among networks of power. However, Castells also explains that the only possibility of destroying a network completely is by having the ability to destroy all its connecting points; a network will find new connexions nodes and ways of adapting. On top of that, switches are where power is mostly accumulated and they are also more difficult to identify. Switches are not easily targeted actors but they are more abstract entities or strategies. E.g. Switches can be seen in ways of communicating ideas (a discourse) or in the kinds of products available on the market associated with specific ways of production. All of these are forms of exercising power difficult to evidence as they form part of our daily lives (Gaventa, 2006). She argues that power influences the place of people in the world, implying the shape of beliefs, sense of self and acceptance of status quo, which is perpetuated through a process of socialisation, culture and ideology. This refers as an invisible way of

exercising power, one which is difficult to observe and therefore difficult to hit (Ibid, 2006).

Additionally, Slaughter (2004) widens the previous perspectives by analysing the potential of a world governed by global networks. She points out networks as the way forward to balance power in society. Yet, the process is not confrontational among powerful networks and counter power networks. She argues networks are an ongoing process that is constantly built by the interaction of multi-stakeholder influencing one another. Aggregation of diverse actors allows participants of networks as well as to a wider audience of citizens to see features of the political, economic, environmental and other spectrums previously hidden. Therefore, governance in networks is the way that truly influences the change of behaviours, values and the everyday actions of people and it is proposed as the desirable form for global governance.

Furthermore, global governance in networks might reduce the tri-dilemma of government. Avoid top-down coercive decision-making processes, but still support a global interaction of actors to shape and unify goals and values (for example about human rights). Centralise processes to agree on global aims, but at the same time allow decentralisation of governance at local and regional scales where diversity of actors (nurtured by global knowledge and information) can shape their own ways of governance. Lastly, the global networks might start implementing by themselves transparency and accountability of processes. For example, nation-states continue being a medullar part of governance at national levels; but they will become accountable at global and local scales. This makes them to respond to wider sectors of society and goals. Lastly to mention is that international institutions such as the UN (United Nations) are not required to

disappear but they might become the hosts of processes for the global networks of governance (Ibid, 2004).

Associated to this idea, Patel (2013) indicates that in the endeavour progress towards global governance in which power is redistributed; nowadays, it is necessary to locate actions to hit power in a significant way. It implies of a constant understanding of the ways structural power is exercised as well as a constant definition and re-definition of actions. In this process it is needed of the inputs of several and diverse minds of people networking and thinking of the best strategy to be used when a crisis and an opportunity come by, which this author calls 'crisistunity' (crisis plus opportunity windows). This is the only way in which power accumulation can be redirected and history can take other pathways at present and in the future. He remarks that this endeavour sometimes is not immediate:

Getting to the point of making a change can take years of painstaking work, usually behind the essences by dedicated people focusing on nothing else. But when the moment does come, and the sunlight of public attention floods in, the most crucial decisions go one way or another depending on leaders' perceptions of the political consequences of each option. It is in these brief windows of tremendous crisis and opportunity that communities often make their mark. This requires of previous constant work, analysis, testing of ideas, quantifying and learning (Patel, 2013:1).

On addition, Esteva (2010b), Stahler-Sholk et al. (2007) and Sitrin and Azzellini (2014) claim that by creating viable economical alternatives to the global capitalism is the way of redistributing power in society, as well as by creating new ways in which human relate one another. Re-imagining and rebuilding everything that has been broken to build other possible worlds.

Stahler-Sholk et al. (2007) claim that alternatives to development such as fair trade and organic production, if not well connected through networks regionally or globally (by the social movement solidarity) they might not influence any larger scale transformation. Sitrin and Azzellini (2014) argue that these projects (ruptures of the system) are emerging everywhere, therefore it is becoming less difficult of link them together. All these projects are expressed in new ways of living (autonomous communal kitchens, health centres, schools, arts and cultural centres, assemblies, occupiers, etc.) by trial and error. Ultimately, it becomes a process of changing the values of society that are already being embedded in such alternatives to the mainstream way development. These ruptures progressively transform individuals who get empowered 'with others' versus the idea of taking over power. Mental structures of people are changed, which becomes the counter-force to the dominant system (Ibid, 2014), (Esteva, 2010b).

Castells (2012) points out that even when most people agree with new social movements' values and aims towards social justice as well as the withdrawn of the powerful forces, people do not see real alternatives that enable them to shift to other ways of living such as changing the type of products they consume or the type of work they do. For example, after several months of the M15 movement in Spain, a survey demonstrated that 80% of the population believed in the petitions and nature of the movement, but less than 10% believed the M15 could make a real change (Ibid, 2012). The author does not suggest, however, the necessity to build real alternatives where people can experiment new values and ways of living.

Based on the previous premises, this analysis summarises powerful actions of civil networks to hit and redistribute power exercised and accumulated by networks of power as follows:

- i. Actions to hit the structural capacity of networks of power: in order to generate powerful actions to hit switches of networks of power, a continuous and critical uncovering of closed and invisible ways in which power is exercised is needed. Actions need to be defined and re-defined in order to impact power's distribution dynamics in crisis windows. This includes actions at all levels that evidence and weaken switches in order to eventually change the pathway of decisions in benefit of the less powerful or to reprogram the network with other types of values (to those referring to profits and capital accumulation).

- ii. Actions to build viable alternatives to the dominant system: actions to develop autonomous linked alternatives (independent from the current dominant institutions) need to be constantly tested and subject to improvement. These alternatives are to be shaped according to local contexts—there is no such thing as a unique alternative but they are based on local peoples' necessities and availability of resources. Global/broader perspectives are expected to nurture the local processes, namely, local alternative grow connected to global processes and actors. Finally, alternatives to development are influenced by the value of sharing and become experiments of power re-distribution within themselves.

Gaventa (2006) affirms that no single strategy will be effective to redistribute power; multiple strategies that increase potential of networks are needed. The future history of society will be told according to how the process of unfreezing power accumulation takes place; a process in hands of today's social movements.

2.4.2 Essence and spirit of civil networks to succeed

Stahler-Sholk et al. (2007) insists on questioning how the characteristics of new social movements, mainly showing separation from the state and more horizontal ways of decision-making can truly empower people from below. They also point out that beyond specific victories or horizontal ways of organisation (in networks); the essence that makes them succeed is the diversity of actors joined by a 'communal identity' .

The effectiveness of attempts to construct new social subjects depends on whether opposite and diverse actors build community and collective consciousness so that the perceived commonalities of interest are transformed into durable alliances (Ibid, 2007:11).

For example, the Brazilian MST joined landless peasants and urban slum dwellers; the Argentine *piqueteros* brought together members from the middle class, the workers, the unemployed, and other urban poor; and the Mexican Zapatistas appealed to all those "on the left and at the bottom" (Stahler-Sholk et al. 2007). The key point in all of them is the building of a communal and collective identity and consciousness beyond their diverse identities such as race, ethnicity, gender and places of origin. This communal identity glues members within the movement regardless of their diverse contextual forms of resistance and their geographical dispersed locations that generate difficulties for mobilisation, communication and interaction (Ibid, 2007). Finally, as the authors point out, the formation and preservation of the movement require specific subcultures, which this thesis calls the need of a profound 'essence and spirit' based on the recognition and ability of leaders to develop solid local knowledge as well as its reconceptualization.

Furthermore, authors analysing features that make new social movements come together, specifically to youth generations (from 2010 to today), also agree on a shared communal identity that is based on a shared vision of creating a live worth living together with direct democracy (Chang, 2016). This common identity makes people to identify each other (in the beginning); however, the social integration and iteration through time is what translates this common identity into a meaningful life for the members. It makes them to avoid being co-opted and succeed over time (Benski et al. 2015). Other factors make youth civil networks to glue: emotions and the perception of collective achievements for a socioeconomic transformation. Emotions oscillate among anger, frustration, dissatisfaction and anxiety facing a system that is offering less and less opportunities for a decent job. Additionally, the perceptions of gains vary from the self-transformation of individuals within the movements to important impacts on public opinion and on structural changes that benefit to the claimers (Ibid, 2015).

Assessing outcomes of new social movements might be soon to do. Yet, what is true is they are downplaying the ideological order to draw a larger base of support, being inclusive and encouraging greater participation and engagement of diverse and 'opposite' actors (affiliated to diverse groups and parties). It is leading to reframe ideological references at a global scale (Ibid, 2015) (Chang, 2016).

By linking the previous perspectives with insights into movements in Mexico (where the case study of this thesis is located) working on food sovereignty, and more specifically, against GMOs, this section implies that the 'essence and spirit' is linked to the construction of communal identities among 'opposite' actors.

McAfee (2008) and Gaalaas (2014) agree that Mexico struggle against GMOs is beyond environmental agenda or food production issues, but it is the symbolic struggle to define another type of development for this country. Arguments to introduce GMOs, specifically GMO maize in Mexico, cannot be built without considering the variability of natural environments where this crop is cultivated, much less without taking into account the peasants who cultivate it. They produce 80% of the maize that is consumed in Mexico by using traditional ways of maize production and by preserving and enhancing the thousands of varieties of the seeds (Gaalaas, 2014). In sum, technological arguments cannot take over cultural and societal aspects, as it would deny the existence of a diverse culture and the people of this country. The struggle for maize is beyond GMOs, but it is a struggle in defence of culture and people of Mexico (NDM, 2012).

Furthermore, Esteva (2011) puts forward the argument that *criollo* maize cannot be erased from Mexico, not only does it feed people, but it is also a symbol of the dignity of the Mexicans. He introduced the motto *Sin maíz no hay país* (Without maize there is no county') in his book under the same tittle. He explains that cultivating maize is a political position facing a dominant system systematically deteriorating the dignity of the peoples. Therefore, defending the maize is defending these people, their cultures, rights and territories. And more than this, defending maize is a way of recreating and constructing alternatives to development under other values, those ones aligned with *Buen Vivir* (The Way of a Good Life), a term coming from Latin America indigenous communities to re-conceptualise the current development paradigm.

Maize is also intrinsically linked to peoples' identities. The *Popol Vuh*, a sacred book on the origin of the most outstanding Mesoamerican cultures, such as the Mayan, put into words the myths and narratives from the Latin American ancestors. This describes how the people from this region of the world were

made out of mud soak and wood; but these first human did not have souls or minds. In late stages, gods used maize to create Balam-Quitze, Jaguar Night, Naught, and Wind Jaguar who populate these territories. These were the men made of maize who represented the origin of Latin-American civilisation, whose values remained in indigenous communities. Maize represented the intrinsic way in which humans related symbiotically with Gods, Earth and nature; respecting one another to live in community.

Ultimately, this thesis argues that the source and spirit of civil networks goes beyond the more apparent mechanical ways of operation such as stages of evolution and specific characteristics of operation. The essence of civil networks to face networks of power is based on the construction of a common identify among diverse and 'opposite' actors founded on the possibility of constructing other possible worlds in which they recreate dingy of lives. In this case maize becomes the symbol and glue of the struggle, but the ultimate aim is the construction of new values and spaces for real people where dignity is practiced in the everyday life. In words of Sitrin (2006) dignity is the recognition of each's individual own value as well as the equal value of the others.

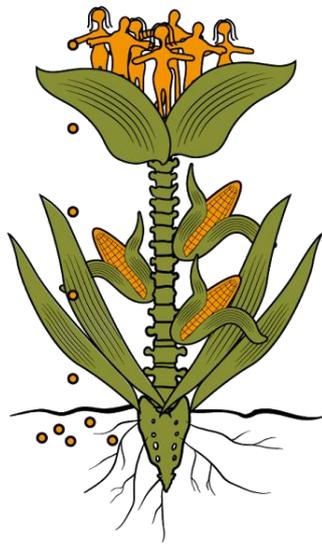
2.4.3 Limitations of the analytical and theoretical framework

Observing civil networks nature and features is not a linear or single-source based process. Therefore, it requires a comprehensive and critical methodological approach to examine such features during the field work. A multi-instrument research methodology needs to be developed to obtain insights from different sources in order to do triangulation and systematic analysis of findings. Furthermore, not all the so-called new social movements belong to this type of civil network; therefore, a refined strategy to identify the appropriate case study

also needs be developed. In fact, in recent times—over the past two decades, some political parties claim to become progressive social movements as the case of the PRD (the Party of the Democratic Revolution) in Mexico (Stahler-Sholk et al. 2007). Nevertheless, PRD is still subject and part to political parties that is not in line with civil networks key features.

An ultimate goal of civil networks is the change of values and the shaping of minds of people to see transformation of the dominant system at larger scales, which is a slow process. It took years to rid of ‘formal’ colonialism, but at the end it changed (Shiva, 2013b). Others forms of colonialism have taken place, for example, GMOs is a form of domination of peoples and a devastating mechanism to the environment, only taking place in the past 20 years. Yet, GMO will also be finished, but it may take few more years to observe this (Ibid, 2010). The struggle will never end, but in order to comprehensively observe a transformation on larger scales it may take more than a few civil networks’ dynamics. Under this perspective it might become difficult to observe, for the time being, tangible outcomes of civil networks on the grounds. Nonetheless, this framework is a useful guide to examine case studies working on these issues to obtain further insights into the nature of civil networks.

Chapter 3: Research methodology

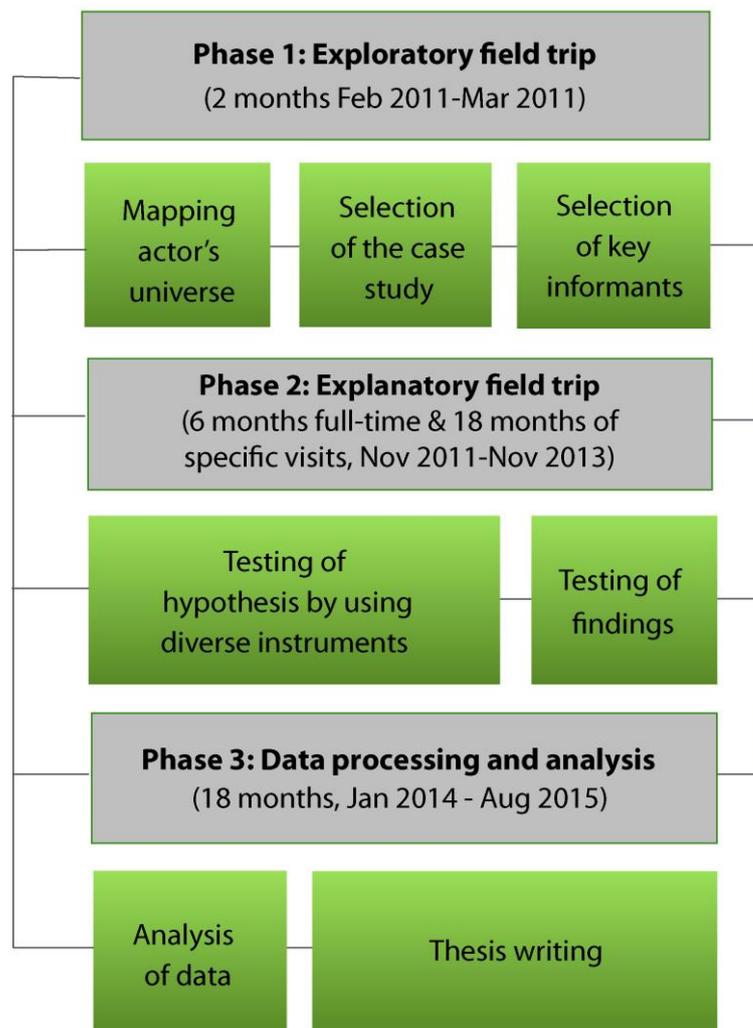


A field trip to Mexico

3.1 Introduction

This chapter explains the research methodology encompassing the phases, steps, method and instruments used to explore, collect, process and analyse the data gathered in the field. This research was carried out in three phases: an exploratory trip to delimit the case study, an explanatory trip to prove/disprove the thesis' hypothesis, and finally, the data processing and analysis. The chapter is also divided into three parts, each of them explaining the different steps, methods and instruments used during each phase.

Figure 4: Phases of the research methodology



The first phase of the research, the exploratory trip, encompasses three steps: the mapping and characterisation of the actors' universe, selection of the case study and the identification of key informants within the selected case. A total number of 50 actors were identified during the actors' universe mapping process, out of which 39 were interviewed in order to proceed with their characterization and with the selection of the case study. Three different groups of people were characterised as potential case studies: the Network in Defence of Maize (NDM), the Campaign "Without Maize, there is No Country" and the National Crusade against Hunger. One case was selected—the NDM. At the end, an identification of key informants within the NDM was made. The method used in this phase was in two forms. One was a maximum exposure to forums, presentations, meetings and assemblies where to meet actors working on food sovereignty in Mexico. Another was a trip to five states in Mexico, where groups of people/communities working on food sovereignty were identified during literature review and interviews during the mapping process. Three instruments were used to gather and organise the data of this phase. A semi-structured-interview was utilised for the mapping of the actors' universe. An analysis of these semi-structured interviews was made to do the characterisation of actors and the selection of the case study. Lastly, literature on new social movements in Mexico as well as food sovereignty was examined in order to complement the final selection of the case study and the key informants.

The second phase, the explanatory field trip, was focused on proving/disproving the three main hypothesis of this thesis through exploring the spaces and the dynamics of operation of the NDM. Two main steps were taken to collect data during this phase: one to prove/disprove the hypothesis of the thesis and another to obtain feedback on the previous data. In doing so it was fundamental to 'become part of the NDM' (for a period of approximately seven months full

time and itinerary over two years) in order to closely observe both, apparent and less visible forms of operation of the network. A main method employed in this phase was participant observation, which implied attending and actively listening/taking notes at meetings, workshops and assemblies of the NDM. Another was participant residence in three organisations of the NDM—at local, national and international levels of operation. This method implied helping with specific duties of the organizations to better understand their ways of operation and their decisions-making processes. Participant observation (residency) enabled to establish meaningful and trustworthy conversations with members of the NDM as well as to pinpoint those less visible features that enable the NDM to achieve their accomplishments. The main instrument during this phase was the use of in-depth interviews as well as a series of less formal conversations held with key informants during the residency period. Another instrument was the construction of analytical charts (based on attributes of Chapter 2 of this thesis) as well as the use of the NVivo software to process the collected data in interviews and conversations. The analysis was supported by a systematic review of secondary data such as publications by members of the NDM.

Finally, the phase of data processing and analysis was based on a constant and iterative comparison between the field trip data collection and the theoretical and analytical framework of this thesis. It was also based on triangulating of data between secondary sources of information, data from formal interviews and the analytical notes taken during the participant observation process. After examining insights and lessons from the field trip data, I proceeded with the overall composition of the thesis.

3.2 Exploratory field trip: delimiting the case study

As an 'outsider' in my own country—Mexico—, after living and studying in London, UK for nearly four years, my first approach to delimit the case study was by identifying key authors working on the topic of food sovereignty and new social movements in Mexico. This literature on the topic did not direct me to a specific group of people, region or social resistance. Nevertheless, it was remarkable that different authors: Rosset (2008), Esteva (2010a) and Otero (2008) emphasised that Mexico, like India and Brazil, was a place with the strongest social movements fighting for changing the oppressive food system in the world. They also pointed to the emergence of alternative food systems constructed in response to the severe world food crisis and the imposition of neoliberal policies in the country. With this perspective in mind my first field trip to Mexico (February, 2011) was organised to start delimiting the case study. The main objective of this visit was to map the universe of actors working on the topic of food sovereignty (a total of 50 actors were mapped—See Appendix 9). The following year my second exploratory field trip was carried out, which allowed me to do the final selection of the case study as well as the identification of key informants. The detail of the method and instruments used for this exploratory trip are explained as follows.

3.2.1 Mapping of the actors' universe

The first two semi-structured interviews held in Mexico were with two key authors highlighting the existence of strong social movements in Mexico: Gustavo Esteva and Petter Rosset, both living in the south of the country, in Oaxaca and Chiapas respectively. These are two of the ten poorest states of

Mexico. Gustavo Esteva is an academic, activist, co-founder of Unitierra,¹⁰ Oaxaca and author of articles and books on the bottom-up resistance in Mexico influenced by the Zapatista movement. Petter Rosset is also an academic, activist and member of La Vía Campesina International Organisation; he has written several articles on food sovereignty. The reason why I held conversations with them prior to the field work was to incorporate their feedback in the structure of my posterior interviews based on their experience in studying social movements and on the other hand, they could direct me to actors/groups working on food sovereignty—organised as civil networks in Mexico.

Following these initial conversations it became evident that it was not an easy task to delimit the case study. Neither Gustavo Esteva nor Petter Rosset directed me to a particular case, organisation or community of actors working on food sovereignty. Rather, they pointed out different organisations that defend traditional ways of cultivating maize in Mexico. Moreover, they explained that these organisations normally do not work under the umbrella of food sovereignty, but under larger visions such as the one of the Zapatistas who claim that *Otro mundo es posible* (Another world is possible) or the vision of *Buen Vivir* (The Way of a Good Life) that many communities and organisations in Latin America have adopted against the mainstream way of development. Finally, they mentioned, some organisations work together on a systematic basis on the defence of maize, although the struggle goes beyond defending a food system. It is more complex, it also implies defending territories where indigenous communities inhabit from an increased encroachment due to projects in energy, mining or dams.

¹⁰ A community centre located in Oaxaca City where people can learn how to improve their lives. The idea of Unitierra is to set up the conditions for apprenticeship; one of the main topics is urban agriculture.

On the other hand, the process of mapping the actors' universe resulted relatively easy—without considering time or resources to travel to different locations in the south of Mexico. A significant number of people and organisations working on topics related to food sovereignty were mapped over a short period of time (50 organisations in a month). Furthermore, a total of 23 semi-structured interviews were arranged over a period of a month thanks to being directed from one actor to another regardless of their geographical location. The actors know one another mainly for two reasons. Either because they have identified other actors working on similar concerns or because they have collaborated in common projects. Collaboration was observed in three principal aspects: knowledge sharing to improve ecological practices to grow food, resource sharing to implement appropriate technologies (e.g. rainwater harvesting) and working together to make lobbying.

It is worth noting that food sovereignty was useful during the mapping of actors as a wide reference to identify an ample range of people and organisations working on several topics to improve the conditions for food production. For example, access to land or water, improving ecological and traditional agricultural practices or influencing the current food/agricultural policies (*See Appendix 9 for detailed organisations' activities*). This is aligned with the food sovereignty framework, as it is conformed and achieved by interrelated pillars.

The 50 mapped actors were geographically located in different states of Mexico—Oaxaca, Chiapas, Veracruz, Guanajuato and Mexico City. A total of 39 semi-structured interviews were carried out throughout the first and the second field trips made to delimit the case study (*See Appendix 5 for the semi-structured interview*). The semi-structured interview was used with the objective of categorising actors in relation to specific criteria extracted from the key features,

outcomes and challenges for civil networks summarised in Box 1 of Chapter 1 of this thesis (based on Esteva and Castells).

These criteria are listed below:

Features:

- i. Multi-nodal flexible organisations: difficult to be co-opted by the state, as they organise and reorganise through a diversity of multi-level links.

Criteria: to observe presence of members working together at different levels: local (L), national (N), or international (I) with no formal membership. Also, to observe the type of work they do together such as: sharing learning, sharing resources for projects and/or lobbying.

- ii. Formed by autonomous individuals/organisations (from the state/political parties): actors coordinated by their own flexible flows of communication, visions, contents and resources.

Criteria: to identify actors working autonomously in political and financial terms from political parties or other bidding organisations/affiliations that might influence their agendas. In the case of the financial aspect six sources of income are to be examined: INGOs, national NGOs, government (G), self-productive activities (Self), private funding (PF) and others (O). In the political aspect, the membership or link to political parties/international governance institutions are to be scrutinised (e.g. UN, World Bank or other).

- iii. Use of symbolic public spaces to show resistance: actors meet in flexible ways as different contexts and needs demand.

Criteria: to identify participation in resistance held in public spaces, either systematically or randomly with the aim of food sovereignty or a related topic.

- iv. Use of spaces for dialogue as experiments of direct democracy: characterised by self-representation of people.

Criteria: to identify actors' participation in spaces of collective learning, either systematically or randomly where people represents themselves versus a leader representing them.

- v. Use of spaces to generate collective learning: that is transformed into alternatives to development and visions of the world that challenge the dominant system.

Criteria: to identify if projects that work on individual bases emerged from spaces of collective learning (assemblies, regional meetings, workshops, etc.)

Outcomes:

- vi. Changing of mind and values of people in the long term: organisations aiming at social justice and ecological practices
- vii. Building of alternative to current dominant form of development in the grounds: viable economic and ecological practices.

Criteria: to identify the mission and objectives of the individuals and/or organisations as well as categorise their projects under the pillars of food sovereignty. The activities or projects are also to be categorised under productive, knowledge generation or lobbying activities: lobbying (L), productive (P) improving ways for producing food and research/education (R/E) to increase actors' knowledge.

Challenges:

viii. Building switches among diverse civil networks for social justice: networks of networks working together, linking diverse topics such as preservation of environment, human rights and other.

Criteria: identifying diverse type of groups or organisations (interests, background, type of knowledge, membership) working together. Linkages among academics, researches and producers (collaboration between global and local actors) are also to be examined.

The analysis of the 39 semi-structured interviews is presented below. The first round of 23 interviews was held primarily during the trip to Oaxaca, Chiapas and Veracruz. The second round of interviews was held in Mexico City during assemblies, meetings and workshops. The number of interviews, either in the first or the second round was not based on quantitative terms, but on qualitative analysis whose main purpose was the delimitation of the case study.

Characterisation of the actors' universe: first round of 23 semi-structured interviews

In relation to the activities the organisations do, it was found that the principal activity was based on productive projects versus lobbying or education/research

(80% of the interviewed organisations are dedicated to food production). 55% of the individuals produce food in cities (e.g. in gardens or houses) and 45% in rural areas. These numbers show that the topic has become equally important in rural as well as in urban contexts. Different organisations mentioned that the food issue has gone beyond the rural areas; it is shifting to urban locations where the access to nutrition and sufficient food is limited. Furthermore, 75% of the organisations identified contribute with one or more of the pillars of food sovereignty. The pillars of highest incidence were: food as a basic human right and protection of natural resources.

In relation to the level of influence of their work, from local to international levels, results show the following numbers. 70% of the projects were carried out at local levels. The remaining 20% and 10% were held at national and international levels, respectively. By local level, actions impacting the local spectrum are understood—e.g. one or various communities in a region. National is when one organisation works with diverse communities or regions. International is when work is normally aimed at influencing at national or local level, but organisation works with actors from the international spectrum. It is worth highlighting that all the organizations affirmed to have worked in collaboration with at least another organisation with similar types of activities or objectives, either locally or internationally. Indeed, 80% declared to have an international linkage, even when most of their work is held at local levels. Nevertheless, when asking about experiences of working on a systematic basis with other actors (e.g. periodic assemblies or workshops) very few (4 out of 23) answered positively to this aspect. An even smaller portion admitted to meeting in public spaces to show open resistance with other members.

The background of the interviewed actors was found to be widely diverse, ranging from activists, journalists, researchers, academics, indigenous people and peasants. All of the interviewed individuals admitted to working autonomously from political parties. Their resources are obtained from diverse sources—with the exception of the government. The highest source of funding is from INGOs and self-productive activities (e.g. production of food), accounting for 56% and 47% respectively.

A final question was added to identify the period of time in which the interviewed actors worked on the issue of food sovereignty (aiming at assessing the extent and depth of their knowledge and experience on the topic). Most of the organisations were established as formal NGOs during the past decade—2000s onwards. The remaining 25% started their operation during the 1990s.

One of the most significant findings of this analysis is that these organizations have a rather local impact that is mainly oriented to food production. It has an impact on food as a basic human right and protection of natural resources (as food production is under ecological practices), according to the actors' perspectives. It can be concluded that the organization's work contributes to the construction of food alternatives to the current dominant way of development; although at this stage their work impacts only at local 'isolated' spectrums versus larger scales. This is not to say that the work is not relevant, neither is the perception of the importance of working with higher levels of collaboration (e.g. international or national scales). On the contrary, all of the organisations admitted to having worked with other actors at different levels to achieve objectives, yet not on a systematic basis.

In sum, no identification of a visible civil network was made at this stage of the actors' universe mapping process. Another point to remark is that most of the organisations working on the topic of food sovereignty were established in the last ten years. This is not decisive but important to observe deeper features in the evolution process of civil networks. Finally, it is worth mentioning that I could observe an easy flow, going from one actor to another. It was like navigating within a network of actors who are not formally organised yet, but connected according to similar topics, projects or personal synergies. A feeling of mutual recognition and a spirit of 'togetherness' were perceived during this field trip in spite of not being able to identify a clear group of actors specifically formed as civil networks.

Characterisation of the actors' universe: second round of 16 semi-structured interviews

The second round of interviews was held in Mexico City by a maximum exposure to diverse types of meetings with actors working on food sovereignty. These included book presentations on food policies, national assemblies and public press conferences of the Network in Defence of Maize, workshops on food sovereignty organised by the Campaign 'Without maize, there is no country' and other public meetings such as the presentation of the UN rapporteur on food security held in the UN Mexico office (*See Appendix 7 for a detailed list of events I attended as a participant observer*). A total of 13 days were dedicated to attending these events in February, 2012. The frequency of events shows the high profile of the topic in Mexico at present.

A different perspective emerged from the second round of interviews, which helped finalise the characterisation of the actors' universe. The main insights from this analysis are summarised as follows:

In relation to the types of activities undertaken by the organisations, they all recognise—although not always explicitly—that their work aims at food sovereignty. Food as a basic human right and protection of natural resources were the two most recognised pillars to which organisations contribute. 50% added a new pillar on which they focus their work: indigenous rights. A main difference with the past round of interviews is that in this case 63% of the organisations dedicate their efforts to research/educational projects versus production of food, even though the research/educational projects are to increase the food production capacity of peasants or the improvement of ecological practices on the ground. In this sample, only 12% of the organisations dedicate their efforts to food production whereas 25% of them, to lobbying activities.

In relation to the level of these organizations' actions, it became evident that they are more concentrated in international and national spectrums. Indeed, 88% of the interviewed organisations were working at national and international levels, whereas in the previous sample 80% were working at the local one. For example, they carry out research on the impact of neoliberal policies in Mexico and other countries at international level in order to support claims and projects of peasants' communities —this is the work of CECCAM NGO in Mexico.

In reference to the background of participants of these projects, it is also widely diverse, including activists, journalists, researchers, academics, food producers and indigenous people. Nevertheless, a notorious difference between this sample and the previous one is recognised. These actors pointed out that they are collaborating with other organisations on regular or more systematic basis. They agree on sharing meeting spaces for the analysis of issues related to food system

such as the workshops and national assemblies of the Campaign 'Without maize, there is no country' and the NDM respectively.

Similar to the previous sample, all interviewed organisations work autonomously from political parties; and 80% obtain resources mainly from INGOs. There is a slight difference with the previous sample where most of the projects were productive and an important source for their funds of 47% was based on their own productive projects.

Finally, 80% of the interviewed organisations started formal operations during the 1990s. It is another difference from the previous sample in which the number was exactly the opposite; almost 80% of the organisations initiated their operation in the 2000s. The average age of this group of organisations (mainly working on research projects) is 20 years, the double compared with the organisations working on productive projects.

The main insight from this analysis is the emergence of visible spaces where actors meet for collective sharing of knowledge or actions on a more systematic basis. In fact, three different groups of people were identified according to either an expressed membership or observed spaces of periodic meetings. These groups of actors are: the Network in Defence of Maize, the Campaign 'Without maize, there is no country' and the National Crusade against Hunger. They meet to discuss food-related issues (e.g. food prices increases), climate change, GMOs, environmental devastation concerns, among others.

3.2.2 Selection of the case study: The Network in Defence of Maize (NDM)

By characterising each of the three identified groups of work, a clearer delimitation of the boundaries for the case study emerged. This delimitation was made by crosscutting data from semi-structured interviews and secondary sources of information such as: literature on GMO's resistance in Mexico, new social movement literature and academic research (e.g. a PhD thesis analysing the differences between the NDM and the Campaign 'Without maize, there is no country' provided by Peter Rosset). Their work focuses mainly on:

1. Campaign 'Without maize, there is no country' : Lobbying in opposition to the legal entrance of GMO maize
2. Network in Defence of Maize: Strengthening the development of alternative food systems and rights of indigenous/peasants communities
3. National Crusade Against Hunger: Following up of governmental projects carried out by charity organisations

A more detailed characterisation is summarised below:

1. Campaign 'Without maize, there is no country':

The Campaign was launched by a group of organizations that formalised in 2007. It is formed by different actors who participated in the biggest peasant demonstration held in Mexico in 2003: El campo no aguanta más ('Mexican fields cannot take it any more'). They came together with the objective to analyse common strategies to defend peasant smallholders' markets. Over the years, they have become more focused on lobbying against the legal entrance of

GMO maize in Mexico. The group is mainly formed by NGOs, from local to international levels: Semillas de Vida (Seeds of Life), Green Peace Mexico, GEA (Group of Environmental Studies), ANEC (National Association of Commercialisation Enterprises of Crop Field Products), Fray Bartolomé de las Casas Human Rights Centre, FIAN and others. These organisations work on diverse range topics, from environmental issues mostly with a bio-diversity conservation perspective (such as GEA) to human rights and gender issues (such as FIAN and Fray Bartolomé de las Casas Human Rights Centre).

The specific work on food issues is divided into three main topics and organised in commissions: GMOs, Right to food and support to commercialisation of peasant smallholder' s products. The commission that works on a more systematic basis is the one focusing on GMOs, having monthly meetings to discuss strategies. Its main objective is to disseminate GMO threats in the public domain, mostly in urban areas where the issues are unknown. Public awareness campaigns include areas of human health, bio-diversity and peasant economy. They organise a yearly national celebration of the Maize Day (held each year on Sep 20th) where the motto 'Without maize, there is no country' is spread across Mexico and outside the country. This commission is confirmed by four NGOs: Green Peace Mexico, GEA, Semillas de Vida and ANEC that have shared a story of working together on lobbying projects since the early 2000s; mainly focused on demands against the Bio-diversity Law changes. GEA member has published books narrating how the process of changing bio-diversity laws in Mexico has been a closed-door process in which regardless of these organisations' claims to participate, the government has left them behind.

One of the Campaign' s principal achievements has been the incorporation of the right to food into the Mexican Constitution at the end of 2011, mainly led by

FIAN but supported by the other members. However, the Campaign 'Without maize, there is no country' claims that its main achievement has been the positioning of the Maize GMO issue in diverse agendas of work, from local communities to international levels (Interviews with Lara and Marielle from Green Peace and GEA Organizations, respectively, Mexico, 2012), which has contributed to slowing down the process of signing a final permission for the commercialisation and legal entrance of GMO maize in Mexico.

2. The Network in Defence of Maize:

The Network in Defence of Maize began its systematic work in 2002. The organizations that form this group have experience in working on topics concerned with food issues since the 1990s. During this decade peasants and indigenous people together with NGOs or academics started to work together to analyse the impact of neoliberal policies introduced in Mexico during that time. This type of work precedes the NDM formation. From this perspective the NDM has a longer trajectory of nearly 25 years analysing issues around the food system in Mexico. The NDM started at first as 'isolated' organisations working as small workgroups, and then as a network in the 2000s. They recognise themselves as a plural network that is characterised by their strong linkages between the bottom-up communities and local-international NGOs. They do not work on policy incidence as they are focused on reinforcing the cultivation of traditional maize varieties and strengthening assemblies and self-determination of communities to prevent spreading of GMOs in Mexico. The focus of its work has changed over time. Before the 2000s, the research projects focused on the impact of neoliberal policies in the Mexico countryside. In the beginning of the 2000s it focused on a research to diagnose the spread of GMO maize's contamination in Mexico. More recently, its work is centred on empowering

communities to defend their rights and continue cultivating maize with ecological practices. The organisation encompasses more than 1000 communities (Interview with de Ita, Head of CECCAM, Mexico, 2012). Since 2002 a group of organisations have been collaborating to facilitate the yearly NDM' s National Assembly: CECCAM (Centre of Studies for Change in the Mexican Crop Fields), ETC group, GRAIN, CENAMI (National Centre of Help to Indigenous Missions), UNOSJO (Union of Organisations of the Sierra Juarez of Oaxaca), COA (Collective for the Autonomy) and CASIFOP (Centre of Social Analysis, Information and Popular Formation).

3. National Crusade against Hunger:

Crusade against Hunger is the principal motto behind some organisations that work on programmes financed by the Mexican government, as well as FAO initiatives to improve the people' s right to food. The main programme is known as PESA (Special Programme for Food Security in Mexico) funded in 2004, whose discourse is food security. Projects under PESA are mostly conceived by the government, whose funding scheme is inefficient as it is absorbed by bureaucratic issues (Interview with Culebro, FAO Representative, Mexico, 2011). In the discourse they recognise the necessity of empowering communities, but projects are very focused on emergencies relief and charity. The FAO representative in Mexico confirmed during the interview, "It has been so difficult to improve the systematisation of the initiatives to measure the impact on communities' access to quality and quantity of food; moreover, participation of the community in the project planning process is not systematic, as this is executed by different local NGOs who act as intermediaries between FAO and the communities" (Ibid, 2011).

Furthermore, The UN Rapporteur on Food Security insisted, these kinds of programmes (E.g. PESA) take place as a result of a systematic diversion of the state funds towards the big producers of food, leaving entire communities with no access to resources, neither to buy food nor to produce it (Participant Observation in the 'Inform of Mission to Mexico by the UN Special Report' , Mexico, 2012). In fact, he points out that only nearly 25% of the resources of PROCAMPO¹¹ and other programs of the Secretary of Agriculture and Food of Mexico go to small and medium holders. Small-medium holder peasants are targeted by programmes such as *Oportunidades*, which only support them to buy food as opposed to increasing their means to produce food and escape poverty (Ibid, 2012).

After this analysis, the Network in Defence of Maize was selected as a case of study. Four main reasons contributed to this choice. These are based on features, outcomes and challenges of civil networks.

- i. They have been working formally as a civil network since 2002 as opposed to the Campaign 'Without maize, there is no country' , which was formalised in 2007. Moreover, the NDM works on empowering communities to develop ecological food systems of production, which is in line with outcomes of civil networks working on food sovereignty. The Campaign 'Without maize, there is no country' and The National Crusade against Hunger focus their work on lobbying and charity projects respectively, which are not the main outcome of civil networks—a change

¹¹ PROCAMPO is a governmental programme whose objective is to support the development of Mexican fields in terms of improving food productivity, either for self-consumption or to commercialise products for both, nation consumption and exports oriented products (Secretary of Agriculture, Mexico).

of mind and values of people and development of alternative ways to current development.

- ii. By attending the first National Assembly of NDM (Feb, 2012) I could observe how arguments built at the meeting were based on a common understanding constructed with equality of voice from all participants: NGO' s specialised on topics such as mapping, agro-ecology and GMO working with small-medium scale peasants and indigenous people. Peasants and indigenous people were the main participants in these gatherings; they were in charge of sharing their experiences, then teamwork to uncover root causes with information provided by specialist and finally they proposed strategies to be taken on the ground. Additionally, a wide range of interrelated topics was discussed, from GMO contamination to land access, migration, climate change and environmental issues affecting diverse communities in the country. These features are in line with civil networks. It is observed the use of spaces for dialogue as experiments for real democracy, which is characterised by self-representation of peasants, indigenous people and NGO professionals where they collectively share knowledge.
- iii. The NDM is also aligned with the feature of civil networks of being formed by autonomous individuals/organisations politically and financially—from the state and political parties. Members of the NDM are funded by INGO and peasants productive projects whereas the Campaign and the National Crusade against Hunger are funded by the state to some extent. What is more, the Campaign 'Without maize, there is no country' might be prone to be co-opted as some of the members participate in the political

contends of the PRD (Political Party of the Mexican Revolution) (Interview with Marielle, GEA Member, Mexico, 2012).

- iv. Another reason, beyond the established criteria, is that the NDM is formed mostly by indigenous and small-landholder peasants' communities, rather than by farmers. An interview with Vera (GRAIN Member, 2012) explains that indigenous communities as well as small-medium scale peasants produce food as a way of living versus a merely productive-economic activity. Life has no meaning without maize; this activity is considered to be their main role in the world (Ibid, 2012). Moreover, they are influenced by the indigenous forms of organisation and the Zapatista movement in Mexico, whose struggle is based on constructing alternatives to development. In fact, most of the founding members of the NDM took part in the Zapatista movement that has indisputably influenced new social movements all over the world (Castells, 2004; Esteva, 2010a; Interview with Vera, GRAIN Member, Mexico, 2012).

3.2.3 Selection of key informants within the NDM

The aim to examine civil networks is not to trace connections and determine their core or periphery. The objective of this research is to identify civil networks' operational dynamics. Therefore, the objective is on identifying actors that could provide with the significance of the network operation at all levels and stages of its evolution. Furthermore, as members of the NDM mentioned in the first National Assembly I attended in 2012: "New members keep joining the network and it is difficult to know the exact number of people working within it; what is more, the NDM has never focused its energy on this aspect" (Interview with Robles, COA Member, Guadalajara, Mexico, 2012)

Given this perspective, the way of making the delimitation of people to be interviewed was based on the following aspects (also in reference to the main features, outcomes and challenges of civil networks):

- i. Multi-nodal flexible organisations: difficult to be co-opted by the state, as they organise and reorganise through a diversity of national and international links. This was assessed by the presence of members working together at different levels: local (L), national (N), or international (I) with no a formal membership. A list of key informants was selected at each level (*See* next section for detailed lists of actors). The focus was not to define an exact number of people for the case study, but to have a wide range of informants according to the criteria.
- ii. Build switches among diverse civil networks for social justice: networks of networks working together, linking diverse topics such as preservation of environment, human rights and other. The main criterion was to examine linkages among different kinds of knowledge (e.g. scientific and know-how), as well as the interaction among academics, researches and producers examining diverse topics around the food systems in Mexico.
- iii. The final criterion was accessibility of the information: the ultimate goal was to conduct my research at an organisation willing to facilitate the process. I chose to do my field work with those that invited me to collaborate with them.

3.3 Explanatory field trip: hypothesis testing

This phase of the research methodology is focused on obtaining information to test the three hypothesis of the thesis. In doing so, the participant observation method was used, complemented with instruments to collect and analyse data. Participant observation took place in different meetings of the NDM (e.g. PPT hearings or national assemblies) as well as a resident at three levels of the network operations: local, national and international. In-depth interviews were utilised to gather further insights and obtain feedback of the observed data. Finally, these two primary sources of information were triangulated with secondary data such as transcription of type-records of previous meeting of the NDM (national assemblies from 2002 to 2010) as well as publications of the NDM and other literature about current analysis on new social movements in Mexico (*See Appendix 3 for a detailed list of the instruments used for each hypothesis, as well as the amount of collected data for each of them*).

The following three sections present the questions and hypothesis of the thesis, as well as an explanation of how the data was gathered and processed.

3.3.1 Hypothesis 1: assessing achievements and defeats of the NDM

Q.1 What are the achievements of the NDM? What are its defeats, if any?

To what extent has the NDM contributed to food sovereignty in Mexico?

Hypothesis 1: Civil networks are capable of challenging the dominant food system through a variety of actions that stop/reverse mechanisms imposed by networks of power. These actions contribute to one or more of the food

sovereignty pillars; hence, contributing to the progress of food sovereignty in Mexico.

Table 4: Sub-questions, variables and instruments for testing H1

Sub-questions	Identified Variables	Instruments
<p>SQ.1 What are the achievements of the NDM? What are its defeats, if any?</p>	<p>Achievements of NDM</p> <p>Direct ones:</p> <ol style="list-style-type: none"> 1. Legal appeals (maize and soybeans) 2. International advocacy to support Mexico against GMOs (from scientific demonstration of <i>criollo</i> maize contamination to the PPT international hearings) 3. Maintain benefits of the Land Reform-Article 27 in relation to the communal land access right 4. Support the production of food under ecological practices (<i>milpa</i>) <p>Indirect ones:</p> <ol style="list-style-type: none"> 5. Contributing to social peace 6. Improving the access to food and nutrition in rural communities <p>Defeats of NDM</p> <ol style="list-style-type: none"> 7. Lack of joint efforts with movements working on similar issues 	<p>Triangulation of data based on:</p> <ol style="list-style-type: none"> 1. Analysis of articles and books published by NDM members (secondary source) 2. Analysis of scientific articles on GMO issues in Mexico (secondary source) 3. In-depth interviews with key informants (primary source) 4. Participant observation at NDM' s national assemblies <p>Analysis:</p> <p>Classification of information by types of achievements and defeats</p>

Sub-questions	Identified Variables	Instruments
<p>SQ.2 To what extent had the NDM contributed to food sovereignty in Mexico?</p>	<p>Pillars of the food sovereignty framework:</p> <ol style="list-style-type: none"> 1. Food as a basic human right 2. Agrarian reform 3. Democratic control 4. Protecting natural resources 5. Reorganising food trade 6. End the globalisation of hunger 7. Social Peace 	<p>Analysis:</p> <p>Cross cutting comparison of the achievements/defeats of the NDM and the food sovereignty pillars in a matrix. The process is made by identifying presence or absence (in qualitative terms) of key words between the two types of elements.</p>

In testing H1 of this thesis four main sources of information are used; two secondary and two primary sources. Secondary sources are the analysis of articles and books published by NDM members, as well as the analysis of scientific articles on GMO issues in Mexico to make the link of identified achievements against GMOs and the actions taken by members of the network. Primary sources are in-depth interviews with key informants and participant observation in assemblies and meetings of the member of NDM.

The book published by members of NDM, *The maize is not a thing, it is a centre of origin*, which contains the history of 10 years of work (from 2002 to 2012), was used as the guiding document to identify the vision and commitments of the members made every year at their national assemblies. Based on these statements, the other three data sources helped identify evidence of specific actions and systematised outcomes in relation to the NDM' s commitments (e.g. the systematic organisation of workshops to improve the indigenous systems of food production, the *milpa*, a term and practice further explained in this thesis). In-depth interviews helped collect feedback on the final list of achievements from the members' point of view. It is worth mentioning that NDM achievements

were not quite evident neither after initial semi-structured interviews nor after different conversations held during the participant observation with members of the network. When asking about the achievements of NDM, members normally responded: the greatest achievement of our work group is that we continue working and learning together. Indeed, it constitutes an important feature of NDM and it is further analysed in H3 of the thesis. Nevertheless, it was necessary to make NDM tangible outcomes evident in order to assess how and to what extent this civil network stops/reverts action of networks of power and/or improves the life of people on the ground.

3.3.2 Hypothesis 2: evolution stages and operational dynamics of the NDM

Q.2 How does the NDM succeed in their objectives? What are the salient characteristics and evolution stages that enable civil networks to succeed?

Hypothesis 2: Civil networks have the potential to challenge the dominant food system by shifting to higher stages of evolution, meaning building more systematic, integral and multi-level strategies. At the heart of this evolution process is collective learning (as process and outcome), characterised by mutual respect and influence, leaders as catalysers and facilitators, diversity of meeting spaces, networks as the organisational base and the inclusion of linking nodes, specialised knowledge and expert know-how actors.

Table 5: Sub-questions, variables and instruments for testing H2

Sub Questions	Identified Variables	Instruments
<p>S.Q.1 Which are the precedents for the NDM formation?</p>	<p>Relational systems (See Appendix 2).</p> <ol style="list-style-type: none"> 1. Consciousness 2. Social practices 	<p>Triangulation of data from:</p> <ol style="list-style-type: none"> 1. Analysis of academic articles and books on new social movements in Mexico (secondary source) 2. Analysis of type records of the NDM past National Assemblies 3. In-depth interviews to key informants (primary source) <p>Analysis: reconstruction of historical facts classified by relational systems to identify key factors influencing the NDM formation (prior to 2002).</p>
<p>S.Q.2 What are the stages of evolution of the NDM?</p> <p>S.Q.3 What salient characteristics enable civil networks to succeed?</p>	<p>Stages of evolution:</p> <ol style="list-style-type: none"> 1. Network-resilient 2. CoP-Transitioning 3. Syl-Transforming <p>Each of the phases will be evaluated according to:</p> <ol style="list-style-type: none"> 1. Types of actions (from isolated to integral/multi-level actions) 2. Types of spaces for collective learning (less to more systematised) 3. Target of actions (state and others versus empowering of communities) 4. Level of collaboration (from individuals to networks of networks) 	<p>Triangulation of data from:</p> <ol style="list-style-type: none"> 1. Participant observation (attendance of diverse types of meetings of the NDM) (primary source) 2. Analysis of articles and books published by NDM members (secondary source) 3. Analysis of type records from testimonies of NDM members in past Assemblies and Workshops (secondary source) 4. In-depth interviews with key informants (primary source) <p>Analysis: reconstruction of historical facts classified by characteristics of the stages of evolution.</p>

The H2 required more diverse and interrelated instruments to gather data. In identifying characteristics of the evolution stages of NDM, a historical reconstruction of facts in order to identify the turning points was required. E.g. identifying the moment in which actions shifted from being more isolated projects to an integral strategy shared by diverse members of the network. Furthermore, it became relevant to understand the precedents to the formal formation of NDM in 2002 when they operated more as individual organisations rather than as a civil network. In doing so, a literature review on new social movements was made, as well as a review on bulletins and articles published by NDM members (prior to the 2000s decade). Additionally, this information was complemented with participant observation at national assemblies (from 2012 to 2014), years covered by this thesis' field trip as well as information from previous assemblies (from audio-records). An analysis' chart was filled out according to characteristic of civil networks in their process of evolution (See Appendix 8). Ultimately, insights from this analysis were triangulated with in-depth interviews.

3.3.3 Hypothesis 3: NDM's essence and spirit to challenge the dominant food system

Q.3 Why has the NDM developed potential to challenge the dominant food system? What is the essence and spirit of civil networks to avoid being co-opted by networks of power? To what extent does the NDM have the potential to challenge power of the dominant food system at present and in the long term?

Hypothesis 3: Civil networks' essence and spirit to challenge networks of power are based on the construction of a common identity among diverse and

'opposite' actors. These actors cannot be co-opted as their struggle relies on shaping their own minds and on recreating dignity in their everyday lives (as part of their identity). The struggle cannot die unless people themselves are killed or disappeared.

Table 6: Sub-questions, variables and instruments for testing H3

Sub	Variables	Instruments
<p>S.Q.1 Why has the NDM developed potential to challenge the dominant food system?</p>	<p>Features of the collective learning process</p> <ol style="list-style-type: none"> 1. Collective learning as a process and outcome 2. Relations based on mutual recognition and influence 3. Leaders as catalysers-facilitators 4. Diversity of meeting spaces 5. Networks as the organisational form 	<p>Triangulation of data from:</p> <ol style="list-style-type: none"> 1. In-depth interviews with key informants (primary source) 2. Participant resident (primary source) 3. Participant observation (direct observation of diverse types of meetings of the NDM) (primary source) 4. Analysis of type records from testimonies of NDM members
<p>S.Q.2 What is the essence and spirit of civil networks to avoid being co-opted by networks of power?</p>	<p>Construction of a communal identify, departing from maize as the sacred unifying symbol. A metaphor is used to explain such spirit of resistance:</p> <ol style="list-style-type: none"> 1. Maize: medulla 2. <i>Milpa</i>: spinal cord 3. Body: territory 	<p>Triangulation of data from:</p> <ol style="list-style-type: none"> 1. In-depth interviews with key informants (primary source) 2. Participant resident (primary source) 3. Participant observation (direct observation of diverse types of meetings of the NDM) (primary source) <p>Analysis: data analysis to show the common identity to all actors.</p>

Sub	Variables	Instruments
<p>S.Q.3 To what extent does the NDM have the potential to challenge the dominant food system at present and in the long term?</p>	<p>Type of powerful actions:</p> <ol style="list-style-type: none"> 1. Actions to hit the structural capacity of networks of power 2. Actions to build viable alternatives to the dominant system 	<p>Triangulation of data from:</p> <ol style="list-style-type: none"> 1. In-depth interviews with key informants (primary source) 2. Participant resident (primary source) 3. Participant observation (direct observation of diverse types of meetings of the NDM) (primary source) <p>Analysis: assessment of impacts (from Q.1 according to Mexico context (e.g. poverty levels). Reflections on what lies ahead for the NDM.</p>

In testing H3 the principal instrument was participant observation, mainly as a resident in order to pinpoint those ‘invisible’ features that enable civil networks to succeed in the long term as well that make the spirit of the network to change the dominant system. Primary data was the principal source of information for proving/refuting this hypothesis, including participant observation at assemblies of NDM, as well as the recordings from previous assemblies; in-depth interviews and the participant residency. This last instrument contributed most to understanding not only of H3 but also of a perspective on the previous hypothesis. This process is detailed in the next section.

3.3.4 Participant observation process (resident)

The main reason to use participant observation as within NDM was to 'become part' of the group and to observe the less apparent features of its operational process. Vera, one of the founders of NDM, argues that for a researcher to understand the case study it is necessary that he/she becomes emphatic by putting himself/herself in the shoes of people living under the conditions to characterise (Interview with Vera, GRAIN Member, Mexico, 2012). He also mentioned that the story to be told takes its form during the process of living it; it cannot be prescribed in advance. In fact, the role of the researcher is becoming a narrator that captures the essence of actors' perception to tell a story for them.

The way in which the participant residency process took place was by carrying out specific activities in three selected organisations—one at each level of operation of the network (local, national and international). The performed activities were arranged in advance to seek a mutual benefit. On the one hand, the activities should contribute to enhancing the understanding of the researcher on the processes of work of the NDM. On the other hand, they also should contribute to the organisation' s work. The three organisations in which I made a residency, together with performed activities and their relevance to the research's objectives are presented below.

- i. Mission de Guadalupe (MG): It is a religious mission located in Comitan, Chiapas. It was founded 50 years ago and works with 102 communities in the Margaritas region, significantly influenced by the Zapatista movement. The MG works as a formal NGO since the 1990s. Its agenda is divided in four pillars: health and education, the way of a good life (mainly focused on eco-

technologies and organic agriculture), internal/external communication with communities and other networks of organisations, and indigenous culture. MG members facilitate the pillars of work and systematise workshops and processes to be taken to the communities. The MG team meets on a weekly basis to review the progress of activities and every two months at workshops to increase knowledge of the team. This organisation collaborates with other missions in Chiapas working on crosscutting issues such as improving the youth's perceptions of the indigenous cultural practices to support livelihoods and prevent migration to the US. Finally, the MG also collaborates with diverse networks such as the NDM and the Youth International Social Forum, as well as with other NGOs and universities in order to work in appropriate technology development and transference to the communities.

I stayed at the facilities of the MG—where few of its members work and live—for seven weeks. The participation I had at MG was centred on contributing to the health and education pillar by producing materials for children in relation to climate change, besides attending a weekly meeting and visiting indigenous communities in the region of Margaritas. In fact, I stayed in one of the communities, Guadalupe of Atoyac¹², for two weeks in addition to several visits. In the community I helped with the *milpa* and participated in their daily activities and assemblies.

The significance of working with the MG lied in the possibility to directly observe actions of the network on the ground, mainly in the application of improvements to the *milpa*—a multi-crop food production model of indigenous communities. I could also capture perceptions of maize and its

¹² The community of *Guadalupe Atoyac* is where the most important meeting of the Zapatista movement was held at national level in 1996.

importance for indigenous communities in terms of organisation and sacred symbols, as well as the way they understand GMO threats. Finally, this residency contributed to observing how the assemblies of the NDM work at local levels.

- ii. Centre of Studies for Change in the Mexican Crop Fields (CECCAM): a NGO founded in 1992 whose main objective is to provide support to peasant and indigenous communities through research on their topics of interest. CECCAM's main lines of investigation are on the impacts of neoliberal mechanisms on the economy of small-medium scale peasants in Mexico. For example, the impacts of the NAFTA, climate change mechanisms such as the UN-REED¹³ and the US farm bills. CECCAM also studies recent peasants and indigenous social movements in Mexico to better understand how to support their autonomy and self-determination. Finally, CECCAM supports communities by coordinating research for NDM on any topic related with the mechanisms to support the legal entrance of the GMOs in Mexico. The members of this organisation are peasants, indigenous communities and rural researches to academics trained in social and biological sciences, as well as journalists. CECCAM recognises itself as one of the founder members of NDM and participates in different national and international forums such as Climate Change, La Vía Campesina and FAO parallel discussions in preparation for the World Food Forums. Finally, it is worth mentioning that CECCAM has a comprehensive collection of documents and publications of members of the NDM as well as other publications on these topics.

¹³ UN-REED (Reducing Emissions from Deforestation and Forest Degradation) is an effort from the United Nations to create a financial value for the carbon stored in forests, offering incentives for developing countries to reduce emissions from forested lands.

The main activity I carried out with this organisation during eight weeks was the digitalisation of recordings they have kept from national assemblies, meetings and workshops of NDM since 2002. During this time I also analysed and compiled a series of publications from different actors of NDM to complete the analysis on the evolution stages of the network.

The importance of doing research with CECCAM is that this organisation serves as the library compilation of NDM, which allowed easy access to several secondary sources of information. Moreover, CECCAM is a platform for learning about the different organisations and members of the NDM. Furthermore, Ana de Ita, the head of the organisation invited me to participate in the NDM' s National Assemblies and events such the PPT prehearings on maize and food sovereignty. In one of them Vandana Shiva (an international academic-activist recognised as a moral authority on the GMO topic) was invited to testify and validate the process. Finally, it is worth mentioning that CECCAM allowed me to work at their offices, where most of the explanatory data analysis took place.

- iii. The Permanent Peoples' Tribunal (PPT): this is an international non-governmental organisation that works to identify causes for communities' human rights violations all over the world. In case of violations, the responsible are denounced to international authorities. The PPT is formed by multiple personalities from diverse countries, disciplines and ideological positions that are recognised as moral authority. The mission of the PPT is to promote universal respect for human rights of indigenous communities, minorities and individuals. This is achieved by the supporting of systematising data from 'non-visible' violations carried out by the states, authorities or private organisations. It also fights for the right to self-determination of indigenous

settlements against foreign invasions, dictators and destruction of natural resources. The PPT has its own procedures that help take cases to international courts.

The PPT Chapter Mexico was formalised in 2009 encompassing seven demands that converge into a single root cause: 'the systematic violation of Mexican peoples' rights by the state following the NAFTA'. The seven demands are: femicides, migration, environmental devastation, maize and food sovereignty, working conditions, violence against and dirty war. Each demand has its own process of prehearings, which in the end becomes linked in one single final PPT International Hearing for the Mexican case. The ultimate aim of this process is strengthening of social bonds and empowering of individuals and organisations of Mexico in their struggles to face national and global forces.

I attended different meetings of the PPT process, from the preparation gathering to the Opening National Hearing held in Ciudad Juarez in May 2012, to its Final Ruling PPT Chapter Mexico held in Nov, 2014. I participated as a translator at both events and as a participant observation in different prehearings, specifically on the topic of food sovereignty and maize. The importance of participating at the hearings was the possibility to observe the dynamics of operation of NDM at higher levels, e.g. the collaborative work between the NDM and other civil networks working on topics of environmental devastation in Mexico. Most importantly, however, it allowed me to examine empowerment of members from the communities who presented their own cases.

A list of the members who I held conversations with during this process is shown below —a total of 23 conversions where held. The purpose of presenting this list

is to show the diverse backgrounds of the NDM' s members. These range from NGOs professionals, academics and to small-scale peasant-indigenous producers; they also vary in indigenous and non-indigenous backgrounds.

It is worth noting that names of peasants have been changed for safety purposes. Names of NGO members appear constantly in publications and other sources, yet the surnames of the indigenous people and peasants that might be threatened due to their struggles had better not be mentioned (their surnames have been changed). However, I decided to refer them by name to show the equality of membership and value their participation within the NDM. During the field trip chapters, the testimonies of NGO members as well as peasants and indigenous people include their names, the place and date of the conversation. Finally the list of conversations points out if an actor is an NGO professional or if they are currently part of the academia, or both and also whether they have a PhD grade.

Table 7: List of conversations during participant observation with NDM members

	Role	Name	Type of actor	Ind	Organisat ion
1	Head of the MG	Juan Carlos Robles	Professional NGO		MG
2	Head of CENAMI	Alvaro Salgado	Professional NGO		CENAMI
3	Head of Communications	Marcelino Henes	Professional NGO	Yes	MG
4	Support and expert in health education pillar	Ramiro Torres	Professional NGO		MG
5	Head of the 'The good way of living	Juan Carlos Oliveira	Professional NGO, PhD		MG
6	Coordinator of Training for Communities	Ivan Hernandez	Professional NGO, Academic (PhD)	Yes	CECCAM
7	Media coordinator	Roberto Deepso	Professional NGO		CECCAM
8	Head of CECCAM	Ana de Ita	Professional NGO PhD		CECCAM
9	Climate Change Research Coordinator	Daniel Sandoval	Professional NGO		CECCAM
10	GMO Research Coordinator	Flor Luna	Professional NGO PhD		CECCAM
11	Projects Coordinator	Ramon Vera	Professional NGO		GRAIN
12	Head of the COA	Evangelina Robles	Professional NGO		COA
13	Head of UNOSJO	Aldo González	Professional NGO	Yes	UNOSJO
14	Member of the NMD	Alvaro Chávez	Peasant Producer	Yes	Tabasco
15	Head of Hidalgo Org	Rogelio Sanchez	Peasant Producer	Yes	Hidalgo
16	Training Coordinator	Antonio Chavez	Peasant Producer	Yes	Santiago
17	Youth Programs	Josefina Sanchez	Peasant Producer	Yes	MG
18	Model eco-technologies	Sergio Gomez	Peasant Producer	Yes	Gpe
19	Eco-technologies	Celia Aguayo	Peasant Producer	Yes	Gpe
20	Head of ETC Group Mexico	Silvia Ribeiro	Professional NGO	Yes	ETC
21	Projects Coordinator	Veronica Villa	Peasant Producer	Yes	ETC
22	PPT Representative Mexico	Octavio Rosas	Professional NGO, Academic		PPT
23	PPT Process Coordinator	Andres Barreda	Professional NGO, Academic (PhD)		PPT

3.3.5 Field trip feedback

In-depth interviews were held to feedback the information gathered during the participant observation (See Appendix 6). The objective for using this instrument was to corroborate insights and assumptions of the researcher as well as to have a deeper understanding on some topics. For example, the reconstruction of historical facts enabled me to identify two shifts in the network's actions:

- i. 2003-2004: the network shifted their efforts from making self-diagnosis of the GMO contamination of native maize in Mexico towards empowering communities in order to improve their traditional and ecological forms of producing food (the *milpa*).
- ii. 2007-2009: the NDM expanded its work to meet on systematic basis with other civil networks under the PPT process.

I corroborated this information through the in-depth interviews, but most importantly, I obtained profound insights into reasons why the members face such shifts. The shift to higher levels of collaboration and strategies to empower communities followed the crisis, e.g. the global food prices increases in 2006-2008 that impacted Mexican rural and urban communities. However, it is relevant to note that the shifts are not the consequence of the crisis, but rather they occur in anticipation to the economic hardships, given the capacity of the network to learn collectively.

A total of eleven in-depth interviews were carried out. The main criteria to select key informants were based on having a wide perspective of the network's evolution, e.g. being a founder member of NDM. Another criterion was to include

local, national and international members with a range of backgrounds, e.g. small-scale peasant-indigenous producers, NGO professionals and academics. Finally, it was relevant to obtain viewpoints of actors outside the NDM in order to have a more balanced perspective.

Table 8: List of actors interviewed for the in-depth feedback

	Role and name	Funder Member	Level of collaboration	Type of actor	NDM member
1	Head of CENAMI – Alvaro Salgado	Yes	National	Professional NGO	Yes
2	Head of UNOSJO –Aldo Gonzalez	Yes	Local	Indigenous-peasant	Yes
3	Head of CECCAM – Ana de Ita	Yes	National	Professional NGO-Academia	Yes
4	Member of ETC Group – Ramon Vera	Yes	International	Professional NGO	Yes
5	Projects Coordinator GRAIN – Veronica Villa	Yes	International	Professional NGO	Yes
6	Vía Campesina Member – Peter Rosset	No	International	Professional NGO Academia	No
7	Project Coordinator GEA – Catherine Marielle	Yes	National	Professional NGO	No
8	Process Coordinator PPT – Octavio Rosas Landa	Yes	International	Professional NGO & Academia	No
9	Coordinator of Trainings for Communities CECCAM – Ivan Hernandez	No	Local	Professional NGO & Academia (PhD)	Yes
10	Head of Green Peace Mexico – Aleira Lara	No	National	Professional NGO	No
11	Head of Semillas de Vida – Adelita San Vicente	No	National	Professional NGO	No

Subsequently, the processing and data analysis were carried out in order to produce a coherent narrative of a field trip as well as to ensure the triangulation of data at the last stage of this research. Lastly to mention is that a gender analysis of the in-depth interviews was made by using the NVivo software to observe if relevant insights could be drawn on this aspect.

3.4 Data processing and analysis

There is no established protocol for examining the dynamics of operation of civil networks; therefore there is no particular approach to the analysis of the data gathered throughout the field trip. Thus, assigning fixed categories to the analysis of the NDM' s features was not a straightforward endeavour. In one of the in-depth interviews held with Vera (2012) he mentions that "these kinds of networks are fundamentally based on human relations and there is no one single form to look at them" (Ibid, 2012). Nevertheless, triangulation of data allowed finding patterns of information to identify underlying perceptions of actors. This became the essential method to structure and categorise the main arguments of this research. At the end, fourth rounds of data processing and analysis took place over 24 months in which three drafts of this thesis were produced. Through this iterative process, a final coherent and comprehensive narrative emerged.

It is important to emphasise that the final categories presented in the chapters concerning the field trip serve as a guideline as opposed to a fixed criteria with which to examine civil network dynamics of operation. To better illustrate this point, the example of the achievements of NDM is presented. As previously mentioned in this chapter, four different sources of information were used to assess its achievements and defeats. First, a compilation of secondary data

helped to draw an initial list of categories. Then the achievement and defeats were complemented by insights of the participant observation. Finally, feedback obtained through in-depth interviews and participant residencies were used to test and evaluate the categories. Ultimately, what it is important to highlight is the process of data gathering, processing and analysing versus the categories themselves. Such categories might change in future periods of analysis of NDM or contexts. The testimony of Salgado on the achievements of NDM helps further examine this point.

We tried to avoid becoming overwhelmed by specific achievements of the NDM's work. We, as members of this network, know that we are fighting an endless fight, so the process of struggle is the most important aspect. The circumstances constantly change; therefore a constant analysis is needed. We do not believe in an ultimate goal to be achieved, but in keep up the struggle in the long term. Nevertheless, if I have to mention a specific achievement of the NDM I would say it is keeping up the fight, which is about constantly learning about the context to identify strategic actions. Even when we recognise the cumulative force of our actions in preventing the entrance and spread of GMOs in Mexico; our ultimate goal goes beyond GMOs. Our goal is to generate structures that contribute to a good way of life of indigenous communities. However, measuring these achievements might be difficult, as communities work at their own pace and according to specific necessities (Interview with Salgado, Head of CENAMI, Mexico, 2013).

Finally, it should be mentioned that a field journal with observations and the literal transcription of conversations was updated together with my own findings and insights. Additionally, audio recordings of the different events I attended as well as of the interviews I held were transcribed. This allowed reviewing them as many times as necessary whenever relevant information was noted in the diary. Such information was transcribed, too. The same case applied to the audio-records of past national assemblies (prior to 2012), from which I transcribed relevant pieces of information.

3.4.1 Composition and content of the thesis

To tell the story of the NDM, I structured data according to specific categories and a reconstruction of historical facts. Chapter 4 of this thesis presents the information according to specific categories, which are the NDM's achievements and defeats. The chapter also assesses how the achievements of NDM contribute to food sovereignty in Mexico. Chapter 5 is based on a historical reconstruction of facts according to variables chosen such as the characteristics of stages of evolution of civil networks. It begins with the precedents of NDM formation (1970-1990), followed by the network-resilient stage (1990-2002) and at the end, the CoP-transitioning and Syl-transforming stages are discussed (from 2002 until present). In all the periods what is relevant to show is evidence of the characteristics of the stage evolution; but most importantly, to discuss the salient features that contribute to making civil networks shift from one stage to another. During the reconstruction of historical facts, a second layer of information emerged for the construction of the final part of the thesis. It is based on identifying the less apparent elements in terms of NDM operations. These elements truly motivate members of the network to keep their struggle alive in the long term and are examined in Chapter 6.

3.5 Limitations of the research methodology

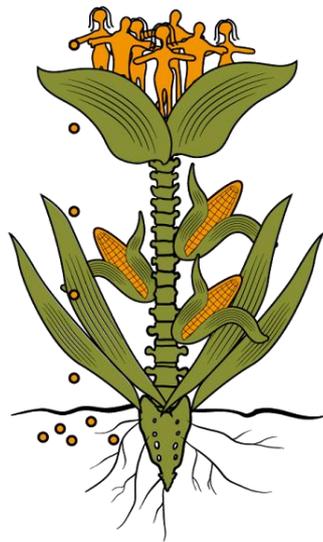
This methodology presents three major limitations. The first has to do with the case study itself, as attributes observed might change according to other contexts. Further research on different civil networks might bring additional insights to expand the viewpoints on their dynamics of work. Nevertheless, to compensate this limitation, participant observation was used as a main instrument. This prevented the predetermination of fixed attributes and enabled thorough exploration and examination of the case with diverse lenses (e.g. local,

national and international elites of operation). Moreover, the case of NDM is structured enough (with 15 years of formal work as a civil network) to provide quality information in comparison to other cases. Finally, large amount of secondary data concerning this case was very supportive to complement and provide evidence for any claims.

The second limitation of this thesis is that it does not focus on social networks that use the Internet as its main platform. This has become a relevant topic when studying new social movements. Yet, even Castells (2012) who writes about the features of civil networks working with and through the Internet insists that understanding the dynamics of human beings' interaction seems more complex and it is vital to support the expansion of civil networks.

Finally, the thesis' data collection and analysis is based on qualitative instruments. The reason is that it focuses on understanding of human relations and interactions. Nevertheless, for some pieces of information such as the case of the achievements of civil networks, quantitative data could enhance future investigations on the topic to seek further evidence for tangible outcomes (e.g. nutritional levels among indigenous people or in rural communities as opposed to urban).

Chapter 4: NDM achievements and defeats



**A contribution to food
sovereignty in Mexico**

4.1 Introduction

This chapter presents the achievements and defeats of the NDM within the framework of food sovereignty. The structure of this chapter is divided into three sections. The first one analyses the direct positive outcomes of the NDM; namely, those related to specific actions formulated by members of the NDM in their different meetings. The second part presents indirect accomplishments that stem from the NDM work rather than outcomes expressly formulated by its members. Defeats of the NDM are also discussed in this section. The last part analyses the relationship between achievements and the food sovereignty pillars. The purpose of this analysis is to visualise to what extent the NDM contribute to food sovereignty in Mexico.

4.2 Direct achievements of the NDM

The achievements hereby presented are extracted from a compilation of secondary data, mainly bulletins published by members of the NDM as well as scientific reviews. These sources were triangulated with in-depth interviews and participant observation in meetings of the NDM (*See Appendix 3 and 4 for a detailed list of the instruments used and a list of secondary sources, respectively*). Four direct positive outcomes of the NDM were established: i. Winning legal appeals against planting of genetically modified maize and soybeans in Mexico; ii. Supporting the struggle against GMOs through international advocacy (e.g. the PPT processes); iii. Maintaining benefits of the Land Reform, Article 27, in relation to the right of communal land access for peasants and indigenous settlements;

and iv. Supporting the production of food under agro-ecological¹⁴ practices (the *milpa*), a multi-cropping model practiced in Mexico for smallholder peasants.

4.2.1 Legal appeals: maize and soybeans

1. Appeal against planting and commercialising GMO maize in Mexico

In 2003 governmental entities, without previous consultation to incumbent actors from civil society (such as NGOs and scientific bodies), called a change in the Diversity Law of Mexico. It implied the cancellation of GMO maize moratorium established in 1996 due to the risk of contaminating the *criollo* traditional maize. This moratorium was established following the NAFTA signature under a civil society petition together with scientific and governmental entities. Their main argument was that Mexico is a centre of origin¹⁵ of maize. According to international treaties such as the Cartagena International Agreement—which is binding in Mexico—, growing GMOs is banned in the centres of origin. Moreover, amendments to the law were made behind closed doors; “diverse organisations such as Green Peace, Semillas de Vida, CECCAM, ANEC and GEA raised petitions to

¹⁴ Agro-ecology represents to a wise set of forms of food production that do not only provide of food, but also of numerous environmental benefits (e.g. soil restoration of soils, water conservation, enhancing of biodiversity and others). Furthermore, recent studies have shown that agro-ecological production methods have the capacity of yield increase of more than 100%. On top of that, agro-ecology is not separated from peasants, their communities and social and economic contexts. These systems include aspects such as labour availability, human health, knowledge, technology and others (Pimbert et al. 2014).

¹⁵ Centre of origin is the location where a crop was firstly grown. According to Vavilov (1926), 8 different centres of origin have been identified. One of them is Mesoamerica, centre of origin of maize. Mexico is located in this region of the world, with the highest number of maize varieties. 59 families are identified in this country that encompasses around 23,000 varieties. Locating the centre of origin of a crop is basic for plant breeding. It allows identifying crop wild relatives, related species and new genes to improve the resistance and variety of seeds (CECCAM, 2014).

become part of the Diversity Law meetings, but these were always denied” (Interview with Marielle, GEA Member, Mexico, 2012).

In the following years, two instruments that enabled the operationalization of legal GMO maize in Mexico were published by the Mexican government. The first is known as ‘GMO free zones’ , which consists of a map delimiting the zones in which GMO maize plantations are banned. These zones correspond to indigenous settlements and/or locations where *criollo* maize is grown. The second instrument is ‘GMO experimental permits’ , which implies granting access to a piece of land of 2 to 5 ha—outside GMO free zones—to companies in order to conduct transgenic maize trials. The objective of such experimental trials is to demonstrate impacts of GMO sowing. Following this step, companies would be granted ‘commercial permits’ to plant larger extensions of transgenic maize. However, the process of issuing these permits has been strongly questioned by NGOs. These are neither validated by scientific procedures nor any expert entity on the topic. Permits are merely validated by SAGARPA¹⁶, the governmental entity issuing them. What is more, the process does not include consultancy to civil society or any other governmental agency such as the National Institute of Ecology and Climate Change (INECC) that rejected GMOs in Mexico since the maize moratorium in 1996 (NDM, 2012).

In 2009, following the official publication of the GMO experimental permits, 196 were approved by SAGARPA in the north of Mexico. These permits were given to four TNCs: Monsanto, Dupont Pioneer, Syngenta and Dow Agrosiences. In the same year CECCAM member of the NDM, hired an expert on mapping to verify the congruence between the issued experimental permits and the GMO free

¹⁶ SAGARPA: The Secretariat of Agriculture, Livestock, Rural Development, Fisheries and Food

zones. Outcomes of this research¹⁷ show different contradictions. One is that licences to carry out experimental trials approved to Monsanto and Dupont are located within GMO free zones—in indigenous territories—where transgenic plantations are prohibited. Another contradiction is that such licences have been issued in zones close to settlements where *criollo* maize is cultivated, e.g. within 200 m. Natural pollination of maize seeds might occur at kilometres of distance (Ibid, 2011). Therefore native maize crops face the risk of being contaminated¹⁸ with transgenic seeds.

In response to the release of these instruments, different NGOs raised a legal appeal in 2008. A legal appeal is an instrument used in the Mexican jurisdictional system to protest the instrumentation of laws. This tool has been employed by civil organisations to prevent or delay instrumentation of different laws' changes in Mexico in the last decades. The main argument against transgenic maize in Mexico was the lack of transparency in the process of approving experimental trials, as well as the pitfalls of the instruments documented by CECCAM. The lack of transparency corresponds to the approval of permits by one

¹⁷ CECCAM' s research was done by crosschecking the official maps versus field trip visits to the GMO free zones and by corroborating information using Goggle maps. The final outcome is a set of maps that show the inconsistencies hereby mentioned.

¹⁸ Native maize transgenic contamination implies several risks, which are summarized by Antonio Turrent, president of the Union of Scientists Committed to Society (UCSS) and academic from Autonomous University of Mexico (UNAM). One is the impact on human health as some toxins in the GMO maize are carcinogenic, demonstrated by recent French studies (See Chapter 1). The contamination implies having those toxins in the daily meals of Mexican peoples. Another is the impact is on the sovereignty of peasants to maintain their territories and livelihoods. Presence of GMO seeds implies potential demands by TNCs for using their seeds; moreover, it implies the need of having to buy transgenic seeds to cultivate maize versus the current free practice of exchanging seeds to improve their diversity and resilience. Additionally, GMO seeds have demonstrated to deteriorate and deform native maize cobs, reducing varieties. This might impact on diminishing the diversity of the multi-cultural diet of Mexicans based on maize and other foods grown in the *milpa*, as well as the resilience to face current and future challenges of climate change (Turrent, 2014).

single entity, SAGARPA, without the inclusion of scientific, academics, governmental agencies or civil society actors to validate the process. At the first instance, the Federal Mexican Judges did not support the appeal. Therefore, a second round of experimental permits was approved from September, 2012 to September, 2014. These permits amounted to 70 new experimental trials for Monsanto, Syngenta, Dow and Pioneer companies, out of which 14 seek commercial planting in almost 6 million ha (CECCAM, 2011). However, when these commercial permits were mentioned, a series of mobilisations and petitions pushing for the support of the legal appeal were raised by civil society in the whole country (Interview with Ribeiro, ETC Group Member, Mexico 2012).

The fact of approving commercialization of transgenic maize in Mexico represented a threat not only to the diminishing of variety of native seeds, but also to the health of people. Mexico is the country with the highest consumption of maize per capita and recent studies have shown the chronic effects of transgenic maize (*See Chapter 1*). Facing such threat made urban and youth movements join the struggle. The Movimiento Urbano Popular (MUP, Urban Popular Movement) attended the national assembly of the NDM in 2012. Both groups organised informative workshops and public forums in several parts of Mexico City, including communal kitchens. MUP was an important part in the protest against SAGARPA in December, 2012, demanding transgenic maize to be halted. Another movement formed by youth members, mostly the 132 Environmental Commission and Youth at the National Emergency were the engines of many public activities also attended the National Assembly of the NDM in 2012 (Participant Observant at NDM National Assembly, 2012).

Youth organised a National Conference on Transgenic Maize in February, 2013 at UNAM with an attendance that exceeded 2000 people. They invited the Mexican

authorities to publicly discuss concerns regarding GMO maize issues, but they did not attend. Youth were also protagonists of a demonstration at the United Nations High Commission for Human Rights to draw attention to the violation of rights that transgenic maize represents in Mexico (Participant Observation, NDM National Assembly, Mexico, 2012 and National Conference on Transgenic Maize, UNAM, Mexico, 2013).

In addition, several organisations across Mexico organised diverse actions to raise the profile of the issue. In November, 2012, international organisations such as La Vía Campesina, GRAIN and ETC Group addressed FAO and the Convention on Biological Diversity of the United Nations (CBD) in an open letter pointing out the danger of GMO contamination in the centre of origin of maize. Moreover, Avaaz¹⁹—contacted by CECCAM—, campaigned collecting over 40,000 signatures to halt GMO maize in Mexico. All these petitions were delivered to Mexican authorities in January, 2013. One month later the Union Nacional de Organizaciones Campesinas Autonomas (UNORCA, National Union of Autonomous Regional Peasant Organisations) held a hunger strike and a demonstration in Mexico City that included thousands of participants in protest against transgenic maize. The UCCS launched a petition to stop GMO maize on scientific grounds, signed by 3000 national and international scientists, which was delivered to the president of Mexico in March, 2013. Later, the same year, the UCCS organised a three-day

19 Avaaz is an international organisation meaning ‘voice’ in several European, Middle Eastern and Asian languages. It operates since 2007 with a simple democratic mission: “organise citizens of all nations to close the gap between the world we have and the world most people everywhere want” (Avaaz, 2015). Avaaz is an online campaigning organisation “that’ s halfway between an NGO and a megaphone” , who collect firms online to raise demands and petitions to change the pathway of decisions taken by corporations, governments or other organisations in detriment of less favoured sectors of society (The Economist, 2013).

hearing at UNAM, as part of the Permanent Peoples' Tribunal where more than twenty scientific papers were presented to show why GMO maize should not be grown in Mexico (Ribeiro, 2014b).

Finally, all these mobilisations initiated by the NDM culminated in a strong petition for the acceptance of the legal appeal against GMO maize in Mexico at a national level in October, 2013. The appeal was upheld by the Mexican federal judges, which signified the end of any transgenic maize experimental or commercial trials. Surely, attacks from TNCs continue happening to reverse this appeal in order to get licences to plant transgenic maize; but as civil organisations and movements claim: "The surrender is not on the agenda" (Ibid, 2014b).

In August, 2015 an explicit imputation to reject the appeal was made by transnational companies, mainly Monsanto. It raised arguments to approve commercial licenses in favour of increasing yields of maize in Mexico. Civil organisations reacted immediately preventing any reversal of the actual prohibition of transgenic permits. Organisations and movements argue: "We have been working on these appeals for years, therefore, we have the experience and arguments; we will never allow the entrance of GMO maize (Public Presentation of Anita San Vicente, Head of Semillas de Vida, Mexico, 2015). 22 appeals, which encompass 91 imputations made by private companies, have been already rejected from 2013 to 2015. This shows the strength of civil society in defending legal cases of this nature. The final ruling has not been made; yet civil society is winning the struggle (Ibid, 2015).

2. Legal appeal against GMO soybeans in southern Mexico

On July, 2014 a district judge in the state of Yucatan, south-eastern Mexico, responding to petitions of beekeepers, peasants and environmentalists organisations overturned a permit issued by SAGARPA to Monsanto to plant transgenic soybeans (Ribeiro, 2014a). The judge stated that for the time being planting GMO soybean in this state is prohibited. It gives another glimpse of positive outcomes coming from civil society' s efforts, among the multiple wars in the same line going on in the whole country.

The process of issuing the soybean appeal in Yucatan was discussed at the National Assembly of the NDM in February, 2012, which I attended as an observer. Apparently, the decision to appeal was made on the spur of the moment, noticeably based on previous experience and the existence of resources (specialised professionals) and arguments to move forward. In addition to the NDM, Green Peace and other organisations participated in issuing this appeal. This was done in recognition that joint efforts towards the same aim were needed to strengthen the struggle (Interview with Salgado, Head of CENAMI, Mexico, 2012). Following the national assembly, in February, 2012 the NDM members—UNORCA, Honey Integrative SA de CV, Social Solidarity Society Bee Maya of Yucatan, the Organisation of Strategic Litigation Human Rights and CENAMI—and Greenpeace sued SAGARPA for unconstitutionally allowing commercial planting of 235,000 ha transgenic soybeans in southern Mexico, including Yucatan Peninsula (Ibid, 2014a).

The fact the current ruling grants the appeal in favour of the Mayan beekeepers is due to the lack of transparency of governmental authorities. They did not comply with the right to prior consultation of indigenous communities.

Organisations mobilised to find evidence on how plantations of transgenic soybeans affected their legal, economic and environmental rights, and demanded an appropriate consultation process. Transgenic soybean plantations were contaminating the regional production of organic honey, which is exported to Europe. Honey exports represent the livelihood for nearly 25,000 Mayan peasants and indigenous families who practice beekeeping. Beekeeping is one of the main exports of Mexico and the majority of its cultivation occurs in the Yucatan Peninsula.

In the end, the final ruling following the civil society legal appeal, states the violation by SEMARNAT to endorse planting transgenic arbitrarily, with not consultation to the communities. The judgment also states this authorisation contradicts opinions by official technical authorities and academics experts in the field. As a matter of fact, this case, as well as many others in Mexico, make evident how governmental agencies ignore The National Commission of Natural Protected Areas in Mexico (CONABIO) and the National Institute of Ecology and Climate Change (INECC) that have rejected the authorisations of transgenic soybean in Yucatan Peninsula and other states of the country (PPT Ruling on GMO Soybean, Yucatan, Mexico, 2014).

Both, the case of maize and soybeans, show that different arguments are developed to file legal appeals against GMOs in Mexico. These vary from arguing that Mexico is centre of origin of maize to showing the lack of transparency on the approval of licences. The array of arguments is based on the experience gained by civil networks working on the issue for more than ten years. In particular, this work remarks on the specific actions of the NDM that has been a key group of actors bringing valuable information for the appeals.

4.2.2 GMO advocacy at international levels

In 2002 the NDM was formalised to systematically build strategies in defence of native maize in Mexico. Since then its members have used international advocacy to gather support for their struggle. The first action of this nature was a petition to obtain 300 signatures from several organisations around the world to prevent the entrance of transgenic maize imports from the US. These imports are identified as the main source of contamination for the *criollo* maize in Mexico—small-scale peasants and indigenous communities have always practiced the combination of seeds to improve varieties over time. Transgenic seeds were available in Mexican stores such as DICONSA²⁰, which distributed seeds to food producers and which represented an imminent threat to native maize. The petition was formally sent to FAO in order to exercise pressure on the Mexican government at international levels to prohibit the imports of transgenic maize and GMO maize plantations in Mexico. The petition was also supported by a research coordinated and resourced by the NDM members, who collected samples (from 2002 to 2004) across Mexico in order to make a diagnosis of the GMO contamination of *criollo* maize. They traced 33 samples in 130 communities located in six states of Mexico: the state of Mexico, Puebla, Tlaxcala, San Luis Potosi, Hidalgo and Oaxaca. The results, which were corroborated by scientists from the UNAM showed the presence of 25% of samples contaminated (Audio-recording, NDM National Assembly, 2004 and NDM, 2012).

Even when international lobbying has not constituted the most effective tool to stop either Mexican government or TNCs to move forward with their plans of sowing GMO in Mexico. It has become a powerful tool for the NDM members to

²⁰ DICONSA: Centro de Distribución de CONASUPO (Distribution System of CONASUPO). A state-store that distributes seeds and other agro-inputs to Mexican peasants and farmers.

systematise evidence of the violation of rights by the Mexican State and other organisms against small-scale peasants and indigenous settlements. A recent example of this process is the Permanent Peoples' Tribunal Mexican Chapter, of which the NDM was part from 2009 to 2014. More than 1500 communities participated in this process to systematise evidence on 500 cases presented as part of a single demand against the Mexican State. The impact of this effort is still to be seen in terms of actions taken by Mexican State or TNCs, but the communities have been empowered to defend their rights regardless of the final result (Participant Observation, PPT Final Hearing, Mexico, 2014).

To illustrate the type of PPT cases made by the NDM within the PPT, a review of the demand on 'violence against maize and food sovereignty' is presented. A series of 19 prehearings were held which ultimately reached six different arguments against GMO maize in Mexico. These were presented in six hearings held in Morelos, Jalisco, Oaxaca, Puebla, Yucatan Peninsula and D.F. to finally converge in the Final National Hearing in Oaxaca in April, 2014. Each hearing hosted international judges and hundreds of participants, reaching more than a thousand in Puebla. The six arguments against transgenic maize in Mexico showed evidence on: i. Intentional GMO contamination of *criollo* maize by government and private companies; ii. Lobbying of TNCs to dismantle small-scale peasants and indigenous people ways of life; iii. Introduction of seed laws to criminalise the practice of peasants to share and improve their seeds; iv. Arbitrary approval of transgenic soybeans by Mexican governmental entities; v. Signing and ratifying international treaties such as NAFTA to dismantle indigenous people and peasant's life; and vi. Evidence the corrupt relations between private companies and academic corpuses to develop GMO technologies.

The hearing on violence against maize and food sovereignty was presented together with other six interrelated topics that composed the lawsuit of the PPT Final Hearing held in November, 2014 in Mexico City. Moreover, during this event, evidence on systematic power abuse by the Mexican State was also unveiled. One example can be seen in the structural changes made hastily to the Mexican Constitution over the last two decades (*See Box 3*). The final PPT ruling states that one of the types of power abuse occurs at legislative level in order to approve law reforms and other mechanisms to guarantee private sector the access to Mexican resources without adequate limitations. For example, the requesting appropriate environmental studies or identifying preventive actions/mechanisms to allocate distributional benefits in Mexican communities (Participant Observant, PPT Final Hearing, Mexico, 2014).

Box 3: The case of the legislative power abuse by the Mexican State (PPT Final Hearing)

During the Final PTT Final Hearing held in November, 2014 in Mexico City, an analysis of the legislative power abuse was presented, whose highlights are hereby summarised:

1. The first neoliberal amendments to the Mexican Constitutions were made in 1983. They included the addition of three fractions to the articles 16, 25, 26 and 27: XXIX-D, XXIX-E and XXIX-F, limiting levels of participation of the state in economic issues of the country as well as strengthening of private property and the legalisation of corporate participation in Mexican economic duties.
2. Consequently with previous amendments, a series of modifications have taken place in the Mexican Constitution. 55% of them refer to the articles 3, 27 and 123 which correspond to: access to education, use of Mexican natural resources such as land, and workers' rights. The remaining changes are in articles related to: limiting the participation of citizens in political issues, transparency of information, municipal autonomy, electoral processes and human rights. 80.15% of all modifications are to deliberately grant access—rights—to corporations and private companies to use Mexican resources.
3. The abuse of power can be seen in the rapid changes in the Constitution, behind closed doors and no civil participation. A total of 247 decrees (a modification of an article) have occurred since 1983. From these 120 (nearly half of decrees) happened within the previous 3 years under the mandate of the President Enrique Peña Nieto. During this period new decrees were made on: finances, telecommunications, education, energy, health, labour conditions, water and transparency. Most of them go in detriment of social benefits; e.g. Health changes will limit the access to services and pensions and private sector obtained unlimited rights over agrarian labour, environment, fiscal and administrative issues.

President	Period	Political Party	Modified Articles	Decreets
Miguel de la Madrid	1982-1988	PRI	36	19
Carlos Salinas	1988-1994	PRI	55	15
Ernesto Zedillo	1994-2000	PRI	77	18
Vicente Fox	2000-2006	PAN	31	19
Felipe Calderon	2006-2012	PAN	110	56
Enrique Peña Nieto	2012-2015	PRI	41	120

4. Modifications to articles are processes behind closed doors, regardless of the petitions made by the citizens to be included. For example, in the case of the energy reform, which was approved in August, 2014, citizens raised two petitions with more than 2,000,000 signatures. The government rejected them arguing the issue was a matter of state finances, an exclusive topic to be looked after Mexican authorities. However, the energy reform is not only a financial issue; it impacts the use and exploration of natural resources in Mexico. Different organisations have shown its negative impacts. First, it does not consider the investment and development of renewable energies but rather exploitation of petroleum. Second, it does not contemplate mechanisms that enable Mexico to determine the use of new explorations. Third, it does not contemplate the integration of foreign enterprises with Mexican ones—which implies an outrush increase of revenues to foreign countries (Forbes, 2015).

5. A main reason why law' s modifications proceeded without consultation to civil society is that executive branch of government in Mexico remains the principal voice within the congress. Moreover, it can make a final decision and select judges taking decisions of justice in the Supreme Court of Mexico. It does not mean that in all cases courts uphold cases in favour of powerful elites of the country; however, this is what often occurs. Additionally, cases might take long to be solved—this is the case of the appeal against GMO maize in Mexico, which has not been rejected, yet it is in a resolution process.

Source: Built by the author based on Raymundo Espinoza Hernandez and Jorge Fernandez Souza from UNAM on the Final PPT Ruling, 2014.

Another example of power abuse by the Mexican State is observed in communication and media:

The final PPT ruling indicates that in the last 20 months—from January, 2013 onwards, 11 journalists have been murdered in the country. This tribunal has heard many witness statements, but the dimension of silence has also been present which accounts of how fear gags communities in different regions of Mexico. In several communities, the media cannot even do their work and journalists and community radio broadcasters live muzzled by death threats. That level of terror and silencing represents a large-scale violation of freedom of expression and the right to information. A practical monopoly of the media and the fact that television stations are heavily concentrated in the hands of two corporations in Mexico imply a huge capacity for controlling public information, which is at odds with democracy (PPT Final Ruling 2014:7).

A final example of power abuse is direct violence exercised on peasant and indigenous communities. It can be observed in killings, displacements and forced disappearances. One of the most recent cases is Ayotzinapa²¹ where 43 students were disappeared and allegedly killed by Mexican authorities. Another type of direct violence is through environmental devastation of entire regions, which force peasants and indigenous people to migrate in search of alternative livelihoods (e.g. either to migrate to the US or to join the drug cartels). To illustrate this issue the PPT Final Ruling (2014) mentions that 211 out of 500 cases are on environmental issues. In all cases transnational companies are benefited whereas 433 municipalities in 21 states of Mexico are impacted negatively in terms of drugs trafficking routes, exploitation of natural resources, organised crime, destruction of water sources, destruction of farming life, overexploitation of aquifers, environmental pollution from toxic agrochemicals and genetically modified contamination.

²¹ Ayotzinapa is a Mexican town in the state of Guerrero, where 43 students of the Raul Isidro Burgos Rural College in were disappeared on 26th September, 2014 by security government forces. The case is still unsolved.

Ultimately, the PPT Mexican Chapter highlighted the potential of these demands to be presented at the International Criminal Court as a crime against humanity. It declares the following:

Systematic violence refers to the organised nature of the acts of violence and the improbability of their random occurrence. Although the data vary, the number of people killed since the beginning of the six-year presidency of Felipe Calderon Hinojosa in 2006 is estimated at 37,000, increasing inexorably, and these are, in many extrajudicial executions. In 2009 it was the state of Chihuahua, northern Mexico, which reported the highest number of violent deaths, reaching a total of 3,250 in that year alone with Ciudad Juarez declared the municipality with the highest number of violent deaths. At the hearings held and by means of the numerous oral and written witness statements received, the Tribunal has been able to ascertain the extreme gravity of human rights violations in Mexico to the point of a widespread humanitarian crisis affecting very broad sectors of the population and which has led to a crisis of the Mexican State.

The 'abuse of power' has been described as a transformation of the State apparatus which, whilst reinforcing, subcontracting and updating a punitive capacity, it is definitively abandoning any concern for the wellbeing of the population. Using public power to support the private interests, thereby encroaching the historic gains achieved by peoples' struggles. The process of a Mexican structural transformation to exercise power abuse stems from multi-dimensional sources of actors related to each other: i. Transnational corporations; ii. Countries of origin of those corporations—essentially, the US and Canada; iii. International institutions such as the WTO, the IMF and the World Bank, amongst others, which act as representatives of the transnational corporations; iv. The Mexican State that act on behalf of the interests of transnational corporations, their countries of origin and national and transnational criminal groups (Participant Observation, PPT Final Hearing, Mexico, 2014).

It is worth noting that the purpose of this section is not to detail examples of power abuse or the PPT demands, but to show evidence of the work of the NDM on the systematisation of information (through cases) to evidence violence against communities in Mexico. It is a relevant achievement of the NDM, whose most important and positive outcome, in the short term, has been the

empowerment of people that have learnt to defend their own rights in local and international courts. Andres Barreda, the Mexican coordinator of the PPT claims: “Eventually the PPT will resound, how and where, we do not know, but it will... in the meantime we know the PPT has already joined the pathways of diverse organisations, communities and individuals making us stronger to continue this endless struggle” (Participant Observation, PPT Final Hearing, Mexico, 2014).

4.2.3 Supporting the milpa model of food production

The labour of the NDM with the communities is extraordinary in terms of strengthening their traditional forms to cultivate food. This is the NDM main strength and victory (Interview with Lara, Head of Green Peace, Mexico, 2012).

The case of Santiago Lachiguirí region in Oaxaca is one of the most recently documented cases of the work done by CENAMI and CECCAM (both NGO members of the NDM) in joint effort with indigenous communities to support the traditional *milpa* model of food production. The case has been published to share the learning process with other communities and members of the NDM.

In 2003, communities of Santiago Lachiguirí region were approached by the governmental entity of SAGARPA that asked them to join a program of ‘environmental services’ . One of the community members explained: “We were confused about the agreement as local authorities wanted to offer us money for reforestation, water conservation and soil recovery; activities we were already doing in our territories” (CENAMI, 2013:5). Even when community members were unsure about the intention of the proposal, the fact of receiving an extra income for the activities they were already performing was gladly accepted and an agreement for 5 years was signed with local authorities (Ibid, 2013).

However, the communities of Santiago Lachiguiri were informed of payments for environmental services, but not of access restrictions to certain zones in their territories. As soon as the agreement was about to end, the communities from Santiago Lachiguiri demanded to return to the previous situation. It was when they learnt that the official document stated contract's duration of 30 years. During a local assembly, members of Santiago Lachiguiri decided to ask for the support of CENAMI and CECCAM to issue a demand against SAGARPA. CECCAM and CENAMI initiated a research mapping process together with the community as previously stated to file a demand. Maps were used as the main tool to delimit different zones in which the 120 communities of Santiago Lachiguiri used to live (territories from which some have already been displaced).

The research also showed how the restricted areas encompass zones where the community used to cultivate the *milpa*, a multi-crop food production system that includes the combined growth of maize (*zea mays*), beans (*phaseolus*) and courgette (*cucurbita*). Each of these crops helps one another restore soil nutrients (CECCAM, 2014). The *milpa* is a traditional way in which indigenous communities across Mexico and Central America cultivate maize. Peasants have enhanced the system over time and currently it also includes the growth of tomato (*physalis*), chili (*capsicum*) and amaranth (*amaranthus cruentus*) as well as fruits, aromatic and medicinal plants. The *milpa* is recognised by the National Mexican Institute of Nutrition as a food system with high nutritional value, rich in carbohydrates, proteins, vitamins and minerals (Participant Observation, Conference on Obesity at National Mexican Institute of Nutrition, Mexico, 2013).

Furthermore, the Santiago Lachiguiri region practices the *milpa* on 'itinerant basis', which means crops being rotated in order for the soil to recover. It implies cultivating for approximately 2 to 3 consecutive years on a parcel of land

and at the end of the period, burning it. The burning generates carbon to regenerate soil, which takes approximately 5 years. During this time the lands are not cultivated (Interview with Chavez, Indigenous member from Santiago Lachiguiri, NDM National Assembly, Mexico, 2013). Practicing itinerant agriculture is not only to protect the soil, but it is also for the production system to adapt to a wide range of precipitation conditions and types of vegetation in the region, which indigenous people have studied for a long period of time (Ibid, 2013).

The research also produced an estimated income obtained from the payment for environmental services versus the human investment of looking after natural resources of the region. This calculation implied the costs of restrictions on using lands; e.g. the cost of buying food versus producing it. This resulted in an estimated loss of 80% (CENAMI, 2013). Moreover, it became evident that the restricted areas (in order to preserve natural resources) to indigenous communities were not restricted to governmental agencies that built a factory to produce bottled water. This project did not benefit the communities; on the contrary, it might imply paying for irrigation water. On top of this, with the re-zoning of the territory, the Santiago Lachiguiri local assemblies started to be dissolved over a period from 2003 to 2008 in which they agreed on joining the environmental services programme (Ibid, 2013).

Following the mapping process, CECCAM and CENAMI helped initiate the process of issuing a legal demand against local authorities. The demand was based on evidence obtained from the mapping process as well as the lack of transparency by local authorities. In fact, official documents contained names of governmental officials as well as of indigenous members who did not attend the assembly in which the agreement was made. Furthermore, the official documents confirmed the attendance of 460 indigenous members out of 900 living in the

region. The community showed that only 415 signed the agreement; this was inconsistent with the 460 signatures in the official document. Besides the number of signatures did not comply with the legal requirement that specify consensus of at least three quarters of the community in order to proceed with an arrangement which implies the signature of a minimum of 675 members.

In the end, communities managed to officially cancel the agreement. Most importantly, the process helped reinforce the mind-set of the community about the importance of cultivating the *milpa* as a source of food and as a means to prevent being displaced from their territories. 98 families retrieved their capacity to produce food for self-consumption after recovering their lands. Additionally, they claimed that the research helped them systematise and make visible their work on protecting natural resources. The support to communities by CECCAM and CENAMI is not always through mapping or filing demands. It is also offered through periodic workshops on techniques to increase productivity of the *milpa*—open every year to communities of the NDM on CENAMI facilities. Examining the case of Santiago Lachiguiri goes to show that the process of preserving the *milpa* in Mexico requires more than focusing on production techniques. It is rather an on-going process of seeking strategic actions to prevent the continuous threat and encroachment of lands by the government or private companies to the detriment of communities and their rights to live and to cultivate in their territories.

4.2.4 Maintaining benefits of the Land Reform in Mexico—Article 27

The article 27 of the Mexican Constitution states that indigenous communities and smallholder peasants have the right to a parcel of land for agricultural

purposes. These communal lands are commonly known as *ejidos* and are legitimised within the Mexico's National Agrarian Registry. The *ejido* system was introduced as an important component of the Agrarian Land Reform in Mexico after the Revolution of 1910 (de Ita, 2006). In 1992 a modification to this article was made in order to allow the selling or renting of communal lands. According to the WB (2007), communal lands were expected to privatise due to the lack of governmental subsidies for small-medium landholders and their consequent lack of capacity to compete in the national market. However, this was not the case. One example is the case of the members of the NDM who have kept their lands to produce food, either for self-consumption—mainly in the south of Mexico—, but also for commercialisation in the north of the country (de Ita, 2010). The Head of CECCAM, de Ita (2012) affirmed in an interview:

The Land Reform has remained a topic in each meeting before and after the formation of the NDM where activists, researchers and peasants participate. Together we have learnt that without land there is not opportunity to defend neither the dignity of people, nor the food sovereignty in Mexico. Communal lands allow peasants to have access to a piece of land and on top of that, to share resources such as water and timber or interchange knowledge or crops to enrich their diets.

Peasants have learnt that producing food is essential to maintain access to their communal lands. In the north of Mexico medium landholders who still produce food for commercialisation have maintained a close relation with the government to receive funding for agriculture, whereas peasants from the south are more aligned with the Zapatista line of thinking according to which they should remain independent from government and have organised to defend their territories and autonomously produce food for self-consumption (de Ita, 2010). In line with this idea, during a PPT workshops, Barrera (2013) mentions: “The beginning of the NDM work was focused on resisting specific issues such as the GMO contamination of native maize or bio-piracy; but now we have understood that at

the core of the struggle is keeping peoples' territories and their capacity of producing food" (Participant Observation, PPT Workshop on Mapping Tools, Queretaro, Mexico, 2013).

To further illustrate this achievement of the NDM, results from the research conducted by de Ita (2006; 2005), Head of CECCAM, as part of her doctoral research are discussed. The research was on the impact of the Procede Programme²², the instrument used by the Mexican government following the land reform in 1992 to privatise communal land. This demonstrates how small and medium landholders (both indigenous and peasants communities) have kept their lands regardless of their inability to compete in the national market. Half of the Mexican territory, 106 million ha, is declared under communal *ejidos*, which are owned by the indigenous and peasant population. Of these lands only 0.4% has been privatised and 40% has been certified under the Procede Programme with the aim of being rented (de Ita, 2005). They are mainly located in the north of the country where 75% of maize production in Mexico takes places. Peasant rent land to private producers who pay for the access. For example, a northern state of Sinaloa with the biggest production of maize in the country has also the biggest amount of land certified under Procede—95%, out of which 80% is rented. On the other hand, a southern state of Oaxaca with the highest diversity of indigenous settlements has 20% of its land certified under the programme merely for renting (de Ita, 2006).

Another form to illustrate this achievement is by bringing testimonies of peasants, Gomez from Chiapas claims:

²² PROCEDE: The Programme for the Certification of *Ejido* Land Rights and the Titling of Urban House Plots

Since the greatest mobilisation of peasants in Mexico in 1994 following the NAFTA agreement, we have been involved in different kinds of meetings and assemblies of the country on a systematic basis. In these spaces we have learnt that if we do not produce maize, we will lose our lands. There is no other job that would enable us to keep living in our regions, rather than being slaves in the construction or tourism sectors in urban settlements. Moreover, maize is our food and our culture; we are the children of the maize. We will never sell our lands, we are peasants and growing maize is our good way of living (Interview with Gomez, Indigenous Member of Guadalupe Atoyac, Chiapas, Mexico, 2012).

In addition to cultivating maize, other strategies need to be implemented to maintain access to communal lands. “The struggle is becoming more and more complex and cultivating maize is not the only way to defend lands, although it remains at the core of the struggle” (Interview with Esteva, Oaxaca, Mexico, 2011). He also explains that in 2005—when a reform to the Article 27 was made in relation to the access and use of mineral resources of Mexico— licenses were issued for TNCs to exploit mines, mainly in the state of Oaxaca. Consequently, indigenous and peasants settlements have been faced with the necessity of widening the scope of the struggle beyond cultivation of maize. It refers to operationalising strategies to stop/reverse the forms in which these projects take place, which might force them to migrate from their lands. These projects are normally approved without a proper consultation process to the communities living the region, lack of transparency and/or without precautionary principles to prevent environmental disasters.

Different civil networks with similar dynamics to the NDM have emerged to activate strategies to face not only mining projects, but also irregular landfills, dams and others (de Ita, 2010). For example, the Asamblea Nacional de Afectados Ambientales (ANAA, National Assembly of the Environmentally Affected) was formalised in 2008 in order to defend communal lands on several fronts: mining, water over-exploitation, irregular dumping sites and construction

of dams. Another example is the Movimiento Mexicano de Afectados por las Presas (MAPDER, Affected by Dams Mexican Movement) that gathers to work on strategies to defend indigenous settlements from dams' construction with no consultation processes in south region of the country. Yet another example is the Red Mexicana de Afectados por la Minería (REMA, Mexican Anti-mining Network) that resists mining projects across Mexico. Specifically, they have supported Oaxaca indigenous communities, where massive presence of mining projects is taking place. These civil networks are composed by NGO professionals and specialists in resources management or human rights that work hand in hand with communities to develop strategies to push projects with improved outcomes or merely stop them (Ibid, 2010).

In line with this, Octavio Rosas Landa, coordinator member of the PPT Chapter Mexico, affirms that on some occasions these networks interact, although each of them normally work in their own spaces and on proper aims in order to deepen the analysis of roots and formulation of actions. However, he also points out that even when different civil networks work on their own issues, they have learnt from the NDM dynamics of work and understand that maize cultivation is an essential part of the struggle (Participant Observation, NDM National Assembly, Mexico, 2013). Furthermore, these civil networks share another commonality, all of them operate in spaces that learn and decide on actions collectively, which have produced specific gains. Some recent achievements of these civil networks' are listed below. The cases presented are based on: Interviews with Esteva, Oaxaca, Mexico (2011), de Ita, (2010) and Ribeiro (2014b).

- i) Parota Dam Project: The construction of the dam La Parota in the state of Guerrero has faced with the resistance from the Consejo de Ejidos de las Presas (CEPA, Council of *Ejidos* and Communities in Opposition to Dams)

against the dam. For this dam, 17,000 ha of arable land of the Cacahuatpec indigenous settlement would be flooded and 25,000 peasants would be evicted. In September, 2009, the Commission of Electricity responsible for the project confirmed that the construction of the dam will be postponed until 2018. This decision is a positive outcome of CEPA who impugned with legal appeals and other types of mobilisations to receive gestures of national and international solidarity. Members of CEPA worked together with people from MAPDER and ANAA. They also obtained support from the special rapporteur of the United Nations on Human Rights for Indigenous peoples.

- ii) La Trinidad Mining Project: The amendments to the Mining Act of 2005 in Mexico virtually declared an open exploitation of territories of indigenous people, which benefited a Canadian TNC. In 2007 the government of Mexico issued 424 mining concessions to mining companies. Over 90 ha in Oaxaca were licensed to Canadian mining companies. According to the Mexican Geological Survey, more than 13% of territory in Oaxaca has been conceded to private companies until June 2008. Since 2007, organisations from Oaxaca have linked with communities of Guerrero, Chiapas, Mexico City, San Luis Potosi and Jalisco, as well as with people from REMA. Together they have supported resistance against mining projects through research and its dissemination on the negative impacts for communities as well as denouncing abuses from TNCs.

The Trinidad Mining Project is the first of more than 50 mines that are to be built or reactivated in the valley of Ocotlan, Oaxaca. This project was conceded to the subsidiary Canadian company Fortuna Silver Mines. This mine is going to be installed in 40,000 ha of territories of Zapotec communities in San Jose Progreso, Magdalena, Ocotlan and the surrounding

communities. The project would affect 160,000 ha polluting rivers with cyanide, mercury, arsenic and lead, as well as reducing the aquifers' levels. The Zapotec communities and organisations have occupied the construction facilities of the mine to demand the immediate termination of the project. State police has repressed the mobilisation and jailed a few members. However, political pressure from the Zapotec indigenous communities has achieved their liberation; what is more, organisations continue demands to reach a final deliberation. In the meantime, the project is on hold.

4.3 Indirect achievements of the NDM

The indirect achievements of the NDM can be examined on the ground but not considered specific aims by the members. Two main indirect positive outcomes were identified: i. Increasing access to nutritious food in indigenous communities; and ii. Supporting reduction of violence in indigenous territories. This section also examines opportunity areas—defeats—of the NDM.

4.3.1 Increasing nutritional levels of indigenous communities

By and large, members of the NDM do not discuss the aspect of access to nutritious food as a principal topic, although it appears occasionally. Yet, a more balanced diet is observed in communities practicing the *milpa*, a direct aim of the NDM.

The Mission of Guadalupe (MG), member of the NDM, works with indigenous youth in order to prepare them to become teachers of children in the

communities. Youth participate in workshops held by the MG as well as by CENAMI. Sanchez, one of youth participants on the process said: “We have learnt to systematise material to spread knowledge among youth and children in the communities; this knowledge has been grasped in workshops of CENAMI in topics of permaculture, cultivation of medicinal plants and improvement of *milpa*” (Interview with Sanchez, MG, Chiapas, Mexico, 2012). She added that by putting into practice the workshops’ learnings youth have understood the importance of cultivating their own food. Families that reduce their agricultural practices ended up migrating to the US or to the nearby cities to work for minimum wages, which are shamefully low. Youth might also have a job in their own region, such as working for Monsanto, a company that is a large-scale producer of tomatoes for export. However, it does not pay good salary or offers good working conditions. They have neighbours who work for Monsanto and they realise how these families eat less variety of foods as they buy processed foods—mainly soda drinks—which generate health issues such as negative impacts on stomach. Consequently, youth members working with MG prefer to channel their energies into implementing programmes to improve food systems and diets. In fact, at this moment in time, they are starting a project with the support of MG to measure the nutritional level of children and youth in the communities of Margaritas, Chiapas. They believe that by doing this, people will become more conscious of what they eat and increase the variety of foods as well as value the cultivation of *milpa*.

This research used qualitative methods as the main approach to gather data; in consequence, it did not seek numeric data to corroborate the increased nutrimental levels of communities in which I stayed as a participant observant. The community project to measure the level of nutrition in Margaritas was yet not concluded and it could not be included as part of this thesis. Nevertheless,

testimonies and the participant observation visits to different communities in the region of Margaritas, Chiapas, confirm that communities working the *milpa* could have an improved nutritional level when compared with others. The everyday diet of families producing the *milpa* included rabbits or chickens, a variety of vegetables and fruits in addition to maize, beans and coffee.

4.3.2 Supporting reduction of violence on indigenous territories

Indigenous communities from the Itsmo of Tehuantepec in southern Mexico have experienced considerable environmental damage due to the operation of wind farms in their territory, which affect their access and use to land. This impact has resulted in a loss of livelihoods of the communities who are no longer able to keep their economic activities and mode of subsistence. Additionally, the access to land owned by these communities was granted to private companies under unilateral and disadvantageous arrangements that violate human rights (Oceransky, 2010). The private sector has offered only 1.5% of the wind energy sales revenues to the indigenous landowners, keeping the remainder for themselves. This translates into an average amount of \$1.4/day per family; if this were the only income for the family, many would live below internationally recognised poverty levels (e.g., less than \$2 per day) (Ibid, 2010).

A recent study carried out by PPT members at the Faculty of Economy of UNAM (2015) further contributes to this perspective. It states how previous conditions in the Itsmo of Tehuantepec have forced many communities to leave their territories in search of alternative ways of making a living. Members of the communities, mainly the youth, either migrate to the US or in many cases shift to work for the drug cartels (PAPIIT UNAM Project, 2015). In fact, this compilation

shows an increase in the number of youth (aged 15 to 24 years-old) migrating to the US since 2010. Moreover, crossing to the US is less viable not only because the physical risk that might imply death, but also because it has become more difficult to make sufficient amount of money to live and send to Mexico—a principal reason for migration. Therefore, becoming part of the drug economy in Mexico is a more viable alternative, with nearly 10% of Mexican population working in it (Poverties Org, 2015). Young migrants come mainly from rural areas where fewer opportunities are available to work the land, which is increasingly coming under ownership of private companies undertaking highly intensive agriculture, mining, dams and energy projects (PAPIIT UNAM Project, 2015).

On a more positive note, some indigenous communities have organised to develop their own managed wind energy projects in a joint work with civil networks working on this topic (Oceransky, 2010). He also emphasises that they are not against energy technology but rather the conditions in which the processes of development are taking place. Unfortunately, few communities in the region are working within these networks, among them the NDM. Given this context, the work of the NDM in joint efforts with other civil networks contribute to social peace in Mexico, a country where violence has increased dramatically since 2006 in close relation to drug trafficking. Reducing violence in Mexico is not an explicit aim of the NDM, but they are aware of the situation and recurrently raise the topic in their meetings. They recognise the importance of the issue, but also a possible danger of confronting it directly (Participant Observation, NDM National Assembly, 2012 and 2013).

4.3.3 Opportunity areas of the NDM

Members of the NDM frequently mention they do not have specific achievements, but the trajectory they share over the years. This is a truly positive outcome, as their work has developed to positively impact on improving life of members. Nevertheless, having a clear vision of their achievements could help share their work with other groups in Mexico or enhance collaborations with organizations that might complement its work to strengthen its struggle.

Another opportunity area of the NDM, mentioned by other interviewees, is the perception of it of being a closed group that would share its dynamics of work with difficulty. Perhaps it is not due to the lack of willingness, but its focus and position that remain invisible on a political landscape such as political parties, media or public opinion in Mexico. These members also recognise their biggest achievement is working on the ground which directly contributes to improving peasant life and preventing the spread of GMO contamination (Interviews with Lara, Head of Green Peace, Marielle, GEA Member, San Vicente, Head of Semillas de Vida, Mexico, 2012). In line with this idea, members of the NDM also recognise that they need to join efforts not only with civil networks that work with similar dynamics such as the PPT organisations. “Faced with a more complex world we need to join efforts with other organisations in Mexico lobbying for these issues, in the end we need strategies to be hitting at all levels in order to strengthen our struggle” (Interviews with Salgado, Head of CENAMI and de Ita, Head of CECCAM, Mexico, 2012)

Finally, by expanding their linkages with other organisations they might enhance channelling of funds, which becomes a limitation in many cases to cover other areas or take more actions. They mostly depend on funding from International

Non-Profit Organisations (INGOs) through core members such as CECCAM, CENAMI, GRAIN and ETC Group, as well as the resources given by the communities. Budget limitations of the NDM make it difficult to hire new specialists to carry out research or to further improve the methods food production. Expanding strategies of the NDM on this topic of increasing monetary resources has not been the focus of the group and a clear opportunity area.

4.4 Contribution of the NDM to food sovereignty in Mexico

Each of the different NDM achievements was crosschecked with the food sovereignty pillars in order to examine its contributions.

The accomplishment of the NDM on legal appeals against transgenic maize and soybeans can be related to five out of the seven food sovereignty pillars: democratic control, food as a basic human right, agrarian reform, reorganisation of food trade and protection of natural resources.

Legal appeals contribute to democratic control over the resources, food systems and/or supply chains by indigenous and peasant communities. The appeals have opened the space for civil society to negotiate with authorities and to uphold their rights in relation to control over their resources and territories. This is the case of the upheld appeal to ban soybeans in Yucatan Peninsula of Mexico, in which the organised communities ensured their right to cultivate organic honey without potential risks of contamination from transgenic soybean. The contamination negatively impacted their capacities to negotiate and

commercialise honey in international markets. This situation was in detriment to their livelihoods and consequently might force them to migrate from their territories. Legal appeals are also related to the right to food as a basic human right which states: “What really makes a difference between truly emancipatory political-social movements is their active participation to impose, construct and open spaces for enforcement of their visions” (Zizek, 2009).

On top of that, as indigenous and peasant communities are capable of maintaining the access to communal lands to cultivate their crops, either for self-consumption or for commercialisation, they maintain the benefits from the right to access to communal lands, enacted in the Mexican Constitution. This is a contribution to the pillar of the agrarian reform that states the redistribution and access to land should not be limited to private access. La Vía Campesina emphasises that land access is at the core of the food sovereignty; and through legal appeals communities defend their right of access to it as well as to maintain their food production systems.

Legal appeals are also related to the reorganisation of the food trade pillar. The reason is that these processes support producers to be recognised by their high quality products; e.g. by selling organic honey in specific niche markets in Europe where consumers can pay fair prices. The capacity of generating food circuits that introduce quality, fairness and environmental concerns as the underlining values is part of challenging the dominant food system—hence contributing to food sovereignty in Mexico. Finally, legal appeals directly contribute to the protection of natural resources. This pillar expressly rejects the introduction of GMO under the rationale of the precautionary principle, and in the case of maize, due to Mexico as centre of origin.

The achievement of international advocacy to support rejection of GMOs in Mexico is principally related to two out of the seven pillars of food sovereignty: democratic control and ending globalisation of hunger. The positioning of the GMO issue at international levels increases capacity of democratic control by local indigenous and peasant communities that become empowered to defend their rights. E.g. Within the PPT process, regardless of the unbinding character to influence over the Mexican State decisions, peasants and indigenous have acquired the know-how to make their own demands, legal appeals or any other process to stop/reverse actions from the government or private companies. The impact at international levels is still to be seen, but the voice has been raised and the evidence of violation of rights been systematised, which might take force in a given opportunity window. Moreover, international advocacy is also related to the pillar of ending globalisation of hunger in the sense that it appeals to international organisations to support the modification of current undemocratic rules as well as to exercise pressure on actors abusing power in Mexico.

The achievements of the NDM in terms of the benefits from the Agrarian Reform in Mexico as well as the supporting the *milpa* model of food production are closely related to four out of the seven food sovereignty pillars: democratic control, land reform, food as a basic human right and protecting natural resources. Democratic control and agrarian reform appear again as the pillars to which work of the NDM contributes. As already explained, regardless of the amendments made to the Mexican Constitution to allow peasants to sell or rent their lands, they have maintained their right to communal land access through the cultivation of the *milpa*. Producers have understood that cultivating their own food is at the core of the strategy to keep this right; what is more, it is central to having access to a dignified life. Moreover, even when in Mexico there is a lack of extension services—which is part of the land reform pillar—to support producers

with credits, subsidies of inputs, support for local markets and others, peasants produce for self-consumption. The struggle goes beyond defending a model of food production or keeping access to communal land. The struggle is to keep their culture and identities as indigenous communities in Mexico.

Previous achievements are also related to food as a basic human right and protection of natural resources' pillars. Communities that produce their own food—mainly those who produce the *milpa*—have access to quality food. In addition, the *milpa* is cultivated under ecological methods, soil is conserved and bio-diversity is enhanced due to the multi-crop production system.

Reduction of violence in indigenous and peasant settlements may contribute to all pillars due to the fact that people are capable to keep their lands, ways of life and ways of producing food. Yet this analysis points to their contributions to social peace in Mexico. The reason is that by preventing a shift from cultivating food to cultivating drugs/forming part of the drug cartels indigenous and peasant communities contribute to peace. Mexico is a country where more than 100,000 people have been killed during the past decade, including extra-judicial records, and most of cases are related to drug trafficking (PTT Final Ruling, 2014). Social peace is also related to not using food as a weapon in order to displace people from their territories; e.g. environmental devastation due to industrialised ways of food production that might force people to migrate. In the NDM case, communities do the contrary; they prevent their displacement by cultivating food.

Finally, the support to increase the level of nutrition of indigenous and peasant settlements contributes to the pillar of food as a basic human right. In a country like Mexico with one of the highest rates of obesity and important

undernourishment issues (*See* the Chapter 1 of thesis for further details), growing the *milpa* increases the capacity of people to have access to sufficient, safe and nutritious food. This meets their dietary needs and food preferences—as stated by the food security definition and also by the food as a basic human right perspective.

Table 9: Contribution of the achievements of the NDM to food sovereignty in Mexico

	1. Legal appeals	2. International advocacy	3. Land protection	4. Milpa system	5. Violence reduction	6. Nutritional indexes
1. Food as a basic human right	x		x	x		x
2. Agrarian reform	x		x	x		
3. Democratic control	x	x	x	x		
4. Protection of natural resources	x		x	x		
5. Reorganising food trade	x					
6. Ending globalisation of hunger		x				
7. Social peace					x	

Source: Built by the author based on the analysis of achievements of the NDM versus the food sovereignty pillars.

Three achievements of the NDM contribute the most towards food sovereignty in Mexico: legal appeals, maintaining access to communal lands and supporting the *milpa* model of food production. At the same time, the three of them contribute to four pillars of food sovereignty: food as a basic human right, agrarian reform, democratic control and protection of natural resources. It is worth noting that in all cases democratic control appears as the principal pillar in which member of

the NDM focus to impact on other pillars. In all cases—the soybeans and maize appeals, the support for the *milpa* in Santiago Lachiguiri, the PPT demand to evidence violation against maize and food sovereignty and abuse of power in Mexico and the Parota Dam and La Trinidad Mining projects—the first action taken by members of the NDM has been to gather in order to understand roots of issues and collect evidences in order to formulate actions. During an interview with Salgado, Head of CENAMI (2012), he insisted that it is fundamental peasants get empowered themselves as the panorama is complex and they need to face a multi-source threats in their territories. Therefore, they need to be capable to raise voices at their local assemblies but also in any other national or international forums. Given this perspective it might be affirmed that democratic control plays a pivotal role for actors to open further spaces of struggle and be successful on other fronts. Democratic control understood as the capacity of people to enhance their possibilities (thought widening their knowledge and the generation of multiple strategies) rather than taking decisions within a constrained panorama.

Additionally, democratic control goes in line with the food as basic human pillar, approach that enables people to open spaces to enforce their visions as well as ensure the capacity to have access to the resources to live in dignity.

Upon completing this analysis it also clear that most positive outcomes of the NDM can be seen in the local spectrum: access to land, producing under agro-ecological practices and accessing to quality and sufficient food. Whereas reorganizing food trade, ending globalisation of hunger and social peace are not considered their main achievements, pillars with higher impact at international levels. It might be seen as a weakness of this civil network, but at the same time,

it is its main strength as they are capable of improving life of people on the ground.

A close relationship among the different pillars should also be remarked. It reinforces the integral approach of the food sovereignty framework—a process of development rather than a specific objective to be achieved. E.g. democratic control, land access and food as a basic human right are intrinsically related in the achievements to uphold legal appeals. These become the tool to defend communities by generating spaces of dialogue and defence of rights with gains in access to land, quality and sufficient food and beyond these, increasing capacity of communities of maintain their culture and territories. The intervention in one particular pillar would often impact other pillars' outcomes. It is important to stress that strengthening democratic control is critical as it contributes to all the other pillars.

4.5 Concluding remarks

Qualitatively speaking, a more dignified life of the indigenous and peasant communities that are part of NDM can be considered the most tangible outcome of NDM in Mexico. As a matter of fact, a concluding remark of this section is that civil networks' main focus of work is to improve life of peoples on the ground. It is aligned with food sovereignty in its perspective on:

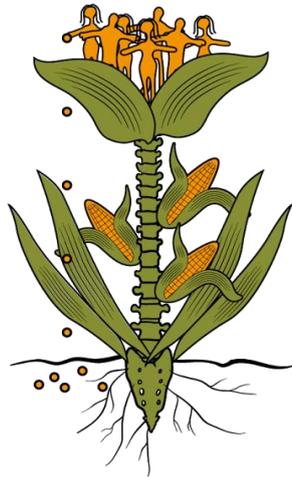
Food sovereignty is better understood as a transformative process from below that seeks to recreate the democratic political realm and generate a diversity of autonomous food systems based on equity, social justice and ecological sustainability (Pimbert, 2008:3).

Another remark concerns the interrelation among the different pillars, in which democratic control plays an essential role to obtain benefits in other pillars, at

least in the case of Mexico. The NDM demonstrates that by working on this pillar windows are opened to build strong local food systems, improving the access to quality of food, protecting the right of access to communal land, protecting natural resources, contributing to peace and at some extent reorganising food trade with the support of fair supply chains.

Finally, further gathering of quantitative data might be part of a future research to complement qualitative findings of this thesis. For example, to specify data of the increased biodiversity in communities that produce *milpa*, or to examine other specific gains of the civil network' s work in order to inform other actors working on similar issues or related to food sovereignty.

Chapter 5: NDM evolution process and operational dynamics



A historical reconstruction of the Network in Defence of Maize

5.1 Introduction

The principal aim of this chapter is to answer the sub-questions: How does the NDM succeed in their objectives? What are the salient characteristics and evolution stages that enable civil networks to succeed?

According to Chapter 2, "The Analytical and Theoretical Framework" , the hypothesis that addresses these questions is that civil networks have the potential to challenge the dominant system when higher levels of evolution are observed, namely, reaching the Syl-transformation stage. This stage implies higher levels of collaboration with larger capacity to efficiently manage multi-level and integral strategies. The strategies are focused on empowering communities to struggle against any type of organisation without aims of social justice (*See* Table 3 of this thesis for detailed characteristics of each stage of the civil network' s evolution process).

The Chapter 2 also points out that in the analysis of the evolution process for civil networks, it is yet to be identified what makes these groups shift from one stage another. Therefore a further examination of other authors working on networks' organisational forms is conducted. It states that at the core of the evolution process is collective learning (as process and as outcome). Collective learning is defined by different characteristics: mutual respect and influence, leaders as catalysers and facilitators, diversity of meeting spaces, networks as the organisational base and the inclusion of linking nodes, specialised knowledge and expert know-how actors.

This chapter offers an analysis based on a reconstruction of facts in order to identify the different stages of evolution of the NDM. The intention of this section is not to present a detailed history of the NDM, but rather to identify relevant facts that enabled the establishment of this civil network's dynamics as well as its different stages of work. Castells (2004) argues that it is not necessary to understand past features to investigate present dynamics of social movements; nevertheless, few precedents give insights into the context, explaining how it influenced their current forms of operation.

The chapter is organised in four parts. The first is concerned with the precedents for the NDM. This period of analysis corresponds to 1970-1990, a period in which a change in the dynamics of social movements is observed at a larger scale (Castells, 2004; Esteva, 2010b; Wallerstein, 2011). Consequently, it will impact the NDM in Mexico. The second part corresponds to the resilient-network stage of the NDM, a period that lasted from 1990 to 2002. Visible features of this stage can be identified as 'isolated' actions carried out by individuals and teams of organisations working together. The third part corresponds to the CoP-transition and Syl-transformation stages. Features of both stages are presented together as no evident boundary among them is identified. This period of time is delimited from 2002 to present. The fourth part of this chapter discusses the salient characteristics of the civil networks' dynamics of operation, and most importantly, what is at the core of shifting from one stage to another.

The data presented in this chapter are based to a variety of sources. They encompass primary sources of data such as participatory observation and in-depth interviews. They also include a wide collection of secondary sources: transcribed audio-recordings from NDM national assemblies, bulletins written by members of the NDM, journals and academic sources on new social movements

in Mexico and PPT documents (*See Appendix 3 for a detailed list of secondary sources used in this chapter*).

5.2 Precedents for NDM—1970 to 1990

The historical reconstruction of this chapter starts the 1970s, a time of changes for social movements at an international level. Two relational systems from Herrera (2008) are used to frame the context and features influencing the formation of the NDM: ‘social practices’ and ‘consciousness’ (*See Appendix 2 for a detailed explanation of each relational system*). The first refers to diverse forms of civil society organisation in order to support or diminish the access to tangible and intangible resources, for example, social movements’ dynamics as well as their structures and types of actions. The second refers to the ‘consciousness’ of people about their positions in the process of accessing goods and services and their own role in the process, e.g. having advantages or disadvantages, being exploited or treated as equals. Selecting these two relational systems does not mean they are the only ones influencing the NDM context, but the ones that allowed examining the NDM’s precedents.

5.2.1 Social practices: from syndicates to an organised civil society

In Mexico, a change in social practices is observed in direct relation to the economic restructuring of the country, also influenced by cultural changes in consciousness of global social movements during the 1970s. It refers to manners

in which civil society organises to obtain access to the tangible and intangible resources—which Herrera (2008) calls improving the dignity of life.

This change was observed in the formation of ‘National Coordinators’ that agglomerated different organisations in the country working independently from the state and political parties. Prior to this, civil society in Mexico used to be organised in ‘unions’ in direct relation with the state apparatus—the former giving votes to the latter as an exchange in channelling financial resources (Avila et al. 2011). This meant a transition to become independent from the state, as national coordinators were capable of taking their own decisions—no longer in exchange of votes or others political favours. Two main representatives of these forms of organisation were the Congreso Nacional Indígena (CNI, National Indigenous Congress) and the Coordinadora Nacional del Plan de Ayala (CNPA, National Coordinator of the Ayala Plan) that initiated their operations in 1974 and 1979, respectively (Interview with Salgado, Head of CENAMI, Mexico, 2012; Avila et al. 2011).

A discussion on how to proceed as ‘newly organised civil society’ took place at forums of the CNI and CNPA. It is worth noting that these happened in a context in which both, violence as well as fewer subsidies from the state, were prevalent conditions. One violent event that marked civil society was the 1968 Tlatelolco mass killing²³. In fact, these militants were leading some of the discussions held at these spaces “After 1968 academics, activists, teachers and researchers started to work hand in hand with peasants and/or city-dwellers to have a deep

²³ The Mexican Student Movement of 1968 was a social movement of students and workers, influenced by global movements of that time. Their main claims were towards freedom of speech in addition to expressing their dissatisfaction with society in search for a better world. Government opened fire on protesters in the Tlatelolco Plaza, Mexico City, on 2nd October, 1968. Thousands of militants were killed.

understanding of the situation in the country; many of the discussions took place at the CNI and CNPA” (Interview with de Ita, Head of CECCAM, Mexico, 2013). A well-known case is the one of Lucio Cabañas, a recognised guerrilla fighter, activist and teacher who participated in the 1968 movement and later joined rural communities in the south of Mexico to be able to grasp how to proceed with their demands. The main output of Lucio Cabañas’ work pointed to the necessity for truly autonomous organisations managing their own resources and supply chains (Avila et al. 2011).

Subsequently, in the 1980s another important fact made civil society shift towards an increased political and financial autonomy. It was due to their capacity to mobilise resources by themselves following the 1985 earthquake in Mexico City. This was a disaster for the country that was tackled by INGOs (International Non-profit Organisations) in collaboration with Mexican civil society. All of these organisations were the protagonists in the emergency rescue (Ibid, 2011). Mexican civil society learnt about its capacity to become highly organised and mobilise resources without the need of the governmental agencies. From this moment onwards, social movements in Mexico have been composed of both, INGOs and Mexican NGOs working at national, regional and local levels (Interview with de Ita, Head of CECCAM, Mexico, 2013). An additional aspect to mention is the use of Internet which is mentioned insistently by Castells (2004) as a fundamental factor to encourage communication and flow of information, which is also the case in Mexico during that time (Interview with Marielle, GEA Member, 2012).

It is also in the 1980s when national autonomous organisations were formed, such as UNORCA—a peasant organisation that emerged from CNPA. These organisations worked mostly at regional levels and started claiming to operate as ‘networks’ , meaning more horizontal organisations that took decisions

following a different process of decision-making as opposed to unions (Avila et al. 2011). In one of his articles in the journal *La Jornada*, Hernandez (1996) declared: "UNORCA was not flexible enough to call them a network; they were much more horizontal and autonomous in their operations in comparison to unions, but they still had remnants of vertical structure with leaders working in close relation to the state in order to receive funds" . Additionally, Hernandez pointed to a clear difference between UNORCA and the indigenous perspective. It is related to the so-called 'autonomy' of indigenous organisations from the state that excluded the possibility of receiving state funds. The UNORCA's main argument was that peasant organisations in order to be productive required funds from the government; otherwise, these funds would be channelled to large landholders and private companies (Ibid, 1996). During personal communication with de Ita, Head of CECCAM (2013), she adds: "It was not a good strategy to stop receiving monetary resources from the government, it was like giving all the power and resources to TNCs and large-scale food producers in the country" . Regardless of their different positions, either more influenced by the indigenous perspective or by peasant organisations as UNORCA, what is fundamentally different in these new forms of civil organisation is the notion of rights. State resources were seen as rights versus a favour (e.g. votes in exchange). These new forms of organisations are recognized as politically and financially autonomous despite receiving funds from the state (Ibid, 2013).

In sum, as Juan Villoro (in Esteva, 2010a), a well-known Mexican thinker, writes that after the 1980s civil society in Mexico acquired a new significance and value; it was a society that recognised itself as a more powerful entity with its own autonomy and political position. Esteva (2010a) adds that there was a significant transformation in terms of social resistance in Mexico as a result of the global structural changes of the 1980s and the dismantling of policies and structures to give way to the neoliberal agenda. Social networks for liberation were created;

they no longer aimed at state power but rather they struggled for recognition as autonomous actors capable to build political power and generate changes through their daily actions.

5.2.2 Consciousness: influence of the Zapatista movement in Mexico

It is worth examining the case of the Zapatista movement in Chiapas as they have exercised enormous influence on the form in which social movements in Mexico changed consciousness since the 1980s.

The background of the Zapatista movement helps illustrate. This social movement began in Chiapas, a state in the south of Mexico with one of the highest population of indigenous people. It is different from the rest of the country as it did not go through the revolution process of 1920, which marked a turning point in the re-distribution of lands in the country—which passed from the *latifundistas* (big landholders) to small-medium holder peasants (Interview with Robles, Head of MG, 2012; Avilla et al. 2011). In Chiapas after the Revolution *latifundistas* continued having access to most of the land and only 2% of farming fields was in hands of small-medium landholders Chiapas was also the biggest producer and exporter of coffee and in the 1980s when worldwide prices went down had a considerable impact on the regional economy. Indigenous peoples from Chiapas depended primarily on the land to produce maize for self-consumption and to produce coffee for a living (Avila et al. 2011).

During the economic recession in Mexico in the 1980s, an important number of peasants and indigenous people migrated to the north of the country and the US, which was not the case in Chiapas. Rather, they migrated to La Selva Lacandona—the *Chiapaneca* jungle. Regardless of their lack of access to land,

indigenous people were attached to their culture and territories. Additionally, during this period there was a great wave of immigration of indigenous people from Guatemala to La Selva Lacandona. The waves of migration created a situation in which diverse indigenous groups/peoples together had to deal with a lack of tangible and intangible means to make a living. The overall economic situation in the country, combined with the global downturn in coffee prices, made them face appalling hardships: with no rights, no lands, no productive resources and no basic means to survive (Ibid, 2011).

At the same time, the Pastoral of Liberation, represented by Samuel Ruiz in that area of the country, had a long history of working with the indigenous communities, highlighting and supporting their rights. It is also at this stage that INGOs started pushing for human rights and in 1989 the International Convention of Indigenous Peoples' Rights was held to protect their rights based on the respect to maintain their identities and a capacity to decide their own paths for development. Indigenous people from Chiapas participated in these global forums, reinforcing their consciousness about their lack of rights in the current global and national processes of development (Interview with Robles, Head of MG, Chiapas, Mexico, 2012).

Finally, it is important to mention that a group of activists with the idea of starting an armed revolution in Mexico also arrived to La Selva Lacandana in 1983. Both, indigenous communities and this group of activists called Ejército Zapatista de Liberación Nacional (EZLN, Zapatista Army of National Liberation) commenced to interact. Together they were able to respect and complement one another. A process of dialogue and collective learning took over a decade, from 1983 to 1993 before social unrest led by the movement sparked in 1994 (Avila et al. 2011). The EZLN belonged to the old social movement form of thinking that

believed in an armed revolution to overthrow the government to bring a change (Interview with Vera, GRAIN Member, Mexico, 2012; Wallerstein, 2011). The EZLN learnt from indigenous communities to respect other visions and to base the struggle in assemblies and collective reflections, which was considered the main weapon of the indigenous' struggle. Indigenous people never lost their tradition of narratives and storytelling, using the 'dialogue' as principal means to defend their rights and organising themselves in community assemblies to take collective decisions/actions in relation to their way of living and development.

This process of collective reflection based on a diversity of ideas resulted in a variety of perspectives and a strong civil society organised as the Zapatista movement. The Zapatistas —formed by indigenous and revolutionary activists— made the consensus that its main form of resistance was the construction of alternatives to the current development in Mexico. They closely examined their lack of rights within the neoliberal system and came to a conclusion that their poverty was not due to a lack of incorporation into the system, but the result of structural changes that would systematically leave them behind. Therefore, constructing autonomous communities and modelling their own alternatives to food production, health, housing and others became a way to move forward. The Zapatistas' ultimate goal was to achieve a life in dignity, as well as the recognition of their autonomy as a right within the Mexican Constitution (Interview with Esteva, Oaxaca, Mexico, 2011).

This 'consciousness' of the Zapatistas who understood the systematic oppression of indigenous communities within the current global system would later spread across Mexico and the world, influencing the dynamics of operation

of social movements (Interview with Vera, GRAIN Member, Mexico 2012; Esteva, 2010b).

In the 1990s the 'anti-globalisation social movement' emerged, better defined by Castells (2004) as the new social movements for global social justice. They took the essence of the Zapatistas' insights. They made an open call to a diverse range of actors: from old social movements such as trade unions to new social movements encompassing NGOs, civil society organisations, students, workers and other groups. They also deliberated together and claimed for the first time that social movements were facing the World Trade System Vis a Vis individual states. The movement acknowledged that other ways of development needed to be created in parallel to the dominant system to balance power which required spaces for constant learning and reflection to proceed and envision alternatives to current development (Wallerstein, 2011; Esteva, 2010b).

Summarising this section, the Zapatistas became an important influence for the new social movements in Mexico after the 1980s that serve as a platform for civil society to reflect on the path of the struggle, based on building capacity of diverse actors to learn together in order to build alternatives to the so called 'development' versus merely demands of rights difficult to be fulfilled by a state subject to international neoliberal forces.

5.3 The NDM network-resilience stage—1990 to 2002

In the 1990s the network-resilience stage of the NDM commenced, characterised by a civil society that started to open spaces in which diverse actors meet to reflect and learn from the impacts of the on-going structural changes in Mexico.

During this stage actual members of the NDM were working in 'isolated' forms, meaning they were small teams of organisations or a group of peasants and researchers working together to make analysis about policy changes or new mechanisms, e.g. the NAFTA (Interview with de Ita, Head of CECCAM, Mexico, 2013).

The context in which the network-resilience stage took place is as follows. During the beginning of the 1990s decade the idea that political changes would create opportunities to put pressure on the state to fulfil rights was still prevalent in peoples' mind. It was based on the view that Mexican economy was to recover from the economic recession and consequently political parties were to meet civil society demands (Ibid, 2013; Avila et al., 2011). Nevertheless, the process was quite contrary to such expectations. In 1994 when presidential elections took place in Mexico, Carlos Salinas de Gortari—the outgoing president—, signed the NAFTA, a structural change for the country. It rather than providing people with rights, meant a padlock to prevent any reverse in Mexico with respect to the execution of the neoliberal policies (Rosset, 2008). The NAFTA marked a complex scenario that needed a stronger and organised civil society to struggle against its impacts such as an increased level of poverty (*See* Graphic 4 of this thesis). The impacts of the NAFTA on the specific case of the food system was a systematic loss of the food sovereignty in Mexico as widely explained in Chapter 1 of the thesis.

The reason to identify the network-resilience stage from 1990 to 2002 —year in which the NDM adopted its formal name— is due to characteristics of this stage in relation to this civil network' s actions and levels of collaboration as detailed in the next section.

5.3.1 NDM network-resilience key actions and features

Faced with the NAFTA scenario, the emerging civil networks started to take actions on different fronts:

- i. Development of alternative supply chains: Since the 1980s when organisations such as UNORCA were set up, spaces where small-scale peasants/indigenous people and academics/activists could learn collectively were established (Interview with de Ita, Head of CECCAM, Mexico, 2013). They interacted to come up with the best actions according to the context in which fewer resources were available for agriculture and national markets were closed to small-medium peasants who could not compete with subsidised food coming from the US (due to the NAFTA). One of the actions based on these reflections was the formation of co-operatives and self-organised enterprises emerging in both, the north and the south of the country. The co-operatives that have resisted the NAFTA for a longer period of time are located in the south. There is a reason that explains this situation: people in the south became much more autonomous, politically, organisationally and financially, such as the CNOC and MOCAF organisations. These were in charge of coffee production-commercialisation and management of forest resources, respectively. In these cooperatives reflections among indigenous communities /small-scale peasants and activist/academics reached to the point when the need for alternative markets was evident; e.g. for coffee could be allocated in niche market of organic coffee outside Mexico (Interview with Salgado, Head of CENAMI, Mexico, 2012). Furthermore, Luis Hernandez, assessor of CNOC, funder member of the NDM and journalist, explains that together with small-scale peasants from southern Mexico they realised the need to overcome neoliberal barriers which implied building international solidarity networks

(Hernandez and Poniatowska, 2000).

Cooperatives, which started to be formed by civil society during the 1980s, replaced the transportation, processing and marketing arms provided by INMECAFE, an agency of the state until the end of 1980s for the coffee production in Mexico. This saved farmers from disadvantaged positions in the national and global markets, as well as exploitation of coyotes (middleman). They began to share information on organic certification (the price for organic coffee being much more stable than industrially grown coffee), and decreasing dependence on capital-intensive inputs like fertilisers. Co-ops developed linkages with European 'alternative trade organisations' and began exporting fairly traded coffee successfully, securing a stable price and pre-harvest financing for their members. Co-ops have survived not only to replace INMECAFE and become powerful players in the organic coffee industry, but also to extend their purview to economic diversification, environmental initiatives, and to provide and lobby for social services like school and hospitals. They have come to represent islands of self-determination within a political spectrum that barely has recognised their existence (Ibid, 2000:7).

Diverse groups started to meet to discuss how to proceed with their cooperatives according to their type of culture and management of natural resources such as forestry, maize, coffee and other. Yet, co-operatives from the north of the country were hit significantly by the NAFTA and could not endure competition with subsidised maize and other products coming from the US. Eventually, most of these co-operatives were dismantled and very few remained by the end of the 2000s (Interview with de Ita, Head of CECCAM, Mexico, 2013).

- ii. Formalisation of civil society as NGO: A panorama in Mexico seemed more and more complex not only because of the NAFTA, but also due to changes in different laws happening at a high rate. Different activists and academics working hand in hand with small-scale peasants and indigenous communities including Luis Meneses, Luis Hernandez, Andres Barreda, Alejandro Nadal and Pat Mooney became founding members of the NDM. Together they agreed

on the need to systematise their work to be able to cope with the rate of law amendments and to have a deep understanding of the structural changes occurring in the Mexican countryside (Ibid, 2013). Consequently, they set up formal NGO (CECCAM and CASIFOP) channelling resources from international bodies in order to carry out research on a systematic basis. The NGO operated at a national level by working with different indigenous and small-sale peasants communities of the country.

Table 10: NDM organisations formalising operations in the 1990s

Organisation	Year	Objective of the organisation	Current NDM
CECCAM	1992	Research for and with peasants to understand the impacts of neoliberal policies in Mexico	Yes
CENAMI	1996	Facilitates work and empowerment of indigenous communities. CENAMI was founded in 1970, but its work became formalised as NGO to work systematically with indigenous communities after the outbreak of the Zapatistas rebellion.	Yes
GEA	1977	Work with communities and social organizations in rural and urban areas to promote participation and capacity of actors to obtain control over their territories.	No
ETC Group Mexico	1990	ETC Group International works to address the socioeconomic and ecological issues related to new technologies that could have an impact on the world' s poorest and most vulnerable people. E.g. investigation on soil erosion and technology that works with genomics global governance issues. They also work closely with civil society and social movements.	Yes
GRAIN Mexico	1992	GRAIN international non-profit organisation works to support small-farmers and social movements in their struggles for community-controlled and biodiversity-based food systems.	Yes
UNOSJO	1990	The Union of Organizations of the Sierra Juarez of Oaxaca (UNOSJO) is a Zapotec indigenous organization, conformed by 26 regional and community-based indigenous peasants' organizations in Oaxaca' s Juarez Mountains.	Yes

Source: Built by the author based on participant observation, interviews with the organizations heads and their organizations web pages.

During the process of formalisation these organisations were recognized in Mexico not only for conducting research, but also for implementing projects with communities on different fronts such as minorities' rights and environmental concerns—influenced considerably by the worldwide issue of environmental destruction discussed in the Forum of Rio de Janeiro for Sustainable Development held in 1992 (Interview with Salgado, Head of CENAMI, Mexico, 2012). The aims of the majority of the projects were defined by indigenous communities and small-scale peasant organisations alone.

“These organisations were essential in their approach as they tried to use resources to support communities' concerns rather than pursue their own agendas. They worked on communities' specific requests such as: technical support, building connections with strategic actors and facilitating spaces for collective learning (Ibid, 2012).

It is worth mentioning that not all newly formalized NGOs in Mexico dedicated their efforts to support communities. Others were focused on lobbying and policy incidence, which was also of importance. The Zapatistas claim that these types of organisation are also needed in order to have interlocutors with government and complement the work to resist on different fronts of the struggle (Ibid, 2012; Avila et al. 2011).

- iii. Forums as a common practice to learn collectively: this new civil society started to meet frequently under different names such as: alliances, assemblies or committees (Esteva, 2010a). They were defined as "the united men and women, the groups and individuals, who carried out activities aiming at transforming their society" (Villoro 1997:36 in Esteva, 2010a). Esteva refers to the spaces where they used to meet to learn together as networks of relations or communities of practice (Interview with Esteva, Oaxaca, Mexico,

2011). This became a common practice happening at diverse levels and with different purposes across the country.

One of the best examples is the National Forum on Food Sovereignty held in 1996, which was called by diverse organisations to address the food system in Mexico. In this forum the participation of La Vía Campesina was fundamental to bring about the discussion of the food sovereignty framework in Mexico. More than 300 organisations participated in this space, from environmentalists to indigenous rights civil organisations. “This forum did not lead to further systematic actions, but we learnt a lot and collectively reflected on where to focus our actions on an individual level; we also understood the broad meaning of the food sovereignty term” (Interview with Marielle, GEA Member, Mexico, 2012). Key lessons from this meeting are extracted and hereby summarised: i. Commitment to increase support to small-medium peasants to produce foods; ii. Work on lobbying to generate policies to support local food systems; and iii. Exercise more pressure on dumping practices and neoliberal policies undermining the food system of the country (Food Sovereignty Forum, 1996).

In an interview, de Ita, the Head from CECCAM (2013), mentioned: “In these spaces not only did we reach consensus on the type of actions to be incorporated as part of our duties within our organisations, but we also started networking with international organisations. For example, CECCAM started to collaborate with GRAIN following the Forum on Food Sovereignty. We decided to make an alliance to do collaborative research on new agricultural bills in the US and their impacts on Mexican agricultural markets” .

Another example is given by Salgado, Head of CENAMI (2012), who mentioned that a previous platform to the NDM was the meetings held to analyse the bio-piracy issue in Mexico at the end of the 2000s decade. Diverse academics, NGO professionals, lawyers, indigenous people and activists reunited to analyse what was happening in the Mexican countryside in relation to the international process of patenting and commercialising indigenous knowledge. The conversations held in various meetings are registered in the compilation of the 'Agrarian Books' whose main conclusion was that the complexity of the issue was beyond their power, therefore, legal appeals became a means for temporarily halting the process of patenting indigenous knowledge. They decided that in the meantime they could develop alternatives on the ground. Legal appeals might not fix the problem, but they helped lawyers, activists, researchers and indigenous people to start documentation of these types of rights violations in Mexico (Agrarian Books, 2001).

- iv. Consolidating civil networks' consciousness while supporting the Zapatistas: In Mexico, the Zapatistas outbreak occurred in 1994 after the NAFTA agreement was signed. They raised voice against domination following 12 years (from 1982 to 1994) of neoliberal policies and regulations being implemented in the country. After several years of collective learning they decided that they needed to take up arms. The Zapatistas argued that it was better to die fighting rather than die of hunger or malnutrition; what is more, they said it was better to show dignity and its motto became '*¡Ya basta!*' — 'Enough is enough!' (Esteva, 2010b). The most important achievement of the Zapatistas during this decade was to open new spaces, which allowed the new social movements to consolidate and learn the path of the struggle. The Zapatistas made a national call to the Convención Nacional Democrática

(CND, National Democratic Convention) in 1995, a year after they took up arms. At this forum more than 7000 militants (including students, academics, entrepreneurs, government entities, intellectuals, old social movements, ONGs, civil organisations, a range of workers and civilians were present). It was a place where all social movements and organisations converged. “In fact, most of the members that initiated the NDM participated in these dialogues” (Interview with de Ita, Head of CECCAM, Mexico, 2012).

Regardless of diverse contradictions and disputes, the participants of the CND learnt from this process. First, an insight into the consequences of the neoliberal project that negatively affected various sectors of the population regardless of their struggles and aims, localities and/or affiliations, which generated the sense of being ‘united’ in the struggle. Second, collective dialogue allowed them to reflect and construct individuals and organisations that were not easily manipulated and absorbed by the neoliberal development (Avila et al. 2011).

It is worth noting that the Zapatistas did not want to form an autonomous nation, but their aim was to defend their autonomy so that they would not be subject to the will of a national or foreign power (Esteva, 2010b). Indigenous people argued that communities could govern themselves in accordance with their customs and traditions, without the intervention of illegitimate and corrupt governments. Indeed, the notion of autonomy was the recognition of indigenous people without discarding other cultures, groups and interests (Ibid, 2010b). “The Zapatista movement brought about a political existence of the subordinated. This penetrated our minds and later became part of the spirit of the NDM. The NDM fight became based on what Zapatistas used to call the ‘construction of other worlds’ , in which horizontal and critical

dialogue was at the centre of the struggle. Major transformations started to be seen in the way civil society fought, including the proposal of two basic principles: an intercultural dialogue and the construction of shared visions” (Interview with Vera, GRAIN Member, Mexico, 2012)

Finally, another process from which civil networks learnt was the biggest demonstration in the modern history of Mexico led by the Zapatistas in 2001. It began in Chiapas (south of the country) and culminated in Mexico City with the demand of the San Andres Accords²⁴. Six different national groups were established by several civil society organisations and individuals who supported the process. In the end, government rejected the petition of the Zapatistas. This event made them (together with many other civil organisations) finally stop channelling their energy in lobbying strategies and shift into what the Zapatistas call: ‘the silent struggle’, which was to continue fighting through the construction of alternatives to the neoliberal model of development but in their own territories as autonomous communities (Esteva, 2010b; Interview with de Ita, Head of CECAM, Mexico, 2013).

When analysing the types and target of actions, as well as the levels of collaboration of the NDM during the period 1990-2002, they seem to fit in the network-resilient characteristics as showed in Table 11:

²⁴The San Andrés Accords are agreements reached between the Zapatista Army of National Liberation and the Mexican government, headed by President Ernesto Zedillo. The accords were signed on February 16th, 1996, in San Andrés Larráinzar, Chiapas, and granted autonomy, recognition, and rights to the indigenous population of Mexico. They were discussed and approved by representatives of all the indigenous communities in Mexico and translated into ten indigenous languages. President Zedillo and the Institutional Revolutionary Party (PRI), however, ignored the agreements and instead increased the military presence in the region (Avila et al. 2011).

Table 11: Network-resilience NDM key features

Stages	Network Resilience	Examples
Levels of collaboration	Individuals, Organisations, Teams	<p>CECCAM is a good example of teams of activist researches working together with peasants & indigenous communities to analyse the impact of neoliberal policies on the Mexican countryside.</p> <p>CENAMI is another example that started to work to connect diverse indigenous communities of Mexico through national workshops in topics of importance for indigenous communities such as agro-ecological practices.</p>
Type of Actions (TyA)	<p>'Isolated' alternative development projects (E.g. experimental lands for bio-intensive food production)</p> <p>Sporadic spaces for collective reflection (E.g. local assemblies, workshops)</p>	<p>One example is the co-operatives emerging from dialogues between activists and peasants, e.g. organic coffee for exports as an example of alternatives of development.</p> <p>Forums emerge in which diverse actors learn together —not on an on-going basis— but frequently enough to observe the formation of alliances between actors to start collaborative projects. E.g. GRAIN and CECCAM working to make policy analysis of the US farm bills.</p>
Target of Actions (TaA)	Government	<p>The 1990s decade was still an opportunity window for civil society to demand rights from the state, but the approval of the NAFTA (behind closed doors) and the rejection of the San Andres Accords marked the final shift for many Mexican organisations to a 'silent struggle' versus lobbying. It means a resistance based on collective learning and development of alternatives on the grounds.</p>

5.3.2 NDM network-resilience key learnings

According to the analytical and theoretical framework, the Syl-transformation stage has the potential to challenge the dominant system. In the case of the NDM, it was found that some alternatives generated during the network-resilient stage, characterised by more 'isolated' projects, had also a challenging force. During 1990-2002 certain groups from the south of Mexico working in the cultivation of coffee, maize, forestry and other had the capacity to build transformative actions to overcome neoliberal policies. It meant they sought projects beyond a survival scope that allow producers to generate long-term supply chains independent from the neoliberal regimen. This is observed in the example of solidarity networks with international actors to establish organic coffee chains between producers in Chiapas and markets in Europe. Furthermore, since this early stage of the civil network evolution, international levels of collaboration were seen and became an important factor in building stronger alternatives to development as well as the participation of diverse background actors as small-scale peasant producers and activists-academics working together. It is also indisputable that some other alternatives were not able to cope, as the maize co-operatives in the north of Mexico that were hit significantly by the NAFTA mechanisms (especially those involved in maize production).

Furthermore, what is relevant in this analysis, in addition to matching characteristics of the NDM to the analytical and theoretical framework, is the identification of this period of formation-preparation of the type of civil networks work. This preparation consists of organising to learn together and develop profound awareness of the form of the struggle based on collective learning where constant feedback is gained on neoliberal changes (reflected in treaties, policies, and other). Alternatives to the dominant form of development are also discussed and start taking shape on the ground.

Another lesson is that at the core of the process of civil networks is the formation of grassroots who are capable to analyse their contexts through the interaction with diverse actors and, thanks to knowledge, they prevent from being co-opted and vulnerable to neoliberal policies.

This period is also categorised in the network-resilient stage due to the prevalent idea among the NDM actors that fulfilment of rights would come from the state. However, it was during 1990-2002 that different events—from the NAFTA signature to the rejection of the San Andres Accords in Mexico—that made civil society fully understand and reaffirm the strategy to move forward: a silent struggle based on spaces for dialogue with diverse actors and production of their autonomous alternatives ways of development. This is how civil networks rooted in the Zapatista movement were formed (although not all civil society is organised in this manner). Finally, this period also shed light on civil networks' forms of actions that is anticipative rather than reactive when faced with complex and pressing issues, e.g. the NAFTA and bio-piracy.

Visualising anticipated actions enabled us to improve our livelihoods in the short term. It has been a fundamental factor to keep us working together for a long time; moreover, this manner of working has become our way of life, our struggle (Participant Observation, PPT Opening Hearing, Ciudad Juarez, Mexico, 2012).

Complementing this idea de Ita, Head of CECCAM (2012) mentions:

We learnt about the impact of neoliberal policies on other countries of Latin America such as Chile and Argentina through the networks we generated in different forums. Working in these forums was critical to unveil the upcoming impacts of the NAFTA in Mexico and to timely react facing tougher scenarios.

Four key learnings are drawn from the analysis of the NDM network-resilient stage: i. This stage is recognised as a preparation period to build an embedded consciousness of the 'silent struggle' in actors and organisations, based on

learning together to generate autonomous and alternative forms to the neoliberal development; ii. Building individual capacity of grassroots actors is at the core of the dynamics of the civil network as they will be capable to come up with actions to transform their realities on the ground; iii. 'Isolated' actions might challenge the dominant food system so long as they are accompanied by a process of collective learning among actors from different backgrounds such as peasants and researchers as well as to develop alliances at a local and international level; and iv. Actions of civil networks become anticipative rather than reactive based on their capacity of learning together.

5.4 NDM CoP-transition and Syl-transforming stages— 2002 to present

The year 2001 arrives with an unprecedented event in Mexico: the announcement of GMO contamination of *criollo* maize. This was an important issue for different organisations, from those working on environmental concerns to those working on rights of indigenous communities. Marielle, GEA Member stated in an interview (2012): "The *criollo* maize's contamination was an intangible issue for everybody; it was a new mechanism of which no any organisation had a clear idea, neither of its potential impacts nor solutions ".

This is the turning point when the NDM shifts to a systemic work—national assemblies—in where strategies are devised and changed on a regular basis. From that moment onwards the NDM worked on visible, periodic and formal spaces for collective learning at different scales, from local and regional assemblies to the national ones such as the PPT Hearings and the yearly NDM national assembly. Such systematization of civil networks' dynamics

corresponds to features of both, the CoP-transition and Syl-transforming stages further analysed in the following section.

The first part of the section presents a wider perspective of how the GMO contamination of *criollo* maize took place in Mexico—the catalyser for the shifting of the NDM to work on a systematic basis. Then, it presents an analysis of the main features of CoP-transition and Syl-transformation stages and lastly, reflections on key learnings from this period.

5.4.1 Setting the context: GMO contamination of native maize in Mexico

CASIFOP, CECCAM and CENAMI organisations, which used to work closely with peasants and indigenous communities, called for a national forum in January, 2002 under the name Forum in Defence of Maize. The triggering topic was the GMO contamination of *criollo* maize in Mexico, announced by specialists in Dec. 2001. This contamination was detected in the south of Mexico, specifically in Oaxaca and Puebla, by researchers from the University of Berkeley: David Quist and Ignacio Chapela who worked with indigenous communities to teach them how to sample their seeds in order to detect any kind transgenic presence in their fields.

120 organisations and 300 participants attended to discuss the implications of the issue. To the surprise of some participants, most of the people attending had an indigenous background (Interview with Marielle, GEA Member, Mexico, 2012). Vera, GRAIN Member (2012) explained that indigenous people consider agriculture as part of their culture and they assume their role in preserving seeds and maize for humanity beyond a productive interest. Therefore when

indigenous communities learnt about the *criollo* maize contamination they were appalled. Aldo Gonzalez, an indigenous member of the NDM mentioned at that national assembly:

Most of indigenous communities do not understand scientific explanations of genetic modification of maize, but they understand maize is at the heart of our life, which was suddenly on threat. Indigenous communities have been systematically losing access to land, markets, and other resources (e.g. water), but maize cannot be lost. Maize represents our ways of social organisation, our food, our rituals and traditions. We recognise that at some point members of the communities face the necessity of diversifying their livelihoods and migrate to obtain other sources for making a living, but a part of the community will remain to cultivate maize. We know that losing our maize means the end of our communities and culture (Audio-recording NDM National Assembly, 2002).

In a conversation with de Ita, Head of CECCAM (2012), she added:

I was quite impressed at that forum, in the beginning I could not understand why indigenous were crying during the meeting. During 20 years of close work with small-scale peasants, they never showed such reaction. Smallholder' s peasants understand the situation with maize, but their concerns are more related to market issues such as losing competitiveness in the face of dumping practices. But the indigenous were devastated to hear their maize was contaminated.

That was a different forum; we developed stronger ties during that meeting because diverse interests from several organisations reached a common ground. Environmentalist organisations such as Green Peace, GEA, GRAIN, ETC Group and others, passionate about the topic, claimed that contamination would destroy the bio-diversity of thousand years of work from peasants in Latin America. On the other hand, indigenous people were devastated about losing their culture and way of life. Peasants were worried about losing markets and competitiveness; in the end, their livelihoods. Academics-activists such as Ramon Vera, Luis Hernandez and Andres Barreda were conducting a geo-political analysis of how the transnational companies were appropriating in addition to land and water, of the most intimate resource related to life: seeds; which contain the knowledge of peasants and indigenous people. It really seemed a tragedy; and beyond different arguments, the bottom line was to realise we were not agreeing or disagreeing, we were constructing a broader understanding of the situation.

This made us gaining higher respect for one another; we also acknowledge that the contribution of everyone' s experience was important. Thanks to that meeting we reached a common understanding and we declared the need of a systematic work in a network, which would work continuously on collective strategies based on proper analysis. The problem was complex and no single action coming from a single perspective would suffice. Following that meeting we called ourselves the Network in Defence of Maize (NDM). Although I thought it would be a scientific forum seeking to understand GMO implications for Mexico, it ended up being inclusive and diverse gather where the cultural argument of the indigenous participants became the most powerful. We learnt that as a group of organisations, we needed more strategic actions to stop not only GMO maize contamination, but also the devastation of a country and its people, including ourselves.

5.4.2 NDM CoP- transition and Syl-transforming actions and features

Following that forum held in 2002, the NDM established systematic meetings every six months to discuss strategies at a national level. The key actions put into practice during this decade are summarised below. They evolved from the diagnosis of the GMO contamination of native maize to the empowerment of communities for ecological production and defence of their rights.

- i. GMO maize contamination diagnosis and awareness: they agreed to inform of the contamination of *criollo* maize through regional workshops across the country. A total of 12 workshops during eighteen months (from 2002 to 2004) were held encompassing 1200 communities. Peasants and indigenous perspectives on GMO were collected during the workshops (Participant observation, PPT National Hearing on Food Sovereignty and Maize, Oaxaca, 2014). They were led by CECCAM, GRAIN and ETC Group. The other strategy was to make diagnostics across the whole country to assess the severity of the contamination issue. The aim of this process was to understand the actual impact of the issue across Mexico, as well as to scientifically demonstrate its

illegality. In Mexico—centre of origin of maize—the introduction of transgenic is against international treaties (Conversation with Luna, CECCAM GMO Specialists, Oaxaca, Mexico, 2014).

The diagnostic process was organised by a diverse team encompassed by 16²⁵ organisations in total. The process was coordinated by CECCAM that hired a person to systematise the work and ensure all the samples that were taken and analysed under proven methods. What is important to highlight is that each community had the option to establish their own diagnosis and learning process. It was never mandatory, but carried out only if they found it valuable (Ibid, 2014).

The diagnosis lasted 1.5 years (mid-2002-2004). Through this process the network expanded in number of members, from around 300 to nearly 1200 (Interview with Robles, COA Member, Guadalajara, Mexico, 2011). “Although the number of members of the NDM might have varied through time, we believe it remained around 1200 since its foundation. Yet, the number of members has never been the aim of our work” . The real achievement of the networks is the spread of its spirit and dynamics, e.g. the awareness of people about the GMO threats so they reinforce their own ways of food production to prevent being overcome by the government and TNCs practices (Ibid, 2011).

When the results of the diagnostics were shared in the NDM national assembly in December, 2004, the political position of the NDM changed—from making diagnosis of GMO contamination of *criollo* maize to the

²⁷CECCAM, CENAMI, CASIFOP, ETC, UNOSJO, UNAM, CONTEC, CEDIM, COSYDDHAC, AJAGI UNORCA, Green Peace, GEA, Guerreros Verdes, Orab, Regionalización Tlaxteca, Unitona (NDM, 2012).

empowerment of communities to produce and conserve their own seeds and food models of production. The group recognised that demands against government and international bodies on the contamination issue were futile; the panorama in Mexico was violent enough to keep the resistance merely trying to obtain support from these entities. Mexican State was aligned with TNCs petitions such as the ones from Monsanto to amend the bio-diversity laws with no significant pressure from international organisations to prevent commercialisation of GMO maize in Mexico (Participation of Ribeiro, Audio-recording NDM National Assembly, 2004). In sum, the political position of the network became even clearer with respect to directing their efforts to support the production of *criollo* maize and supporting the improvement of livelihoods for peasants and indigenous.

We declared our position, which was the strengthening of the networks and communities across the country to continue producing under permaculture, agro-diversity, the milpa and any ecological method to prevent the fields from GMO contamination. In the National Assembly of 2004, we declared that transgenic maize contamination in Mexico was not an accident; it was the result of a lack of commitment of entities such as the government to comply with international and national laws. This issue threatens the food sovereignty of Mexico, which we, the members of the NDM will focus on defending (NDM, 2012:34).

This was also an important move for the NDM members. Some organisations participating in the forums since 2002 onwards declared to continue working on GMO issues but from other platforms. Some of them were GEA and Green Peace that were subject to their international agencies with a focus on lobbying activities. Afterwards both organisations formed the Campaign: 'Without maize, there is no country' . At the same time, after two years of work, a CoP was formed within the NDM by six NGO members (See Figure 6): CECCAM, CENAMI, ETC Group, GRAIN, UNOSJO and COA.

- ii. Systematising support to peasants and indigenous settlements: Robles, Head of MG, affirmed in an interview (2012): “We were present at the Forum in Defence of Maize in 2002; ever since we have attended national assemblies and workshops of the NDM on different topics such as the use of medicinal eco-technologies, and indigenous culture” . “These annual workshops are co-designed with communities themselves” , affirms Salgado, Head of CENAMI (2012). CENAMI has incorporated new concepts such as permaculture, which was not part of our work, but has provided the workshops with a wider perspective: not only do communities focus on cultivating maize but they also design their houses and sounding spaces, as well as, diversifying the food system production and the implementation of eco-technologies. Another systematic space of the NDM work is the thematic workshops held to carry out deep analysis of structural and policy changes in Mexico; e.g. analysis of the seed law introduced in 2007. Finally, national assemblies are held every 6 to 12 months (as required) where members evaluate and formulate strategies of the NDM (Ibid, 2012).
- iii. Rise of appeals against the legal GMO entrance in Mexico: Different legal appeals have been issued across the country at a local and national level, as reviewed in Chapter 4 of this thesis. Although as Salgado, Head of CENAMI, in an interview (2012) claims: “It will never be enough to have moratorium or appeals to change laws in Mexico; in the end, the government might end up making amendments to change laws and ultimately approve the GMO legal entrance” . These actions will always be seen as a supportive strategy, and not the final aim of the NDM.
- iv. Empowering communities: the PPT is a “process to empower individuals and communities, whose ultimate aim is to provide people with tools to defend their rights and forms of living” (Interview with Rosas, PPT Coordinator,

Mexico, 2013). This process initiated in 2009 as a result of a more complex environmental degradation in the country, in which communities began defending maize together with their territories (from mining, water contamination, dams construction among other). The most visible result from the PPT has been the series of multi-level actions taken by the small-scale peasants/indigenous communities themselves: local demands and appeals, demonstrations, mapping processes, support of the *milpa* production system, organisation of seed interchange and others.

The PPT became the community space, not because it defined a supreme plan or a new faith to which we are subject, but because it began a community process and this experience in particular transformed each of the participants. Within this space we recreated one another, reconstituting our hope in the role of dialogue and assemblies, as well as arguments and judgment based on ethical principles. That is why, even if for a brief moment, we re-established our relationships based on trust. It became something immediate, and open for constant practice by those who are willing to do so (PTT Final Ruling, 2014).

When summarising the features of this period of the NDM work, since 2002 onwards, characteristics of the CoP-transition and Syl-transforming stages are observed as follows (See Table 12):

Table 12: CoP-transition and Syl-transforming NDM key features

Stages	CoP-transition	Syl-transforming	Examples
Levels of collaboration	Community of Practice (CoP)	Network of networks	<p>Spaces for collective learning as national assemblies became coordinated by a group of people who regardless of working in different organisations made this activity part of their duties. A CoP is established within the NDM.</p> <p>The PPT process initiated a systematised work of network of networks formed by groups of people working on diverse aims and networks (e.g. environmental devastation, human rights, violation against women, organised crime) sharing a platform towards a goal in common.</p>
Type of Actions (TyA)	<p>More integrated, resources and innovative alternative models of development (E.g. sustainable supply networks)</p> <p>Systematisatio</p>	<p>Responsiveness diverse types of actions at all levels (E.g. coordination of actions at all levels in interrelated topics: food security, climate change, bio-diversity)</p> <p>Systematisation</p>	<p>Systematised work is noted in different actions of the NDM. The GMO diagnosis across Mexico, the workshops to support the <i>milpa</i> food production system and the work to prepare the PPT hearings. All of them are examples of responsive (anticipated) actions formulated in multi-levels of collaboration.</p>

Stages	CoP-transition	Syl-transforming	Examples
	n of work within the network (E.g. assemblies at national levels at established times)	of work among diverse networks of networks (E.g. PTT or WSF processes)	Systematised spaces for collecting learning with national assemblies as the most visible. As well as PPT pre-hearings and National Hearings.
Target of Actions (TaA)	Communities' empowerment to defend their rights. TNCs and governments	Communities' empowerment to defend their rights and any organisations not promoting social justice	Communities' empowerment becomes the main focus of the NDM. Most of actions challenge the dominant system, even when still not at large scale.

5.4.3 NDM CoP- transition and Syl-transforming key learnings

A fundamental difference is observed between the network-resilient and the CoP-transition and Syl-transforming stages. It relies on the systematisation of the learning spaces in which diverse actors learn and strategize together. Systematisation is observed in the frequency of meetings as well as in the strategies whose scope reaches the whole country. Moreover, it is in this period that national assemblies of the Network in Defence of Maize are formalised and recognised as a pivotal strategy to continuously assess the effectiveness and focus of the group's actions. Clear examples of the NDM work systematisation are seen in the diagnosis of the GMO contamination of *criollo* maize in the whole

country, the yearly national workshops to improve ecological-agricultural practices and the PPT process.

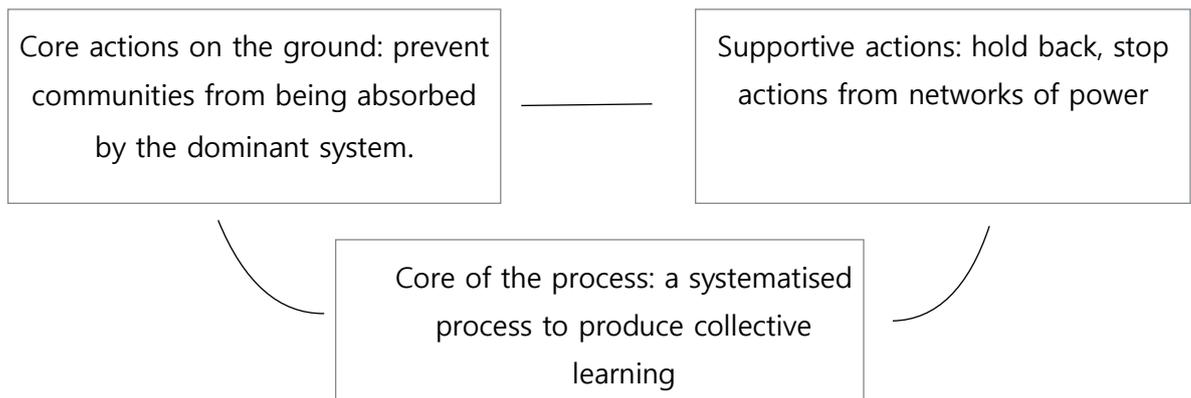
Within these spaces multi-level actors collaborate, e.g. INGOs such as GRAIN and ETC Group as well as national NGOs as the case of CENAMI and CECAM. Moreover, the most important participants, in terms of number and decision-making are peasants and indigenous communities who define their own strategies to be taken on the ground. Throughout the GMO *criollo* maize contamination diagnosis more than 1000 communities commenced to join the national assemblies and workshops; processes facilitated by the CoP members. These organisations have learnt collaborating by sharing resources to systematise the work of the civil network and beyond, to reach a higher goal: strengthening the struggle for food sovereignty in Mexico thorough the support to indigenous and peasant communities to keep their culture, forms of food cultivating food and empowering them to defend their rights and territories.

Formation of a CoP as well as the emergence of systematic spaces for collective learning, are all part of the CoP-transition and Syl-transformation stages. Yet, a difference between the NDM case and the analytical framework of this thesis lies in the lack of recognition of the pivotal role of spaces for collective learning in the civil network's evolution process. It is in these spaces where strategies and the pathway of the network are collectively decided on. For example, these spaces enabled diverse actors to visualise the necessity of systematising the work when faced with complex issues such as the contamination of *criollo* maize. Civil networks evolve because actors observe the necessity of getting more organised to tackle complex contexts versus mere crisis. It also confirms that the work of civil network is anticipative versus reactive.

In addition, actions from the CoP-transition and Syl-transformation are qualified as more integral and at multi-level scales. This is true for the NDM, however a more detailed perspective can be added. These actions might demand a finer categorisation as follows:

- i. Core actions on the ground: Those actions that prevent communities from being absorbed by the dominant neoliberal system (transformative in principle). Examples are the alternative supply chains such as fair trade supply chains in the case of organic fair coffee and the support for the *milpa* systems of production.
- ii. Supportive actions: those actions that help providing time or stopping/restraining actions from network of power, e.g. legal appeals and demands against TNCs and government.

Figure 5: Core and supportive actions of civil networks



It is also worth noting that civil networks' are successful due to their dynamics of work versus the number of people or alliances of the network. On the other hand, what enables civil networks to evolve is the quality of spaces for collective learning where multi-level actors participate and grassroots actors become strong individuals capable to transform their realities. In this regard, a finer analysis of the characteristics of spaces for collective learning is provided in Chapter 6.

In summary, key learnings of this section are: i. Awareness of the necessity of a systematised work emerges from spaces of collective learning through an in-depth analysis that unveil complex issues cannot be tackled by one participant or actor; the work of civil networks and the shift to higher levels of evolution is based on this process; ii. Systematisation of work is what differentiates the preparation stage—the network-resilient—from the following stage of civil networks, where higher levels of collaboration and multi-level actions are sustained through systematic spaces of collaboration and collective learning; iii. Transformative actions (on the ground) of civil networks are what avoid grassroots being absorbed by neoliberal forces.

5.5 Concluding remarks

Menes, an indigenous leader from Yucatan and a participant of the NDM, declared during the national assembly of the NDN (2012): "For the indigenous communities to observe a social change a cycle of twenty years is needed" . Given this perspective, it might be affirmed that during the period from the 1970s to the 1990s a change on social movements in Mexico underwent a transformation. A variety of factors, among which is an economic structural change that deviated the state funds to the private sector vis-a-vis indigenous

and peasant communities. It influenced a change from 'unions' as the organisational structure -linked to the state- to a more autonomous civil society. On top of that, events such as the earthquake of 1985 made Mexican civil society organisations realise that together with INGOs and international funds they were able to mobilise resources independently from government. Furthermore, the Zapatista movement became an essential mirror for civil society to understand that the resistance needed to be focus on profound learning of the context and the construction of real and viable alternatives to current development that diminishes the right of peoples. This form of the struggle becomes embedded in individuals and organisations' minds—who would form civil networks afterwards.

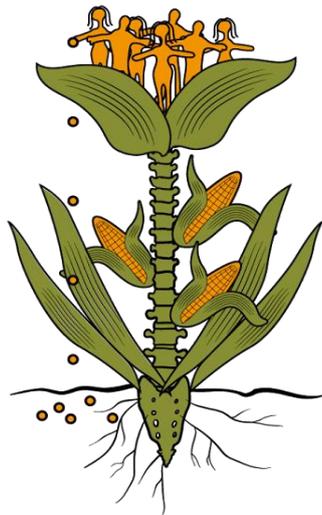
In the following periods, since 1990 onwards the emergence of the NDM is seen, not as the result of crisis, but rather as the consequence of a formation-preparation stage. In this period alternatives to development emerge as well as diverse spaces for collective leaning where alliances and work among researchers, activities, peasants and indigenous become a common practice. E.g. the case of the Food Sovereignty Forum held in Mexico in 1996 where more than 300 organisations gathered to discuss the food issues in the country. The more complex scenario of the struggle, the more necessary became to systematise the work of civil networks. In the case of the NDM it became evident with the issue of the GMO contamination of *criollo* maize that demanded of an organized work from different NGO working together. From that moment onwards, higher levels of collaboration working on periodic spaces, as well as integral and multilevel strategies have been generated by the NDM.

It can be concluded that evolution process of civil networks increases possibilities to challenge the dominant system. And at the core of the process is collective

learning, also seen as these spaces of direct democracy where all actors participate to reach consensus. The evolution process according to the NDM is seen rather as two stages: a formation-preparation process during which individuals and organisation gain consciousness of the 'silent struggle' and learn to collaborate to later shift to 'systematised dynamics' of work.

The 'silent struggle' refers to unveiling what actions might result transformative for a given context through the process of collective learning. Where transformative actions are the construction of alternatives on the ground that impact people's life; whereas, other actions become supportive to reverse/restrain actions from networks of power (e.g. Legal demands). In the other hand, the 'systematised dynamics' of work' refers to processes that are constantly reviewed, thus providing with feedback to ensure the energy is directed to transformative actions, as well as to identifying appropriate supportive strategies. The more systematised the spaces of collective learning, the more potential to formulate transformative actions since the formation of civil networks.

Chapter 6: NDM essence and spirit that enable to challenge the dominant food system



**Unveiling the less visible
features that strengthen civil
networks**

6.1 Introduction

This chapter examines the less visible features that unite members of the NDM over time so that they become a counterforce to tackle the dominant food system. This chapter is divided into three parts. The first analyses how spaces to produce collective learning promote a systematised work of members in the long term. Features defined within the analytical and theoretical chapter in relation to these types of spaces are used as a starting point for the analysis. Using this framework is not aimed at describing each characteristic of NDM collective learning process, but rather to unveil what makes them consolidate their work beyond apparent features; e.g. multilevel actors. The second part attempts to capture such features—the glue keeping members of the NDM to work on a common ground—as well as the essence and spirit that enable members to become a counterforce to the neoliberal system. Finally, this chapter discusses to what extent the NDM represents a challenge to the dominant food system. In this endeavour, it analyses the actual potential of the NDM actions to debilitate networks of power in addition to exploring its possible pathways in the future.

The data presented in this chapter corresponds to conversations and interviews with actors within the NDM and other actors. As well as to notes and interventions of actors during different types of NDM meetings: at a local level, mainly from the meetings in Mission of Guadalupe (MG) held with indigenous communities; at a national level from workshops and assemblies of the NDM and at an international levels from the PPT prehearings and final hearings. I attended all these types of meetings as a participant observant, therefore most of the findings come from a primary source. This data was complemented with transcribed recordings of previous workshops and national assemblies of the

NDM as well as with the history of the NDM in the book: *El maíz no es una cosa, es un centro de origen* (*The maize is not a thing, it is a centre of origin*).

6.2 NDM spaces to produce collective learning

Having identified in Chapter 4 and 5 the main outcome of the civil networks' work—individuals capable of defending their rights and transforming their lives—which is sustained by the process of collective learning, this section focuses on considerable insight into how these spaces operate. The main objective is to explore how spaces for collective learning incentivise the systematised work of civil networks in the long term. As a starting point for the analysis, the six features identified in Chapter 2 of this thesis are used as the reference: 1. Collective learning as a social process and outcome, 2. Relations based on mutual recognition and influence, 3. Leaders as catalyser-facilitators, 4. Diversity of meeting spaces, 5. Networks as the organisational base, 6. Participants—linking nodes, specialised knowledge and expert know-how actors.

6.2.1 Collective learning as process and outcome

Based on the analytical framework of this thesis, the process of producing collective learning requires acknowledging the value of bringing diverse inputs and sources in order to produce innovative knowledge as outcome. To produce innovative learning power relations as well as root causes must be unveiled, as the ultimate aim of the process is to produce social change towards higher goals such as social justice (Herrera, 2008; Kaiten et al., 2010; Armitage, 2008). Moreover, an approach of IKS is required, that implies enhancing and complementing traditional knowledge with scientific approaches rather than substituting it (Fre and Dinucci, 2003). Additionally, within these processes

everybody is to be heard to reach consensus (direct democracy); the process itself is what creates anew individuals (Sitrin, 2006). The special workshops organized by the NDM whenever law amendments or pressing issues arise help illustrate the previous features.

In 2006 a workshop in which diverse structural changes happening in Mexico were analysed was held. It was organised following the National Assembly (2006), given a necessity to further examine root causes of pressing issues in the communities such as environmental devastation. Advocacy and law experts—invited specifically for the occasion—together with peasants and indigenous members, conducted the analysis. Besides environmental devastation, topics such as food crisis, violence, migration and bio-piracy were also examined. Moreover, another reason why the workshop of 2006 is worthy of closer examination is that it demonstrates the anticipative capacity of the NDM to identify strategies and move forward in moments of crisis. The meeting started with a regular discussion led by peasants and indigenous people, who shared their experiences to sum up the complexity of the on-going local issues. Peasant and indigenous members' perspectives are normally complemented with research by NGO members as follows:

- i. Food crisis impacts in Mexico: Peasants revealed their lack of capacity to buy food as prices were increasing to unprecedented levels, which resulted in higher rates of immigration to the US. Moreover, the discussion moved to the noticeable impact of increased food price in cities, an issue not seen before. An intervention of Ribeiro, ETC Group member, during the workshop reported that according to FAO, Mexico reported a high food security index, of 94.5% (FAO, 2006). Nevertheless, different studies such as the one carried out by Foundation of Social Democracy for the Americas (FUSDA), taking into

account the frequency of meals intake, the quality of food, and perceptions of people about being able to eat in the near future, showed that the malnutrition index of the country was of 52% in the same year (FUSDA, 2006).

- ii. Malnutrition and obesity: Different peasants and indigenous members of the NDM spoke of how Mexico was presenting a drastic change in diets and malnutrition following the introduction of neoliberal policies, which resulted in an increase of processed food (cheaper and available) to people. “Today Mexico is one of the countries with the highest rates of obesity in the world” (Ribeiro’ s participation, NDM Workshop, 2006). According to ENSANUT (Mexican National Health and Nutrition Survey), in Mexico a population of nearly 30 million is living with hidden hunger (lack of adequate micro-nutrients) and 30 million more, with obesity which represents more than 50% of the total population of Mexico (Ibid, 2006).
- iii. Environmental degradation: Members amply discussed climate change impacts in Mexico. These were mainly observed in severe droughts in the north of the country, as well as floods observed in central Mexico. These events drastically affected the amount of food available for the indigenous people. Moreover, due to construction of mega projects such as mining or dams, water contamination was becoming another issue which also had an impact on the access to food—due to lack of access to the resources such as land and water to cultivate food.

The second part of the discussion was dedicated to interventions made by the invitees. They emphasised that following the Reform to the Article 27 of the Constitution in 1992 that modified land access in Mexico—enabling selling/renting communal lands—several other law reforms were made to this

article in relation to the use/access of other Mexican resources: genetic, water, environmental services and mining (Intervention of Vera, NDM Workshop, 2006).

A summary of the analysis is presented below:

iv. Genetic resources: The first issue discussed in this topic was in relation to 'patenting genetic resources'. An emerging concern is that these resources are in regions where indigenous and peasant communities live. Therefore, it becomes difficult to delimit the ownership of genetic resources by one single community. What is more, the improvement and diversification of uses of medicinal plants and the thousands of different maize seeds in Mexico are the result of the work carried out by generations of diverse communities who interchange knowledge and seeds. Therefore, this issue of ownership has become even more difficult to define. On top of that, the current Mexican Constitution does not acknowledge indigenous settlements despite the recognition of communities—groups of people detached from a territory. In consequence, indigenous individuals have no right to claim ownership over genetic resources in the territories they inhabit.

Another concern is 'bio-prospection', a practice carried out by private companies since the 1980s not only in Mexico, but also across the world to identify and to appropriate genetic resources for profit making. Private companies use patents to legally obtain ownership over these resources for which in the best-case scenario they pay communities a symbolic amount that represents next to nothing when compared to their revenues.

A third concern is the 'patenting process' itself. Even when participants of the meetings recognize this is not a process to be pursued—the appropriation of seeds—they analyse how the process is enabled exclusively for private

companies. This patenting process involves three requirements: to be a new product/process, to be invented by someone (a physical or moral person) and to be useful.

Obtaining a patent is not an option for indigenous communities as the requirement of an individual inventor automatically excludes communities; they are collective actors who develop knowledge that does not belong to a specific individual. Besides, the variety of maize seeds or the diverse use of medicinal plants, are not considered 'new' by law. New products/processes are only for private companies who make genetic improvements in laboratories. For example a new product is considered when a TNC isolates a specific gene of a plant to be commercialised, regardless of the fact that the gene might be the result from the work of indigenous communities. One of the worst cases that exemplify this issue is the patent of yellow beans (*phaseolus vulgaris*)—native to central Mexico and Mesoamerica. People from the US took this bean from supermarkets and planted this in US. Later they claimed it as a new process which was patented. US farmers that have access to subsidies flooded the Mexican markets with cheap yellow beans establishing a monopoly which constituted a clear disadvantage for small-medium landholders producers in Mexico that simply could not compete.

Lastly, small-scale peasants and indigenous communities cannot afford prices of the patenting process; the cheapest one—like the one correspondent to the yellow bean—that does not include genetic modifications amounts \$20,000. Genetic modifications are more costly and reach up to \$1.5 million. Therefore, even in the rare case that a community would like to get a patent by pointing a representative of the community as a moral person, costs result prohibiting.

- v. Other topic of discussion was the 'seed law' , which is still within an approval phase. Yet, participants of the workshops recognised the threat on approving this law. It was to oblige peasants or indigenous food producers to register their seeds and to take control over what they plant. Not registering seeds would make them law offenders; forcing them to stop the practice of sharing seeds to improve seed varieties over time—as they would only plant registered seeds. At first, NGO members of the NDM thought this was a law to protect maize and other varieties, but thanks to the discussion they realised about the issue of control.
- vi. They also discussed the issue of emerging mechanisms for protected natural resources areas. One of the most recent mechanisms was placed under Climate Change: 'payment for environmental services' in exchange of carbon offsets²⁶. The payment for the environmental services comes from private companies to small-scale peasants or indigenous communities with the aim to protect natural resources—like foresting. Nevertheless, what these mechanisms might imply for communities is the control of access to natural resources as they lose the right to use them. E.g. reforesting agricultural lands where peasants cultivate maize under the *milpa* model. This practice makes communities dependent on buying food to survive versus producing their own crops. The payment for environmental services is not sufficient to buy food and communities are forced to migrate in search for alternatives to make a living. Furthermore, reforestation introduces mono-crops, which is in detriment of bio-diversity, whereas the *milpa* system improves it.

²⁶ Carbon offsets is a mechanism to encourage the private sector to reduce emissions of carbon dioxide or greenhouse gases made elsewhere in order to compensate their own.

vii. In addition, private companies have become more interested in 'payments for environmental services' as the implemented mechanisms stipulate payment of insignificant amounts of money for exploiting resources. For example, reforestation helps recover water deposits in these zones. Companies obtain permits for the use of water resources as they are paying for the reforestation. The annual fee for reforestation is of only \$23-30 for ha. 80% of small-medium landholders in Mexico have access to 2-5 ha of land; therefore, they can make a maximum of \$0.40 per day. Solely peasants that have considerable lands can afford reforest at the time they cultivate their food. Producers of milk or paper—who consume vast amounts of water—pay for reforestation to obtain water permits at the prices mentioned above. They become the 'owners' of the water, as ultimately it is them who decide how to use it and make profits from it.

viii. A final a discussion was held on permits for access to mining. It is yet another common practice that stemmed from the amendments to Article 27 in relation to environmental services. In this case the payments are made for the use of ha of land at approximately \$8 per year. The fee is nothing when compared to the volume or value of minerals companies exploit. Without taking into account health issues and environmental impact of mining projects; companies make up to 800% profits in comparison to what they pay for the land access. In Mexico 16% of the territory is conceded to TNC mining companies, partly in indigenous territories and natural protected zones—25% of the total land concessions.

At the end of the workshop, members, mainly peasants and indigenous participants concluded that patents, bio-prospection, carbon offsets, payment for environmental services and the seed law are mechanisms that aim at the displacement of communities in order for private companies to gain access to the

resources. This is the mechanism communities need to unveil to adopt adequate strategies. They also concluded that the awareness of GMOs introduction into their fields and supporting the *milpa* cultivation are not enough to prevent the displacement of indigenous and peasants settlements. As a matter of fact, the main conclusion of the workshop stated by peasants and indigenous members was:

Indigenous and small-peasant communities need of these workshops in which policy analysis is made. But we are not lawyers. We do not have the energy or resources to analyse each law modification or mechanism implemented either by governments or private companies. What is important in these spaces is to understand their dynamics of operation, which ultimately will shift towards exploitation of natural resources with nothing in return to either communities or the country. We are peasants and growing food is what we do and we will continue doing so. This is our main defence, but from now on, clearly there is a need to work closely with specialists to get assessment to issue demands whenever appropriate to face this complex scenario. But at the core of our strategy is and will always be the maize cultivation, which needs to be supported by an integral strategy (Servin, Indigenous Leader participation, NDM Workshop, 2006).

On top of this, the specialists pointed out law modifications as instruments that support a strategy that makes 'the poor poorer' . Laws reforms allow the private sector to get access to the commons with no adequate retribution; nor an appropriate environmental sustainable approach. The implications of moving barriers between the public and private goods, e.g. water and mines that are national but the regime of concessions makes TNC 'the owners' , are in abuse of power. "Making visible this abuse of power is at the core of any legal case or demand presented by the NDM "(Salgado, Head of CENAMI, NDM Workshop, 2006).

From a standpoint of both, specialists and expert peasant and indigenous producers, two main strategies to move forward are identified. One is based on the core of the struggle, cultivating the *milpa* and improving their food systems.

The other is based on the expansion of supportive strategies such as demands and the expansion of this civil network dynamics. A clear example of this was the formation of National Assembly for the Environmentally Affected (ANAA) in 2007, as a result of the 2006 workshop discussions. ANAA civil network is facilitated by CASIFOP organisation, a funder member of the NDM. CASIFOP learnings from the NDM dynamics helped to quickly systematise the work of the ANAA oriented to strategizing against mining projects, water over-exploitation and other environmental issues. Luis Hernandez, a writer, activist and journalist in Mexico, provides with philosophy underlying this civil network:

People fighting against open waste lands do not only fight for taking care of the environment, but for public health and recovering their communal spaces. The objective of the National Assembly for the Environmentally Affected is to make justice to the people who have experienced the effects of the environmental devastation and who have lived in such territories for thousands of years (Hernandez, 2011).

What is important to highlight in this section is that NDN workshops focus on the formation of narratives that come from the iteration of knowledge among specialist such as lawyers or biologist and expert producers—small-scale peasants and indigenous people. Both types of actors are equally important to generate innovative learning translated into strategies (social change). Above all, it is important to mention that specialist participants and NGO members—who do research as part of their duties—are essential to support strategies, but these have to come from peasants and indigenous themselves. “The specialist or NGO knowledge would not be of value without resounding the voice of peasants who understand their realities and have a perspective on how to change them; specialists will only support when necessary” (Interview with Salgado, Head of CENAMI, 2012).

Furthermore, it can be remarked that unveiling root cause of issues is essential in formulating innovative strategies. In doing so, meetings of the NDM always start by hearing peoples' realities which are closely examined to find out root causes with the support of formal knowledge. This process ultimately implies constant iteration between 'theory and practice' to enable the emergence of social change. At the end of meetings it is also peasant and indigenous members who make the final conclusions and catch sight of the NDM strategies. In the long term it is a sustainable approach as they become aware of the knowledge and support needed to face more complex realities and issues.

6.2.2 Relations based on mutual recognition and influence

This feature is about observing trustable relationships in which all participants' inputs are valued and respected as well as reciprocity and solidarity are a common practice (Herrera, 2008; Kaiten et al. 2010). Testimonies from actors in diverse gatherings of the NDM show evidence of it.

- i. Recognising value and showing respect for others: It refers to the recognition of one-self as part of a whole in which everyone is valued equally. This is also related to the fact that nobody has the entire solution or complete vision of a problem, yet each contribution helps achieve a higher goal; e.g., food sovereignty. In the case of the NDM members, they claim to be part of a group with a higher aim than their individual organisations, although there is no formal membership. Participants assure the NDM has something 'intangible' to it and it is a source of inspiration and connection. "The network helps our individual-local duties seem more meaningful. When I think of the NDM I feel that my daily duties contribute to the transformation

of Mexico now and in the future” (Conversation with Sanchez, Peasant from Hidalgo State, NDM National Assembly, 2011). He also adds:

The NDM is to be connected to the heart of a living organism that pumps energy up to the different parts of the body at all times. Being part of the NDM gives a feeling of being part of something bigger, so even when working in our own localities and activities we do not feel like isolated actors. The NDM does not impose a result, but allows us to get contacts for technical, organisational or just motivational support to continuously nourish and refresh our vision and projects. For example, in our region, Hidalgo, we are struggling with severe droughts; moreover, we have problems due to people getting severely sick because of the minerals in the water. Our main task has become to prevent people from drinking contaminated water through the implementation of rainwater collection systems, informing people of dangers and introducing new ways of cultivating organically with less water requirements. In achieving this endeavour, we found key technical help from CENAMI and CECCAM, as well as the interaction with other communities and organisations we have met through the NDM. By working with them, we recognise that we are not only struggling to prevent them from getting sick, this is immediate. Our real struggle is to defend our culture and territories.

Additionally, for peasant and indigenous participants, NGO members have no more importance or are recognised as leaders. And for NGO members, they immediately referred to peasants and indigenous as the core of the NDM. Another aspect that shows recognition and respect among members of the network is they do not seek to agree or disagree, but to find common grounds from which they obtain value as individuals or organisations. Robles, Head of MG (2012) said in an interview:

The only way to achieve a higher goal, e.g. food sovereignty for this country is by working with other organisations as a single entity. In this endeavour a key element is necessary; this is not about trying to agree or disagree with others, but to find common grounds that make us to increase our capacities regardless of our diverse backgrounds, objectives and resources. For example, MG does not seek to agree or disagree with CENAMI, but to find a common ground to enrich each other. MG attends the national assemblies and workshops, which help us reinforce our understanding of global issues such as climate change, food crisis and

neoliberal policies in Mexico. MG contributes to the NDM by sharing its experiences and systems of work with other members. MG has learnt the value behind collaboration and we are open to work with others. In fact, thanks to the NDM we have connected with experts on topics such as ecological construction. We know that by deliberating with others, we enhance our vision. On the other hand, we do not participate in the PPT process as we recognise this is not a priority for our current system of work, yet this is a useful process for other members. Each community or organisation decides what adds value to its work, this is real democracy.

- ii. Reciprocity: This feature is about returning to others what we have received from them, to society, to individuals and to nature. In the case of the NDM this feature is observed in diverse forms. Participants recognise that learning and agreements achieved during national assemblies and workshops nurture their own organisational objectives and duties. And vice-versa, participants also recognise their inputs are valuable for the civil network.

One example is CECCAM. This organisation has always incorporated the agreements from the NDM as part of their daily duties. For example, the coordination of the diagnosis of the GMO contamination of *criollo* maize in 2002 or the research to detect inconsistencies between the 'GMO free zones' and 'GMO experimental permits' to commercialise transgenic maize in Mexico. More recently, CECCAM has shifted its focus of research to support communities in their PPT prehearing as well as on topics of the impacts of climate change mechanisms.

On the other hand, CECCAM is reciprocated by the NDM, the assemblies and workshops are the place where this organisation weights where to direct its topics of research. "CECCAM's main objective is to become a facilitator to empower communities of peasants in Mexico, in doing so; we need platforms where to work directly with them. Moreover, a close work with communities

provides us with arguments and evidence to justify and channel funds from INGOs. We recognise that acquiring expertise in any given topic takes time so we have better identified priorities in communities before specialising on it (Conversation with Hernandez, CECCAM Member, 2014).

Another example of reciprocity among organisations can be illustrated with the projects executed based on the relationship between CECCAM and CENAMI. CECCAM has the experience of carrying out research with small-scale peasants and CENAMI has linkages with indigenous communities. The merging between both organisations expands the network (in number of communities working together) and increases the bonds between indigenous and peasant communities experiencing similar issues. Moreover, CECCAM had worked mainly with small and medium landholder peasants located in the north of Mexico who produce maize for commercialisation and CENAMI, with indigenous communities in the south of the country who are also producers, but mostly for self-consumption. Indigenous communities provide with their ways of work, e.g. assemblies and traditional ways of producing the multi-crop system of *milpa* and peasants share their ways of cultivating to increase productivity. Additionally, the combination of resources of both organisations facilitates the organisation of the NDM national assemblies. CECCAM usually contributes with funds for transport and CENAMI with the space and food of the gatherings.

Another way to observe reciprocity within the NDM is by quickly responding whenever pressing issues need to be tackled. For example, when the region of Oaxaca decided to issue a demand against the legal entrance of GMO in its local jurisdiction—as it is a zone with a high diversity of maize and indigenous communities—the year of Oaxaca against GMOs in the NDM was declared in

2008. Consequently, resources were focused on that region with workshops and the support from specialist to pursue the case. "This legal appeal became a model for further demands made on this issue, reciprocating the effort of the NDM members" (Conversation with Robles, COA member, 2013). She also mentioned that Oaxaca was the place where lawyers and peasants began to understand one another and came up with the case for a legal demand. She is a lawyer by profession and she had experience in working with communities to issue demands but not in GMO cases. This was a learning process reapplied to other communities and beyond; this was a fundamental learning for the development of the PPT demands (Ibid, 2013).

Finally, reciprocity with nature is also observed. One of the main areas of work of the NDM is the support of ecological agricultural practices. Furthermore, members themselves take on this responsibly at an individual level. NGO members working for GRAIN, ETC Group and MG are not food producers, but attempt to cultivate their own food as a way of living: "We cannot understand what we do without practicing it." (Interview with Villa, ETC Group, Mexico, 2012) (Interview with Robles, Head of MG, Chiapas, Mexico, 2012). Members of GRAIN and ETC Group live in a communal house in Mexico City where they cultivate food. The same is true for the MG, whose members have developed an urban food garden using eco-technologies such as the dry sanitation and rainwater harvesting at the Mission of Guadalupe facilities. In the end, members say, the values of the NDM are embedded in our ways of living.

A key remark from this section can be made. Relations of recognition and influence are based on finding common grounds as a culture of work. It focuses on forming alliances based on those aspects that increase capacities of each

organisation/ individual within the network. It goes beyond being comrades or having affinities. Rather, it is a culture based on reciprocity and recognition of members' equal value and contribution. This brings back to a reflection of one member of the NDM, Vera, who insists that civil networks are based on human relationships and the best way to understand their dynamics is by comparing them with a marriage. Marriages face periods of conflicts and happiness over time; some marriages can fail, but others survive. This is because they understand the value behind the alliance and constantly seeks how to overcome differences (Interview with Vera, GRAIN Member, Mexico, 2012).

6.2.3 Leadership and participants of civil networks

Theory identifies three main characteristics of leadership for civil networks. They act as catalysers to generate connexions in the network and sense energies (Kaiten et al. 2010). They also act as facilitators at meetings in the decision-making process and support the flow of information (Armitage 2008; Castells, 2012). Lastly, they are key to reinforcing work culture, promoting equal participation—power balance within the network (Castells, 2012).

In addition, theory also identifies three types of participants in spaces of collective learning: linking nodes, specialised knowledge and expert know-how actors. Linking nodes promote a constant iteration between scientific knowledge and expert know-how actors. Specialists contribute with knowledge of theories, treaties, policies, structural changes and scientific research; whereas expert know-how actors bring inputs from their own localities and also take actions on the ground.

As already explored in section 6.2.1 of this chapter (by analysing the NDM Workshop, 2006) specialist participants and expert peasant-indigenous members interact to produce innovative knowledge and strategies, which shows two roles to stand out in the NDM meetings. Specialist participants of the NDM are usually from the Union of Scientists Committed to Society (UCCS), mostly researchers from UNAM in topics of genetic resources, water, environmental devastation, economic, advocacy, among others. Peasants and indigenous communities constitute 90% of all the participants and come from across the country.

A third type of actor became evident by attending different meetings of the NDM. It is a less formal and visible type of actor, yet its role is fundamental in different aspects. These are the NGO members—linking nodes—that call and channel resources to organise and facilitate gatherings such as national assemblies and special workshops of the NDM. They also serve as catalysers by linking peasants and indigenous members with specialists to produce new learning and consciousness of the struggle on the ground. On top of that, they ensure that energy among the members is regenerated and good rapport is built. An example is the celebration of the 10 years of the NDM formal operation since 2002. A compilation of the history of the NDM was made in the book: *The maize is not a thing, it is a centre of origin*, a work led by GRAIN. In this compilation not only do members of the NDM recognised their trajectory, but also became a tool to demand rights for indigenous people and their ways of producing food in diverse public spaces where they get motivated. E.g. peasants presented their demands at UNAM as well as in different spaces of Mexico City where the media was invited.

A characteristic that is not mentioned in theory is that these members also make sure that grassroots have the leading role in the discussions and the construction

of strategies of civil networks. In fact, this constitutes a culture of work of these organisations. In this thesis this is called as 'inversion of power' —from the specialists to the expert peasants/indigenous people. The power of voice, learning and actions come from local actors who are the core of the network. It also means that the usually recognised 'formal/professional knowledge' becomes at the service of peoples in order to defend their rights. The role of linking-nodes in civil networks is fundamental, but power is in the hands of producers to generate long-term strategies.

Another characteristic not mentioned in theory is that linking-node actors systematise the knowledge produced within civil networks. They summarise and highlight new knowledge and needs of the network in order for strategies to come true on the ground. E.g. these organisations typically get involved in sub-committees such as the PPT commission to help systematise workshops in which peasants and indigenous members learn from each other in how documenting and rising their demands or mobilize resources to help file demands when needed.

On addition to previous duties, linking nodes also ensure keeping the structure and flexibility of the network as the NDM motto indicates:

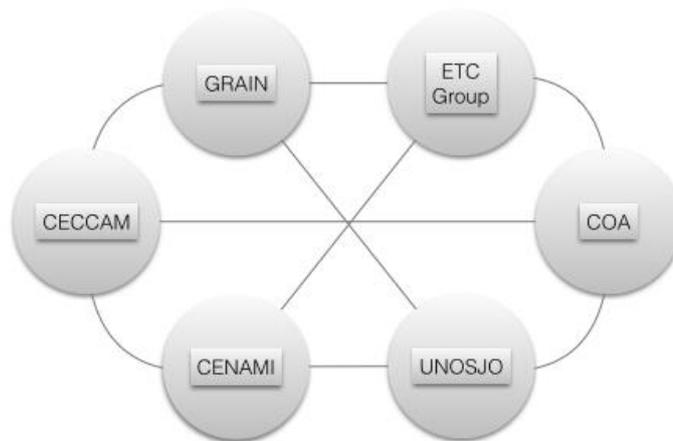
When we come together we are an assembly; when we go away to work in our own localities and organisations, we are a network (Participant observation, NDM National Assembly, 2012).

Finally to mention is that linking nodes make sure to change of duties or responsibilities as the network demands (Interview with Salgado, Head of CENAMI, Mexico, 2012). "All the facilitator members, if we are going to call them in this form, have changed roles over time as well as indigenous and peasant members have joined in carrying out duties as needed. Roles are not fixed within

the network as the fundamental point is to ensure constant reflections of the context to feedback our strategies” (Ibid, 2012). For example, CASIFOP founder member of the NDM, move to work under the ANAA. Or UNOSJO is taking on new responsibilities in Oaxaca; its members are working closely on indigenous rights with governmental entities since 2011. “Therefore, another indigenous organisation will need to take over within the NDM to ensure this perspective is included “(Interview with de Ita, Head of CECCAM, Mexico, 2012).

The linking-node members can be also identified as the CoP organisations, founders’ members of the NDM who initiated the systematisation of national assemblies (explained in Chapter 5 of the thesis). This CoP tries to keep a balance among local organisations (UNOSJO and COA Collective), national (CECCAM and CENAMI) and international (GRAIN and ETC Group).

Figure 6: NDM linking-node members —CoP



Source: Build by the author based on its own observations

6.2.4 Meeting spaces

According to the theory, spaces for collective learning take place as the context and the necessity of members require; these spaces do not need more than sufficient structure to enable discussions, celebrations and construction of strategies. They vary from informal and 'invisible' spaces that usually occur at local levels to more visible and formal ones at national or international levels (Kaiten et al. 2010, Pelling, 2011; Castells, 2012).

This is precisely the case of the NDM, which has clearly defined the need for a systematised and more formal-visible space at a national level, but local assemblies and actions happen at the pace and need of each peasant or indigenous organisation/community. "Certainly, what has remained permanent to our role [referring to the linking-nodes] is the organisation of national assemblies, which is a fundamental pillar to visualise the pathway of the network "(Interview with de Ita, Head of CECAM, Mexico, 2012). National assemblies on a periodic basis stem from the need expressed by multi-actors to perform constant analysis facing a more complex scenario with issues such as *criollo* maize contamination, displacement of indigenous communities from their territories, environmental degradation, food crisis and migration as well as the need to build strategies accordingly. This reiterative analysis enables to decide on future strategies of the NDM.

In addition, other types of meetings spaces can be singled out within the NDM to operationalize strategies: special workshops and hearings (at national levels) to produce innovative learning, local assemblies and processes of work and international forums to demand power abuse.

- i. PPT workshops and hearings at a national level: These spaces focus on analysing evidence, unveiling power abuse and root causes of issues. In doing so, real examples of communities are examined in order to observe variants and differences of problems on the ground. As previously mentioned, specialists are invited to support building of arguments and providing guidelines on how to issue demands. Two main tools are used for the demands' argument construction. Cases narrated by the victims are supported by data from scientists or NGO-professionals in the topic. The other tool is mapping, which is usually carried out in collective ways by peasants and specialists in the communities' territories. Mapping is used for issues such as water contamination and land degradation/encroachment. The idea is to walk in communities' lands to capture issues and gather evidence for the demands. Mapping also serves as a process of generating awareness and consciousness of peasants' positions to empower them to take action.

These workshops are organised by a CoP committee, at the case of the Hearing on Food Sovereignty and Maize, three members were responsible: Villa from ETC Group, Robles from COA and Rosas from ANAA. They call for the workshops, make sure that appropriate specialists or translators are present (if needed), material and resources are available. They only call on meetings whenever communities express their desire to go through the process and have already identified the specific support they require.

Subsequently, indigenous and peasant members make formal presentation of their cases at PPT prehearings. These are open to general public and are organised in public spaces. Their purpose is not only to evaluate the quality of the cases by moral authorities on the topic, but most importantly, to empower peasants in terms of their cases. Prehearings are organised regionally or

nationally depending on the number of cases linked together or communities in a region. In the preparation for the National Hearing on Food Sovereignty and Maize, 19 different prehearings were held in several issues that communities struggle with. The examples below help understand this diversity of topics.

One case is related to the 'destruction of water sources, the forest and the peasant life in the community of San Pedro Atlapulco located in the state of Mexico—the periphery of Mexico City. They presented how their agricultural activities, as well as their community organisations and life have been put at risk as every day. 22,000 m³ of water from their lands are deviated to Mexico City. They demanded a fair recognition of the benefit they grant the city and be compensated. Another case denounced 'water overexploitation' in the Cuenca de la Independencia in Guanajuato State. There is only access to contaminated water there. In 1958 the aquifer was exploited and now it is contaminated with chloride and arsenic—a research supported by specialists from UNAM. This situation threatens the very survival of communities putting at risk their health and their agricultural activities. Communities of Mezcala, Jalisco denounced the case of 'violent occupation of their territories by a private company' with complicity of the municipal government; what is more, under private police protection who physically threatened members of the community. This has prevented them from practicing their agriculture activities, which puts at risk their livelihoods, organisational ways and therefore, the possibility to live in this territory (Participant Observation, PPT National Hearing on Food Sovereignty and Maize, Oaxaca, Mexico, 2014).

- ii. PPT Final Hearings at an international level: A national hearing for each of the seven topics of the PPT demands is organised as well as the Final National

Hearing bringing the topics together. In this forum the power abuse by the Mexican State against indigenous and peasant communities is denounced (See example of the legislative power abuse in Box 3). Both, specialists and peasants are present at these court rulings. In addition, the main arguments for each of the demands are presented, constructed during the prehearings and workshops. In the case of the Final Hearing on Maize and Food Sovereignty six arguments were presented:

One concern is the 'transgenic contamination of native maize' and the liability incurred by companies and governments in this regard. Mexico is the centre of origin of maize, which by international treaties should be protected. Its introduction threatens the 59 native families of maize, which encompass 23,000 varieties of seeds and equivalent to 24 billion of seeds produced in Mexico every year. This is a reservoir for humanity, as maize is a major cereal consumed globally.

Another argument seeks to demonstrate that private companies have knowingly attempted to disrupt the livelihood of people (land, seeds, water, earth, biodiversity and other parts of the commons). This case argues that companies are either undermining or attempting outright to ban ancestral and contemporary strategies through bio-piracy or regulating the type of seeds used by communities. Moreover, companies pay next to 'nothing' by the exploitation of resources, degrading the environment in which communities live. This violates the article 27 of the Declaration of Human Rights, which declares that all communities have the right to develop their own culture and have access to the resources to do so; that, for Mexican rural settlements is the cultivation of maize.

The third argument considers the specific case of seed-related laws and regulations. It claims that the Mexican Seeds Act is deliberately designed to criminalise native seed saving, planting, exchanging and trading. This demand also discusses intellectual property and privatisation of seeds, e.g. GMO seeds.

The fourth line of argument documents the invasion of transgenic soybeans, and in particular, well-documented contamination of beekeeping operations in the Yucatan Peninsula that threatens the livelihoods of the settlements in the entire region.

The fifth line establishes the role of governmental programmes, such as imposed agricultural models, privatisation and compulsory individualised landholding, dismantling the peasant way of life. This argument is interconnected with international treaties such as the NAFTA.

The sixth one is designed to shed light on the corrupt relationship between public research institutions and private companies to develop technologies in GMOs that might not consider many different components of diversity, culture and economy in Mexico.

A final and transversal demand is made to defend the right to food and health of Mexican people. Mexican people consume more maize than any other country in the world. The GMO introduction poses a health threat to its population. It needs to be tackled on all fronts, environmentally and health-wise; as the precautionary principle states, GMO maize should be banned in Mexico.

iii. Local spaces: the *milpa* is at the core of the NDM actions. Legal demands as well as actions to stop mining or dam projects are undertaken in the localities as supporting strategies. A further detail of local processes is given later on this chapter.

All previous spaces, from local to international, are linked. Moreover, these spaces are planned as effectively as possible by sharing resources to generate knowledge at lower levels to be escalated to international spaces. It is in the prehearings and workshops where the key lessons and evidence of the network are collected and made available to local people.

It is worth highlighting that national assemblies become the heart of the NDM spaces for collective learning. Within these spaces the pathway of actions, the culture and political position of the NDM are formed, constantly assessed and travel upward and downward through the network. It also becomes a space that keeps sufficient structure to allow for the process to function without diminishing freedom of its members.

Finally, figure 7 shows a 'fixed representation' of the NDM, positioning at the centre the CoP organisations given their facilitating role. It is a fixed representation in opposition to the flexible nature of networks. The objective is to represent the levels of collaboration of members and their dynamic of meetings according to its motto: 'When we are together we are an assembly; when we are at our localities we are a network'. This representation does not include all organisations and indigenous/peasant community members (nearly 1500). What it shows is local, national and international levels operation as well as different regions of Mexico that the NDM covers. The regions encompass different states of the country, e.g. Hidalgo or Oaxaca where hundred members of the NDM are

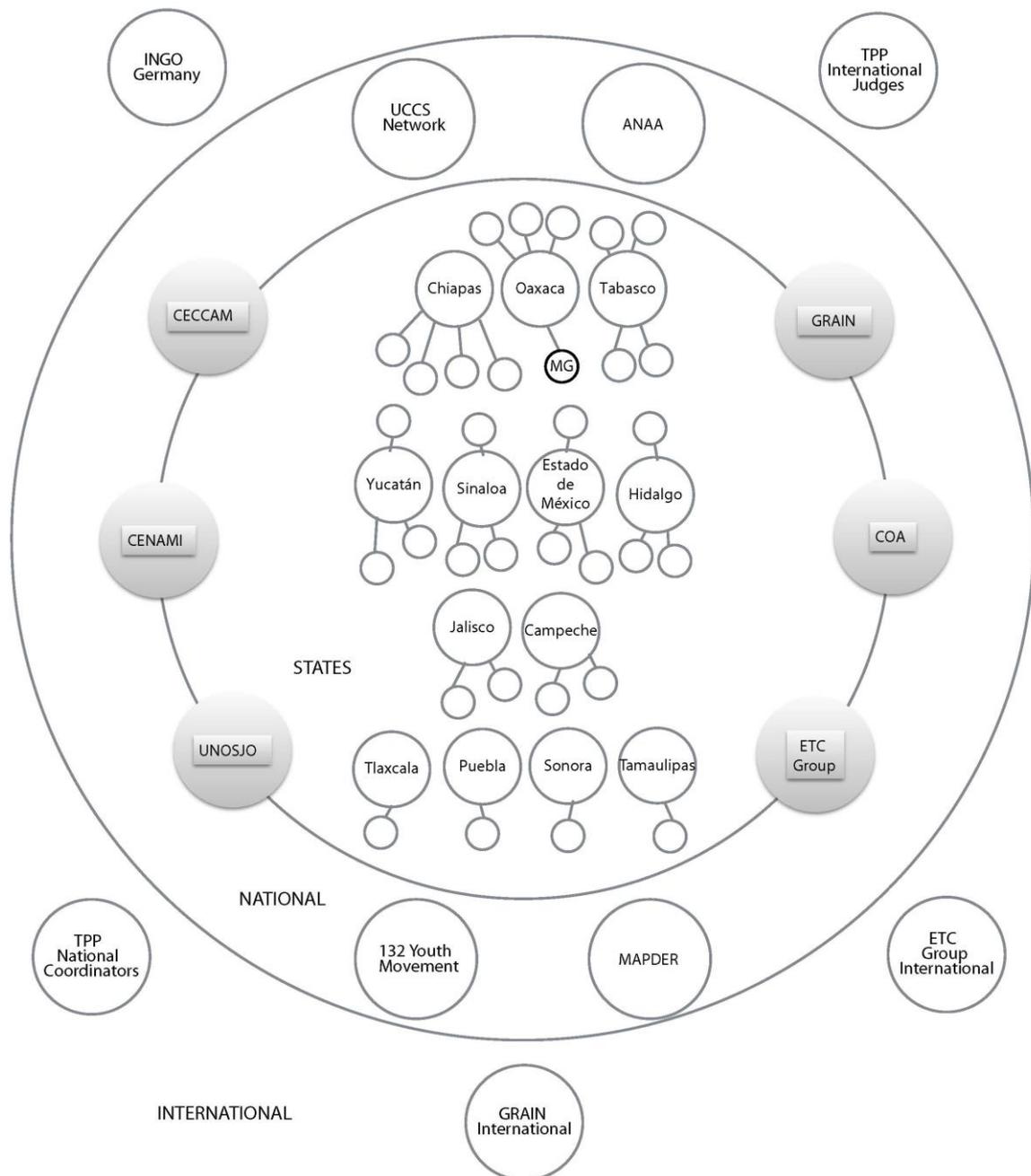
located. As already mentioned, 90% of members are small-scale peasants and indigenous people, that the figure attempts to represent. Important to note is the labels of local, national and international levels do not imply subordination.

Another topic to analyse in relation to the members who participate in the different meeting spaces of the NDM is the gender perspective. When looking at the CoP members they are evenly distributed in duties and in terms of men and women representation. COA, CECCAM and GRAIN organisations (each of them located at local, national and international levels respectively) are directed by women. In the other hand, UNOSJO, CENAMI and ETC Group, also representing to each of the levels of operation of the NDM, are directed by men. Nevertheless, when looking at the national assemblies, this distribution is not the same. The majority of participants in these spaces are men. Women are less represented with an average of a ratio of 70%-30% (men-women) participation. This might become a challenge for the NDM in order to ensure that the overall strategies of the NDM incorporate the views of both types of participants. The same suggestion might apply for the youth perspective. Youth participation in the national assemblies accounts on 25%. Lastly, when looking at local meeting spaces, such as local assemblies and the *milpa* process, a more balanced gender perspective is noted again. The ratio is on average (50%-50%) women and men participation; both types of members have important roles within the *milpa* production system (as explained in the following section).

Interesting to note is that an analysis of the content of the in-depth interviews held with women and men show that these two types of actors are knowledgeable in different topics discussed within the different meeting spaces. 70% of the responses of women expand in the topics of identity, weaknesses and future steps of the NDM. Whereas the topics related to victories of the NDM, forms in which the spaces of collective learning operate as well as the roles of

people within the *milpa* system are widely described by men (80%). These results might imply that women's role within the NDM is more focused on keeping/building the essence and spirit of the group. Whereas the men's role seems to be more oriented to define the ways of working and operationalise the actions of the NDM. This is not to say that these roles are restrictive, but that energy of each of these different personalities, of women and men, might bring different features to the network dynamics of operation. Finally to say is that it might be also an important topic of further research to understand if the actions of the NDM impact equality to the everyday life of men and women.

Figure 7: NDM structure and levels of collaboration



6.2.5 Networks as the organisational base

Responsiveness and resourcefulness are main characteristics of the network organisational structures according to the theory (Armitage, 2008; da Silva et al. 2012). From Chapter 4 and 5 of this thesis the NDM is perceived as capable to identify responsive actions, which means a capacity to formulate anticipated multi-level actions. Moreover, the enhanced possibilities to carry out actions by members of the network, by combining resources of diverse organisations, have been evident through this chapter. Therefore, this topic is not further explored.

Worth mentioning is that even when communities themselves at times provide the network with their spaces and resources to carry out processes such as mappings, resources to keep the NDM's dynamics (mainly national assemblies, workshops and ongoing research) comes from INGOs. E.g. funds from CECCAM and CENAMI. In the same line, ETC Group and GRAIN operations in Mexico are funded by their international organizations. A question of economical sustainability emerges. Does it need further resources to expand its work? What happens if INGOs stop channelling their resources to current CoP organisations? There is still no clear answer at the moment. This issue is further analysed in the following sections of this chapter.

6. 3 NDM essence and spirit: maize as a source of food and a sacred symbol

Chapter 5 identifies the cultivation of maize and the improvement of ecological/traditional practices to produce food in peasant and indigenous communities as core actions. Actions of the NDM have expanded to higher levels

operation such as demands within the PPT process but without keeping as a core strategy the maize defence since 2004:

We cannot spend so much energy trying to identify the GMO contamination of native maize. What we need to do is to improve our methods for planting and cultivating it as well as encouraging seeds interchange and implementation of eco-technologies such as water storage and soil recovering. The role of NGOs within the NDM is to facilitate and support this job (NDM, 2012).

Maize is not only at the core of actions of the NDM, but it is also at the core of the *milpa* model of production system. Maize is a starting point to further analyse the deep motivation that constitutes a base for a long-term relationship. This chapter has already identified different features that contribute to making spaces to produce collective learning successful. Beyond these features, this section unveils the essence and spirit motivating its members to keep up the struggle. The analysis is mainly conducted through the systematisation of work of the Mission of Guadalupe (MG) with indigenous communities from Chiapas, specifically on the case of Guadalupe Tepeyac as this is where participant observation was carried out. MG has worked systematically with indigenous communities to support their ways of living. One of its main pillars is supporting their ways of producing food. Robles, Head of MG, in an interview (2012) affirmed that all pillars are important, however, food production, eco-technologies and health are crucial.

Maize cultivation can be categorised according to the following factors:

1. Maize as a common ground of a NDM struggle: Diverse actors agreed on the necessity of common spaces for learning to analyse complex issues around the food system in Mexico following the detection of native maize contaminated by GMOs. Maize became the common ground of the struggle:

for the environmentalists concerned about bio-diversity; for geopolitics about private companies appropriating seeds; small-holder peasants upset about their livelihoods at risk and indigenous people devastated by the possibility of losing their maize due to the 'contamination issue'. Ultimately, maize made participants understand that no single perspective or solution could tackle such complex problem. It also became evident that maize signified much more than food, it represented a way of living for indigenous communities as expressed in the Forum on Defence of Maize (2012): Maize is not a 'thing' or a project; maize is a sacred symbol for us and defending it means defending our territories and way of life.

2. Maize as a philosophy of life and at centre of the *milpa*: maize is not an isolated crop but it is pivotal for ecological and multi-crop production of the *milpa* food system (See Chapter 4 for further description). The *milpa* represents more than a survival strategy; it is a system that organises life of communities in terms of roles and the capacity not only to access quality and culturally appropriate food but also to produce food in dignity.

The *milpa* principles and characteristics is what underlie the whole structural organisation of communities. It includes the conservation and improvement of soil health by keeping its nutrients; this is a duty normally carried out by men and youths in communities. The *milpa* also includes the continuous analysis, selection and storage of the best seeds each year in order to ensure resistant crops every growing season. Women are responsible for this duty, in which they select the best seeds to be combined and planted in the following maize planting. This process increases the variety of maize seeds over time. Other activities of the *milpa* are the production of quality organic compost as well as fruit and vegetables. The whole family, including children, youths and

others performs these activities as well as the harvesting. Finally, the *milpa* system also implies organising community assemblies and seed fairs to celebrate harvests, to share seeds and experiences to improve the methods of cultivation, where the elders have a key role.

MG organises workshops and assemblies with the communities in which members of the organisation share principles of permaculture²⁷ design, expanding the food production system to a way of thinking and living. MG does not impose these concepts, but rather combine them with practices of communities. E.g. They include permaculture design to plan their *solares*—a term used by indigenous communities for the cultivation of crops close to their houses—in which they produce vegetables, fruit and cattle with the support of appropriate eco-technologies. During a conversation, Aguayo, a member from Guadalupe Atoyac community shared the following (2012):

We build our houses with principles of natural construction and permaculture design. We have improved the process with the support of MG who put us in contact with Alejandra Caballero²⁸, a recognised Mexican architect on ecological building. We use materials that are within reach and design tools to capture water and to produce compost from organic residues—both from kitchen and our own waste. According to permaculture, the house is located within the most proximate circle; thereafter, vegetable which are more often required in the kitchen, are cultivated. In outer circles, cattle, including chicken, rabbit or any other animals

²⁷ Permaculture: a system of agricultural and social design principles centred on simulating the patterns and features observed in natural ecosystems. The Australians David Holmgren and Bill Mollison first introduced the term in 1978. The word permaculture originally referred to "permanent agriculture", but was expanded to stand also for "permanent culture", as social aspects were seen as integral to a truly sustainable system (Holmgren, 2011).

²⁸ Alejandra Caballero has a reforestation project in Tlaxco, Tlaxcala, Mexico. This has become an educational space where activities, including courses and workshops that engage participants in ways to build, grow and eat food in harmony with nature. The organisation is called Comun Tierra (Common Land) and has built collaboration with CENAMI who put her in contact with local NGOs and communities.

are located as well as the milpa and fruit trees. Close to the vegetables we locate eco-technologies such as rainwater reservoirs and the compost process. The milpa is worked in collective ways among family. We launch into experimentation to improve productivity and soil health. This system of work is not new for us, but it has been improved at the MG workshops. In addition, we have our own system of schools known as 'NEAPI network' whose material is developed by the MG in close work with communities. Government schools do not teach things necessary for our wellbeing, whereas NEAPI subjects are based on: ecological construction, food production, health and indigenous vision.

MG facilitates workshops to improve *milpa* productivity of communities in Margaritas region in Chiapas. They are organised and facilitated by Oliveira, a PhD. in permaculture who graduated in Spain. He has also worked in other regions of Mexico (e.g. Veracruz, where these practices are being improved). He joined MG and works with a group of 15 peasants every two weeks to discuss results of the work they do in their *milpa* 'experimental lands' . In one of the workshops an indigenous member said: "Resources of this country go to improve the industrialised food production, but not the ecological practices that might feed the entire population; therefore, we have taken on this duty. In the short term, we are to improve the production of our plantations and in the long term, production might be for commercialisation (Indigenous participant, MG Experimental Lands Workshop, Chiapas, Mexico, 2012).

Oliveira has its own 'land of experimentation' . He argues that one cannot learn and share if one does not live the process. The main objective is to learn from each other and to systematise learnings to improve soil health.

"Peasants' practises are taken as the base to further enhance their knowledge. Follow a three-year process, in which we constantly test soil to examine their composition and health (by sending samples to laboratories in Mexico City), we will figure out soil health versus increments of maize and

beans productivity in the *milpa* system. The current average productivity of is 1.5tons/ha and the objective is to triple it. Experimentation of lands is not a project, but a philosophy of life in which we improve soils, biodiversity and forms of living and eating of participants, which might be reapplied by other communities “(Interview with Oliveira, Chiapas, Mexico, 2012).

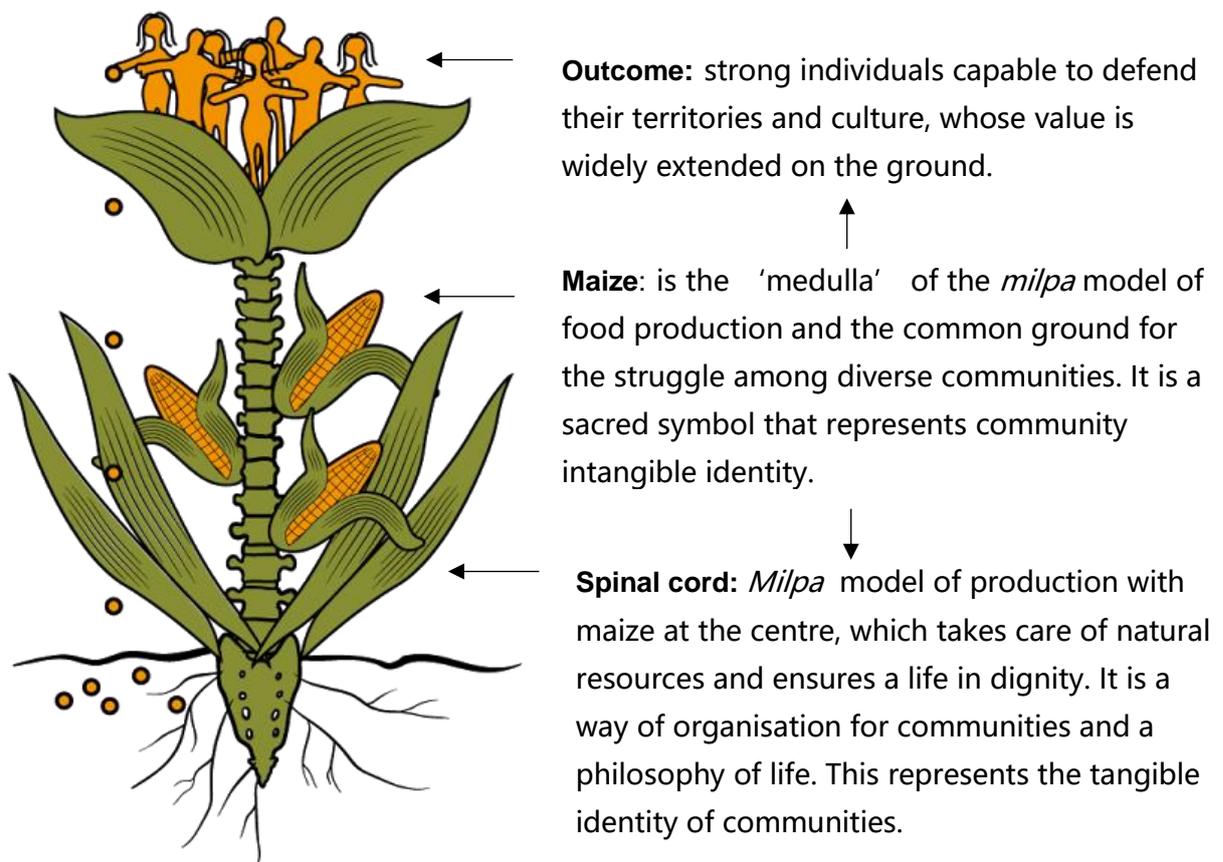
3. Maize as strategy to prevent forced displacement of indigenous and peasant settlements and as sacred symbol: the PPT Final Ruling (2014) states that three forms of violence against indigenous and peasant communities are excised: direct violence and killings as well as forced disappearances; indirect violence manifested in structural mechanisms such as the minimum wage that endure poverty in Mexico and environmental devastation that force communities to migrate from their lands. Moreover, when analysing each of the PPT 19 prehearings on Food Sovereignty and Maize it could be concluded that putting at risk the cultivation of maize threatens the very survival of communities and force them to leave their territories. As a peasant member said during one of the NDM gatherings: “If maize is terminated, we will also die “(Peasant participation, NDM National Assembly, 2013). Given this perspective maize becomes not only a strategy, but a sacred symbol:

I cannot explain scientifically what GMO are, but I know that if they reach our communities, we lose the core of our culture and ourselves. This is our way of organising, our livelihood, our food and our sacred symbol in ceremonies. Maize represents us; we are made of maize (Conversation with Luna, harvesting of maize in Guadalupe Atoyac community, Chiapas, 2012).

Following previous perspectives on maize, an analogy fits here; it is aimed at visualising the essence and source of the NDM. First, maize cultivation becomes the ‘medulla’ of a production food system. It goes from the production of the staple itself, which is the main food for peasants, but it is grown together with a

variety of other crops to keep the soil and people healthy. The multi-crop production system becomes the 'spinal cord' that keeps communities organised and guarantees access to a life in dignity and it becomes the main strategy and common ground of the struggle to prevent indigenous and peasant communities from being displaced from their territories. Finally, maize indisputably represents people and their core identities. If maize is killed, people will die as they are one, which means this struggle is about life and about protecting their ways of life. Indeed, the struggle becomes a form of life, not a specific project or aim. Figure 8 represents this analogy:

Figure 8: Maize cultivation as the source and spirit of the NDM



As a concluding remark of this section, maize cultivation becomes the essence and spirit that motivates the long-term struggle of the members of the NDM. The essence and spirit relies on a struggle that becomes a way of living. Maize is the source and spirit observed as a tangible aspect —food—, but also as an intangible common ground of the struggle and identity of people. This is true not only for peasants and indigenous people, but also for NGO members and specialists. NGOs' daily duties are aligned to support strategies and dynamics of operation of the NDM and that by doing so they also live in dignity. Lastly, it should be emphasised that less visible features that glue civil networks are related to the struggle as a way of life, meaning that it is embedded in peoples' mentality as a common identity and translated into their everyday values. In this way the struggle is not a project but endless process regardless of a specific organisational structure or achievements of a group.

6.4 NDM potential to challenge the dominant food system and steps ahead

Having analysed different features that contribute to strengthening the work of the NDM, a main insight is extracted, spaces of collective learning as a core pillar as well as maize as essence and spirit of the struggle, enhance peoples' lives on the ground. Yet it is still not clear to what extent they might have the capacity to generate transformation on a larger scale. The NDM is attempting to do so by making the abuse of power in Mexico visible at international levels, but benefits from the PPT process are still to be seen. Moreover, PPT demands are not binding agreements.

Faced with this scenario, a question emerges: How to spread dynamics of civil networks on a larger scale? In other words, how to reapply values and features of collective spaces for learning to an extended community in Mexico and beyond? A potential is there, Castells (2004) argues that technology and infrastructure of networks allow disseminating information and values on a global scale. However, it is not clear how to expand the process when it is not only about dissemination of ideas, but also about the construction of individuals within these spaces. As members of the NDM claim: "Crisis has transformed strategies of the NDM and it seems we are facing an internal crisis; it is critical for us to rethink the pathway of our work" (Interview with Salgado, Head of CENAMI, and de Ita, Head of CECCAM, Mexico, 2012).

de Ita, Head of CECCAM said in an interview (2013) that members of the NDM recognise the need to integrate youth urban movements into the dynamics of the network, but it is not yet clear how. Thanks to participant observation I could grasp this might be a combination of both, a clear invitation from the NDM as well as the capacity of youth movements to innovate and incorporate new ways forwards to their dynamics. In 2013 the NDM directly invited the 132 Youth Environmental Movement, the Youth Facing the National Emergency and urban movements to the NDM national assembly in order to share the severity of a potential release of a commercial permit for transgenic maize in Mexico. These movements looked up to the ways of the NDM and ANAA made them form their own PPT Youth Hearing as part of the PPT Mexican Chapter in which they declared:

We, the youth, are the future of Mexico; but we find ourselves with no future options other than migrating to the US, becoming part of the drug trafficking networks or getting low-paid jobs in cities which do not require formal studies. We need to join efforts with other struggles in Mexico; we need and must change the future of our country (PPT Youth Hearing, Nov 2014).

Youth movements learned and incorporated dynamic of civil networks in few months (from February 2013 to October 2014). In a little more than a year, they were capable of inserting its PPT hearing with adequate standards. This hearing was not only honoured by the presence of youth movements participating with the NDM, but also other groups of youth such as the ones working on the case Ayotzinapa—the disappearance of 43 students by Mexican State in September, 2014. Ultimately, this is to say that civil network's dynamics is recognised and rapidly adopted by youth networks, which is relevant in a country where this part of the society is becoming vulnerable to an economic crisis and fewer options are available.

Furthermore, Vera and Salgado, members of the NDM, reflect on the fact that the PPT has shown the NDM that other members rather than the CoP can coordinate dynamics of work in other regions. The PPT prehearings have built capacity in people to get organised without actual CoP members. E.g. the work in the states of Yucatan and Tabasco to file a demand against transgenic soybean and their PPT prehearings were self-managed. "We do not want a fixed structure or a fixed membership for the NDM. Our work has grown through increasing capacity in individuals that disseminate our values and strategies in Mexico. The flexible structure is the strength of the network, as well as the spaces for learning; therefore, we cannot predict the struggle but continue working together to analyse next steps." (Interviews with Salgado, Head of CENAMI and Vera, GRAIN Member, Mexico, 2012).

On the contrary, de Ita, Head of CECCAM (2013) in an interview insisted that the flexible structure of the NDM and the lack of specific goals and formalised ways of work is what makes it difficult to spread their dynamics on a larger scale. In spite of this she insists that next steps of the NDM are to be reflected in a

collective process within the national assemblies and other meetings together with peasant and indigenous members.

From the perspectives above, it becomes clear that next steps of the NDM cannot be determined without the process of collective learning that has characterised its work. What is more, the focus of the discussions needs to be on reapplications of the dynamics to other civil networks versus incorporation of a larger number of people with the NDM. Salgado, Head of CENCOMI in an interview (2012) added: "The NDM recognises the importance of reinforcing our links with other networks working under our dynamics but also with other forms of working in order to join efforts" . In line with this idea Ribeiro (2013) affirms:

Whether it is done legally, illegally, clandestinely or cynically, the invasion of GMOs and the contamination of native varieties is a tough blow. But in the long term, people will keep up the fight for native maize. We will decontaminate and strengthen it until the end of times. Whenever necessary, we will resort to mobilisation, collective strategizing, day-to-day work, alliances with diverse organisations or legal action. In short: the fight is far from over and the future is not written.

Three concluding remarks emerge from this analysis. First, dynamics of civil networks are being adopted by other groups such as some youth movements as well as other civil networks, e.g. the ANAA that was formalised in 2007. It might be too early to examine achievements of these recent civil networks' struggles, yet they have potential to strengthen and expand the struggle in Mexico to achieve positive outcomes at a larger scale. Second, the lack of a fixed structure or focus on results of the NDM dynamics becomes a relevant issue. A systematised process of work is observed in the spaces for collective learning and actions, but not in an in-depth analysis of their results. This might be a good point in time to incorporate this process and disseminate its outcomes among other groups to encourage the adoption of NDM dynamics. Third, the future of

the NDM is not written, which becomes its strength and weakness. They will continue working to learn together to formulate responsible actions. At the same time, there is nothing that ensures members of networks of power will not co-opt their strategies and a clear need to link its struggle with other forms seems imminent.

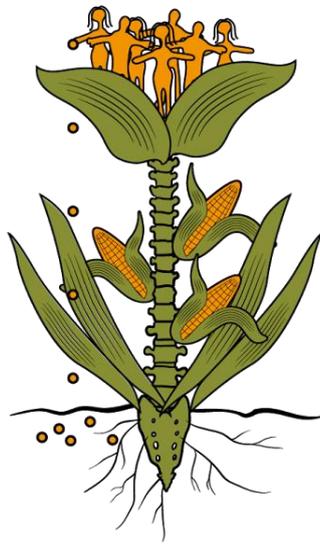
6.5 Concluding remarks

The principal intention of this chapter was to unveil the less visible features that strengthen and motivate the struggle of the NDM in the long term. It became evident that some features of collective learning are essential in this endeavour. One is that innovative knowledge is produced through the constant iteration of knowledge among expert peasants and indigenous people and specialists. This traditional-formal knowledge generates powerful strategies. Moreover, formal knowledge is to generate social change on the ground, which this thesis calls 'inversion of power' between specialists (formal knowledge) and expert know-how actors. Another is the type of actors participating within civil networks, where on top of specialists and peasant-indigenous members, linking nodes — CoP— play a fundamental role. They call for, organise and channel resources to make feasible the process of collective learning. Moreover, they systematise the forms of work, strategies and generated knowledge within the civil network. What is more, they make sure to keep the culture of power inversion upward and downwards in the different spaces of work. Yet, another finding is that national assemblies become the heart of the collective learning process. It is where the pathway of the NDM is visualized and aligned. Besides national assemblies, other spaces are necessary to operationalize actions of the civil network members. Finally, relationships based on a common ground that add value to all members become part of the culture of civil networks work.

Whereas all previous features are important to sustain the work of the NDM, what really makes its members keep working in the long term is the maize. It truly unites diverse members of the network under a common identity. It becomes both, an intangible symbol of the struggle as common ground as well as represents the very people. Maize is related to their cultures, territories and histories. Furthermore, maize is also a tangible asset in the *milpa* model of food production that organizes communities and allows them to live in dignity. In this way the struggle surpasses a specific goal or project, but it is converted in a 'dignified way of living' .

A final question emerges: To what extent civil networks challenge to the dominant food system? This thesis concludes that power of civil networks is limited to their members. It is not to say that they are not powerful enough to carry out transformative actions. Therefore, a second question is posed: How could civil networks reapply its process of work on larger scales? This is still an unanswered question, but some hints are underpinned. One is by disseminating/sharing the dynamics of the NDM to regional levels and to youth and urban movements. This will enhance the number of people working under the dynamics. Yet, a process of collective learning is suggested to determine how to proceed. Additionally, bonds need to be generated with organisations working other types of strategies to join forces at all levels. Finally, it should be said that reapplying the civil networks dynamics of work rather than expanding the number of members of a civil network is what matters. The future is yet unknown but what is certain is that the struggle is everlasting and it will take any needed steps in order to succeed.

Chapter 7: Conclusions



Remarks and further steps

7.1 Introduction

This thesis' principal question was to understand: How do civil networks become a counterforce faced with the dominant food system beyond their more apparent ways of operation? Three sets of sub-questions and hypothesis were developed, whose key learnings and conclusions are presented in this chapter. The first set of sub-questions corresponds to the analysis of the NDM achievements and defeats, the second examines the NDM evolution process and dynamics of operation, and the third discusses the essence and spirit of the NDM that prevent them from being co-opted by networks of power.

This chapter starts by presenting learnings from the field trip: Chapter 4, Achievements and defeats of the NDM; Chapter 5, The NDM evolution process and dynamics of operation; and Chapter 6, The NDM essence and spirit to challenge the dominant food system. Thereafter, findings on the theoretical and analytical framework are discussed and finally challenges that lie ahead for civil networks as well as further steps for future research are evaluated.

7.2 Key learnings from the field trip

7.2.1 NDM's achievements and defeats

This thesis commenced by examining the tangible and positive outcomes of the NDM work. The analysis was made in Chapter 4, where a set of three sub-questions was developed: What are the achievements of the NDM? What are its defeats, if any? To what extent has the NDM contributed to food sovereignty in Mexico? The hypothesis to the sub-questions was the following: civil networks are capable of challenging the dominant food system through a variety of multi-

actions that stop/reverse mechanisms imposed by networks of power. These actions contribute to one or more of the food sovereignty pillars, hence, to the progress of food sovereignty of this country.

Chapter 4 makes evident that the major achievement of the NDM is the formation of capable and empowered peasant and indigenous communities that challenge neoliberal mechanisms enforced by networks of power in Mexico. Beyond resistance, members of the NDM build alternative spaces of dignified forms of life, of models of agro-ecological food systems and of solid cases to defend their rights. Certainly, as the hypothesis states, the struggle of the NDM is composed by diverse multi-level actions that manage to restrain and overcome strategies from dominant actors such as TNCs and government entities. In more specific terms, the two most visible accomplishments of the NDM are observed in the support of the *milpa* model of food production and on the successful legal appeals against legalization of GMOs in Mexico.

On the one hand, supporting the *milpa* through diverse multi-level actions—demands against local authorities to prevent the encroachment of territories or workshops to improve agro-ecological practices—impacts positively on different aspects of communities. For example, on improving their quality of food access, reducing the likelihood of shifting to economic activities in which violence is highly observed such as drug trafficking and on maintaining their access to communal lands. What is more, this contributes to strengthen community cohesion and human relations (based on reciprocity) as each community member has an important role within the *milpa* system.

On the other hand, legal appeals have restrained the capacity of networks of power to introduce GMOs commercialization in the country, which ultimately help preserve one of the most important maize centres of origin. Additionally, it

prevents Mexicans—the population with the highest maize consumption per capita worldwide—from chronic health issues due to transgenic maize. Moreover, it prevents displacement of the remaining small-medium *criollo* maize producers and disappearance of their culture. The reason they might be displaced is potential contamination of peasants' native seeds that become deformed through various cycles of natural pollination between traditional and transgenic seeds impeding further reproduction. Moreover, companies like Monsanto might also sue peasants that use transgenic seeds involuntarily (due to contamination).

Chapter 4 also evidences how actions of the NDM contribute to food sovereignty; mainly impacting four pillars on the ground: food as basic human right, protecting natural resources, land reform and democratic control. E.g. Restraining legalisation of commercial transgenic maize in Mexico is a clear contribution to food sovereignty as this is a fundamental principle of the protecting natural resources pillar. In addition, the *milpa* cultivation improves the natural resources in territories where it is grown. The most important work carried out by the NDM, however, is in terms of the democratic control pillar. This civil network empowers grassroots actors thanks to its spaces for collective learning, where they increase capabilities to open spaces for dialogue with networks of power to negotiate the control of their resources and livelihoods. E.g. the won legal appeal against transgenic soybean or the blocking of projects such La Parota dam or La Trinidad mining projects.

Finally, when examining defeats of the NDM, this thesis acknowledges that even when it improves its members' lives, the progress on food sovereignty at a larger scale in Mexico is questionable. Mexico continues to be a country with one of the highest rates of malnutrition and a significant number of cases of obesity and hidden hunger. Poverty levels continue increasing, with 52% of population

lacking access to sufficient, adequate and affordable food. Moreover, in general small and medium landholders lack funds to improve agricultural and ecological systems, facing the necessity of migration to the shanty towns or of work at black markets. The fact that Mexico has not further increased the levels of poverty following the NAFTA (in 1994) is due to state programmes that channel resources to rural areas to lessen the vulnerability of people. However, they are not sufficient to generate structural changes (UN Special Rapporteur on the Right to Food, 2011).

Given this context, three opportunity areas are identified in relation to the NDM work. One is a lack of funding to expand their dynamics of work with a more significant number of communities. Another one is a necessity to make further linkages with other civil networks or groups of people working on similar issues to strengthen the struggle in Mexico and beyond. Furthermore, one of the new social movement's clearer outcomes is the impact they generate in legitimizing their claims by creating strong public opinion. This might be other opportunity of the NDM to draw larger support from different groups and affiliations in Mexico and outside the country.

7.2.2 NDM's evolution process and dynamics of operation

Following the analysis on the achievements of the NDM, an examination on the process of building successful strategies was made in Chapter 5. The framework on evolution stages of civil networks developed by Pelling (2011) as well as Wheatley and Frieze (2006) was used to develop the following set of sub-questions: How does the NDM succeed in their objectives? What are the salient characteristics and evolution stages that enable civil networks to succeed?

The hypothesis to these sub-questions stated: Civil networks have the potential to challenge the dominant food system by shifting to higher stages of evolution, building more systematic, integral and multi-level strategies. At the heart of this evolution process lies collective learning (as process and outcome), characterised by mutual respect and influence, leaders as catalysers and facilitators, diversity of meeting spaces, networks as the organisational base and the inclusion of linking nodes, specialised knowledge and expert know-how actors.

A historical reconstruction of the NDM was made in order to characterise the operational dynamics as well as the turning points in which the members shifted to higher stages of evolution. The hypothesis is mostly confirmed with new insights. It is indisputable that the longer the period of operation, the higher levels of collaboration and more integral multi-level strategies emerge; e.g. the formation of the PPT process or the National Assembly of the Environmental Affected (ANAA). These examples imply the emergence of higher levels of collaboration and the formation of networks of networks working on a more systematic and coordinated basis. In the same line, these higher levels of collaboration open opportunity windows to overthrow values of the dominant system, which is a main characteristic of the Syl-transformation stage. E.g. unveiling the close links between the Mexican-state and TNCs to dismantle peasants' ways of life in this country through the PPT process. However, additional perspectives in regards of the stages of evolution are identified.

Firstly, in order for civil networks to emerge, it is required of an embedded political position on people' mind in relation to the type of struggle to be pursued. In the case of the NDM its political position was developed during the 1970-1990s period. This is not to say that this process of civil networks might require such a long period of time. Yet, it is important to highlight the basis of its

foundation to be potentially reapplied in a more rapid fashion in other contexts and cases. One aspect is the formation-maturation of autonomous—politically and financially—individuals and organisations to operate based on their own aims and values. This needs to become true for organisations receiving funds either from the state or from any other national/international organisation. Funds need to be regarded as rights versus political favours that restrain operational dynamics or aims of civil networks.

On top of that, it is important that civil society should recognize its power of producing social change by collaborating with diverse actors and with international organisations—moreover, taking the advantage of Internet technologies of our time to mobilise flows of information and resources. Lastly, but perhaps, most importantly, there is a need of raising awareness about what this thesis refers as the ‘silent struggle’ —in reference to the Zapatistas social movement. It is based on constant critical learning to construct real alternatives to mainstream development where people can experiment new values and livelihoods. In sum, to establish new civil networks it might be important to have individuals who are knowledgeable in these topics to support their dynamics.

Additionally, it is confirmed that the process of shifting to higher levels of evolution is underpinned by the core dynamic of collective learning. It unveils root causes of issues as well as formulates actions of civil networks. Based on this, the evolution process of civil networks is observed in two phases. One is a ‘preparation stage’ in which actors comprehend the value of learning and collaborating together. Another is a ‘systematization of the operational dynamics’ . In the NDM case, the former is observed during the 1990s, a period in which actors deeper internalise the form of the so-called ‘silent struggle’ . Moreover, in this preparation stage, real actions take place, despite being

'isolated' , e.g. the fair trade organic coffee supply chain in Chiapas. These actions are already transformative and contain the spirit of the struggle based on constructing real alternatives to development to overcome the neoliberal system. Finally, during this preparation stage the basis for a systematised process or work are set up. E.g. Formalization of NGOs to assume the organisation of collective learning at forums and assemblies as well as the execution of research that is useful to carry out deep discussion in meetings.

As spaces of collective learning become more practiced, the process makes evident the need of systematizing the way of work to its participants as well as it makes them assume such responsibility—fundamental for a long term process. The need of a systemized work is usually observed facing more complex issues that are difficult to understand (root causes) and to tackle by single or isolated actors. At this point the consolidation of systematised dynamics is observed and can be summarised as follows: a constant iteration between the process of collective learning, their outcomes and actions taken to the ground. These actions are constantly scrutinised and reformulated to make sure they are transformative. Other less visible features of the collective learning process are examined in Chapter 6 in order to unveil what factors unite them to strengthen their struggle in the long term.

7.2.3 NDM as a counterforce to the dominant food system

Chapter 6 examines the less visible features of the NDM dynamics to keep up the struggle in the long term. In this endeavour, three sub-questions were proposed: Why has the NDM developed potential to challenge the dominant food system? What is the essence and spirit of civil networks to avoid being co-opted by

networks of power? To what extent does the NDM have the potential to challenge power of the dominant food system at present and in the long term?

The hypothesis to the sub-questions states that civil networks' essence-spirit to challenge networks of power is based on the construction of a common identity among diverse and 'opposite' actors. These actors cannot be co-opted as their struggle relies on shaping their own minds and on recreating dignity in their everyday lives (as part of their identity). Therefore, the struggle cannot die unless people themselves are killed or disappeared.

Chapter 5 evidenced that collective learning as process and outcome becomes the heart of the operations' dynamics of civil networks. In Chapter 6 additional insights are examined to understand the long-term process of collective learning. These reflections mainly answer the following question: Why has the NDM developed potential to challenge the dominant food system? The key learnings are hereby highlighted:

Power inversion results an important feature of the collective learning process. It is recognised as the support to grassroots members of civil networks to unveil root causes of issues and to produce innovative learning, which is translated in strategies. The process requires of developing a culture of constant open dialogue—inside out and outside in—between external actors and members of networks to interchange knowledge. The support comes from specialist participants (when invited) and NGO members (CoP), who in many cases have PhD grades and do research as part of their duties in topics that are helpful for the network. E.g. in CECCAM most of their members already hold a PhD title or are about to have it. It is worth emphasising that specialists or NGOs knowledge would not be of value without lauding the voice of peasants who understand

their realities and make use of new knowledge to formulate strategies. This is a sustainable approach for civil networks work as it is grassroots who are capable to dignify their lives. Moreover, strategies become innovative to generate genuine alternatives versus only confrontational strategies.

Additionally, it should be mentioned that these two types of actors: specialists and expert know-how producers are essential actors of civil networks in order to produce innovative knowledge (e.g. well-formulated arguments of the PPT demands). It is based on a constant iteration between realities of people faced with theories, treaties, laws and other mechanisms. On top of that, there is another type of actor contributing to the long-term process of civil networks' work. These are the linking-node actors, normally the CoP members, who take responsibility to call and channel funds to organise the process of collective learning. On top of that, they play other important roles. They are catalysers to generate alliances and sense the energy of actors; systematisers of the newly generated knowledge; and keepers of the power inversion culture as well as of the flexible structure that oscillates between 'assemblies' —spaces of collective learning—and dissemination of knowledge and actions through the network. Lastly, these members deeply understand that their roles are neither static nor everlasting.

Another insight emerges from this analysis. It is in relation to the culture of work of civil networks based on finding a common ground that add value to participants within civil networks. These common grounds are seen in different examples of reciprocity: in the collaboration to strengthen organisational aims of two or more members (e.g. sharing of resources between CECCAM and CENAMI); in the relation between individuals and the network as a source of inspiration/resources; in the responsive capacity to allocate resources to pressing

projects; and in projects that enhance natural resources—as the *milpa* process. This culture is constantly reinforced and embedded in people’s minds, which is different from seeking affinities or being comrades within a group of work. In fact, there are many moments in which members might differ in their points of view. Yet, these differences make ties among members stronger as per their capacity to hear (respectfully) each other and valuing their differences to reach deepest lessons and powerful strategies. Ultimately, this becomes the nature of networks, processes of building new relationships among diverse individuals that make them to create ‘power with’ others versus ‘power over’.

A final insight is in relation to the need of some more ‘fixed/formal’ spaces for collective learning—identified in two types. One is a core space to visualize the pathway and main strategies of the NDM as well as to reinforce the culture of work—in the case of the NDM these are the national assemblies. In addition, other diverse spaces are to operationalise strategies and disseminate knowledge of the civil network. The latter go from open and public international/national forums for denouncing power abuse to local assemblies/workshops to improve agro-ecological practices. It is worth mentioning that the process requires structure in order to make in-depth analysis and to formulate strategies, leaving their member freedom to work at their own peace.

Following the analysis, another question is answered: What is the essence and spirit of civil networks that prevents them from being co-opted by networks of power? Chapter 6 illustrates that in addition to the previous features, another less visible characteristic unites the NDM members in the long term. It is related to a common identity of its members: the maize as an intangible and tangible asset. Intangible identity is related to maize being a symbol that represents peasant-indigenous peoples and as a common ground of the struggle for diverse actors.

The tangible identity refers to a form of food production based on ecological principles on which the community organisation is based. Ultimately, this identity can be translated into their everyday life in dignity—confirming the hypothesis. Dignity of life is not only understood as an access to material assets, but it also implies the self-value of each individual and the value of others. The *milpa* system implies the integration of diverse duties by each member of the community; all of them contributing to recognize the importance of each individual within a community. In this way, life itself becomes the struggle that is difficult to end unless people are killed or disappeared.

A third question is addressed: To what extent does the NDM have the potential to challenge power of the dominant food system at present and in the future? Chapter 6 also makes evident that there is potential to expand the dynamics of the NDM at a larger scale. For example, there is evidence of recent civil networks already reapplying these dynamics and working on issues of mining, water over-exploitation and others—although it is too early to assess the extent of their achievements. However, it is not clear how to support the expansion of civil networks' dynamics; moreover, because what matters is the process itself and not merely increasing the number of people in each civil network. Still, some hints are given.

The work with urban youth movements might be essential as they have energy and capacity to learn rapidly from the civil network's dynamics. In addition, there is a need of working systematically and at a larger scale with groups of people/organisations with other skills and dynamics though with similar aims in order to conform a real counter-hegemonic force to the dominant system. Generating bigger impact on the Mexican public opinion is another gap that might be powered by the urban youth through the use of social media.

7.3 Reflections on the theoretical and analytical framework

7.3.1 The Network Society

Over the past decades, the world has witnessed a continuous global crisis in economic, political, environmental and social terms. What is more, more recently, it is also the global north that is experiencing similar issues to those of the global south such as severe economic recessions. Moreover, Castells (2012) (Benski et al. 2015) and Chang (2016) argue that what recent social movement's outrages have in common is anger, frustration and dissatisfaction against a global dominant system that fails to deliver social benefits at large. Whereas these movements—the Occupy Wall Street in NY, the Indignados in Spain or the Arab Spring in Egypt—call themselves civil or solidarity networks, horizontal autonomous movements, assemblies, and so on, their practices and forms of resistance might resemble those of Latin America. Not necessarily because they are copying them, but because the world is facing shared issues. Yet, Latin America is a region with longer and severe impacts by neoliberal strategies (since the 1980s); therefore, with experience in confronting the dominant system with new ways of organising, resisting and building alternatives to the dominant form of development. In this globalised context of the struggle, Castells (2004) and Slaughter (2004) argue that the Network Society has the potential to become the form of global governance that ultimately will redistribute power in society.

Given such potential, the Network Society is taken as the base theory and starting point of analysis in the endeavour of understating dynamics of new social movements to counterbalance power. This thesis focuses on the specific case of the dominant food system, which is critical to be addressed as it threatens the

very survival of humanity. According to the Network Society theory, capacity of new social movements to counterbalance power in society relies on organising autonomously from dominant actors (Castells, 2004). This capacity is built upon a network's organisational form and infrastructure at global scale—with technologies as Internet—to establish horizontal, flexible and autonomous groups of peoples with their own flows of communication, ideas and values. This theory is complemented by other perspectives on new social movements in Latin America such as those of Esteva (2010a, Stahler-Sholk et al. (2007) and Sitrin (2006). They claim that by experimenting direct democracy on the ground and by creating viable economic alternatives to the global capitalism, power in society can be redistributed. By combining all these authors, a framework to examine features of new social movements on the ground was constructed.

Since the 1970s, the so called new social movements (Castells, 2004; Wallerstein, 2011), organise quite autonomously from the state and have developed other common characteristics. They are multi-nodal and flexible organisations, difficult to be co-opted by the state, as they organise and reorganise as needed through a diversity of national/international links. They are coordinated by their own flexible flows of communication, visions, contents and resources and they use symbolic public spaces to show resistance (but meet in flexible ways as different contexts and needs demand; usually at local spaces where everyday life is organized). Besides, spaces of dialogue and learning are used as experiments of direct democracy characterised by self-representation of people and continuous consensus (Castells, 2012) (Sitrin, 2006). Esteva (2010a) complements by saying: new social movements are formed by an organised civil society in networks capable of building alternative dignified lives that challenge the dominant system; where new relationships are formed (Sitrin, 2006). In fact, this is the contribution of Networks; whereas Castells (2004) claims that their ultimate

outcome is a change of mind and values of peoples (seeking social justice) in society.

Author analysing more recent social movements such as Stahler-Sholk et al. (2007), Bensky et al. (2015) and Chang (2016) complement previous points by claiming that beyond specific horizontal ways of organisation, new social movements' essence that make them succeeding is the diversity of actors united by one profound communal identity. "The effectiveness of these attempts to construct new social subjects depends on whether they build community and collective consciousness so that the perceived commonalities of interest are transformed into durable alliances" Stahler-Sholk et al. (2007:11). This author also argues that by linking different real economic alternatives is what can challenge current dominant structures. In fact, the main challenge of new social movements consists of building switches among its members in order to strengthen capacity to enforce values and aims of social justice (Ibid, 2007; Castells, 2004; Esteva, 2010a) as well as to put in practice a life worth living (Chang, 2016; Sitrin, 2006).

All of these become important features of new social movements' dynamics—which are called civil networks in this thesis in reference to Esteva's notion of an organized 'civil society' in networks, which construct new relationships through them (Sitrin, 2006). Civil networks are also named in this form in reference to Castells' notion of the Network Society. Notwithstanding, another fundamental question is addressed in the theoretical and analytical framework. This refers to how civil networks should deal with power. Communities of struggle are faced with different forms of domination and oppression. Therefore, it becomes essential to understand which the way forward is: facing power directly or delinking from it through autonomous projects; or both. In this

endeavour, power and forms of challenging it, are unveiled as follows.

Castells (2004) claims that power is built and enforced in networks, where 'networks of power' —to which he refers as the switches among powerful entities such as corporations, mainstream media, governments, financial sector and others—have the highest capacity to exercise power. Power is not only exercised but also accumulated and captured in sophisticated mechanisms recognised as structural capacity such as in discourses, treaties, laws and so on. In line with this idea, Gaventa (2006) states that the strongest way of power exercising is through the everyday life of people, e.g. the types of products they consume or the job they have. Both authors, Gaventa and Castells, refer to this type of power as the most invisible and difficult to be directly hit as it is embedded in people's minds. By using this perspective of power as well as features and ways of resistances of new social movements, this thesis captures two forms of capacity to challenge networks of power.

One challenge is posed by actions that hit the structural capacity of networks of power. These actions require a continuous process of critical unveiling of 'invisible' ways in which power is exercised in order to constantly define and re-define strategies accordingly. The objective is to impact power's distribution in 'crisistunity' (crisis plus opportunity) windows at all levels by the cumulative impact of diverse actions. Eventually, they might weaken switches of networks of power as well as change the pathway of decisions in benefit of the less powerful. It might also imply reprogramming networks of power based on values of social justice rather than those of profits and capital accumulation.

Another challenge refers to actions that build viable alternatives to the dominant system, independent from current dominant institutions. These alternatives also require constant testing and are subject to continuous improvement as well as to be shaped according to local contexts—there is no such thing as a unique alternative but they are based on local peoples' necessities and availability of resources. Global/wider perspectives are expected to nurture local processes and actors, as well as to support them in building a larger, systematised and coherent alternative to development for peoples. Finally, this alternative should be influenced by the value of sharing and by being constant experiments on redistributing of power.

The analysis of the Network in Defence of Maize (NDM) in Mexico offers additional reflections to previous viewpoints. It is worth mentioning that the case was selected by complying with most of the civil networks' features (listed in this section); which makes it an interesting case to gather further insights into the dynamics of new social movements. Furthermore, the NDM plays a critical role in preserving and defending the most important centre of origin of maize for humanity—the Mexican territory with 23,000 varieties of traditional maize seeds.

First, it offers feedback on the Network Society's notion of Castells that does not take into account the role of collective learning (also seen as the exercise of direct democracy) as the core of civil networks dynamics. Collective learning becomes the process in which profound reflections underpin root causes of issues and power relations. It generates comprehensive set of systematised and multi-level actions that constantly hit switches of networks of power (e.g. legal demands, alternative supply chains or changing values of a sector of the society). Moreover, this process generates anew and empowered individuals, strong ties among them, and a communal identity that makes them to operate in a longer

term by avoiding co-optation. In sum, the Network Society brings together diverse features of the civil networks dynamics of operation, which are important to grasp. Still, it lacks to frame and underpin the essence and spirit of civil networks.

Second, the Network Society argues that to achieve power redistribution in society it is needed of a constant confrontation among counter power networks and networks of power. In this process a main challenge for counter power networks is to create switches among them to become stronger. Additionally, Slaughter (2004) argues that there is not such direct confrontation, but networks' formation is a dynamic process in which diverse actors with different aims influence each other (in vertical and horizontal networks). The process ultimately changes behaviours and values of participants within networks as well as of wider sectors of citizens around the world.

This thesis adds by saying that to achieve global governance in networks it is needed of both processes together. On the one hand, counter power networks with similar interests, aims and identity (e.g. social justice or direct democracy) need to strengthen themselves (generating strong ties through systematized work of networks of networks to constantly define and redefine strategic actions). In this way, they might become stronger to influence powerful actors. In the other hand, networking of diverse actors at different levels and spaces is already happening, and progressively it might achieve a change of values at a global scale. In this way, global governance might become a reality, which is desirable status. It encompasses: unification of goals at global scale (e.g. human rights), decentralisation of governance at local scales, and global accountability—as different networks at any level would have the right to claim transparency of processes of any other level of governance.

Third, Castells argues that emotions are part of the dynamics of new social movements. They come together to overcome fear exercised by networks of power. Other authors, who also analyse new youth social movements, add that people come together by emotions—but of anger and frustration—against the current system unable to deliver life with dignity at large. This thesis confirms that people come together more in relation to the second factor. For example the claim ‘Enough is Enough’ of the Zapatistas movement shows this frustration and anger. This claim is embedded in the NDM member’s mind; they argue that the lack of access to land and other resources, as well as the constant threat to lose its culture and its maize diversity, are all issues coming from the systematic violation of people’s rights from the Mexican state. With this clarity in mind, they act on consequence and are not afraid to lose their lives. Being killed might become a preferable option than getting more impoverished, losing their culture or ultimately dying of hunger. It is important to point out: these emotions become the source to support a struggle based on generating lives worth living.

Fourth, it is important to highlight that it is not sufficient to file demands, to obtain funds for alternative projects, to make policy amendments (pro social justice) or to redistribute wealth to some extent. It means that it is not enough to have only actions to weak switches of networks of power. It is also profoundly needed to generate solid, innovative and link economies and on the ground processes that build alternative livelihood for people. The network as an organisational form becomes the infrastructure that enables outcomes of the process of collective learning to be disseminated in values and local strategies.

The network infrastructure should link real alternatives of economies and food systems. This is a topic not closely explored in the Network Society approach. These alternatives might emerge and grow as isolated or minor projects.

However, systematised work of civil network actors might generate a larger scale and programmatic approach that can challenge structures or the role of organisations such as the WTO or the financial networks that have impact on the majority of peoples of the world at present.

Finally, Castells (2012) implies that civil networks emerge during crisis and at many times are dissolved. The case of the NDM demonstrates that when a deep and systematic process of collective learning is carried out, the struggle becomes a way of live in dignity for its members; therefore, it is an everlasting struggle. In fact, when examining the specific example of the Indignados (M15) in his book *Networks of outrage and hope: social movements in the internet age*, this author suggests a lack of spaces where people can shift in order to abandon their current jobs and ways of living. This thesis concludes that what is needed is adopting the struggle and its values as a way of life.

Castells also insists the ultimate outcome of civil networks is a change in values and minds of peoples. This thesis complements this viewpoint by claiming that the change needs to be reflected in the people' s everyday practices. E.g. forms of producing, buying and consuming. It is precisely the everyday practices and identities of people (linked to their culture, territories and livelihoods) where power is strongly enforced; therefore, where counter power needs to be exercised. What is more, at the core of this process is the creation of new ways of human relations based on reciprocity and sharing as well as on the development of an identity based on the creation of other possible worlds.

7.3.2 Stages of evolution and dynamics of operation of civil networks

Further reflections are made on the analytical framework. These are on regards of the civil networks stages of evolution of Pelling (2011) and Wheatley and Frieze (2006). These authors argue that transformative actions as well as systematic work among higher levels of collaboration (e.g. networks of networks) are observed in the Syl-transforming stage. The NDM shows that transformative actions appear since the early stages of civil networks evolution. In fact, as this thesis claims, civil networks' spirit is transformative by definition (it aims at overthrowing values and practices of dominant actors). This viewpoint is aligned to Pelling's (2011) perspective that states that transformation should be perceived according to the observer's view and should progressively happen at different levels of a system. In addition, linkages between local and international levels of collaboration are also observed and become essential since the formation of civil networks in order to achieve transformative actions. What remains a further matter for examination is how to achieve a systematic work of networks of networks, which in words of Baker et al. (2003:5) is required for a transformative process at a larger scale that ultimately might create a new system when facing the "current ecological, economic or social (including political) conditions that make the existing system untenable" .

On top of that, what is indisputable in terms of these authors' perspective on the evolution stages is that capacity of influencing transformation at a larger scale is based on the cumulative impact of diverse actions better coordinated at multi-level collaboration on a systematic basis. However, the case examined by this thesis has not enabled me to observe a more advanced process of transformation at a larger scale. Further cycles of work might offer clearer perspective on these types of dynamics.

Another reflection is that the identified stages of evolution—network-resilient, CoP-transitioning and Syl-transforming—are useful to look at features of the civil networks (such as types of actions or levels of collaboration). Nevertheless, other features also need to be considered which are related to precedents for civil networks: an embedded political position on people’s mind as well as features observed in the formation of a systematised process for collective learning. What is more, collective learning as the core of the evolution process of civil networks is to be recognised. These aspects would broaden a framework of civil networks dynamics.

Furthermore, an analysis to pinpoint characteristics of the collective learning process was also made in the analytical framework. It was based on different authors seeking social resistance in networks in the topics of sustainable development, climate change adaptation, indigenous knowledge systems, rights based approach and new social movements—Kaiten et al. (2010); Armitage (2008), da Silva et al. (2012), Fre and Dinucci (2003), Sitrin (2006), Herrera (2008) and Castells (2012). The analysis from different perspectives made evident that collective learning was common to all these authors, categorized in six common features: collective learning as process and outcome, relation of actors based on mutual respect and influence, leaders as catalysers and facilitators, diversity of meeting spaces, networks as the organisational base and participation of linking nodes, specialised knowledge and expert know-how actors.

It is worth noting that further analysis of civil networks might contribute with more characteristics on their dynamics. Yet, these six features were amply confirmed by the NDM analysis and additional insights are added to these features. The intention is not to summarise all characteristics identified in the theoretical framework but to highlight new insights. They are just briefly

mentioned as they have been reviewed in the key learnings from the field trip in this chapter.

Collective learning as a process is to produce social change and redistribute power within society, which demands that consciousness be created in people in terms of their own realities (Herrera, 2008). The examination of the NDM complements this view by showing that the people who produce social change are producers, peasant and indigenous communities—grassroots actors—who take responsibility to positively transform their disadvantaged positions within power relations. This is referred in this thesis as power inversion where formal knowledge enhances capacities and self-grow of grassroots which is in line with the IKS perspective. By and large, this knowledge comes with an open dialogue with external professional NGO members and specialist participants or both.

Reciprocity, respect, trust and mutual influencing are observed among members of civil networks (Herrera, 2008; Sitrin 2006; Kaiten et al. 2010 and Armitage, 2008). From the analysis of the NDM it can be added that as a result of these characteristics members of civil networks build identity and culture based on common ground. It means they constantly seek ways to enhance and add value to their own processes and organisations' aims. This is a culture that is reinforced at meetings and throughout processes of work and relations within the network. Members recognise the aim is not to find affinities or agreements on different viewpoints, but enrich one another in the process of reaching a higher goal. It is a culture in which everybody values and is to be heard within the networks, to what is called horizontalism.

The tripartite alliance formed by linking nodes, expert producers and specialist actors is also important to remark. These members ensure the long-term process

of work of civil networks as well as producing innovate learning. The interaction of grassroots experts in their fields and local context with knowledge specialist actors produces new knowledge. Moreover, the CoP pivotal role on systemizing, energizing and keeping culture of work of civil networks is fundamental. Having multi-level and diverse backgrounds participants is mentioned in the analytical framework, but the referred authors do not specify their roles or specific duties.

Systematising periodic and visible spaces for collective learning is also fundamental for a long-term basis operation of civil networks. These spaces are to examine pathway and actions thoroughly, as well as to spread the culture of work to other levels of operation. On top of that, these core spaces are accompanied by other diverse spaces where knowledge is disseminated and strategies are undertaken at different levels.

A final reflection on this part of the analytical framework is that authors such as Armitage (2008), Kaiten et al. (2010) and da Silva et al. (2012) list different characteristics of civil networks without emphasising the pivotal role of the process of collective learning. Features such as multi-levels actors, diverse backgrounds, and different sources of knowledge are required for social movements to organise in networks, but collective learning should be pointed out as core to the dynamics.

7.3.3 Food sovereignty framework

The analysis of the achievements of the NDM evidences that focusing energies of members on the democratic control pillar of the food sovereignty approach triggers positive outcomes in other pillars. Democratic control is related to the process of increasing actors' capacities to take control of their resources. This is

an important insight into the food sovereignty framework, which does not seem to ponder one pillar over another. The emphasis is not necessarily on sizing them up, but on assessing which pillar becomes more strategic to work according to any given context. On the other hand, prioritising the work on the pillar of democratic control does not mean it will be similar in other contexts. Yet, it is important to remark that empowering people to take control of their food systems and defend their rights is an essential process to progress in food sovereignty.

In addition, supporting the *millpa*, an agro-ecological food system, becomes the core of the NDM actions. The perspective might be the same for the food sovereignty approach. Food sovereignty clearly mentions agro-ecological systems versus the industrialised food system. This thesis points to it as the key action to focus energies on. The construction of local food systems contributes to progress in other pillars. For example, maintaining or gaining access to land, protecting natural resources and improving the access to quality-quantity of food.

Agro-ecological systems might also support progress on pillars located at international levels such as reorganisation of food trade and ending the globalisation of hunger. These two pillars stress the necessity of rebuilding local-regional production-consumption food systems and halting practices of multilateral institutions that support dumping practices, respectively. In both cases, the fact of constructing alternative food systems increases the potential of linking them and forming a larger alternative to the dominant food system based on different values: origin of food, proximity between location of production and consumption, quality, authenticity, freshness and specificity of products. In line with this idea, the construction and experimentation of agro-ecological systems

might support the building of improved policies and mechanisms to operationalize the food sovereignty framework.

To close this section, a food sovereignty viewpoint is brought back: While food sovereignty maintains some precepts of food security (including access, preferences and nutrition), it incorporates an essential difference: 'food as a basic human right'. This is a political position in which food sovereignty claims for a transformative view of rights, namely, capacity to re-distribute resources and power within society. According to this viewpoint, this thesis helps observe the mutual and influential relationship between collective learning—where democratic control is increased—and the construction of agro-ecological systems. This dynamics of work is seen as the base to increase capacity of actors to redistribute power and to influence a change of treaties, policies and laws. This is a necessary step not highlighted at the core of the struggle in food sovereignty. Moreover, this becomes true for contexts like Mexico, where strong switches are constructed between networks of power such as TNCs and governments.

7.4 Civil networks challenges and steps for further research

At this point of the analysis it is clear that a further step for the NDM is to understand how to reapply their dynamics on a larger scale. On this regard, an appropriate research question might be: How to reapply the processes of collective learning at larger scales without transforming their features? It is worth highlighting that collective learning is about transforming individuals and it might not be a rapid/massive process. Yet, some alliances and spaces that need to be generated are pinpointed.

In a world where the majority of the population lives in cities, the struggle for food sovereignty should also be adopted by urban social movements. For example, in Mexico, more than 75% of the population live in urban centres. Therefore it is reasonable that this struggle should expand to cities; particularly, among youth. As mentioned earlier in this chapter, youth have the energy, the emotions to make them to act, and the capacity to adopt civil networks' dynamics. They are also knowledgeable in managing new technologies and could use them to support their dynamics and to make a bigger impact on public opinion to legitimize the claims of food sovereignty in people's mind.

However, an important challenge is to be overcome. How to awake the consciousness of a large sector of youths, who are embedded in resolving how to make a minimum wage to survive or to avoid shifting to the economies of the black markets. Spaces such as youth urban collectives, schools or universities might play a critical role on generating the process of critical and collective learning. Another question might emerge in relation to this topic: What kinds of spaces (close to the everyday life of the urban youth) and under which configuration might support the reapplication of the civil networks' dynamics?

Moreover, to reapply the networks' dynamics, it is also necessary to link local alternative food systems emerging across Mexico. As mentioned in Chapter 3, during the first exploratory field trip it was identified that 80% of the projects addressing the food system are initiatives generating agro-ecological and urban food systems that emerged during the 2000s decade. These 'new' initiatives recognize the importance of working with other actors but they have not succeeded in doing so on a systematic basis. What is more, these initiatives are evenly located in urban and rural areas with potential to generate complementary and more systematic linkages between producers and urban

consumers. Some of these initiatives are working on development of workable examples of alternative local currencies, community land trust and urban agriculture.

Some interesting questions to be addressed in relation to previous topics might be: How to link the work of 'new food alternative projects' with experienced organisations on civil networks dynamics in Mexico? What kind of specialised knowledge is required for a CoP to facilitate the process of collective learning between rural and urban movements? Or what kind of affiliation do they require?

Another type of linkage that civil networks working on food issues need to work on might be with groups of people and/or organisations working on addressing social justice but with different dynamics and/or expertise other than food topics. The PPT has a potential for this type of alliances and work. Yet, most of the organizations know one another and work under the same principles, which is also a limitation in terms of a number and impact of their actions.

For example, it would be important to join efforts with organisations working on offensive strategies such as unveiling structural power of dominant actors. Biel (2012:47) claims: "If you do not hit power networks, it is likely they will adapt and do not fail in any short term" . Making alliances with new organisations that work by the using Internet as a source of generating social change could pose an important challenge. An example is Avaaz INGO, an online campaign that has reached more than 60 million members over a period of 7 years and has impacted important decisions of networks of power. It is set up with the overarching goal of closing the gap between "the world we have and the world most people everywhere want" (Avaaz, 2015). Despite criticism of activism online, they have capacities to generate a change in people's mentality and exert

pressure on dominant actors. In 2012 CECCAM worked with this organisation to obtain support for the process of issuing the demand against transgenic maize in Mexico. Nevertheless, this was a single action versus a systematic work.

How and by whom these spaces will be facilitated is a topic for further research as alliances at international levels might require identifying appropriate forms of collective learning that are manageable and effective for their purposes. E.g. Who are key actors that need to participate in these spaces? And what topics are to be covered? What actions are to be taken? It is worth noting that the emphasis is on reapplying the dynamics versus increasing the number of participants in each civil network with a particular aim and identity. Furthermore, the struggle is the way of life and livelihood versus projects or gathering spaces.

In answering all these questions, participative research is suggested as the main methodological approach. Trying to understand challenges and forms of more effective support for social movements and social changes are relevant topics where academia can play an essential role, not only in terms of research but also in generating alliances to support these processes. How to incorporate and make stronger alliances between social movements and the academia? Or how investigations such as the hereby presented might become a more active tool to further leverage social change? Both are questions yet to be grasped. Moreover, it will be relevant to understand how to remain objective about research outcomes but ultimately raising the profile of academia impact towards social change.

It would be also desirable that by using participatory research methods to demonstrate with tangible indicators that agro-ecology is capable of producing enough, good, culturally appropriated and accessible food to people without

harming the environment. What is more, agro-ecology is not only about food production, but it is an integral paradigm that implies community development and political activity. Therefore, it becomes relevant to find out how to systematise measurements for complex socio-ecological systems with the use of circular-integral indicators. This might allow communicating the benefits and impacts of these practices. Some of the indicators may include the following interlinked aspects: the nutrient cycles within a food production system, social redistribution of their benefits and impacts, economic profits, community identity and levels of direct democracy. Moreover, these indicators should be co-created with producers in order to be meaningful for them as well as easy to access and interpret.

Another topic of further research for new social movements is the gender perspective. Recent research documents highlight the role of women in leading some of the new social movements (e.g. the Arab Spring was strongly led/influenced by women). It would be important to deepen into this topic to further understand, for example in the case of the NDM, the particular benefits of the actions of the network for women, who are usually more vulnerable in terms of land access or access to the resources for production. What is more, it would be also important to understand how women contribute to bring the spirit and essence of civil networks, which is based the creation of a life worth living and direct democracies.

At a more theoretical level, other relevant questions emerge. One might be to analyse how to link frameworks such as the food sovereignty—that provides specific pillars and attributes to focus struggles of social justice—with approaches such as the Network Society and views on Latin American social movements theories. At present these remain separated but when combined they might

provide a much richer perspective of the role, potential and forms of struggles for social movements. For example, it might develop a more operational and programmatic process to achieve progress in each pillar of food sovereignty, such as developing a set of cumulative and complementary strategies to strengthen the democratic control pillar with actions to unveil structural power as well as actions to develop alternative ways of development.

Furthermore, systematically combining outputs and perspectives of researchers studying different contexts might be also desirable. For example, bringing together viewpoints of Castells on new social movements and more specific views on these movements in Latin America could help build a more comprehensive framework to seek the essence of social struggles. Namely, combining scientific knowledge of 'western' perspectives with those of different contexts where social movements' usually take place would enrich frames to better understand civil networks dynamics. This goes in line with a claim analysed during this thesis: in order to generate social change towards aims of social justice it is needed to build knowledge based on multiple sources of information and perspectives (Herrera, 2008).

Additionally, constant exercise of linking theories with practice is also required. For example, to carry out periodic analysis of the agro-ecological experiments to feedback the construction of explicit programmes and policies on food sovereignty. This would help understand obstacles of scaling up these food systems to a strategy that overcome the industrial agriculture model as well as to understand what kind of spaces, coordination and institutions might be needed to put this framework into practice. At present it is indubitable that actions against the global trade system are necessary, however, it is not yet clear what institutions might replace the WTO or what the role of these international

organisations should become.

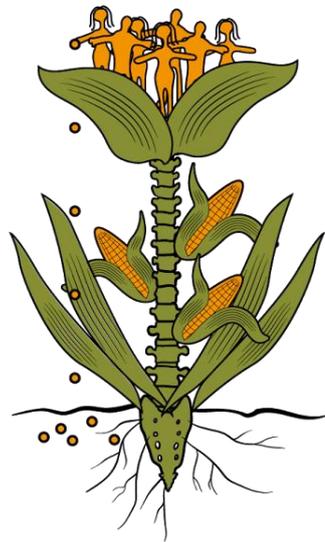
To summarize and point out the different lines of investigation of this thesis, they are categorized in three topics as follows. First, the areas which might open up new insights and that can be readily explored by investigating further the work of the NDM. For example, how to link in appropriated fashion the dynamics of the NDM to emergent groups of people working on constructing alternative food systems. It would be of particular interest to link them with urban youth social movements working on food sovereignty (e.g. alternative currencies, box schemes, urban agriculture and others). Another topic to investigate is the role of women within the NDM as well as to better understand the outcomes of the network's actions to improve their everyday lives.

Another area of research is in relation to the role of academia to leverage the work of new social movements and social transformation. It would be important to understand how researches might become systematically linked to social movements to bring specialised and more integrated knowledge, which can be translated into strategic actions and alternatives forms of development.

Finally, another area of research is to better understand what kind of spaces and actors could systematize the work of civil networks at global scale. E.g. it might be desirable that international organisations such as the UN become the host of civil networks dynamics at larger scale. Nowadays, efforts such as the PPT show evidence of a systematized work of networks of networks, yet it is still unknown under which configuration or spaces their outcomes might resound beyond the communities themselves.

No single strategy will be effective to redistribute power; multiple and multilevel systematized strategies are required to increase potential of civil networks. The future history of humanity will be told according to how the process of unfreezing power accumulation takes place; today, a process in the hands of new social movements. Yet the process needs to expand to a larger sector of the population that needs to start systematically link itself to the network and its dynamics. In this way a real counter-hegemonic stand will be formed uniting people beyond their differences and aiming at benefits for society at large. The real difficulty that remains is to find forms of the struggle that organise civil society at global scale.

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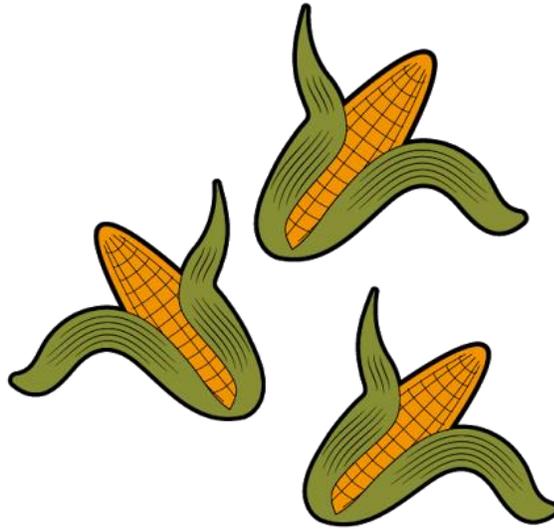
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Appendixes



Appendix 1

Appendix 1: Analysis of diverse author' lists of features for collective learning

Kaiten et al. (2010)

Feature (Author Typology)	Description	Referred Authors
Higher Purpose (<i>Glue of network</i>)	Have a higher purpose that is inspiring, meets a valid social, need, fosters deep commitment and can transcend differences	Merry, 2010 and Mota 2010
Awareness (Type of produce knowledge)	Heighten the ability of the system to be self-aware. This includes being open to all sources of information, and heightening the ability of information to flow throughout the system.	Henen, 2010 and Atlee, 2010
Wholeness (Type of produce knowledge)	Deeply understand the system as a whole in order to properly identify root causes of problems within the system. Invite the whole self into the effort.	Eisenstadt, 2010 and Ibarra, 2010
Interior/Exterior (Type of relationships in the process of produce knowledge)	Create generative spaces and conditions that facilitate the development of high quality interior capacities. Bring capacity potentials into the larger system, by embodying those capacities in the core team. Bring awareness of cultural context and worldview of different participants	Herndon, 2010; Melnick et al, 2006; Mota, 2010
Love/Power (Type of relationships in the process of produce knowledge)	Develop group energy, enthusiasm, commitment and trust around a shared goal by relationship building and nurturing activities. Channel this energy with appropriate strategic processes that efficiently direct this energy in pursuit of the higher purpose. Emphasise relational or strategic when appropriate	Moeller, 2010
Order/Chaos (Type of meeting spaces to produce knowledge)	Use just enough structure necessary to get a job done, no more. Create new structures that allow flow of information and enable personal connections and relationships. Make plans and intentions, then be flexible and let them go.	Merry, 2010; Herndon 2010 and Mota 2010
Rhythm (Type of meeting spaces to produce knowledge)	Support meaningful rhythms for the group including face to face meetings, celebrations and periodic meals together, routine reflection and daily awareness practice.	Glad, 2010 and Moeller 2010

Armigate (2008)

Feature (Author Typology)	Description	Referred Authors
Multi-level (Levels of collaboration)	The literature draws attention to organisational structures with multiple, relatively independent centres. Several advantages are suggested, including enhanced potential for level-dependent management interventions, development of mechanisms to address cross-level interactions, and greater capacity to improve monitoring, understand feedback, and encourage appropriate institutions and incentives.	Young 2002; Dietz et al. 2003; Ostrom 2005; Lebel et al. 2006;
Accountable (Type of outcomes of the produce knowledge process)	Linked to distributed institutional arrangements in which accountable authorities pursue just distribution of benefits. Accountable governance can be expected to reduce threats to vulnerable groups and build adaptive capacity	Lebel et al. 2006
Iterative (Type of relationships in the process of produce knowledge)	An attribute that fits well with networked, multi-layered and participatory ideals. Interactive governance involves a mutually influencing relationship between two or more actors possessing an intentional and structural dimension. Interactive elements must be considered in the context of the system to be governed (e.g., between key social, economic and ecological components of a fishery system), as well as between the actors and components involved in governance of that system.	Kooiman et al. 2005
Leadership (Type of relationships in the process of produce knowledge)	Emphasis is on evolving styles and roles for managers, policy makers, etc. to encourage a move from authoritarian decision maker to facilitator or catalyst. In this capacity, leadership plays a key role in helping create a system 'vision' as well as in sense making. Leadership roles can vary by actor but will likely involve an individual or individuals with the ability to connect with key actors (Brunner et al. 2005 refer to this as 'horseback diplomacy')	Olsson et al. 2004; Brunner et al. 2005; Folke et al. 2005
Knowledge pluralism (Type of produce knowledge)	Recognition of the value in drawing from multiple sources of knowledge, including knowledge from formally-trained scientists, policy makers and managers and resource users (fishers, hunters). Emphasis is placed on using multiple sources of knowledge to build a holistic, integrated or systems understanding, rather than understanding in a reductive sense	Folke et al. 2005; Olsson et al. 2006
Learning (Type of relationships in the process of produce knowledge)	Learning is viewed as a social process and outcome (i.e., social learning) achieved through the collaborative and mutual development and sharing of knowledge by multiple actors. Different types of learning are highlighted (e.g., single, double and triple-loop learning), each of which demands greater focus on the sub-text of learning (individual and collective).	Walker et al. 2002; Folke et al. 2005; Armitage et al. 2007

Armigate (2008)

Feature <i>(Author Typology)</i>	Description	Referred Authors
Trust <i>(Type of relationships in the process of produce knowledge)</i>	Trust is highlighted as a feature of social interaction required for true partnership and collaborative engagements, and one that is underestimated in conventional or top-down management. Discussions of trust are often framed in the terminology of social capital, and therefore, reduced to measurable components (i.e., an outcome of bridging, bonding and social networks).	Berkes et al. 2005; Brunner et al. 2005; Folke et al. 2005
Networked <i>(Levels of collaboration)</i>	Linked to the concept of multi-layered governance (nodes and links), networks of actors across scales (e.g., from local users to municipalities to regional and national or international organizations) are expected to play a key role in better coordinating people, improving information flows, synthesizing and mobilizing knowledge of ecosystem dynamics. Networked arrangements should confer resilience on the institutional system because of enhanced capacity to diffuse negative effects and distribute benefits.	Olsson et al. 2004; Wilson 2006

da Silva et al. (2012)

Feature <i>(Author Typology)</i>	Description	Referred Authors
Redundant and diverse <i>(Type of outcomes of the produce knowledge process)</i>	Alternative sources, sub-systems, entities, roles or strategies which are to back-up one to each other and increase the capacity of the whole system.	da Silva et al (2012), Holling (2001)
Flexibility (hard) <i>(Type of outcomes of the produce knowledge process)</i>	Ability to change and adapt alternative strategies in front of external pressures. Multiple pathways of action.	da Silva et al (2012), Holling (2001)
Safe to failure (hard) <i>(Type of produce knowledge)</i>	Systems are designed to avoid catastrophic failure	da Silva et al (2012)
Resourceless (soft) <i>(Type of outcomes of the produce knowledge process)</i>	Capacity of multi actors to plan, act and carry out solutions with low resources	da Silva et al (2012)

da Silva et al. (2012)

Feature <i>(Author Typology)</i>	Description	Referred Authors
Responsiveness (soft) <i>(Type of outcomes of the produce knowledge process)</i>	Ability to rapidly re-organise and re-establish functions after crisis, changes or failures. Capacity to plan, act and identify solutions with anticipation, respond rapidly and move resources to where these are more needed.	da Silva et al (2012)
Knowledge capacity (soft) <i>(Type of relationships in the process of produce knowledge)</i>	Learning is viewed as a social process and outcome achieved through the collaborative and mutual sharing of knowledge and experiences. Recognition of value in drawing knowledge from multiple actors: formally-trained scientists, policy makers and grassroots.	da Silva et al (2012), Armitage (2008), Holling (2001),

Analysis civil networks features (discourse analysis of the three previous authors)

The process and outcomes of collective learning

Awareness <i>(Type of produce knowledge)</i>	Heighten the ability of the system to be self-aware. This includes being open to all sources of information, and heightening the ability of information to flow throughout the system.	Henen, 2010 and Atlee, 2010
Wholeness <i>(Type of produce knowledge)</i>	Deeply understand the system as a whole in order to properly identify root causes of problems within the system. Invite the whole self into the effort.	Eisenstadt, 2010 and Ibarra, 2010
Knowledge pluralism <i>(Type of produce knowledge)</i>	Recognition of the value in drawing from multiple sources of knowledge, including knowledge from formally-trained scientists, policy makers and managers and resource users (fishers, hunters). Emphasis is placed on using multiple sources of knowledge to build a holistic, integrated or systems understanding, rather than understanding in a reductive sense	Folke et al. 2005; Olsson et al. 2006

Type of leadership and relationships

Type of leadership and relationships

Leadership <i>(Type of leadership)</i>	Emphasis is on evolving styles and roles for managers, policy makers, etc. to encourage a move from authoritarian decision maker to facilitator or catalyst . In this capacity, leadership plays a key role in helping create a system ' vision ' as well as in sense making . Leadership roles can vary by actor but will likely involve an individual or individuals with the ability to connect with key actors (Brunner et al. 2005 refer to this as 'horseback diplomacy')	Olsson et al. 2004; Brunner et al. 2005; Folke et al. 2005
Love/Power <i>(Type of leadership)</i>	Develop group energy, enthusiasm, commitment and trust around a shared goal by relationship building and nurturing activities . Channel this energy with appropriate strategic processes that efficiently direct this energy in pursuit of the higher purpose . Emphasise relational or strategic when appropriate	Moeller, 2010
Interior/Exterior <i>(Type of relationships in the process of produce knowledge)</i>	Create generative spaces and conditions that facilitate the development of high quality interior capacities . Bring capacity potentials into the larger system , by embodying those capacities in the core team. Bring awareness of cultural context and worldview of different participants	Herndon, 2010; Melnick et al, 2006; Mota, 2010
Learning <i>(Type of relationships in the process of produce knowledge)</i>	Learning is viewed as a social process and outcome (i.e., social learning) achieved through the collaborative and mutual development and sharing of knowledge by multiple actors . Different types of learning are highlighted (e.g., single, double and triple-loop learning), each of which demands greater focus on the sub-text of learning (individual and collective).	Walker et al. 2002; Folke et al. 2005; Armitage et al. 2007
Trust <i>(Type of relationships in the process of produce knowledge)</i>	Trust is highlighted as a feature of social interaction required for true partnership and collaborative engagements, and one that is underestimated in conventional or top-down management. Discussions of trust are often framed in the terminology of social capital, and therefore, reduced to measurable components (i.e., an outcome of bridging, bonding and social networks).	Berkes et al. 2005; Brunner et al. 2005; Folke et al. 2005
Iterative <i>(Type of relationships in the process of produce knowledge)</i>	An attribute that fits well with networked, multi-layered and participatory ideals. Interactive governance involves a mutually influencing relationship between two or more actors possessing an intentional and structural dimension . Interactive elements must be considered in the context of the system to be governed (e.g., between key social, economic and ecological components of a fishery system), as well as between the actors and components involved in governance of that system.	Kooiman et al. 2005

Network organisation as the base

Redundant and diverse <i>(Network organisation)</i>	Alternative sources, sub-systems, entities, roles or strategies which are to back-up one to each other and increase the capacity of the whole system.	da Silva et al (2012), Holling (2001)
Flexibility (hard) <i>(Network organisation)</i>	Ability to change and adapt alternative strategies in front of external pressures. Multiple pathways of action.	da Silva et al (2012), Holling (2001)
Resource-less (soft) <i>(Network organisation)</i>	Capacity of multi actors to plan, act and carry out solutions with low resources	da Silva et al (2012)
Responsiveness (soft) <i>(Network organisation)</i>	Ability to rapidly reorganise and re-establish functions after crisis, changes or failures. Capacity to plan, act and identify solutions with anticipation, respond rapidly and move resources to where these are more needed.	da Silva et al (2012)

Type of meeting spaces to produce knowledge

Order/Chaos <i>(Type of spaces to produce knowledge)</i>	Use just enough structure necessary to get a job done, no more. Create new structures that allow flow of information and enable personal connections and relationships . Make plans and intentions, then be flexible and let them go.	Merry, 2010; Herndon 2010 and Mota 2010
Rhythm <i>(Type of spaces to produce knowledge)</i>	Support meaningful rhythms for the group including face to face meetings, celebrations and periodic meals together, routine reflection and daily awareness practice .	Glad, 2010 and Moeller 2010

Appendix 2

Appendix 2: Relational systems to analyse contexts of civil networks

Axis	Element	Meaning
M A T E R I A L A X I S	1.Productive Forces	Technologies, economic activities and types of work that produce goods and services in a given society. E.g. industrial production, agriculture, etc.
	2.Social Production Relationships	Social relationships among the different actors embedded in the production of goods and services and their relation with nature. These determines the modes to access to the goods and services. E.g. cooperative, social enterprise, private enterprise, familiar production.
	3. Consciousness	Consciousness of the situational position on the process of getting access to the goods and services and consciousness of the role within the process. E.g. being advantage or disadvantage on such a process, exploited or receiving a utility, treated as an equal, etc.
	4.History	Understand a social process by its historical context and the actors that gave origin to the current social practices. E.g. Unemployment: when this was originated, who take decisions, how is the situation in the moment of the analysis [prevalent unemployment, low paid work, etc.]
	5.Development	Social, economic and cultural conditions that allow or hider the access to goods, E.g. full access to the goods, excluded, etc.
	6.Social Practices	Organizational forms and actions that allow or hinder the access to goods. E.g. social movements or collective organizations, isolated individuals and inactivity.
C O N C E P T U A L A X I S	7.Theories	Ways to look the world [things and processes] that give meaning about them. E.g. Work is an obligation, everybody has human rights or human rights are gained and constructed.
	8.Values	Individual or collective preferences, from the majority or minority groups in relation to a situation, process or thing. This allow sand set up social relationships with others. E.g. cooperation is good, work dignifies our life, and money is related to happiness.
	9.Position	Place every individual has in the social relationships and that determines the way to access to goods. E.g. poor, rich, urban, farmer, excluded, etc.
	10.Space	Physical, geography, human or cultural spaces in which occur the different social relationships
	11.Narratives	Forms of how we define things or situations (language), ideas from which we are defined and it is established how we should participate in the social relationships. E.g. novels, texts, discourses, conception of natureprivate property is the way better way of having access to resources, who is trustful or not, who is considered developed or not.
	12.Institutions	Norms, rules and procedures that articulate a hierarchical and bureaucratic resolution of a conflict or satisfaction of expectative. E.g. parliament, family, etc.

Appendix 3

Appendix 3: List of the research methodology instruments

List of primary sources of information:

Primary data	Step	# of interviews, events or analysed documents	Collection methods
Semistructured interviews	Mapping of the actors' universe and selection of case study/informants	23 interviews	Type-Recording & Journal
	Mapping of the actors' universe and selection of case study/informants	16 interviews	Type-Recording & Journal
In-depth interviews to key informants	Feedback form the field trip main insights	11 interviews (1.5 hrs on average each)	Type-Recording & Journal
Participant Observation (Attendance to diverse meetings of the NDM)	Proving/disproving of hypothesis (Mainly, but not restricted to H2—dynamics of operation & evolution process)	3 National Assemblies of the NDM (3 days)	Journal/Conversations
		3 Pre-audiences of the TPP (8 days total)	Journal/Conversations
		1 PPT Final Hearing (2 days total)	Journal/Conversations
		3 Local Assemblies in Chiapas - MG (3 days total)	Journal/Conversations
Participant Observation (Resident) at local, national and international levels of the NDM operational dynamics	Proving/disproving of hypothesis (Mainly, but not restricted to H3—spirit of networks to become a counterpower force)	International Level PPT translator & La Vía Campesina Meeting (6 days total)	Journal/Conversations
		National Level CECCAM-1.5 months	Journal/Conversations
		Local Level MG-1.5 monthss	Journal/Conversations

List of secondary sources of information:

Secondary data	Step	# of interviews, events or analysed documents	Collection method
Type Recordings (Testimonies of NDM members from past Assemblies and Workshops)	Proving/disproving of hypothesis (Mainly, but not restricted to H2— dynamics of operation & evolution process)	Total of 5 records from years: 2002, 2004, 2006, 2007 & 2009 Each of them 2 hrs of trascription	Processing of data in an analytical chart (See Appendix 8)
Articles and books published by NDM members (Analysis of different types of articles in bulletins and newspapers)	Proving/disproving of hypothesis (Mainly, but not restricted to H1— achievements of the NDM)	Total of 16 issues (See Appendix 4)	Processing of data in an analytical chart (See Appendix 8)
Scientific articles in GMOs issues in Mexico	Proving/disproving of hypothesis (Mainly, but not restricted to H1— achievements of the NDM)	Total of 4 articles	Processing of data in an analytical chart (See Appendix 8)
Specific research literature in new social movements in Mexico	Proving/disproving of hypothesis (Mainly, but not restricted to H2— dynamics of operation & evolution process and H3— spirit of networks to become a counterpower force)	1 PhD Thesis: the NDM versus Campaign without Maize, no country ways of operation. Provided by Peter Rosset	Journal of participatn observation versus note taking of these sources
		A review of new social moments (from 1970 to 2011) - Compilation	
		3 Agrarian Note-books	

Appendix 4

Appendix 4: List of bulletins, books and articles published by NDM members

Note: all these sources are listed in the references

No	Title	Type	Publishing organisation	Year
1	The maize is not a thing, it is a center of origin	Book	Diverse members of the NDM	2012
2	PPT Final Ruling	Rulling	Moral Authorities of the PPT process	2014
3	La milpa Catalogo de Diversidad	Bulletin	CECCAM	2014
4	Santiago Lachiguiri: respuestas comunitarias ante la política ambiental	Bulletin	CENAMI	2013
5	La determinación de los centros de origen y diversidad genética del maíz. Análisis crítico de la propuesta oficial	Bulletin	CECCAM	2011
6	GMO vs Mexico Resistance: Do not touch our corn	Article	ETC Group	2014
7	Presentatin of Adelita San Vicente	Article	Semillas de Vida	2015
8	Otro freno a los transgenicos	Article	ETC Group	2014
9	PPT Rulling on Soybeans	Rulling	Moral Authorities of the PPT process	2014
10	Territorios indígenas y campesinos en México: entre el despojo y la resistencia. Primer esbozo de un mapa	Article	CECCAM	2010
11	Territorios indigenas y campesinos en Mexico	Article	CECCAM	2005
12	Agriarian Books	Book	CECCAM	2001
13	Food Sovereignty Outcomes	Bulletin	Different members of the NDM	1996
14	Chiapas, la guerra y la paz	Book	ADN Editors (Luiz Hernandez)	1995
15	Siembre de concreto, cosecha de ira	Book	Luxemburg Editors (Luiz Hernandez)	2011
16	PPT Food Sovereingy and Maize Rulling	Rulling	Moral Authorities of the PPT process	2013

Appendix 5

Appendix 5: Semi structured interview

Main Objective: delimiting the case study and selecting key informants

Contact data of interviewed actors:

Person Name: _____ Role: _____

Organisation Name: _____

Phone: _____ E-mail: _____

Background:

- a) Indigenous
- a) *Criollo*
- b) Other

Profession or activity of the contact:

- c) Activists
- d) Academic (researcher)
- e) Student or researcher
- f) Peasant-producer
- g) NGO professional
- h) Intellectual
- i) Journalist
- j) Other

Guided questions based on the features, outcomes and challenges of civil networks

Features:

- i. Multi-nodal flexible organisations: difficult to be co-opted by the state, as they organise and reorganise as needed through a diversity and international links.

Criteria: observe presence of members working together at different levels: local (L), national (N), or international (I) with no a formal membership. It was asked

the type of work they do together: sharing learning, sharing resources for projects and/or lobbying purposes.

Q.1. Do you work with any other organisation in systematic basis? E.g project funding, sharing of knowledge, lobbying.

Q.2. If the answer is yes to past question, who is this organisation(s), and is this organisation working at local, national or international level?

Name of the organisation: _____

Local: _____

National: _____

International: _____

Q.3. Can you describe further the type of shared project? Since when do you work together?

Q.4. Which is the level of action of your organisation?

Local: _____

National: _____

International: _____

ii) Conformed by autonomous individuals/organisations —from the state & political parties: coordinated by their own flexible flows of communication, vision, content and resources.

Criteria: identify members politically and financially independent. In the case of the financial aspect six source of income were checked: INGO, national NGOs, government (G), self-productive activities (Self), private funding (PF) and others (O). In the political aspect, it was checked the belonging or link to political parties or international governance institutions (e.g. UN, World Bank or any other)

Q.5. Which is your source of financing?

INGO: _____

National NGO: _____

Government credits or programs: _____

Private funding: _____

Self-Productive activities: _____

Other: _____

Specify the other: _____

Q.6. Do you work in any way close or as part of political parties? Which is your relation with governmental entities?

iii) *Use symbolic public spaces to show resistance:* but they meet in flexible ways as different contexts and needs demand.

Criteria: it was asked about their participation for resistance in public spaces, either systematically or randomly and for the purpose/topic of the meetings.

Q.7. Do you meet with others either randomly or systematically to do demonstration or lobbying? Or to show resistance against food topics? If yes,

Q.8. How often do you meet, which are the characteristics of these spaces (local, national, international), and which topics do you manifest?

iv) Use spaces of dialogue and learning as experiments of real democracy: characterised by self-representation of people.

Criteria: it was asked about their participation in spaces of collective learning, either systematically or randomly and the purpose/topic of the meetings.

Q.9. Do you meet with others either randomly or systematically to learn or discuss issues together? E.g. assemblies, forums. If yes

Q.10. How often do you meet, which are the characteristics of these spaces (local, national, international), and which topics do you discuss?

Outcomes:

v) Change of mind and values of people in the long term: in the aim of social justice and ecological practices.

Criteria: it was asked the mission and objectives of their own organisations to be categorised under social justice or ecological practices.

Q.11. Which is the mission and objectives of your organisation?

Q.12. Could you link it more towards environmental protection or social justice?

Environmental protection: _____

Social justice: _____

Other: _____

vi) Development of alternative ways of the development in the grounds: viable economic and ecological practices in front of the dominant system.

Criteria: it was asked in what practical projects around the food system they were working on. This was coded under the seven food sovereignty framework pillars. But also under practical and lobbying activities: lobbying (L), productive (P) vis a vis generating alternate ways of ways of development and/or research/education (R/E) to increase capacity of actors.

Q.13. Identify the type of activity of your organisation:

Food production: _____

Food merchandiser: _____

Research on food issues: _____

Lobbying on food policies: _____

Other: _____

Q.14 If you perform an agricultural activity, which one of the following?

Urban: _____

Peri-urban: _____

Small-medium rural (< 5 Ha): _____

Rural (large) (> 5 Ha): _____

Other (explain): _____

Q.15. Could you relate your activity with the food sovereignty pillars? If yes, to which one(s):

Food as a basic human right: _____

Land reform: _____

Democratic control: _____

Reorganising the food trade: _____

Protecting natural resources: _____

Social peace: _____

End of the globalisation of hunger: _____

Other: _____

Q.16. Period of time working on the topic: ideally working for at least 10 years to observe a process of evolution: _____

Appendix 6

Appendix 6: In-depth interview

Main Objective: understand the dynamics of operation of the NDM. This includes open questions for testing of the hypothesis and get to know deeply people within the network.

Stages of evolution of the network

Q.1 Do you observe a shift in the types of actions of the NDM from the diagnosis of native maize contamination with GMOs to now to present? If yes, why?

Q.2 Why the NDM decided to take part of the PPT process?

Q.3 Who are the beneficiaries of the actions of the NDM? Why?

Q.4 Which has been the most effective actions that the NDM has taken as a collective group? Why?

Q.5 Can you differentiate a typology of actions of the network in the last 10 years?

Q. 6 Which are the main achievements of the NDM?

Q.7 Which is the ultimate purpose of the PPT?

Process of produce collective knowledge

Q.8 What kind of learning do you get from the meetings (e.g. assemblies) of the NDM?

Q.9 Which is your role and contribution to the NDM? (As individual or organisation)

Q.10 How do you translate the learnings of the NDM meetings to your on organisation or locality?

Q.11 How the decisions are taken within the NDM? Who leads the process? Which strategies and by whom are approved?

Q.12 How do members of the NDM realise when to shift to another collective strategy?

Power within the NDM and facing to networks of power

Q.13 Which would you say is the next stage of the NDM? Why?

Q.14 How would you assess the power or contribution of the NDM versus the power of TNC companies or other powerful networks such as the drug cartels?

Q.15 What does it motivate you to work within the meetings of the NDM?

Q.16 Who has more weight within the NDM to take decisions? Why?

Q.17 What types of actors or roles are important to produce knowledge and take decision within the NDM? Are the NGO members more important than peasants or indigenous members? Why?

Q.18 How do you observe or measure solidarity and respect among the members of the NDM?

Q.19 How many types of formal spaces do you recognise important to carry on the work of the NDM? Who call and facilitate these meetings?

Collective identity of the NDM

Q.20 What has contributed the most to keep the NDM working together for long time?

Q.21 What would you think is the most important factor that all members of the network are identified within the struggle? Which is the higher aim of the NDN?

Q.22 Why to defend maize versus territories or culture of indigenous communities?

Appendix 7

Appendix 7: List of events attended as participant observant

Mapping of the actors' universe (Exploratory field trip)

National Assemblies, meetings and workshops:

1. National Assembly of NDM (Feb, 2012) - 3 days
2. Monthly meeting of the GMO commission of the 'Campaign without maize there is no country' (Feb 2012) - 1 Day
3. Open public seminar on GMOs in Mexico led by members of the 'Campaign without maize there is not country' (Feb 2012) - 1 Day

Presentation of books in food related topics:

4. *Una política alimentaria en México* (2012) (A food policy in Mexico) -CEDRSSA (Centro de Estudios para el Desarrollo Rural Sustentable y la Soberanía Alimentaria en México) in CIESAS, DF led by members of the 'Campaign without maize there is no country' and the National Institute of Nutrition in Mexico together with academics from public and private universities (March 2012) - 1 Day
5. *El maíz no es una cosa, es un centro de origen* (2012) (The maize is not a thing, it is a center of origin) presented by members of the NDM in the Mexican Cultural Centre, Mexico City (Feb 2012) - 1 Day
6. *Políticas Públicas para la agricultura Mexicana* (2011) (Public Policies for Agriculture in Mexico) by Víctor Suárez, Member of ANEC and the 'Campaign without maize there is no country' (March 2012) - 1 Day

Public diverse forums in food sovereignty:

7. Presentation of the UN Rapporteur on 'Inform of Mission to Mexico by the UN Special Report' (2012) (March 2012) - 1 Day
8. PTT Meeting in preparation for the Initial Hearing, Mexico City, (March 2012)- 1 Day
9. Forum on Policies of the Food System in Mexico - Organised by diverse private Universities and UNAM (March, 2012) - 1 Day
10. Parliamentarian session on the Right to Food in Mexico -(March, 2012) - 1 Day
11. National Crusade against Hunger Meeting, DF, Mexico (April, 2012) – 1 Day

Testing of hypothesis (Explanatory field trip)

NDN National Assemblies, Workshops, Conferences and PPT Hearings:

12. Assembly of the NDM (Feb, 2013) – Mexico City- 2 Days
13. National Assembly of the NDM, (Jan, 2014) – Mexico City- 1 Day
14. PPT Final Hearing (Nov, 2014) Mexico, City-2 Days
15. PPT Opening Hearing (May, 2012) Cd Juarez, Mexico- 2 Days
16. PPT Workshop on Mapping Tools (Mar, 2013), Queretaro, Mexico-2 Days
17. PPT National Hearing on Food Sovereignty and Maize (Apr, 2014), Oaxaca, Mexico-2 Days
18. PPT Youth National Hearing (Oct, 2014), Mexico City-2 Days
19. National Conference on GMO Maize in Mexico by Vandana Shiva (Apr, 2013), Mexico City-1 Day
20. Conference on Obesity by the Mexican National Institute of Nutrition (Jun, 2013), Mexico City-1 Day
21. La Vía Campesina International Meeting in preparation of the 2013 WSF (Oct, 2012), Mexico City-2 Days
22. Local assembly community Guadalupe Atoyac with the participation of MG (Apr, 2012), Chiapas, Mexico-1Day
23. MG Experimental Lands Workshop (May, 2012), Chiapas, Mexico-1Day
24. Weekly meetings of the MG members (Apr-May, 2012), Chiapas, Mexico, 5 Days

Appendix 8

Appendix 8: Analysis of data from participatory observation

	Main commitment (strategy) in NDM national assemblies
2002	As a network they understood that the issue of maize GM contamination was beyond a technical problem related to loose of diversity of the maize seeds in Mexico. The real problem was the loose of Mexican people sovereignty to eat healthy, thus the loose of indigenous cultures, their territories and their knowledge. So, an integral and systematic approach needed to take place to defend maize and indigenous towns
2003	As a network they declared that the maize GM contamination in Mexico was not an accident, as the different government acts in front of the contamination issue clearly showed the lack of commitment to full fill with international and national laws to avoid the GM introduction in Mexico, being it the centre of origin of maize. Solutions need to be focused to a communitarian level who were the ones able to stop the spread of GM contamination in Mexico by cultivating in organic and traditional ways. Networks in different levels need to be strengthened to take actions. The network stoops losing its energy in making GM analysis to detect contamination as this action does not stop it. Neither scientific can stop the problem, as they do not have all the knowledge collected by the diverse towns across the whole country in more than 10,000 years. Maize is not a thing, but the results of years of sharing knowledge, experimenting and people relationships.
2004	They understand that maize is a way of living. It involves rituals, the way of making relations, a way to eat and organize the community. Maize involves several knowledge that are in hands of a diversity of communities. They know that the strength of peoples relies in their assemblies and from there they will defend the maize. If they take care of maize, they take care of soil, water and diversity.
2005	Maize as the centre of Mexican people. Same as 2004.
2006	On top of the same position of focusing on the communities. They also make a declaration where they oppose to the Ley Monsanto and a call to the Government to stop the imports of GM maize to Mexico. This is signed by 50 organisation of the whole country. They also recognise that defend the maize is to defend the towns from migration, from the devastation of environment, and they declare themselves against the violence against the indigenous towns.
2008	During this period, the Network realised that to focus only in communities and the Maize is lacking of support. As the context of the country is on crisis. There is Reforms to the Energetics, the food crisis is rising prices, the urbanisation comities happening in an accelerated rates. Maize is focused to produce agro-biofuels. After the political party PAN in 2006, the violence increased in the communities. Drugs becomes a more profitable business than the maize or any other activity. Topics such high prices, migration, drug trafficking, violence, and others become more relevant than maize and environmental degradation. They never put aside the topics, but they recognise that a more integral fight needs to take place. The organisations position and demands need to be strong, as there is not a unique inactive that says a NO to GMs in the whole country.
2009	Here the crisis is even bigger, the network clearly recognises that they need a more strong fight. The second contamination of the government has been made in the North of the country, as they know it is the easiest way. The declaration in 2009 of the entrance and stop to any biodiversity memorandum put to Mexico without any legal tool to avoid the spread of them all around the country. Plus the energetic, financial and food crisis of the world, the efforts need to be double.
2012	The efforts of the NDM need to be directed in the filing of a legal appeal in Yucatan Mexico to stop the contamination by GMO of exports of honey of those communities.

Levels of collaboration

	Individuals/ organisations	Teams	Network	Community of practice	Networks of networks
2002	More than 300 organisations participated in the Forum in Defence of maize	Since 1990 couples of indigenous and researchers working together or some organizations (E.g. CASIFO and CECCAM working together)	Network formalisation in the Forum in Defence of Maize January 2002	CoP group starting to take responsibilities	None
2004	Around 1000 communities have joined the NDM through the workshops to disseminate threats of the GMO contamination in Mexico.	Organism - NGOs facilitating processes and supporting communities and the network process formation (E.g. GRAIN and ETC group workshops on GMOs)	Organisations such as GEA and Green Peace (lobbying focus) formally leave the NDM. The core CoP gets clearer formed. .	Recognition of a group of NGOs working together to sustain the network. CoP maturation	None
2006	Around 1500 communities constantly participate in national workshops and assemblies of the NDM	Some regions start to get more consolidated in their work as teams E.g. Oaxaca	A periodic and systematic work through assemblies and collective strategies is observed.	Consolidated CoP	None
2008	Around 1500 communities constantly participate in national workshops and assemblies of the NDM	Some regions start to get more consolidated in their work as teams E.g. Oaxaca	A periodic and systematic work through assemblies and collective strategies is observed.	Consolidated CoP	ANNA formation and other (REMA, MADPER) who at some points work together
2012	Around 1500 communities constantly participate in national workshops and assemblies of the NDM	Some regions start to get more consolidated in their work as teams E.g. Oaxaca	A periodic and systematic work through assemblies and collective strategies is observed.	Consolidated CoP	PPT Chapter Mexico, with more than 1500 organisations working together on 7 thematic

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Appendix 9

Appendix 9: List of interviews during the mapping of actors' universe

	No	Contact Name	Organization	Role	Location	Start-up	Type of activity	Activity Description	Level of action	Collective action	Type of work
Interviewed Contacts 2 and Round	1	Alvaro Salgado	CENAMI	Director	Mexico City	1996	Lobbying	Policy incidence and education	National	National Indigenous Coordinator	Knowledge sharing/strategies definition
	2	Alberto Gomez	VIA Campesina	Leader	Mexico City	1993	Lobbying	Policies on food sovereignty	National	NDM, Via Campesina	Knowledge sharing/strategies definition
	3	Ivan Hernandez	CECCAM	Technical adviser	Mexico City	1992	Education	Education on GMs and traditional agriculture	National	NDM	Knowledge sharing/strategies definition
	4	Roberto Arias	CECCAM	Communications	Mexico City	1992	Education	Education on GMs and traditional agriculture	National	NDM	Knowledge sharing/strategies definition
	5	Flor Luna	CECCAM	Biologist	Mexico City	1992	Education	Education on GMs and traditional agriculture	National	NDM	Knowledge sharing/strategies definition
	6	Silvia Riveiro	ETC Group	Latin American Director	Mexico City	2001	Education	Information work and movement building	International	NDM	Knowledge sharing/strategies definition
	7	Veronica	ETC Group	Program Manage	Mexico City	1990	Education	Information work and movement building	International	NDM, PPT	Knowledge sharing/strategies definition
	8	Camila Montesi nos	GRAIN	Advisor in Biodiversity/Seeds	Chile	1990	Education	Biodiversity conservation and agriculture	International	NDM, Grain International	Knowledge sharing/strategies definition
	9	Ramón Vera Herrera	GRAIN	Editor and NDM member	Mexico City	1990	Education	Biodiversity conservation and agriculture	International	NDM, Grain International, PPT,	Knowledge sharing/strategies definition
	10	Juan Robles Gil	Mision de Guadalupe	Director	Chiapas	1960	Education	Strengthening indigenous communities	Local	NDM, Misiones, others	Knowledge sharing/strategies definition
	11	Enrique Perez	ANEC	Communications	Mexico City	1997	Productive	Support to medium peasants agriculture projects	National	Campaña	Knowledge sharing and lobbying
	12	Liza Covante	CDRSSA	Right to food	Mexico City	2004	Lobbying	Right to food	National	Campaña	Lobbying
	13	Gabriela Vargas	CDRSSA	Food Sovereign	Mexico City	2004	Lobbying	Food sovereignty and policies issues	National	Government agencies, OCs	Lobbying
	14	Catherine Marielle	GEA	Director	Mexico City	1977	Productive	Productive projects with communities	National	Campaña, NDM,	Knowledge sharing and lobbying
	15	Eva	Collective COA	Director	Guadalajara, Jal	2001	Education	Assessment in legal issues for farmers	Local	NDM, PPT	Knowledge sharing and lobbying
	16	Adelita Vicente	Semillas de Vida	Director	Mexico City	2009	Education	Seeds and biodiversity	National	Campaña	Lobbying

