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Agrifinancialization and Transnational Agrarian Movements

Mauro Conti

Dedication to Giuliana and Carlo and Ilaria

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Acronyms

CFS= Committee on the World Food Security
DSI= Digital Sequencing Information
FAO= Food Agriculture Organization
FIAP= International Federation Agricultural Producers
GMOs= Genetic Modified Organism
IMF= International Monetary Fund
IPC= International Planning Committee for Food Sovereignty
IPR= Intellectual Property Rights
LVC= La Via Campesina
NBT= New Breeding Techniques
TAMs= Transnational Agrarian Movements
WB= World Bank
WFO= World Farmers Organization

WTO= World Trade Organization

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Abstract

The food price crisis exploded in 2007/2008 with extreme price volatility and high prices, fuelling the Arab spring and other social riots. These extreme price fluctuations have been threatening global food security, increasing the number of undernourished people. The food price crisis shed light on the role of finance in agriculture and the ongoing process of financialization of agriculture. The neoliberal policies promoted by the International Monetary Fund and World Bank, through Structural Adjustment Policies, gave rise to new Transnational Agrarian Movements (TAMs) and the food sovereignty claims. These new TAMs differentiated politically from the existing TAMs and Farmers Organizations that were oriented towards the production of commodities for export and for the international markets.

The research *problematique* addresses the interaction between financialization of agriculture, as a consequence of the end of Bretton Woods agreements, which, reshaping the countryside, also generates the rise of new TAMs claiming for food sovereignty: so the research question is *how has the contemporary financialization impacted agriculture and*

shaped politically the contemporary political orientation of transnational agrarian movements?

The research assumes the Arrighian world-system theory, among the different theoretical frameworks, to understand financialization as part of the worldwide economic cycle generating the Bretton Woods crisis and the reshaping of the space of global governance, with a specific focus on agriculture.

The dissertation identifies how financialization in agriculture generated a dichotomy in the space of global governance (Intellectual Property Rights versus Collective Rights), where TAMs strategically entered claiming for food sovereignty and resisting any further penetration of capital in agriculture from within the production process and through policy dialogue for public policies with governments.

In the actual financialization phase, the hegemonic powers are trying to generate a new material expansion solving the dichotomy of the global governance of agriculture through the appropriation of world biodiversity, which implies deepening the capital penetration in the internal agroecological frontier, and mainly expand the external frontier including all the biodiversity (crop wild relatives, plants, animal and marine biodiversity) in the capital accumulation system.

The new TAMs are opposing this phase of financialization fostering a new material expansion based on agroecology and re-peasantization of the mode of production, which remunerates labour and natural resources rather than capital.

The site of the study situated in the UN Rome based Food Agencies, as space strategically selected by TAMs to re-establish the centrality of the Governments in defining the Agriculture policies and regulations, therefore confronting the neoliberal policies and the financialization processes. Therefore, the United Nation Rome Food Agencies are an essential space to understand the TAMs perspective and strategy, in the different processes and discussion that are relevant for the penetration of capital in the countryside and in the control of natural resources, even beyond the Rome processes themselves.

Samenvatting

De voedselprijzencrisis escaleerde in 2007/2008 met extreme prijsvolatiliteit en hoge prijzen, waardoor de Arabische lente en andere sociale protesten werden aangewakkerd. Deze extreme prijsschommelingen bedreigen de mondiale voedselzekerheid, waardoor het aantal ondervoede mensen toeneemt. De voedselprijzencrisis heeft de rol van de financiële sector in de landbouw en het voortgaande proces van financialisering van de landbouw in de schijnwerpers gezet. Het neoliberale beleid dat door het Internationaal Monetair Fonds en de Wereldbank via het structurele aanpassingsbeleid wordt bevorderd, heeft geleid tot nieuwe transnationale landbouwbewegingen (Transnational Agrarian Movements; TAM's) en aanspraken op voedselsoevereiniteit. Deze nieuwe TAM's onderscheiden zich politiek gezien van de bestaande TAM's en boerenorganisaties die zich richten op de productie van grondstoffen voor de export en voor de internationale markten.

De onderzoeksvraag gaat over de interactie tussen de financialisering van de landbouw, als gevolg van het einde van de Bretton Woods-akkoorden, die door de herinrichting van het platteland ook de opkomst van nieuwe TAM's die aanspraak maken op voedselsoevereiniteit veroorzaakt. De onderzoeksvraag is dus hoe de huidige financialisering de landbouw heeft beïnvloed en de hedendaagse politieke oriëntatie van de transnationale landbouwbewegingen politiek heeft vormgegeven.

Het onderzoek gaat uit van de wereldsysteemtheorie van Arrighi als een van de verschillende theoretische kaders om inzicht te krijgen in financialisering als onderdeel van de wereldwijde economische cyclus die de Bretton Woods-crisis heeft veroorzaakt en van de herinrichting van de ruimte van de mondiale governance, met een speciale focus op landbouw.

In het proefschrift wordt aangegeven hoe de financialisering van de landbouw een dichotomie heeft veroorzaakt in de ruimte van de mondiale governance (intellectuele eigendomsrechten versus collectieve rechten). Toen zijn TAM's op strategische wijze op het toneel verschenen met eisen van voedselsoevereiniteit en verzet tegen elke verdere penetratie van kapitaal in de landbouw vanuit het productieproces en via de beleidsdialoog met de overheid.

In de daadwerkelijke financialiseringsfase proberen de grote mogendheden een nieuwe materiële expansie te bewerkstelligen en de tweedeling van de mondiale governance van de landbouw op te lossen door de toe-eigening van de wereldbiodiversiteit. Dit impliceert een verdieping van de kapitaalpenetratie in de interne agro-ecologische grens, waarbij de externe grens vooral wordt uitgebreid met inbegrip van alle biodiversiteit (gewas, wilde verwanten, planten, dierlijke en mariene biodiversiteit) in het systeem van kapitaalaccumulatie.

De nieuwe TAM's verzetten zich tegen deze fase van financialisering door een nieuwe materiële expansie te stimuleren op basis van agro-ecologie en een herziening van de productiewijze, waarbij arbeid en natuurlijke hulpbronnen worden beloond in plaats van kapitaal.

Het onderzoek is gesitueerd in de in Rome gevestigde voedselagentschappen van de VN. Deze plaats is strategisch gekozen door TAM's om de regeringen weer centraal te stellen bij het bepalen van het beleid en de regelgeving op het gebied van de landbouw, en daarmee de confrontatie aan te gaan met het neoliberale beleid en de financialiseringsprocessen. Daarom zijn de voedselagentschappen van de Verenigde Naties in Rome een essentiële ruimte om het perspectief en de strategie van de TAM's te begrijpen in de verschillende processen en discussies die relevant zijn voor de kapitaalpenetratie op het platteland en in de controle over natuurlijke hulpbronnen, zelfs buiten de processen van Rome zelf.

AGRI-FINANCIALISATIE EN TRANSNATIONALE AGRARISCHE BEWEGINGEN

Samenvatting

Die Lebensmittelpreiskrise explodierte 2007/2008 mit extremer Preisvolatilität und hohen Preisen, was den arabischen Frühling und andere soziale Aufstände beflügelte. Diese extremen Preisschwankungen bedrohen die globale Ernährungssicherheit und erhöhen die Zahl der unterernährten Menschen. Die Lebensmittelpreiskrise hat die Rolle der Finanzierung in der Landwirtschaft und den laufenden Prozess der Finanzialisierung der Landwirtschaft beleuchtet. Die neoliberale Politik, die vom Internationalen Währungsfonds und der Weltbank im Rahmen der Strukturanpassungspolitik gefördert wurde, führte zu neuen transnationalen Agrarbewegungen (TAMs) und den Ansprüchen der Ernährungssouveränität. Diese neuen TAMs unterschieden sich politisch von den bestehenden TAMs und Farmers Organizations, die auf die Produktion von Rohstoffen für den Export und für die internationalen Märkte ausgerichtet waren.

Die Forschungsproblematik befasst sich mit der Wechselwirkung zwischen der Fi-nanzialisierung der Landwirtschaft als Folge des Endes der Bretton-Woods-Übereinkommen, die, indem sie die Landschaft neu gestaltet, auch den Aufstieg neuer TAMs mit dem Anspruch auf Ernährungssouveränität bewirken: Die Forschungsfrage ist also, wie sich die gegenwärtige Finanzialisierung auf die Agrarkultur ausgewirkt und die gegenwärtige politische Ausrichtung transnationaler Agrarbewegungen politisch geprägt hat?

Die Forschung geht davon aus, dass die Arrighian-Weltsystemtheorie unter den verschiedenen theoretischen Rahmenbedingungen die Finanzialisierung als Teil des weltweiten Wirtschaftszyklus versteht, der die Bretton-Woods-Krise und die Neugestaltung des Raums der globalen Governance mit einem speziellen Fokus auf die Landwirtschaft hervorruft.

Die Dissertation identifiziert, wie die Finanzialisierung in der Landwirtschaft zu einer Dichotomie im Rahmen der Global Governance (Intellectual Property Rights versus Collective Rights) geführt hat, wo die TAMs strategisch eingestiegen sind, um die Ernährungssouveränität einzufordern und sich jeder weiteren Penetration von Kapital in der Landwirtschaft aus dem Produktionsprozess und durch den politischen Dialog für die öffentliche Politik mit Regierungen zu widersetzen.

In der aktuellen Phase der Finanzialisierung versuchen die Hegemonialmächte, eine neue materielle Expansion zu generieren, die die Dichotomie der globalen Governance der Landwirtschaft durch die Aneignung der weltweiten Biodiversität löst, was bedeutet, dass die Kapitaldurchdringung an der agroökologischen Binnengrenze vertieft wird und vor allem die Außengrenze einschließlich der gesamten Biodiversität (Pflanzenwildverwandte, Pflanzen, tierische und marine Biodiversität) im Kapitalakkumulationssystem erweitert wird.

Die neuen TAMs wenden sich gegen diese Phase der Finanzialisierung und fördern eine neue materielle Expansion auf der Grundlage der Agrarökologie und die Repeasantizierung der Produktionsweise, die Arbeit und natürliche Ressourcen anstelle von Kapital entlohnt.

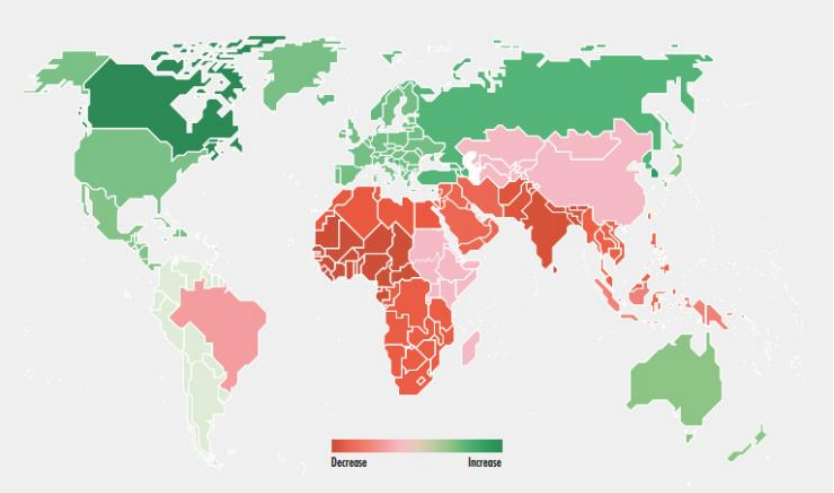
Der Ort der Studie befindet sich in den in Rom ansässigen Lebensmittelagenturen der Vereinten Nationen, die von den TAMs strategisch ausgewählt wurden, um die Zentralität der Regierungen bei der Definition der Agrarpolitiken und -vorschriften wiederherzustellen und somit der neoliberalen Politik und den Finanzialisierungsprozessen gegenüberzustehen. Daher sind die römischen Lebensmittelagenturen der Vereinten Nationen ein wesentlicher Raum, um die Perspektive und Strategie der TAMs in den verschiedenen Prozessen und Diskussionen zu verstehen, die für die Penetration des Kapitals auf dem Land und die Kontrolle der natürlichen Ressourcen relevant sind, auch außerhalb der Rom-Prozesse selbst.

Preface

"The dilemmas of the anti-systemic movements seem to be even more profound than those of the dominant forces of the world-system. In any case, without a strategy, there is no good reason to believe there is an invisible hand that will guarantee transformation in a good direction, even when and if the capitalist world-economy falls apart"
(Arrighi et al 1992:242)

In the last decades, the agricultural sector is facing multiple crises, which are all converging with climate change: the current model of agriculture has been recognized as directly and indirectly responsible for over 30% of the emissions generating climate change (OECD 2015). Extreme weather events are increasing and impacting negatively smallholders (FAO SOWA 2016), which are the most vulnerable portion of family farmers and produce 80% of the food consumed worldwide (FAO IYFF 2014). FAO's*State of the Food Security and Nutrition in the World*(FAO SOFI 2018) recorded that in 2017 climate shocks were the main cause of food crisis: climate change is affecting agricultural productivity mainly in South Asia and Sub-Saharan Africa (FAO SOCO 2018). This phenomenon will require an increase in international trade, which in turn will further increase emissions and impact on climate change.

Map 1
Impact of Climate Change on Food Production



Source: [FAO State of the World Agricultural Commodity Markets (SOCO) 2018, pg 20]

According to the FAO Director-General (Annex 1, event 23), hunger and malnutrition are both increasing (SOFI 2018) while the number of obese people has exceeded that of undernourished people due to the low nutrition quality of internationally traded food. Population growth (9.7 billion by 2050, 10.8 billion by 2080, and 11.2 billion by 2100, FAO 2018d) will increase the demand for food and this will take place in more challenging conditions due to the loss of biodiversity and soil fertility. Climate change and extreme climate events are also worsening the food prices crisis, which is not characterized by price volatility any longer but still maintains high food prices.

The food price crisis exploded in 2007/2008 and was characterized by extreme price volatility and high prices, ultimately fuelling the Arab spring and other social riots in about 33 countries worldwide (Zurayk 2011, Ghana 2012, Perez 2013). These price fluctuations have been threatening global food security and increasing the number of undernourished people to over 170 million (FAO SOFI 2010). This food price shock made clear that the global governance of the global food system was not working. The Transnational Agrarian Movements, as La Via Campesina (Edelman, Borras 2016) and other Civil Society Organizations, requested the governments in the Food and Agriculture Organization of the United Nations to address consistency across

the food security policies of different international agencies and ensure these were informed by the standpoints of the victims of hunger. The strong demand coming from producers' organizations resulted in the reform of the Committee of World Food Security[1]. The Committee became a more inclusive UN body, as it began to involve smallholders and food producers' organizations in the definition of the agendas and the discussions on the decisions of the Committee (DeSchutter 2013, McKeon 2016).

The CFS reform addressed policy convergence against the fragmentation of international law and agricultural policies, which creates inconsistencies in the global governance of agriculture, trade, and climate change. It is not a coincidence that the first report of the High-Level Panel of Experts (HLPE) on Food Security and Nutrition for the Committee on World Food Security was on *Price volatility and food security*[2]. The report was based on a review of the existing literature and summarized the main causes in three approaches: Short, Medium, and Long-term.

The Short term approach assumes that agricultural markets are normally characterized by food price volatility and outlines three possible different causes: a) *demand elasticity*: according to this vision, the biofuel industry dramatically increased demand—ultimately generating a demand shock—, while the export bans aimed to protect consumers restricted international trade) *trade policies*: food price volatility stemmed from the decrease in elasticity of demand due to the higher income of richer consumers c) *speculation on financial markets*: the future market was characterized by a higher volume of non-commercial transactions, which caused price bubbles (according to the HLPE report, this interpretation is seen as controversial).

The Medium-term approach considered periodic food price crises (the 1950s, 1970s, and present) as drivers of agricultural investment cycles: high food prices allow for more investments in agriculture and related technologies so that productivity can increase and prices are lowered, leading to a consequent reduction of investments.

According to the Long term approach, the food price volatility is a long term signal of scarcity in international agricultural markets "*due to the end of the*

[1]http://www.fao.org/3/a-k7197e.pdf

[2] http://www.fao.org/fileadmin/user_upload/hlpe/hlpe_documents/HLPE-price-volatility-and-food-security-report-July-2011.pdf

era of cheap food"[3], which relied on the availability of cheap raw materials and caused structural overproduction. The report's conclusions recommended changes to trade rules;highlighted the need to tackle the structural issues causing the increased demand for food products and the lack of investments in agriculture, and suggested the inclusion of externalities in the cost of food production and the need for future market regulations in order to avoid speculation.

The Special Rapporteur on the Right to Food (De Schutter O. 2013) addressed increasing prices and volatility as a combination of three main causes: the increasing production of food crop biofuels, the extreme weather events caused by climate change, and commodity futures markets.

The HLPE report and the Special Rapporteur on the Right to Food were not differing significantly from the vision expressed in the 2008*IMF/OECD/World Bank Workshop on Food and Fuel Prices*, which identified the food and fuel price shocks as a repercussion of global growth, stocks management and slow supply response—even if this in part was due to cross-commodity (oil and food) price linkages, with rising energy prices spilling into food prices.

The main narrative emerging from the recommendations of these international institutions does not consider speculation and food price volatility as the main cause of food crises. This is due to the unclear distinction between high prices and food price volatility. The former refers to a constant rise in food prices due to trends in market supply and demand and to other underlying economic fundamentals. Price volatility, on the other hand, represents a continuous change in prices within a short period of time. There is a significant difference between the effects of increasing market demand leading to higher prices and the speculative effects resulting in price volatility. In the above-mentioned analysis, the role of financial speculation is limited to biofuels, recognized as the main source of volatility but still considered according to criteria of supply and demand shocks. The supply and demand dynamics applied to biofuels could explain how market prices increase through biofuels supply or demand shocks, but this type of shock does not explain in any way an increase of food price volatility (Gosh 2011, 2012; Knipper 2018; Conti 2012).

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[3] https://www.huffingtonpost.com/2008/04/23/is-this-the-end-of-cheap_n_98285.html

Some scholars built a counter-narrative (Newell 2008, Wall Street Journal 2009, Sivini 2009, Gosh 2010, Conti 2012) that recognized the central role of biofuels in the current food crisis but also traced back the generation of the food price crisis to the financial speculation and financialization of agriculture, rather than to a structural change of supply and demand of agricultural commodities. One must focus on some key aspects of what is referred to as financialization in order to better understand the difference between increased demand and speculative effects, and how they relate to the causes and effects of food price volatility.

Financial capital in agriculture remained a factor deeply discussed in its concrete manifestations, similarly to derivatives on agricultural commodities, but without a clear framework to understand the causes of financialization. While not entering the debate on the definition of financialization and in particular financialization in agriculture, the international debate on different structural and temporary explanations to the food price crisis brought back the role of finance in agriculture as a central focus of the discussion. The discussion on the role of finance in agriculture was mainly production-oriented in its analysis and proposed solutions through a focus on agriculture production,despite the fact that the first scholar mentioning financialization defined it as the *prolonged split between the divergent real and financial economies* (Phillip 1994) and therefore failed to tackle the connection with the economic systems and understand agriculture as a part of this.

Indeed, the roots of financialization are broader than agriculture: in all the different analysis on financialization, whether we assume the cyclical nature of financialization (Arrighi 1994) or its definition as a recent stage of capitalism (Epstein 2005), there is the common understanding that the phenomenon is broader than the agricultural sector (Gosh 2010; Clapp, Isakson 2018). Despite this, most analyses on the financialization in agriculture do not consider the connection of financialization in agriculture with the financialization of the economic system as a whole, so they are limited to agriculture as a standalone sector even in the conclusions and the solutions that they offer.

Whether the actual financialization phase would be considered a new phase of capitalistic system or a cyclical one, there is common agreement in tracing back its origins to the end of Bretton Woods agreements (1971-73) (Magdoff and Sweezy 1972, Harvey 1989, Arrighi 1994, Sweezy 1997, Epstein 2005), with the dollar devaluation and the end of the rigidities of large-scale investments in mass-production systems of the Fordist and Keynesian poli-

cies (Harvey 1989). Since the 1970s and through the 1980s the economic system has been characterized by deep economic restructuring and social and political readjustment, as well as by the rise of neoliberalism, globalization, and financialization. Since the 1970s, financialization characterized the capital accumulation process as the main force of economic growth: financial profits increased from 15% to 40% of total domestic profits in the U.S. (Bellamy Foster 2008), and neoliberalism is often considered as the expression of the new hegemony of finance (Duménil and Lévy2001).

Many analyses of the financialization process in agriculture are recognizing the roots of the process in neoliberal globalization (Epstein 2005,2008, Kotz, 2008, 2015, Palley 2007; Knipper 2018), which defined the worldwide economic cycle after the end of the Bretton Woods agreements, but most of them do not address the causes of financialization at global level in order to then examine how these causes are reflected in the financialization of agriculture.

The relationship between the global cycle of accumulation and the agricultural sector remains therefore unclear, ultimately resulting in analysis and recommendations that are limited to the agricultural sector or to some kind of regulation of financial markets as if this could protect the agricultural sector from its connection with the cycle of accumulation and from neoliberal policies. The connection between the collapse of the Bretton Woods agreements and neoliberal policies in agriculture is crucial to understand the actual financialization in agriculture: the end of Bretton Woods opened to the liberalization of global markets, including food trade (Friedmann and McMichael 1989, McMicheal 1998) and the increased concentration of the corporations providing inputs, processing, and exporting food while also shrinking the traditional functions of the nation-state.

Neoliberal globalization has increasingly reduced nation-state regulatory powers, transferring them to global institutions (Friedmann and McMichael 1989, Harvey 1989, Arrighi, 1994, Arrighi 1999, Borras Edelman 2016): not surprisingly, in the 1980s and early 1990s the resurgence of the World Bank, the International Monetary Fund, and the United Nations shows the U.S. lack of capacity to exercise minimal governmental functions in an increasingly chaotic world. The neoliberal policies promoted by the International Monetary Fund and the World Bank through the Structural Adjustment Policies imposed macroeconomic stabilization policies based on privatization, free-market development, and agro exporting in the 1980s and 1990s. During these two decades, the International Monetary Fund defined at the country level

the agendas for macroeconomic policies and development, while the World Bank provided structural *adjustment lending* (World Bank 1981, Lall 1995, Lensink 1996, Greenberg1997, McGregor 2005, Arrighi 2010). National regulatory powers not only transferred significant power to inter-governmental institutions at the global level, but also through the decentralization and privatization of governance, responsibilities, and financial resources (Harvey 1989, Borras, Edelman 2016).

This general trend affected agricultural policies due to the central role that nation-states have been playing historically in defining agricultural policies and the organization of the countryside. Nation-states used to have the relationship with peasantry at the core of the state-building policies and funded many farmer organizations in order to have negotiating counterparts in the countryside, while the peasantry expressed its political agendas to influence state formation (Barrington Moore Jr 1966, Scott 1976, 1985, 1986). The state–peasantry relationship was also active at the international level, where national governments (including the Vatican State) supported the formation of the first experiences of TAMs(Edelman and Borras 2016). In particular, after World War II, the British National Farmers Union together with other national organizations from other countries created the International Federation of Agriculture Producers (IFAP), in order to participate in the United Nations Food and Agriculture Organization (FAO) and present the position of Farmers Organizations as private sector, mainly being part of governmental delegations (Edelman and Borras 2016). The neoliberal policies and financialization stemming from the end of Bretton Woods resulted into a reduction of the presence of the central governments in the support to agriculture, with privatization processes affecting agrarian classes in their access to natural resources, credit, markets, and social services. The rural areas of the Global South were affected by the Structural Adjustment Programs imposed by the World Bank and the International Monetary Fund: the complete deregulation of agricultural markets through the elimination of marketing boards, price guarantees, and erasing public research gave way to the U.S. and Europe dumping practices in foreign markets. As a result, subsidized grain was sold at prices far under the costs of production and Southern food security was captured and linked to global value chains controlled by rich Northern countries (Holt-Giménez 2008). The success of the *Green Revolution* of the 1960s turned to 'brown', and global food crises became a chronic phenomenon. The policies of dumping practised by northern rich countries and the penetration of capital in the countryside stemmed from the Structural Adjustment Pro-

grams, which meant to substitute labour with capital and small holders labour-intensive farming with modern capital-intensive farming and high productivity (Boussard J-M 1992).

The role of smallholders in capitalistic economic growth is to be proletarianized into wage workers, or turn into large farmers (Lenin 1964): "*peasants are a transitory and differentiating class in a process of decomposition and absorption by the essential classes-proletariat and bourgeoisie-of the mode of production"* (Deere C, de Janvry A., 1979).

This is the political context in which new Transnational Agrarian Movements, representing peasants and other small scale food producers, are emerging in the late 1980s and early 1990s as a reaction to the increasing penetration of capital in the countryside. The last decades of the XX century saw peasants and small farmer organizations getting organized in agrarian movements at the trans-national level to influence global governance, where economic and agricultural policies were defined (McMichael 1998, Edelman 2003). The international institutions defining agricultural policies were supporting two opposite governance tendencies: decentralization and trans-nationalization. The first tendency was supported through *community empowerment* in all the programs of the United Nations and other international institutions, while the second tendency was backed by the creation of partnerships of Civil Society Organizations, Non-Governmental Organizations and TAMs(Bruno Kenny, Karliner Joshua 2002; McKeon 2009).

The emergence of new TAMs confronting free-market policies is commonly traced back to the discussion on the General Agreement on Tariffs and Trade (GATT) in agriculture during the Uruguay Round in 1986, which led to the creation of the World Trade Organization. GATT was formed in 1948 as an international trade treaty designed to boost economic recovery following WWII. GATT's primary purpose was to increase international trade by eliminating or reducing various tariffs, quotas, and subsidies while maintaining meaningful regulations. GATT did apply to agriculture, but it was incomplete: as a result, signatory states (or 'contracting parties') excluded this sector from the scope of the principles stated in the general agreement (McMicheal 1993). The eighth round of GATT was held in 1986 in Uruguay and included agriculture in multilateral trade negotiations, together with intellectual property and dispute settlement. In 1994 the Marrakesh Agreement enabled a new multilateral framework to encourage the gradual liberalisation

of agriculture to facilitate corporate access to (financial) markets and raw materials through international standard rules, removing national social protections (McMicheal 2000, Ingco and Nash 2004, Higgins and Lawrence 2007).

The Marrakesh Agreement on Agriculture and the formation of the World Trade Organization accelerated global coordination among many of the new TAMs in the United Nations space, with the specific strategy to resist the neoliberal wave: the occasion was given by the FAO World Food Summit held in Rome on November 1996 (FAO 1996, Shaw 2007) in which the issue of 800 million people without adequate food (FAO 1995) was tackled through the neoliberal vision of trade policies fostering food security for all through a fair and market-oriented world trade.

The Parallel NGOs Forum, held on11-17 November 1996, gathered more than 1200 CSOs and TAMs, mainly food producers, from circa80 countries. Since the newly established World Trade Organization (WTO) was to hold its first meeting within weeks, the timing of the Summit was ideal to ask for the revision of the Uruguay Round and depart both from market-led solutions dominated by transactional corporations operating within the global economy and from the policy framework created by the Structural Adjustment Programs of World Bank and International Monetary Fund, so as to counter-propose a new agenda based on Right to Food and Food sovereignty to overcome the social injustices rooted in the governance of food production and marketing (La via Campesina 1996, Shaw, Clay 1998). The coordination among the different TAMs and other Civil Society Organization continued until the *NGO/CSO Forum for Food sovereignty: a right for all*, held in parallel to the *World Food Summit: five years later* in Rome (June 8-13 2002) which institutionalized the global coordination among TAMs through the International Planning Committee for Food Sovereignty (IPC) to work with FAO. The formal coalition started through an Exchange of Letter recognizing common priorities, such as the drafting of voluntary guidelines to help member countries guarantee their citizens' right to adequate food (FAO 2002). In the following year, the International Planning Committee for Food Sovereignty (IPC) facilitated the participation of thousands of small scale food producers to the FAO process, such as in the The International Conference on Agrarian Reform and Rural Development (ICARRD) held in Porto Alegre in March 2006, which recognized the collective right to land control and acknowledged the cultural, social,and historical dimensions of land (ICARRD 2006, Borras, 2008, McKeon 2013).

In 2007 TAMs working on food sovereignty organized a global gathering during the Nyeleni Forum in Mali, as the global food crisis was erupting. This created the political opportunity to address the absence of global food policy coherence and of a global body deliberating on food issues, and the necessity of not leaving the regulating power to WTO, the World Bank, the G8, or transnational corporations. The G77 and the Transnational Agrarian Movements, with the FAO support, proposed to transform the FAO Committee on World Food Security (CFS) into an inclusive global policy forum deliberating on food security and nutrition (FIAN, 2009), with a strong presence of small scale food producers contributing to the definition of the agenda through a Civil Society Mechanism[4] that was replicating the regional and constituency structure of the IPC.

The emergence of TAMs working on the issue of food sovereignty can be read as "*an indication of the incompleteness of the transition to capitalism in agriculture"* (Edelman and Borras 2016): during the period of intensification of capital penetration in agriculture in the late 80s and '90s, peasants and small scale food producers organizations recognized the impact neoliberalism had on their livelihoods and the end of the support from public sector, ultimately getting organized at global level as TAMs and food Sovereignty Movement through a process of class differentiation from other international platforms representing the interests of export-oriented commodity producers (Desmarais 2007, Edelman and Borras 2016).

The research problematique addresses the mutual interaction between financialization of agriculture, which after the end of Bretton Woods agreements shapes the countryside and generates the emergence of new TAMs of small scale food producers supporting the Food sovereignty agenda and the reaction and strategies of TAMs in confronting the financialization of agriculture as part of a broader process of financialization of capital accumulation in the framework of neoliberal policies. The research questions are:

How has the contemporary financialization impacted agriculture and shaped politically the contemporary political orientation of transnational agrarian movements?

The research question comes from the fact that, while financialization changes in agriculture and the rise of TAMs coincided, the issue of whether the financialization reshaped agriculture and impacted or reshaped TAMs is not clear in practice and in public debates, and it is an empirical question that

[4] www.cms4cfs.org

requires careful empirical investigation and not to be a priori theoretically assumed.

The literature on the subject has not agreed on a common understanding of the definition of financialization (Harvey 1989, Arrighi 1994, Epstein 2005, Gosh 2010, Lapavitsas 2011) and its role in the actual crisis and in capital accumulation. The first part of the research will focus on the definition of financialization (based on the actual historical phase)which serves the scope of the study, to then focus on the mechanism that applies the analysis of financialization to agriculture. After reaching a useful definition of the financialization in agriculture—in light of the research questions and its connection with the broader financialization of the economy—, the research will focus on the class differentiation process of peasantry at global, level with the emergence of new TAMs supporting food sovereignty in the United Nations space of governance. Lastly, the focus will move to the TAMsstrategy in the space of the United Nations to confront the financialization process.

The study is driven by the attempt to create my own lens of analysis of the emerging space represented by the transnational governance of agriculture and of the political actors affecting it, with particular attention for the TAMsstemming such transnational space.

In order to build my own system of analysis, I will bridge two research frameworks: world-system theory and the theory of critical agrarian studies, as both tackle (in different forms and at different levels) financialization and social movements (Wallerstein, Hopkins, Arrighi 1989, Arrighi 1999, McMicheal 2008, Edelman and Borras 2016; Edelman and Borras 2008).

The tradition of critical agrarian studies has defined TAMs as a field of study (Edelman 2003, Edelman and Borras2008; Edelman and Borras 2016, Bernstein 2010, McMichael 2016) rich in intellectual disputes. First of all, the analysis of TAMs can not be diminished to a response to neoliberal policies and the weakening of the national state, as their existence can be traced back to the beginning of the XX century (Edelman and Borras 2016). However, the emergence of new TAMs claiming food sovereignty is related to neoliberal policies in agriculture and more specifically to the classical *agrarian question* of the capital penetration in the countryside, which seems to be incomplete due to emergence of an agency set to defend small farmers (Edelman and Borras, 2016). In this sense, the classical division between movements struggling for redistribution and movements struggling for recognition (Fraser, Honneth, and Golb, 2003) cannot be applied to TAMs, since both tendencies are concurrently present at the transnational level, due to the heterogeneous

composition of the national members (Desmarais 2007, Bernstein 2010, Edelmann and Borras 2016), who are also affecting the internal class analysis of TAMs. Indeed, Bernstein (2010, 2014) disputes the relevance of "the people of the land" as a single class exploited by corporate capital, since its roots in local, regional, and national "farmers' movements" are part of different rural classes and of different cultures of struggle.

The political economy approach questions whether these movements are relevant for the agrarian change of dynamics and employ mainly the class analysis as the central focus. World system studies approach these questions through different perspectives. Arrighi, Hopkins and Wallerstein (1989), analysing what they call the *ant systemic movements*, try to rethink the two self-defined concepts of these movements (class and status-group) from a world-system perspective, assuming the structural processes that give birth to these movements as world-scale ones. They also consider that until the 1980s the organizational responses were at the national level, while the new emerging organizational responses happen at the global level, so as to recompose as agencies of world-historical transformation by surging from the interstate system and becoming subversive against it. More broadly, the study of TAMsrequires a historical reading of their actions at different levels and as historically interconnected. Therefore, I will assume the methodology of 'incorporated comparison' (McMicheal 2016) "*using diachronic and synchronic analysis of 'world ordering,'"* to read the post-Bretton Woods phase, keeping in mind the longer *secular trends* so as to understand the actual *cyclical dynamics*.

> *"The incorporated comparison makes three particular claims. First, the comparison is not a formal, 'external' procedure in which cases are juxtaposed as separate vehicles of common or contrasting patterns of variation. Rather comparison is 'internal' to historical inquiry, where process-instances are comparable because they are historically connected and mutually conditioning. Second, incorporated comparison does not proceed with an a priori conception of the composition and context of the units compared, rather they form in relation to one another and in relation to the whole formed through their inter-relationship. In other words, the whole is not a given, it is self-forming. This is what I understand we mean by historical 'specificity.' Third, comparison can be conducted across space and time, separately or together" (McMichael 2000a, pg 671)*

In McMicheal (2016), food regimes are just a part of the project within the broader political history of capital. The tentative of the study, bridging two theoretical frameworks, is to connect the agrarian dynamics related to financialization and TAMsto the broader political history of capital. McMicheal (2000) recognizes in Arrighi (1994) the same methodology of cross-space and

cross-time comparison of cycles of capital accumulation, which are part of the same process of capitalist expansion that they constitute and modify. Arrighi operates this comparison within the sphere of capital accumulation, according to *"Braudel's notion of capitalism as the top layer of the hierarchy of the world of trade"* (Arrighi 1994) and as a complementary project to the analysis of the core-periphery and labour-capital relations, as in other world-system theory elaborations (Wallerstein 1979) as well as in Marx, who considered the wage-labour relationship as the core principle of a capitalist world economy.

Arrighi and Moore are useful in order to analyse the financialization process from a global perspective, considering together the capitalist cycles of accumulation, the policy change that gave way to TAMs in the 1980s, and the role played by the United Nations, IMF, WTO and the World Bank in the actual phase of capitalism.

These methodological aspects are relevant also in order to bridge the incorporated comparison between world-system theory and critical agrarian studies, in which class dynamics are a central category of analysis, especially when concerned with the definition of TAMs(Bernstein 2010, 2014, Edelman and Borras 2016, McMicheal 2016): Arrighi (1994) clarifies his conception of capitalism as the top layer of a three-tiered structure emerging from a relationship with the power of the state and in antithesis to market economy—which constitutes, in turn, the middle layer with its interconnections among different markets. Finally, the lower layer is represented by material life through the elementary and mostly self-sufficient economy. Therefore, there is a clear distinction between capitalism and the world market economy, which is constituted by many different markets horizontally connected and existed prior to the emergence of capitalism from the underlying layer of material life. To resume, in Arrighi three different frameworks of analysis correspond to the three layers: a) Cycles of Accumulation: upper floor of the "anti-market", where capitalists are meeting the political powers)Market Economy, related to the circulation phase: dependency and world system theory focused on the polarization of production in centre-periphery relations c)Material life on labour-capital relations at the level of production. The traditional class differentiation discussion (Lenin 1964) relates with this lower layer, focused on the local dynamics and not affecting the top layer of Capital Accumulation, which is not based on the internal social dynamics of a nation-state (Arrighi, Piselli 1986).

Due to the nature of the study, where both the historical context and field analysis are constructed through references to single events (e.g.: the Marrakech Agreement on Agriculture, FAO World Food Summit, the Nyeleni Forum, etc.), it is important to refer to Marc Bloch (1952) in regards to the role of structural and social phenomena in determining the outcome of historical events: history has to do with a *duree*, in which present events shed light on the past and its underlying structures. In this case, the field analysis of a single event, symposium, or committee in the United Nation Food Agriculture Organization (list in Annex I) or any of the meetings held in preparation for them, should be considered as part of a continuum started in 1996 during the FAO World Food Summit and having the internal strategic coherence of a homogeneous process that includes informal conversations and daily meetings in the FAO corridors in preparation of each "event" and its political outcome.

The site of the study has been mainly the UN Rome based Food Agencies, as space strategically selected by TAMs to confront the processes of neoliberal financialization that are trying to deepen capital penetration in the countryside and in food systems. For this reason, the Rome-based food agencies of the United Nations represent a strategic space to understand the TAMs perspective and strategy in the space of global governance. As an inter-governmental agency, FAO is playing a central role in re-establishing the centrality of governments in the definition of agriculture policies and regulations. Concurrently, the TAMs advocating for food sovereignty created space for discussion and negotiation within FAO and other UN Food Agencies: they carved out a major role for CSOs while also making space at the negotiation table for the Private Sector, even if with a minor influence compared to WTO and other similar spaces. What commonly is defined as "Rome process" includes the political and technical negotiations within the Committee on World Food Security and the FAO Technical Committees, FAO Regional Conferences and ITPGRFA, plus all the other technical discussions informing the official processes and FAO's regular programs.

Therefore, the method used to build the field analysis is based on the reconstruction of the political framework and the historical process through official FAO documents, the archive of the International Planning Committee for food sovereignty (located at Centro Internazionale Crocevia[5], the Rome-based host organization and NGO in charge of the Secretariat, for which the author has been working since 2011), the documents and articles

[5]www.croceviaterra.it

published on the websites of TAMs and support NGOs, and the academic literature.

Due to this particular field analysis, which relies on personal trust and informal conversations, the use of interviews (structured or semi-structured) was not useful to capture the political dynamics of a space of negotiations based on confidentiality and personal relationships. Any kind of interview would have shifted the conversation toward a formal relationship outside of the political process, thus affecting both the analysis and the research outcomes. The applied method has been therefore the one of observant participation: having the opportunity to act as IPC Secretariat, working on a daily base within FAO, both in formal meetings; informal conversations (including FAO corridors, negotiation coffee breaks, cafeterias and bars) with FAO officers, government delegations, Civil Society Organizations and representatives of the Private Sector (mainly corporate); and internal preparatory meetings reserved for IPC organizations and allies (the so-called "IPC+ meetings"). The observant participation approach allows grasping the point of view of social actors, which any other methodology would create bias in researching within such a delicate space of negotiation. In this context, the observer's effort and the task have to be separated from the object of study, so as to develop an analysis of occurrences and going beyond the mere description of these. Most of the processes and their political outcomes cannot be understood and negotiated without background information on the daily negotiations occurring across FAO corridors: "*it is the shift from participant observation to observant participation that enables the fieldworker to move from frontstage to backstage, and thereby to gain knowledge that is available only to insiders"* (Wilkinson 2017). Moreover, FAO should be considered a fragmented space rather than a monolithic organization, with different personal, political, and economic interests. In order to analyze insightfully its internal processes, a backstage investigation is essential. Overall, each FAO process must be considered as a *contested arena* for different actors with different political priorities. In order to navigate this *contested arena*, in some cases, the study has been informed by reserved documents.

Due to the backstage analysis demanded by this investigation, research can be conducted only by an insider and situated position. In this sense, I assume Weber's discussion of *avalutativeness*, as interpreted by Pietro Rossi (1957): given that the possibility of taking a position in front of values through a choice qualifies the situation of man in the world and that the reference to personal values is inevitable, the first step of the researcher is to make explicit the personal point of view on the world, so to avoid 'value judgement' and be

able to undertake a method that is scientifically based, in order to gather "factual judgments".

The study has been informed by the author's situated position since 2011 as secretariat of the International Planning Committee for food sovereignty in Rome, in charge of supporting the work and strategies of TAMs in the United Nation Food Agriculture Organization, realizing the food sovereignty agenda, and managing daily liaisons with the FAO Partnership Office reporting to the Cabinet of the Director-General. The International Planning Committee (IPC) for food sovereignty gathers 11 global Transnational Agrarian Movements and six sub-regional ones, with more than 6000 national member organizations, and it claims to represent the voice of more than 300 million small-scale food producers. Since 2003, IPC has a formal relationship with FAO through the exchange of letters with the FAO Director-General, so as to facilitate the participation of TAMs in FAO processes according to common priorities and axes of work, including Civil Society consultations leading to the FAO regional conferences meant to sent FAO priorities.

In the specific case of this study, I also refer to scholar activism from within, based in social movements and their political project (Borras 2016), which lays out the preconditions to pursue both academic work and the political activism that aims to change the status quo without losing the intellectual rigour and honesty (Meyer 2005)required by academia. Scholar activists aim to change food policies and enrich the analysis of the movements informing their strategies through serious intellectual engagement. Hale (2006) points out how possible conflicts between academic and activist work could create contradictions, but also that these conflicts produce new insight and knowledge that challenge and transform conventional academic wisdom, transforming research methods, reframing the process in order to prioritize research questions, and employing and disseminating the results beyond the academic circle.

1 Financialization and capital accumulation

"The real barrier of capitalist production is capital itself"
(Marx Capital. 3 vols. New York: International Publishers 1967 III:250)

In this chapter, we will present the literature on financialization and the debate that emerged after the 2007-2008 financial crisis.

The first section (1.1) describes the characteristics of the financialization process and the neoliberal age after the end of Bretton Woods.

The second section (1.2) reconstructs the actual discussion on financialization, confronting the main definitions and their implications in terms of effects on the real economy and possible policy solutions.

1.1 Financial Crises after Bretton Woods

In the last decade, financialization became a buzzword: the 2008 subprime financial crisis generated a revival of interest on financial capital as the dominant actor of economy, even if we can observe financial crises recurring at the global and local level after the end of Bretton Woods.

Following the 1987 Black Monday, which still remains the largest one-day stock market crash in history (The Dow Jones Industrial Average lost 22.6% of its value, for a total of 500 billion US dollars), global stock markets resumed their previous bull market trend, led by computer and other technology-related stocks that were traded on the new electronic NASDAQ stock exchange. In 1994, with the listing of Netscape—the company that developed the first commercial internet browser—a new economic cycle began, called the New Economy (Bonnet 2000).

The New Economy was opposed to the Old Economy mainly due to the manufacturing sector. In few years, we witnessed the surprising development of companies operating in the Internet sector or, more generally, in the IT sector, called dot-com companies (from the suffix '.com' of the

sites through which these companies typically operated). This process was facilitated by the low cost of capital in the context of low-interest rates.

The general euphoria resulting from the concepts of 'development', 'progress', and 'growth', associated with a sector as advanced as that of the New Economy, fueled the expectations of future and continuous increase in value of the securities issued by the companies in this field, regardless of the information expressed by traditional indicators of profitability (such as profitable products, indebtedness, tangible assets, liquid assets, growth forecasts) (Rapp 2015, Investopedia).

These expectations ended with self-realization, in the face of massive purchases of '.com' securities that supported share prices towards a marked overvaluation of the issuing companies. In the case of the dot-com bubble, unexpectedly, in March 2000, the financial statements published by various companies showed disappointing results, providing evidence that investments in the companies operating in this field could prove unprofitable. Prices began to drop, as a result of sales by those who wanted to disinvest before securities were further depreciated.

The NASDAQ, the reference share index, lost almost 9% in three days. In 2001, many dot-com companies closed or were the subject of acquisition and merger operations. In 2004, only 50% of the companies listed in 2000 were still active, at infinitesimal prices compared to their maximums. Only a few companies managed to grow in the following years (Amazon, eBay, Apple).

Subsequent to the dot-com bubble, the United States witnessed a significant increase in the disbursement of high-risk mortgages to customers who would not have obtained credit under normal conditions, since they would not have been able to provide sufficient guarantees. From 2000 until mid-2006, house prices in the United States grew steadily, ultimately generating a housing bubble.

This dynamic was favoured by the accommodating monetary policies of the Federal Reserve (FED), which maintained interest rates on historically low values until 2004, in response to the internet bubble crisis and the September 11, 2001 attack. The monetary policy of low-interest rates, which implies the low cost of money for borrowers of funds, stimulated the demand for housing.

Furthermore, the real estate bubble made it convenient for mortgages to be granted by financial institutions which, in the event of insolvency of

the borrower, could, in any case, recover the money lent through the acquisition and resale of the home. In addition to the housing bubble and low-interest rates, the growth of subprime mortgages was also supported by the development of securitization transactions, i.e. the possibility for banks to transfer mortgages after having 'transformed' them into a security, to third parties (the so-called 'vehicle companies'), so as to immediately recover a large part of the credit that would otherwise have been collected only at the end of the loans (10, 20 or 30 years later). Securitization allowed the banks to get rid of the risk of insolvency of the borrowers and thus weakened the need to correctly assess the reliability of the customers (Gorton 2008). The vehicle companies, on their end, financed the purchase of securitized loans by offering short-term securities to investors. In a context of low-interest rates, securitized securities were subscribed by many investors both in the US and in Europe. This circumstance created the conditions for the transmission of the crisis from the U.S. economy to European economies.

The development of securitizations led to the transition of the banking business model from the original originate-to-hold (i.e. the bank pays the loan and waits a period of time before recovering the sum lent and related interests) to the approach originate-to-distribute(i.e. the bank issues the loan and transfers it to third parties through securitization, immediately recovering the sum loaned). As a result of securitization, the banks quickly regained the availability of lent sums, which could be reused to provide other loans to customers whose reliability was evaluated in an increasingly less accurate manner. Thanks to securitization, financial institutions could greatly expand their assets in relation to their capital (a phenomenon of leverage or financial leverage). This allowed them to make very high profits, but also exposed them to the risk of huge losses.

Moreover, securitized transactions generated very complex structured products, not standardized and not very liquid. In addition, structured products were traded mainly over the counter (OTC), i.e. outside of regulated markets, and in the absence of significant prices, i.e. prices that could be used for their assessment shared by market participants.

In this context, and in view of the opacity of the products and the difficulty of appreciating their value, the judgement of rating agencies assumed increasing importance as a shared reference for the evaluation of products (CGSF 2018, Conti 2012).

As a result of the subprime crisis, many European credit institutions experienced serious difficulties and were saved by government intervention. The latter exacerbated the public finance imbalances of vulnerable countries, contributing to a global contraction of GDP by about 1% in 2009. In particular, while the main developing countries experienced a significant reduction in growth rates, industrialized countries recorded a change in the negative gross domestic product (CGSF 2018)

In the run-up to the sovereign debt crisis, the Eurozone countries had significant differences in public finance and growth rates.

The dot-com crisis, followed by the subprime crisis (and the food price crisis) generated new interest and studies on financial instability and improved the understanding of capitalist dynamics.

1.2 Theoretical Perspectives on the Actual Financialization Process

The first use of the term financialization can be reconducted to Kevin Phillips (1994) who defined it as "*a prolonged split between the divergent real and financial economies*".

> *"Finance cannot nurture a [large middle] class, because only a small elite portion of any national population – Dutch, British or American – can share in the profits of the bourse, merchant bank and counting-house. Manufacturing, transportation and trade supremacies, by contrast, provide broader national prosperity in which the ordinary person can man the production lines, mines, mills, wheels, mainsails and nets. Once this stage of economic development yields to the next, with its sharper divisions from capital, skills and education, great middle-class societies lose something vital and unique"* (Phillips 1993: 197)

The financialization renaissance started with the publications by Epstein (2005) and Krippner (2005), followed by many other scholars discussing the argument.

The proliferation of studies on financialization, with different approaches simplifying the topic or focusing on some particular micro aspects of contemporary capitalism, led Braga (2013) to define the field as a Babel Tower. According to Epstein (2005), financialization can be defined by "*the increasing importance of financial markets, financial motives, financial institutions, and financial elites in the operation of the economy and its governing institutions, both at the national and international level*".

Indeed, in Krippner (2005) financialization is "*the tendency for profit-making in the economy to occur increasingly through financial channels rather than through productive activities"*, retaking the definition of Arrighi (1994) where after a phase of

> *"material expansion, money capital (M) sets in motion an increasing mass of commodities (C), including labour-power and gifts of nature; and, in phases of financial expansion, an expanded mass of money capital (M') sets itself free from its commodity form, and accumulation proceeds through financial deals (as in Marx's abridged* formula MM')" *(Arrighi 1994)*

The two definitions delimit the main aspect of the debate on financialization: a divide between production and finance in capital accumulation for Krippner versus an increasing presence of financial agents in the economy for Epstein. The divide among real and financial economy is clearer in the definition of Krippner (2005), but it is touched upon in the whole analysis: the increasing divergence between real and financial economy is perceived as a moment of crisis and instability of the economic system both in Epstein (2005) and Krippner (2005, 2018). Epstein (2015) reviews the literature on financialization to present historical and empirical evidence of how financialization has contributed to economic instability, inequalities and declining productive investments and employment. In Epstein (2005) the emergence of finance polarizes classes and favours the class of rentiers, supported by policies of deregulation of the financial markets that affect exchange rates and by international trade that invalidates the theory of comparative advantage. Therefore, in Epstein, financial liberalization and open capital markets were influencing economic crises in developing countries, with financial speculation dominating corporate policies. Epstein (2005, 2015) has no vision on the future development of the financialization process, but he urges some kind of regulation based on the Tobin tax on financial transaction. So he follows a Keynesian approach which aims to regulate the excess of capital mobility at the international level in order to fund public policies and investments.

Following the definition of Epstein, Kotz (2008, 2015) affirms that the concept of neoliberalism is the most useful characterization of post-1980 capitalism, rather than financialization and globalization, which are just outcomes of the neoliberal context. In Kotz's view, neoliberalism is a co-

herent system of economic, social, and political institutions defining capital-labour relations. Kotz does not explain the root causes of the policy shift from Keynesianism to Neoliberalism. He just assumes the latter as a new form of capitalism emerging from the crisis of the previous capitalism. Kotz assumes neoliberalism as a coherent phase of capitalism that cannot be changed by minor governmental policies. Neoliberalism includes liberalization, privatization, and stabilization as means to transform the institutions of regulated capitalism into the institutions of neoliberal capitalism, while financialization only emerged in the 2000s as a phenomenon driven by neoliberal restructuring. Therefore, in Kotz's analysis, financialization is a consequence of neoliberalism without providing an adequate overall framework to understand the development of capitalism in this period.

The conclusions of Kotz derive from the fact that he assumes the Epstein (2005) definition of financialization as the increasing presence of the financial sector in the economy. This implies that there is no big political imprinting of the phenomenon, nor a clear understanding of the role of finance in the shift from Keynesian Fordism to the Neoliberal age. Epstein (2015) himself defines his definition as "*agnostic on the issue of whether it constitutes a new mode of accumulation or broadly characterizes an entire new phase of capitalism"*. Kotz' analysis assumes this shift as a matter of fact, without identifying any root causes leading to the end of the Bretton Woods system, and financialization, as defined by Epstein, assumes a minor role.

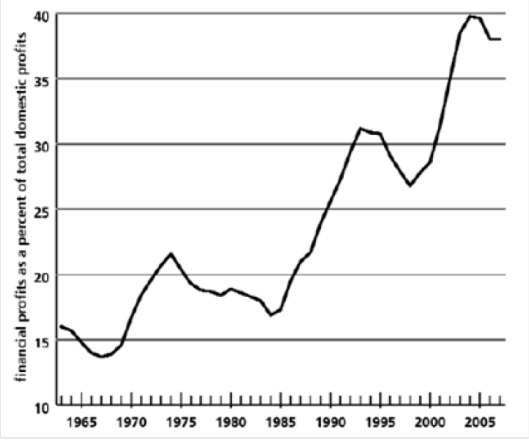
Among those who think that financialization is causing the stagnation of the real economy, Palley (2007, 2013) observes that financialization transforms at the macro and micro level the functioning of the economic system. In particular, he concludes that "*the business cycle generated by financialization may be unstable and end in prolonged stagnation"*, so it is financialization to cause a prolonged stagnation and not the other way around. Financialization implies low wages (no trickle-down effect) and increasing inequality in incomes, creating the conditions for stagnation and recession through an increased risk of debt deflation. Palley (2007, 2013) identifies flaws in the economic theory that justifies financialization. He develops an alternative theoretical approach and set of policies to restore full employment and replace the current corporate globalization with more equitable globalization based on policy dialogue. He suggests replacing the lack of government presence with a progressive "better government" agenda that

would restore policy control over financial markets and challenge neoliberal policies, thus strengthening the political processes and reducing the influence of corporations.

Along the same line as Palley, Orhangazi (2007) argues that financialization has a negative impact on investments due to a) an investment increase in financial assets rather than real assets, which generates a crowding over real investments b) the adoption of shareholder wealth maximization management at the corporate level, which pressures nonfinancial corporations to increase payments to financial markets in the form of dividends. Therefore, in the analysis of Orhangazi too, the stagnation of the real economy is not a cause (as in the stagnation thesis) but an effect (as in the financialization thesis). Pallean and Orhangazi (2007) aim to regulate the financial system to make it more equitable.

Krippner (2005) focuses on whether financialization is a fact or not: the analysis on the shareholder value (Fligstein G 1990) and the increase of new financial tools (Sassen 2001) do not restitute the relevance of the financialization phenomenon to the economy. Krippner shows that the share of financial revenues on productive profits for non-financial firms has been increasing since the 1970s and has been led by the manufacturing sector.

Figure 1.1
Corporate Financial Profits, 1959-2007



Source: [Economic Report of the President, 2008]

Figure 1.2
Profits of Financial Corporations as a % of Profits of All Corpora-tions in the USA

Source: [U.S Bureau of Economic Analysis, National Income and Product table 1.14, revision of Feb 28, 2013]

This makes clear that financialization is a relevant trend of the economy, rather than of the post-industrial service economy, and a useful concept to shed light on the concepts of globalization, neoliberalism and post-industrialism.

On the base of the data available from WWII onward, Krippner does not take a stand on the novelty of the financialization phase, nor on the persistence of the actual phase: she sticks to the available quantitative data in order to promote an approach based on data check, even if she recognizes the relevance of the historical approach in Arrighi, who analyzes the financialization on the *long duree* from XVI century.

Indeed, Krippner's definition (2005), taken from Arrighi (1994), focuses on forms of capital accumulation, which in turn originates from the over-accumulation and fall of the rate of profit. Krippner (2018) quotes the analysis of Arrighi and Silver (1999) as a theoretical reference, limiting her research to verify with data the actual phase of financialization. Krippner (2005, 2018) supports some kind of regulation of the financial markets, but she focuses only on the quantitative analysis of the actual phase, without entering into a broader theoretical analysis.

For Arrighi (1994, 1999), the United States of America's hegemony started with WWII and was based on three main pillars: a) a publicly regulated dollar system, which gave the U.S. government effective control over global liquidity and enabled the promotion of a generalized expansion of world trade that saw few precedents in the capitalist history b) The General Agreement on Trade and Tariffs (GATT), the United Nations, and the Bretton Woods as the institutions meant to govern the formation of a world market under the control of the U.S. government, in particular, which defined the pace and direction of trade liberalization. c) Transnational Corporations integrating mass production and mass distribution processes within a single organization by internalizing a whole sequence of sub-processes (from the procurement of primary inputs to the disposal of final outputs) and internalizing growing proportions of world trade into giant and vertically integrated domestic business organizations, so as to control Foreign Direct Investment (the main tool of post-WWII reconstruction) and shift managerial control of substantial sectors of foreign economies to U.S. nationals.

> *"US corporations began to move to foreign countries almost as soon as they had completed their continent-wide integration [...] In becoming national firms, US corporations learned how to become international. [...] The spectacular domestic and trans-statal expansion of US multi-unit, vertically integrated business enterprises, and the organizational barriers to entry which they created were associated with an equally spectacular growth of managerial hierarchies and bureaucratic structures. Once in place, these hierarchies and structures themselves "became a source of permanence, power and continued growth"* (Arrighi, 1994, pg. 248-249)

In Arrighi's analysis, assumed as framework of analysis by Krippner, the end of Bretton Woods agreements can be reconducted to the crisis of these 3 pillars of the U.S hegemony of capital accumulation: by the end of Bretton Woods, TNCs were embedded into a world-scale system of production, exchange, and accumulation independent from any state authority and ruling the members the interstate system, including the USA. The contradiction between the domestic foundations of U.S. power and the expansion of U.S. corporations abroad (including in the Eurocurrency market) shift back the control of liquidity from Washington to London and New York. According to Arrighi, the economic crisis of the 1970s originated from the end of the gold-dollar exchange standard defined by the Bretton Woods agreements and by the oil-shock. In facts, the end of

the Bretton Woods agreements started between 1968 and 1973, with the explosion of the Eurodollar market. The Eurodollar market was an unplanned outcome of the U.S. regime of accumulation: U.S. TNCs were the most important depositors of the U.S. currency market, and the U.S. banks naturally had to access off-shore banking (controlling 50% of it by 1961) due to the greater freedom of movement this affords. The U.S. surplus in the balance of payment and large gold reserves supported the expansion of U.S. corporate capital and the role of the dollar as a global currency. At the end of the 1960s, the London-centered Eurodollar market exponentially increased its liquidity. The speculation against the regime of fixed exchange rates made unsustainable the fiction of the gold-dollar exchange standard, with the USA gold reserves already falling short due to the action of foreign governments. The U.S. Federal Reserve could not confront the increasing speculation against the regime of fixed exchange rates: the floating exchange of rate left it to markets to fix the price of national currencies and regulate the balance between the U.S. current account surpluses that financed the U.S. capital account deficit. Other countries, which under the fixed exchange rate had to keep their balance of payments in some sort of equilibrium, now they could borrow from the market due to the infinite availability of liquidity, without adjustments to higher oil prices and while increasing inflation worldwide. Moreover, corporate capital had to protect itself from the day-to-day exchange rate fluctuations of the currencies in which their assets were quoted (Arrighi 1999, 2008; Foster 2008, Braga 2013, Sweezy 1997).

Indeed, offshore deposits accumulated world liquidity outside of the control of governments, which in turn were trying to counteract such concentration unsuccessfully by manipulating the exchange rates of their currencies and interest rates. The continuous fluctuation of the exchange rate and the rate of interest differentials increased speculation and trade opportunities in money markets for off-shore capital. By the mid-1970s the monetary transactions in off-shore money markets exceeded the value of world trade many times over (11 times in 1979, 20 times in 1987): the financial expansion became unstoppable, and the financial expansion of the U.S. hegemony became a core aspect of the end of Bretton Woods (Arrighi 1999, Braga 2013).

The context in which this financial phase started, according to Arrighi, includes the inelastic supply of labouring population and primary product

(under a rising pressure on prices). This created an accumulation of capital that, instead of increasing the growth of world trade and production as after WWII, resulted in worldwide cost inflation and in a massive flight of capital to off-shore money markets. The so-called *pay explosion* between 1968 and 1973 was followed by the oil shock (three-fold in 1974), producing about an $80 billion surplus of petrodollars and reducing any real trade profitability. The oil rent was reinvested in the Eurocurrency market, thus increasing free liquidity and financial speculation in off-shore markets, where any regulatory attempt was destined to fail (Arrighi 1999, Krippner 2004, Foster 2008, Braga 2013).

Most of these petrodollars and Eurodollars remerged through the banking system as competitors of the U.S. official dollars issued by the U.S. government, to the detriment of both the U.S. government and businesses. Many countries accessed the liquidity without any constraint in the balance of payments, thus undermining the seigniorage privileges of the U.S. government. Concurrently, however, off-shore money markets were invaded by more liquidity than could possibly be invested profitably. Following Arrighi, TNCs controlled off-shore money markets, rendered useless traditional national policies, and imposed serious constraints to the sovereignty of nation-states, including the world-scale processes of production and exchange within TNCs and the consolidation of supra-statal world markets. Ultimately, the sovereignty of nation-states was repositioned upward (through globalization and the increasing role of international, inter-governmental, and financial institutions), sideways (through the privatization of governance structures) and downward (through political and fiscal decentralization), according the so-called neoliberal reduction of the national state (Edelman and Borras 2016). Assuming the framework of Arrighi's world system theory, neoliberal policies (reconducted to the monetarism) are the expression of the financialization phase of the actual hegemonic cycle of accumulation.

Arrighi (1994, 1999, 2007) describes financialization as a recurrent outcome of a crisis of over accumulation, in which capital cannot find opportunities for remunerative real investments. The result is, therefore, an intensification of inter-state and inter-enterprise competition, leading to the vertical and horizontal integration of enterprises, the extension of proletarianization process, the polarization of society, the shrinking of the middle class, and ultimately the multiplication of social conflicts. Only the

emergence of a new social bloc generating a change of hegemony will be able to tame social conflicts. However, in Arrighi, financialization is just one of the two mutually exclusive paths of the capitalist process of accumulation, which by definition is contradictory and unstable, especially in its financial phase.

> *"This combination of circumstances leads some (mostly capitalist) agencies to divert their cash flows from the trading to the credit system, thereby increasing the supply of loanable funds, and other (mostly territorialist agencies) to seek through borrowing the additional financial resources needed to survive in the more competitive environment, thereby increasing the demand for loanable funds. It follows that the revenue-maximizing and profit-maximizing branches into which logistics of world economic expansion are assumed to bifurcate do not describe actual trajectories. Rather, they describe a field of forces defined by the coexistence of two alternative and mutually exclusive ideo-typical paths of capital accumulation, the unity and opposition of which is the source of turbulence and instability in the world system of trade and accumulation. When the two paths bifurcate, in contrast, the logic of trade expansion and the logic of capital accumulation diverge; the accumulation of capital is no longer embedded in the expansion of the world economy, and the pace of both processes not only slows down but becomes unstable. The predisposition of capitalist organizations to withdraw cash surpluses from trade and production in response to falling profits and increasing risks, in contrast, continually tends to pull the mass of capital invested in commodities downwards, towards or below the lower path, so that the profits of trade and production rise and those of lending and speculation fall. In short, when capital accumulation (CM') enters a phase of financial expansion, its trajectory does not follow a steady path but becomes subject to more or less violent downswings and upswings which recreate and destroy over and over again the profitability of capital invested in trade".* (Arrighi, 1994, pg. 239)

The idea of cyclical financialization comes from Arrighi's reading of Braudel's (1992) trilogy on *Civilization and Capitalism*, in which Braudel historically identifies these phases of financialization of the capital accumulation process as recurrent: a) in Italy in the XV and XVI century, when Genoa withdrew from commercial activities to exercise financial power over Europe b) when the Dutch relinquished commerce around 1740 to turn into the "bankers of Europe", and c) when the British during the Great Depression (1873-96) tried to allocate the money capital accumulated during the industrial revolution. Arrighi includes in this cyclical trend also the Post-Fordism/Keynesianism neoliberal period starting in the

1970s. Braudel's intuition regarding the historical cycles of financial capital is elaborated by Arrighi in the framework of the Marxist theory, with particular reference to the Marxist formula of capital M-C-M' (where Money is invested in a combination of inputs in order to produce an output Commodity, and generate an *expanded liquidity*): not the logic of a single investment, but s the logic of a full cycle of capital accumulation*:*

> *"A central aspect of this pattern is the alternation of epochs of material expansion (MC phases of capital accumulation) with phases of financial rebirth and expansion (C-M´ phases). In phases of material expansion money capital "sets in motion" an increasing mass of commodities (including commoditized labour-power and gifts of nature); and in phases of financial expansion an increasing mass of money capital "sets itself free" from its commodity form, and accumulation proceeds through financial deals (as in Marx's abridged formula M-M´). Together, the two epochs or phases constitute a full systemic cycle of accumulation (M-C-M´)". (Arrighi, 1994, pg 6)*

For Arrighi, financialization is just a recurrent phase of the crisis of capital accumulation in which the trickledown effect of wealth to the working class, typical of the commercial expansion, is suspended—and so is social harmony under the hegemonic centre of capital accumulation.

More specifically, the financialization phase prepares a new commercial expansion under a novel regime of accumulation: first, financial expansion creates a new regime of accumulation that develops within the old regime, followed by a consolidated phase of material expansion of the new regime, with then a second financial expansion characterized by a new financial crisis. Each financial expansion is identified by the switch of the capital of the leading agency from trade and production to financial intermediation and speculation. This switch expresses a turning point that reveals a negative judgement on the possibility of continuing to profit from the reinvestment of surplus capital in the material expansion of world economy, as well as a positive judgement on the possibility of prolonging in time and space its leadership/dominance through a greater specialization in high finance. Despite it helps the capital accumulation during the final part of the material expansion of world economy, the financial phase has always been a preamble to a deepening crisis and to a new regime of accumulation overcoming the previously dominant one. The crucial passage is the role played by business organizations, and their organizational revolutions is central in Arrighi's analysis: any material expansion of the world economy

has historically been based on a specific organizational structure. It was the expansion itself to progressively undermine such organizational structure, as the economic space for high returns reduced while the expansion grew, and ultimately give way for a new organizational innovation to establish. Interstate and inter-enterprise competition is based on the imitation of the hegemonic business model, which brings down profit rates and pushes capital from trade to finance. In this phase, high competition among states and enterprises and low-profit rates cause salary reductions, creating phases of turbulence and chaos. Only when the new hegemonic power creates a new organizational form and business model, a new phase of commercial expansion begins. Therefore, Arrighi introduces organizational revolutions and innovations as key factors in the cycles of capital accumulation. Arrighi's analysis (1994, 1999, 2007) shares similarities with Foster's (2007, 2008, 2014) reading of Sweezy (1997), who identifies a new phase of capitalism in 1974-75 based on the decreasing rate of growth and proliferation of TNCs, and sees the financialization of capital accumulation as the driving force lifting economic growth in the 1970s. Sweezy used his previous analysis with Baran (1966) to understand financialization as the outcome of a monopoly capitalist economy, where a global productive system generates huge surpluses without having enough opportunities to invest them. According to Sweezy (1997), the solution has been to create new financial markets in which to expand with new financial products (such as derivatives, swaps, etc.) and money capital.

In part, this analysis is shared by Gosh (2005, 2009, 2010, 2011), who analyzes the financial liberalization process with a particular focus on developing countries. Gosh (2005) identifies the rise of financial liberalization with the end of Bretton Woods due to the fact that in the 1960s and 70s the international banking system, and the Eurocurrency market more specifically, was flooded with an excess of liquidity from the surpluses of oil-exporting countries.

This excess of liquidity found its way of being invested in developing countries through cross-border capital flows and foreign exchange convertibility. At the same time, governments withdrew from financial intermediation activities, while the banking system became completely privatized and stopped fostering growth in the real sector and development for the countries in which it operated. A major concern of Gosh (2005, 2009)

are the outflows of capitals generated by financial liberalization and moving from developing countries to developed ones.

Therefore, national and individual debts are part of the analysis of Gosh, who recommends a new social role for financial intermediation and the intervention of accountable states in the economy through regulation. Just one year before the financial crisis, the 2006 Global Financial Stability Report from the International Monetary Fund clearly present its concerns on the deceleration of real economy and the growth of financial derivatives, expecting for the 2016 edition financial global instability to increase in the short- and medium-term.

The opposite thesis is supported by Foster (2007, 2008) and Foster and Magdoff (2014), who consider financialization an important aspect of the contemporary economy, transforming the monopoly capital described by Sweezy into monopoly-finance capital. Building on the perspectives of Marx and Keynes, Foster and Magdoff argue that capital accumulation has always embedded as a possible contradiction between real accumulation (ownership of real assets) and financial speculation (paper claiming real assets). Monopoly capitalism has made this decoupling possible thanks to mature financial systems that could move beyond the simple financial bubbles of the past to an overlying financial structure dominating the stagnating production system. Since the 1980s, the states too have been embedded into the system so as to avoid a further crisis for the monopoly-finance capital. Foster follows the analysis of Sweezy and Magdoff, defining financialization as the response of the system to stagnation, meant to maintain the generation of profits. Financialization played a clear role in lifting the economy after the end of Bretton Woods: the deregulation of financial markets aimed to expand the existing financial bubbles.

Foster and Magdoff (2014) support Sweezy's proposal to expand public spending in support of populations and radically redistribute income and wealth. They are aware that capital accumulation is the root cause, and therefore they propose a global tax on capital as a possible solution, quoting Kalecki and Piketty to counter monopolistic accumulation.

Braga (2013) and Ferreira (2017) see the financialization process of capital as the development of capital in its most perfect and original form, moving beyond its own contradictions, such as Marx' s value theory, and abstracting its own value determinations. The pure and original form of

capital could lead capitalism to vanish; therefore, financialization could be the last stage of capitalist development. As a result, they consider the real accumulation as a previous stage, and financial accumulation a more evolved stage, with no possibility of reverting it.

The fact that the IMF Global Report on Financial Stability confirms the excess of available capital (IMF 2016) it excludes the hypothesis of financialization producing stagnation through crowding out effect. The differences among the scholars supporting financialization as a response to stagnation focus on financialization's reversible nature (Foster and Magdoff 2014), on financialization as the final stage of capitalism (Braga 2013, Ferreira 2017), and on financialization as cyclical phase (Arrighi 1994, 1999, 2007).

Table 1.1
Summary different approaches to financialization

Theoretical Framework	Author	Definition	Root Causes	Solution	phase in the history of capitalism	Relation with neoliberalism
Keynesian	Epstein	the increasing importance of financial markets, financial motives, financial institutions, and financial elites in the operation of the economy and its governing institutions, both at the national and	deregulation financial markets	Tobin Tax: to regulate the excess of capital mobility at international level in order to fund public policies and investments	agnostic	
	Kotz	Epstein	not defined	financialization is a structural change	new form of capitalism emerging from the crisis of the previous capitalism	financialization and globalization are outcomes of the
	Palley	Epstein (Financialization is a process whereby financial markets, financial institutions and financial elites gain greater influence over economic policy and economic outcomes.)	financialization creates the conditions of stagnation keeping low wages and income inequality	replace the current corporate globalization with a more equitable globalization based on policy dialogue; restoring policy control over financial markets	reversible	neo-liberal economic policy paradigm encouraged by financialization
	Orhangami	broad approach (1) the approach of Arrighi, who sees financialization in the context of recurring long waves of capitalist history, (2) an approach that sees it as part of neoliberal economic structures (3) an approach that sees it as the result of changes in corporate governance	increase in investing in financial assets rather than real assets, generates a crowding out effect on real investments, and the adoption of shareholder wealth maximization management	replace the current corporate globalization with a more equitable globalization based on policy dialogue; restoring policy control over financial markets		
Marxist	Knipper	the tendency for profit making in the economy to occur increasingly through financial channels rather than through productive activities	quoting Arrighi-Silver (1999): over accumulation and fall of rate of profit.	some kind of regulation of financial markets	data analysis (not taking a stand, but valuing Arrighi - Braudel approach)	financialization is the a relevant trend of the economy, rather than the post-industrial service economy, shedding light on globalization, neoliberalism and, post-industrialism
	Arrighi	expanded mass of money capital (M') sets itself free from its commodity form	the end of Bretton Woods agreements reconducted to the crisis of 3 pillars of the U.S hegemony of capital accumulationa) a publicly regulated dollar system b) The General Agreement on Trade and Tariff s (GATT) c) Transnational Corporations integrating mass production and mass distribution processes	the financialization phase of the economy prepares a new commercial expansion under a new regime of accumulation: the financial expansion prepares a new regime of accumulation which is developing within the old regime, then there is a consolidated phase of material expansion of the new regime, followed by a second financial expansion characterized by a new	financialization as a recurrent outcome of a crisis of over accumulation, in which capital cannot find opportunities for remunerative real investments	the actual neoliberal policies (that are reconducted to the monetarism) are the expression of the financialization phase of the actual hegemonic cycle of accumulation
	Sweezy		financialization as an outcome of a monopoly capitalist economy, where a global productive system is generating huge surpluses which cannot find	create a new financial markets in which expand new financial products (as derivatives, swaps, etc.) and money capital		
	Foster & Magdof	increasing role of finance: capital is trapped in a seemingly endless cycle of stagnation and nancial explosion	financialization as an outcome of a monopoly capitalist economy, where a global productive system is generating huge surpluses which cannot find enough opportunities to be invested	Global tax on capital	a new phase of capitalism in 70s: financialization of the capital accumulation process as driving force lifting economic growth	Financialization generates neoliberism
	Gosh		international banking system, and the Eurocurrency market more in specific, in the 60s and 70s was flooded by an excess of liquidity derived from the surpluses of the oil exporters countries. This excess of liquidity found its own way to be invested in the developing countries through cross-border capital flows and foreign exchange convertibility. At the same time, the state withdrew from the financial intermediation activity and the banking system was totally privatized, not serving anymore growth in the real sector or development for the countries.	new social role for financial intermediation and an accountable state intervention in the economy through regulation		
	Braga & Ferreira	the financialization is a wealth systemic pattern	endogenous nature of the phenomenon	final stage of capitalism	development of capital in its most perfect and original form moving beyond its owns	

Source: own elaboration.

1.3 Conclusions on Financialization and Global Governance

The debate on financialization relates to multiple analysis of capitalism, financial markets, and financial speculation.

Overall, we can conclude by identifying three main approaches:

a) Microeconomic approach: based on corporate governance and on the alignment between corporate manager and the maximization of utility for shareholders: financialization is a side effect of the management of the corporate business shifting corporate money-capital investments from production to financial circuits (Froud et al, 2000)

b) Keynesian approach: focuses on financial institutions; sees financial speculative bubbles as the origin of the financialization process; aims to regulate financial markets in order to mitigate the effects of financialization (Epstein 2005, 2015, Palley 2007, 2015, Orhangazi 2008, Gosh 2010)

c) Marxist approach: interpreting financialization as related to capitalist accumulation, with multiple approaches: financialization as the last perfect stage of capitalism (Braga 2013, Ferreira 2017); as dominance of finance monopoly capital (Foster, Magdoff 2013) that can be changed only by an alliance of popular upsurges in the Global South (external proletariat) and in the developed world (internal proletariat); as a cyclical phase of the capitalist accumulation cycle (Arrighi 1994, 1999, 2007; Krippner 2005, 2017).

The first approach does not provide any root causes for the actual phase of financialization and does not problematize the actual phase.

For what concerns the agnostic vision of Epstein (2015), included in the Keynesian approaches, I assume Krippner's critique, which highlights how Epstein's analysis focuses on a particular and specific manifestation of financialization without addressing the core of the process. Despite Epstein's claim that his broad definition of financialization can include many features, and therefore lacks specificity, Krippner's critique can be applied to Epstein's broad approach, as this can include many financial actors acting in the economy, but it does not distinguish between financial actors investing in productive and trade processes (M-C-M') and those investing just financially (M-M').

Therefore, even the Keynesian approaches, that support new regulations, do not ground their analysis into a structural change of the conditions of capital accumulation: assuming that the end of Bretton Woods system is originated by an excess of capital (over accumulation), it is not clear how the Keynesian proposal for a re-regulation of financial markets could change and reverse the conditions of capital accumulation.

The Marxist approach assumes a structural shift after Bretton Woods (Kotz 2008, 2015, Arrighi 1994, 1999, 2007, Braga 2013, Ferreira 2017) and provides the elements for analysis that can explain the subsequent process and the emergence of the Transnational Agrarian Movements. An exception is an approach developed by Braga (2013) and Ferreira (2017), which uses Sweezy's analysis on monopoly capital (1966) assuming a more mature financial structure but does not explain how the Bretton Woods agreements came to an end or the following developments.

In this Marxist perspective, the framework providing the deepest analysis is the one developed by Arrighi, which connects the different components of public money, Transnational Corporations, and global institutions with the cycle of capital accumulation, thus providing an exhaustive explanatory framework. Indeed, in Arrighi (1994, 1999, and 2007) the resurgence in the 1980s and early 1990s of the World Bank, the International Monetary Fund, and the United Nations after the end of Bretton Woods compensates the ravelling hegemony of the U.S. in an increasingly chaotic world.

For Arrighi, what in the Keynesian and other Marxist analysis is called "financial structure", is deeply related to state power, to the privatization of money through Transnational Corporations, and to the role that the International Monetary Fund, the World Bank, and the United Nations play in a scenario linked to the cycle of capital accumulation. For Arrighi, the General Agreement on Tariffs and Trade (GATT) was the tool that the U.S. government set up to control the formation of a world market. Trade liberalization was left in the hands of national governments, and negotiations for tariff reductions were reduced to bilateral and multilateral agreements. Roosevelt had tried to institutionalize the idea of a United Nations world government in order to manage the process of decolonization and guarantee the self-determination of each national community, participating on equal footing in the UN General Assembly. Roosevelt's idea of a world government encompassing the entire globe was overcome by Truman's freeworldism, which established a Cold War world order in which the United States replaced the UN in world system governance. The U.S. hegemony created a world order based on the control of world money and military power, with supplementary support from Bretton Woods institutions such as the International Monetary Fund, the World Bank, and the United Nations, which supported U.S. policies or were impeded from functioning. Indeed, until the 1970s the U.S. Federal Reserve System

played a major role, compared to the International Monetary Fund and the World Bank, in the regulation of world money. It was only with the crisis of the U.S. hegemony in the 1970s and, especially, in the 1980s that for the first time the Bretton Woods organizations rose to prominence in the system of global monetary regulation.

By looking at the connections between the different levels of analysis, we can assume the Arrighi framework as the most rich to analyze and comprehend financialization—as confirmed by Knipper's quantitative analysis for the period after WWII and by Fasianos et alt (2016) for the entire 20th century—, especially as it includes the evolution of global governance from the end of Bretton Woods to the United Nations and WTO, when the material phase of accumulation came to a crisis. This space of global governance, in particular on agriculture, is the connection between the financialization phase (that generated it) and the new role of the Transnational Agrarian Movements. Such connection sits at the core of this study, as the different levels of analysis of Arrighi do not clearly elaborate on the role of Transnational Movements in the analysis of financialization. I will come back on this point and on Transnational Agrarian Movements in chapter 4, with a particular focus on the role of class struggle and the revolutionary subject in the change of hegemony. In Arrighi (1999), however, there is a reference to Markoff and Tilly on the necessity to confront the decision making in the global arena of the neoliberal financialization phase post-Bretton Woods. What is discussed is the need to recreate a form of democratic transnational decision-making in the emerging world, through transnational movements capable of extracting "concessions from the new holders of transnational power" (Markoff, 1996, 132-35). Tilly concurs on this solution, but is more pessimistic, at least in the short run, regrading whether this will happen (1995, 22).

Therefore, we will assume Arrighi's definition of financialization as an increasing mass of "*money capital setting itself free from its commodity form"*, with capital accumulation proceeding through financial deals (Arrighi, 1994). This definition complements Knipper's definition thanks to two main contributions: a) the application of Marx's formula M-M' to the accumulation cycle b) the liberation of capital from its commodity form, and therefore from the need for this to go through a production process.

When Arrighi speaks about financialization, he refers clearly to a hegemonic power that lends money and provides liquidity for the whole system rather than investing in trade.

> *"For one thing, their switch from trade to finance can be taken as the clearest sign that the time to bring trade expansion to an end in order to prevent it from destroying profitability had really come. Moreover, the agencies in question were better positioned than any other to monitor and act on the overall tendencies of the capitalist world-economy, that is, to act as intermediaries and regulators of the expanding supply of, and demand for, money capital" (Arrighi, 1994, p 241)*

Differently from other narratives, in Arrighi the financial agencies stabilize the world system and foster a financial expansion that secures profits: these agencies are not the cause of systemic instability, they just react to the instability of the system to generate profits through finance.

In conclusion, the financial expansion is the key moment of concentration of capital transforming the end of a cycle of accumulation into the beginning of a new cycle. Indeed, in the financialization phase, two different kinds of capital accumulations take place in parallel: the first capital accumulation occurs within the dominant regime of accumulation, while the second capital accumulation occurs within regional structures of accumulation that destabilize the old regime and foreshadow the emergence of a new phase of material expansion of the capitalist world economy.

2 Globalization, capital accumulation and the role of agriculture

> *"Material and financial expansions are both processes of a system of accumulation and rule that has increased in scale and scope over the centuries but has encompassed from its earliest beginnings a large number and variety of governmental and business agencies. Within each cycle, material expansions occur because of the emergence of a particular bloc of governmental and business agencies capable of leading the system towards a new spatial fix that creates the conditions for the emergence of wider or deeper divisions of labour"* (*Arrighi, 2007, p. 231)*

Chapter 2 applies the analysis on the financialization of capital accumulation to the specific case of agriculture. Section 2.1 describes the 2007-2008 food price crisis and the discussion on high food prices and financial speculation, as a major input feeding the following discussion on the financialization of agriculture. Section 2.2 presents the discussion on the meaning and manifestation of financialization in agriculture.

2.1 The Food Price Crisis

Throughout 2006-2008 and later in 2011, world food prices witnessed a period of extraordinary volatility, peaking (by several hundred per cent) by the end of 2007 and the first half of 2008. For some products such as rice, the market price explosion was particularly pronounced, with negative effects on the stability of vulnerable countries.

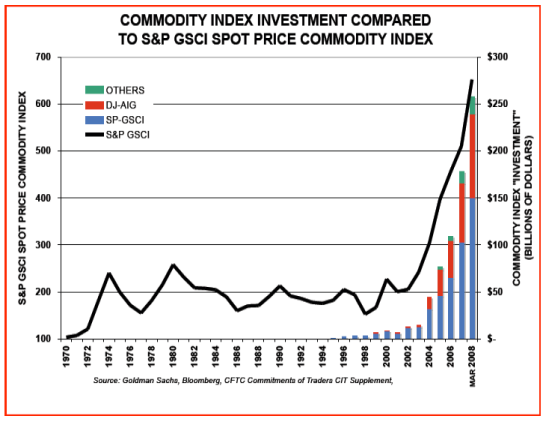
One of the main causes of this process has been identified in agrofuels (HLPE 2011, De Schutter 2013, and Action Aid 2013).

In order to understand the food crisis and the mainstream narrative that was generated on financialization, it is necessary to understand that in recent decades, the correlation between agricultural commodity prices and oil price was 0.07, whereas its correlation with commodity average prices was 0.23 (Newell 2008). However, after the adoption of the U.S. Energy Policy Act in 2005, and with the subsequent introduction of a futures contract on ethanol at the Chicago Board of Trade and large-scale adoption of new ethanol-based agrofuels by the U.S. transport sector, the correlation of agricultural commodity prices with the oil price increased to 0.93.

When the ethanol futures contracts were introduced, over-the-counter (OTC) derivatives were exempted from any regulation designed to limit the ability of market participants to manipulate the market (i.e. position limits), following the adoption of the U.S. Commodity Futures Modernization Act.[6]Figure 4 shows the increase in the volume of investments in Commodity Index Funds since 2004, after the implosion of the housing market (Gosh 2010) and the Energy Policy Act.

Figure 2.1

Commodity Index Investments trend



Source: [Gosh 2010]

[6]Senate and House of Representatives of the United States of America. 106th Congress, 2nd Session. "Commodity Futures Modernization Act of 2000" (H. R. 5660). 14 Dec. 2000. www.cftc.gov/ucm/groups/ public/@lrrulesandstatutoryauthority/ documents/file/ogchr5660.pdf

The mainstream analysis used the dependence of agriculture from fossil fuels as an explanation for the food price crisis. Even if the industrial agriculture model is increasingly dependent on fossil fuels (through fertilizers, costs of transport, machinery, and other energy sources used), it is clear that fossil-dependent inputs do not account for 93% of the total cost of inputs (or even more, considering that the correlation is with the final price and not with the cost of production). The fact that most of the world's agricultural production is still based on biological cycles, as presented in the FAO International Year of Family Farming (2014), and that the transmission of costs to the price is not immediate, are both issues that d not explain the correlation of the fuel-food price. (Conti 2012, Gosh 2010, Krippner 2018)

However, the analysis is still relevant since the correlation between oil and agricultural products prices comes from a process of financialization that attributes a price to an asset in a completely independent manner from the real economy and the underlying economic fundamentals such as supply and demand. Indeed, the analysis of price and cost relation refers to two different channels of transmission: the first one is financial, while the second is embedded in the production system and in supply chains. Therefore, we can notice the division between a financial determination of prices, and a determination of costs based on the real economy: this mechanism replicates the divide we saw in some approaches in chapter 2 between finance and real processes. The transmission channel is, therefore, a central issue within the analysis.

An independent estimate (Epstein 2008) calculated that, in soybeans, speculative positions bought 59.1% of the 2007 U.S. domestic crop, while in wheat the figures are higher, reaching 83.6%. Thus, the changes in food prices did not reflect movements in market supply and/or demand. The main driver were the speculative deals: these were not only providing liquidity to the market but they were also driving it.

In mainstream studies, the effect of agrofuels on food price volatility is based on supply/demand criteria: given a certain supply capacity, if a portion of agricultural products is shifted from food consumption to agrofuels production, there will be a supply shock with a consequent increase in market price. However, if the demand for agrofuels comes in addition to that of agricultural products, there is a demand shock with a consequent increase in price and quantity produced. In other words, an increase in

competition between agricultural production of agrofuels and food for human consumption means that the availability of the latter is reduced and food prices rise.

Nevertheless, the imputation of demand shocks to agrofuels is misleadingly widespread. While recognizing the importance of the role of agrofuels in the current food crisis, supply or demand shocks do not explain price volatility, which corresponds to a series of price changes heading in opposite directions and it is neither predictable nor explainable through the supply/demand fundamentals. Agricultural production has been in constant growth since 1960, and when the food crisis erupted in 2007 the food supply system was more than capable of meeting the demand of the current world population (FAO, IFAD, and WFP 2011). The analyses based on the supply/demand shocks assume that food price volatility relies on real processes (substitution effect on supply and demand of agrofuels and agriculture commodities) (Conti 2012).

A different narrative focused on the deregulation of the financial sector[7]which, at the turn of the last century, encouraged the expansion of complex financial derivatives and structures as the Commodity Index Funds, also due to stimulation through demand from institutional investors(especially after the subprime crisis). Between 2002 and 2008[8]commodity futures contracts traded globally increased by more than 500%. As we saw in chapter 2, this occurred due to other markets drying up one by one: the dotcoms disappeared in 2001, the stock market collapsed soon after, and the U.S. housing market crashed in August 2007. After each

[7] 1999, Gramm-Leach-Bliley Act – With support from Fed Chairman Greenspan, Treasury Secretary Rubin and his successor Lawrence Summers, the bill repeals the Glass-Steagall Act completely. • 2000, Commodity Futures Modernization Act – Passed with support from the Clinton Administration, including Treasury Secretary Lawrence Summers, and bi-partisan support in Congress. The bill prevented the Commodity Futures Trading Commission from regulating most over-the-counter derivative contracts, including credit default swaps.

[8]Lilliston, Ben, and Andrew Ranallo, eds. Excessive Speculation in Agriculture Commodities: Selected Writings from 2008–2011. Minneapolis: Institute for Agriculture and Trade Policy, 2011. Table 23B. www.iadb.org/intal/intalcdi/ PE/2011/08247.pdf

bubble burst, investors tried to protect their portfolios by investing in markets that were more stable and negatively correlated to shares and bonds.

Commodity Index Funds enabled investors to yield from different commodity futures markets without having to invest directly in each single commodity futures. Given that commodity futures markets are predominantly traded OTC, they are customized bilateral contracts made directly between two contracting parties and lack the transparency of being traded on an open exchange at the stock market. Speculators on Commodity Index Funds were not interested in buying underlying goods or in short-term movements in futures prices. Their strategy was to "go long": continuously buy back futures contracts purchased at a lower price and resell them at a higher price before their deadline, thus reinvesting in futures with later maturities. Financial analysts fed this process by providing forecasts of further price increases. Real market players were encouraged to increase their agricultural reserves in anticipation of future earnings, thus increasing farm prices by reducing supply in accordance with the traditional speculative approach (Gosh 2010, Krippner 2018, HLPE 2011, Conti 2012, Sivini 2009).

Raising futures prices was possible because over the last decades the financial market deregulation and the limits on speculative positions that were established by the Chicago Board in the 1930s (in order to avoid market distortions created by possible prevailing hedging positions) were not enforced for those who worked on the indices (index speculators), i.e. those who were regarded as traders (Sivini 2008a, 2008b, 2009).

Despite the difficulty in obtaining official numbers, several independent estimates in March 2008 pointed to $200 billion invested in bullish positions on commodities by the index funds: nearly 40% of the total, with an additional 30% belonging to regulated speculators. This left only 30% of open positions to traders, with a clear divergence between the expectations of index speculators and the traders who decided not to draw on futures any longer.[9]

[9]Masters, Michael. (testimony of). Committee on Homeland Security and Governmental Affairs United States Senate. 20 May 2008. www.hsgac.senate.gov/imo/media/doc/ 052008Masters.pdf?attempt=2.

In fact, the availability of cash is a pre-requisite to operate in the futures market as it ensures the maintenance of margins against market fluctuations, which tend to lower them. Until the expiration of the futures' contract, the ratio between margin and price of the future should be fixed—if the price increases, the difference must be paid immediately. The bullish positions of index speculators in the futures' market (avoiding short-selling and trading on the raw assumption that commodities have the same tendency as stocks to rise over the long run), created difficulties in maintaining margins for smaller operators, forcing them to close their positions. According to estimates by the U.S. Department of Agriculture, price volatility, credit crunch, and rising costs of inputs resulted in nearly eight million acres no longer being farmed.[10]

The analysis on the role of agrofuels in price volatility, not based on the demand and supply dynamics, can explain the almost perfect correlation (0.93)

since 2005 in international markets between oil prices and the FAO Food Price Index[11](Chefurka 2011). This is also confirmed from the fact that, parallel to what happened in the oil market, food prices have collapsed in the agricultural futures market since September 2008, when the U.S. House of Representatives approved a bill that imposed limits on swaps and futures' contracts on commodities and prohibited the activities of foreign traders, even with the initiative lately stalling in Senate (Sivini 2009).[12]

In order to avoid another financial crisis, policy solutions must address the problems affecting market fundamentals as well as the conditions under which speculation is allowed to take place. This became evident in a

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[10]8 million acres is slightly larger than the entirety of Belgium and slightly smaller than the entirety of Moldava. USDA. "Net Farm Income and Costs: 2009 Farm Sector Income Forecast." Economic Research Service. 12 Feb. 2009

[11]Chefurka, Paul. "Food Prices and Oil Prices." Approaching the Limits to Growth. 15 May 2011. www.paulchefurka.ca/Oil_Food. html

[12]Sivini, Giordano. "Scommesse sulla fame: Finanza, agribusiness e crisi alimentare." Foedus 24 (2009).

quantitative study[13] (Lagi 2011) that took into account the resumption of speculative movements in 2010 and managed to accurately distinguish between the effects of the introduction of ethanol and the effects of speculation, demonstrating that the two sharp peaks in 2007-2008 and 2010-2011 were specifically due to investor speculation, while an underlying upward trend was due to increasing demand of ethanol conversion. The study showed how the direct analysis of price-setting practices of granaries can demonstrate the inaccuracy of claims according to which speculators cannot influence grain prices. The reserves of grain and other agricultural products may have an impact on the speculative behaviour of real markets. However, the fact that many reserves of food are controlled by multinational corporations which are vertically and horizontally integrated should be taken into consideration. These corporations, despite being originally trade-oriented, have earned over the last years the most of profits through the financial market[14]. Therefore, it is not the constant growth in demand for food that affects the reserves. It is due to volatile peaks that reserves are reduced to a minimum.[15]

Depletion of reserves is a consequence of speculation, which commonly generates volatility. Therefore, the reconstitution of reserves affects the supply and demand mechanism, but cannot influence the price volatility generated in the financial market. The only function of reserves here is to intervene in food security emergencies generated by price volatility and reduce the market power of global production networks through which prices are transmitted from financial markets to product and local markets.

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[13]Lagi, Marco, et al. "The Food Crises: a Quantitative Model of Food Prices Including Speculators and Ethanol Conversion." New England Complex Systems Institute. 21 Sept. 2011

[14]GRAiN. "Corporations Are Still Making a Killing from hunger." Seedling. 20 Apr. 2009

[15]Lagi, Marco, et al. "the Food Crises: a Quantitative Model of Food Prices including Speculators and Ethanol Conversion." New England Complex Systems institute. 21 Sept. 2011

Strong evidence of this is presented by Gosh (2010) who showed how the underlying fundamentals of food production do not justify price increases: using FAO data,[16] Gosh shows how, when the supply of global food grain markets was increasing, prices were expected to decline: wheat, coarse and rice consumption was lower than production, and this increased end-of-season stocks.

Even though at first, large farms may have benefited from higher prices, as seen in the United States, in the long run, they had difficulties avoiding the effects of price volatility and high borrowing costs.[17]They suffered from the price differential between the stock market and real market prices, the rising production costs caused by the oil peak, and soaring consumer prices[18] (Polgreen 2009). Concurrently, farmers in developing countries distilled false messages from volatile prices. This phenomenon led to bankruptcy and the abandonment of production by small farmers that were investing and borrowing to expand their production during the rising prices—thus exposing themselves to the risk of being wiped out as global food prices dropped.

Financial speculation on agriculture commodities, and the subsequent food price volatility, helped the concentration of the agribusiness evict the weaker actors from the market.

In the case of financial derivatives on agriculture commodities, financial speculation drives the prices of the underlying assets in order to generate profits, subduing production (or "commercial expansion", to quote Arrighi) to financial gains. In this case, financial speculation builds its financial products on the agro-business commodification processes, structurally transforming food into mere commodity and source of profit.

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[16]http://www.fao.org/docrep/011/ai476e/ai476e01.htm

[17]New York Times, 22 Apr. 2008 refers the case of Fred Grider, a farmer who owned 1,500 acres of land near Bloomington, Illinois. When deciding what to grow, he had purchased futures contracts and paid margins, but prices went up by forcing him to reintegrate them every day. "If you have contracts for 50 thousand bushels and the price goes up 20 cents you have to sign a check for $10 000."

[18]Polgreen, Lydia. "West African Villagers Stake Their Fortunes on the Future Price of Rice." New York Times. 25 Jan. 2009

The agribusiness formation is the result of multiple dispossession processes (McMichael 2013) that have penetrated world agriculture, causing the expulsion of millions of peasants, the marginalization of millions more, and the subordination to the "empires" of those who still carry out agricultural activities. The industrial agriculture model depends on fossil fuels, affecting more than 30% of production costs: industrial seeds, fertilizers, retail chains, and intensive use of resources. This model of production modifies traditional agriculture and makes it more and more dependent on agribusiness practices and on a capital-intensive approach. The food price volatility experienced in the last years showcases how the price transmission from the Chicago Board of Trade to each local market around the world, depends on how agribusiness market powers control global value chains and global production networks.

While in past decades TNCs determined agricultural prices by monitoring global production networks and appropriating value along the global value chains, in recent years financial investors replaced TNCs in controlling the sale of rights on future prices of agricultural products, thus creating the conditions for the development of the speculative bubble of the spring-summer of 2008 and the consequent food price crisis.

Financial speculation created the conditions through which the agribusiness could increase its profits by transferring price management from the futures market to the real market, as the latter could be fully kept under control. Financial speculation on agriculture commodities shifted the agrifood businesses to progressively operate in financial markets and gain an increasing share of returns from financial activities, while financial actors influenced the price and control of farmland and the formation of food prices.

The food price crisis in the first decade of the 2000s (and its roots and effects on the real production system) is the source of the discussion on agrifinancialization and on the increasing presence of the financial sector in Agriculture. Such presence, according to Epstein (2005), is what defines the financialization of agriculture.

Agrofuels are generally considered the cause of the food price crisis, but some analyses (Chefurka 2011, Masters 2008, Sivini 2009, Lagi 2011) clearly distinguish high prices from food price volatility. In the food price

crisis, the use of ethanol as a substitute for oil generated a correlation between the two: goods are substitutes when they may replace each other in use or consumption. The assumption of substitute goods is that the correlation among their prices is not based on their cost of production. Once ethanol started to be traded in the futures market, the oil - ethanol correlation was working also on the futures derivate price, strengthened by the high liquidity of the oil future market. In this context the financial capital present in the futures market entered the agricultural sector through ethanol derivatives, creating the speculation on futures food prices and originating the food price volatility.

Most of the narrative on the financialization of agriculture is rooted in these discussions on the food price crisis, in which high prices (originated by a substitution effect of oil and ethanol) were in many analysis confused with food price volatility (originated by financial speculation, rooted in the substitution of oil and ethanol and in the deregulation of financial markets, which allowed the speculative position to assume 70% of futures market positions).

2.2 The Financialization of Agriculture

This section will analyze the specificity of financialization, as described in chapter 2, applied to agriculture, using the discussion on the food price crisis as a lens to understand select analysis rooted in concrete examples.

It is worth to recall that we assumed the definition of financialization as the phenomenon that occurs when an "*increasing mass of money capital sets itself free from its commodity form, and accumulation proceeds through financial deals"* (Arrighi 1994).

Differently, from the general discussion on financialization, the specificity of financialization in agriculture has not been discussed extensively.

The most relevant work on the financialization in agriculture after the food crisis has been developed by Isakson (2014, 2015) and Clapp (2014a, 2014b, 2016, 2018a, 2018b), first individually and more recently together (Clapp J., Isakson R., Visser O., 2016; Clapp J. and Isakson R 2018).

Isakson and Clapp assumed Epstein's *agnostic* definition of financialization (2005): the "*increasing importance of financial markets, financial motives, financial institutions, and financial elites in the operation of the economy and its governing institutions, both at the national and international levels"*. This definition, which

we analyzed in chapter 2, focuses on the nature of the agents rather than on the nature of the investments (M-M').

According to Isakson and Clapp, the process of financialization contributes in several ways to what they define as *distancing*. First of all, financialization "*abstracts food from its physical form into highly complex agricultural commodity 'derivatives' that only seasoned financial traders fully understand"* (Isakson and Clapp 2014; Clapp J., Isakson R. and Visser O.2016).

Moreover, the financialization process increased the actors and steps involved in the global commodity value chains. In this context of *distancing*, the capacity of farmer organizations to influence the agrifood sector decreases, and it is difficult to distinguish a) the agricultural sector and financial sector b) who are the actors involved in agrifinance (Isakson 2014) c) the activities related to financial investments vs 'real' investments (including the distinction between hedging and financial speculation in the agricultural commodity markets) (Clapp J., Isakson R. and Visser O. 2016).

In *Speculative Harvests* (2018b), Clapp and Isakson identify the beginning of the financialization process to the 1970s. They connect this to the neoliberal policies as well as the efficient market hypothesis, which assumes the minimum regulation for markets: the increasing role of financial actors in agriculture has been allowed by the decreasing presence of the state and public support of agriculture.

In previous works, Clapp (2012, 2017) had already referred to neoliberal policies and Structural Adjustment Programs as key to the redefinition of agricultural policies, in light of the withdrawal of state support to agriculture and of the World Bank and International Monetary Fund's support to the liberalization of agricultural markets so as to allow developing countries to pay their debt. More specifically, Clapp references "*the enormous levels of external debt in the early 1980s as a result of global economic conditions that prevailed in the 1970s"* (Clapp 2012, p. 59).

While in their joint work the analysis of the *global economic conditions* is not further developed, Clapp and Isakson refer to other three main approaches/traditions:

a) the neoclassical or mainstream approach: it explains financialization through the increasing role of shareholders' value in corporate

management and the shift of corporate policies from the reinvestment of profits in production processes to the distribution of dividends

b) the Keynesian approach: it identifies the roots of financialization in the deregulation of financial markets, which in turn allowed for speculative bubbles

c) The Marxian tradition: it identifies in financialization a structural and cyclical crisis of capitalism due to the fall of profit rates and due to the over-accumulation stemming from the lack of opportunities for real investments.

Clapp and Isakson, even in the financial symposium introduced with Visser (Clapp J., Isakson R. and Visser O. 2016) do not adopt just one of the three approaches. Instead, they focus on the ongoing processes of financialization so as to extrapolate from the various analyses just one particular aspect, and ultimately define what financialization means at the concrete level.

The two scholars aim to come out with a broader understanding of the financialization of the food system, built on interconnected aspects of the financialization of the economy:

> *"financialization (…) has taken three distinct — yet, we argue, interrelated — forms: as a process that opens up new arenas for capital accumulation (Harvey, 2010; Krippner, 2011); as the increasing prioritization of returns to shareholders over other values in corporate management; and as the permeation of financial values and activities into the everyday practices of social provisioning" (Clapp, Isakson, 2018, p. 438)*

Therefore, Clapp and Isakson understand financialization as:

a) *Opening of new financial arenas*: after the Commodity Futures Modernization Act in 2000, the deregulation of financial markets allowed financial investors to differentiate their portfolios. This led to the creation of new financial tools linked to food and agriculture as commodity index funds (CIFs), as well as of other financial products that developed innovative mechanisms for connecting smallholders in 'emerging' economies to financial markets (e.g. weather-based derivatives as a mean of hedging against environmental risks).

b) *Prioritization of shareholder value*: this corresponds to short-termism in corporate investment policies that encourage mergers and acquisitions to increase market share and reduce duplicated costs (e.g. research and development), lowers wages and environmental standards, increases profits, and pays higher dividends to shareholders

c) *Financialization of everyday life*: leading farmers to access credit through private institutions instead of public ones, individualizing the cost of failures, enabling financial services to control and shape the retail sector and consumers.

These main characteristics of financialization in agriculture identified by Clapp and Isakson overlap and mutually reinforce one another. They challenge directly systems of food security and livelihoods and foster food price volatility, land grabbing, and corporate concentration.

The financial investments in agriculture commodities and Commodity Index Funds were made in the logic of portfolio differentiation and were at the root of the food price crisis and of food price volatility. The increasing presence of the financial sector (Equity Funds, Pension Funds, Banks, etc.) (Clapp, Isakson, 2018b) is considered as an indicator of financialization itself. Therefore, the analysis is not limited to the financialization of the supply chain, the strengthening of the retail sector (Isakson 2014), and the transformation of farmland as a financial asset: it is extended to the financialization of the whole food system.

As an example, the creation of new financial tools and collateral assets related to productive activities strengthens the agrifood capacity to limit small-scale food producers' access to credit and markets. In addition, the prioritization of shareholder value increases short-term profitability (e.g. capital gains) through the restructuring of the sector (especially retail), creating more dependence from private credit rather than investing in the agri-food sector as a long-term investment. The outcome is that TNCs and financial actors extract wealth from the agriculture sector at the expenses of farmers and consumers—who in turn pay the costs of this restructuring—and impede collective and political action thanks to the opacity and distance of the financial system.

The main conclusion of Clapp and Isakson is that financialization generates inequalities in the food system and compromises the socioecological

resilience of food systems and their capacity to resist due to its opacity and abstract nature.

Speculative Harvests (2018a) builds on Clapp and Isakson's previous works and concludes with three main recommendations:

a) The need to better understand the financialization of agriculture, in order to feed the public discussion on its effects on agriculture

b) The recognition of the key role of Civil Society Organizations in strategizing on the role of nation-states and global governance mechanisms, so as to include bottom-up solutions

c) Building alternative food systems of small-scale and ecological producers, unaffected by financialization

The conclusion of Clapp and Isakson is that there is a need for further research on the topic to better understand the phenomenon and discuss an alternative regulation at the national and international level. Vander Stichele summarizes Clapp and Isakson's discourse on the regulation of financial markets as follows:

"*So far, the focus of financial regulators and supervisors has been almost exclusively on financial stability. No financial reform or regulation has held the financial sector responsible for the impact of its financial activities on the economy, the society and the environment* "(Stichele 2014, p.11).

Clapp and Isakson's research, which can be considered the benchmark for financialization in agriculture, assumes as a starting point the agnostic definition of financialization developed by Epstein (2005, 2015). He defines the financialization process as having a negative impact on the economy and society, but he does not provide any specific recommendations on how to regulate finance. His conclusion is simply that *there is something happening here* (Epstein 2015) and that, therefore, it is necessary to intervene somehow. Epstein arrives at a Keynesian conclusion, but he does not develop a deep Keynesian analysis of the causes of financialization.

Clapp and Isakson (2018b) conclude by acknowledging the need to develop further research on financialization. They connect multiple instances and historical periods in which financialization emerged, but they do not identify its root causes. They include among the main characteristics of financialization the neoclassical/mainstream approach on shareholder

value, which defines financialization at the level of corporate policies, and the search for new financial arenas, which is usually linked to over accumulation (although Clapp and Isakson do not mention any link between financialization and over-accumulation)'s hypothesis). Both characteristics could be theoretically explained by the fall of profit rates: corporate investments do not expect long-term returns, and they are therefore diversified when it comes to the creation of new markets for financial investment.

The preference given to financial investments rather productive ones in the financialization process is not clearly discussed by Clapp and Isakson. This can be saw as the most precarious point of their analysis, since it is not possible to identify whether the actual dominance of financial investments is given by the deregulation of financial markets in the last decades, or by the fact that investing in production and trade is no longer profitable. If we were to assume the first hypothesis, the flow of investments in production and trade until the 1970s and 1980s would have resulted from the strict financial regulation of national states (Clapp, Martin 2015b).The current regulation, too, would have resulted from a political choice by made by national governments, creating the conditions for the ongoing financialization.

In order to better understand the issue, we can refer to the analysis of Mergers and Acquisitions (M&A) in the food sector which, according to Clapp (2012) and Isakson (2014) depend on strategies of companies that pursue the maximization of the shareholder value.

First of all, it is important to notice that Clapp (2018a) sees TNCs as a major political actor in the global governance of food and agriculture, as they establish establishing public-private partnerships and lobby national governments and global institutions, to impact normative standards and regulatory frameworks.

Moreover, Clapp (2017) develops a detailed analysis of the Mergers and Acquisition (M&A) in food and agriculture, coming to the same conclusion he developed in the studies with Isakson: the increasing number of M&A is an outcome of the financialization process as maximization of the shareholder value.

Clap presents a background data analysis that feeds the study with Isakson: in *Bigger is Not Always Better* (2017), Clapp explains how the Mergers

and Acquisitions in the food sector are driven by the poor financial performance of the Big Six (Syngenta; DuPont; Monsanto; Bayer; BASF; Dow)[19] and their competing strategies in order to vertical integrate their business. In this context, the maximization of the shareholder value *came down on agribusiness to restructure as a means to save costs and shore up profits*.

The Big Six are the result of a previous process of Mergers and Acquisitions among big chemical, pharmaceutical, and seed companies as well as other small seed and biotech companies in the 1990s and early 2000s. The expected outcome of the newly born Big Six was the full integration of biotech companies with pharmaceuticals, seeds, and agricultural chemicals. In 2017 and 2018 the acquisition of Monsanto by Bayer and Syngenta by ChemChina, and the merger of Dow and Dupont were finalized, leading to further concentration in the agricultural inputs market.

Clapp sees in the weak agricultural commodity prices since 2013 the cause for the low demand for agricultural inputs which according to the corporations (Clapp 2017, Agronews 2017), was the main reason for the mergers within the seed industry.

Figure 2.3 indicates the price depression of global farm products, while figure 2.4 shows the relative increasing prices of agricultural inputs compared to the farm commodities, which resulted into poor financial performance for the Big Six firms.

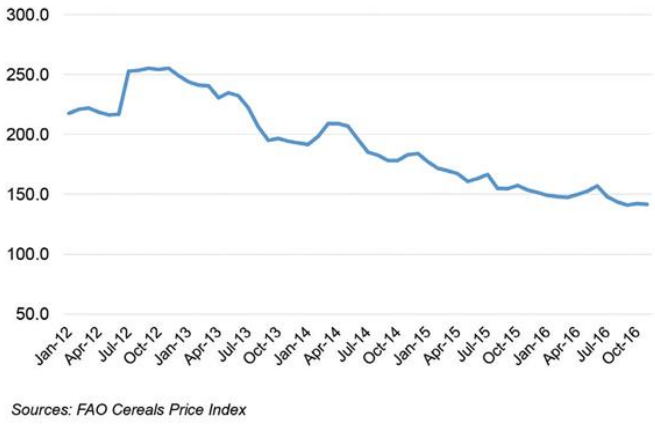
[19]Monsanto – American multinational agrochemical and agricultural biotechnology conglomerate known for producing GM seeds; Bayer – German multinational life sciences, pharmaceutical and chemical company; DuPont – American chemicals company involved in industries including agriculture, biobased industries, advanced materials and electronics; Dow – American multinational chemical conglomerate developing products for agriculture, automotive, construction, consumer, electronic materials, packaging and all other industrial markets; Syngenta – Swiss agricultural company which produces seeds and agrochemicals; BASF – German chemical company and the largest producer in the world with subsidiaries and joint ventures in more than 80 countries

Figure 2.2
Big Six and ChemChina Mergers and Acquisitions

Company	Bayer	Monsanto	Dow	Dupont	ChemChina	Syngenta	BASF
Size of deal	$66bn (acquisition)		$130bn (merger)		$43bn (acquisition)		Not applicable
Sales (2015)	€46.3bn	US$15bn	US$49bn	US$25bn	US$45bn	US$13.4bn	€70.4bn
Employees	116,800	20,000+	53,000	52,000	140,000	28,704	112,435
Country	Germany	US	US	US	China	Switzerland	Germany
% of Global Seed Market in 2013	3%	26%	4%	21%	Not available	8%	Not applicable
% of Global Pesticide Market in 2013	18%	8%	10%	6%	Not available	20%	13%

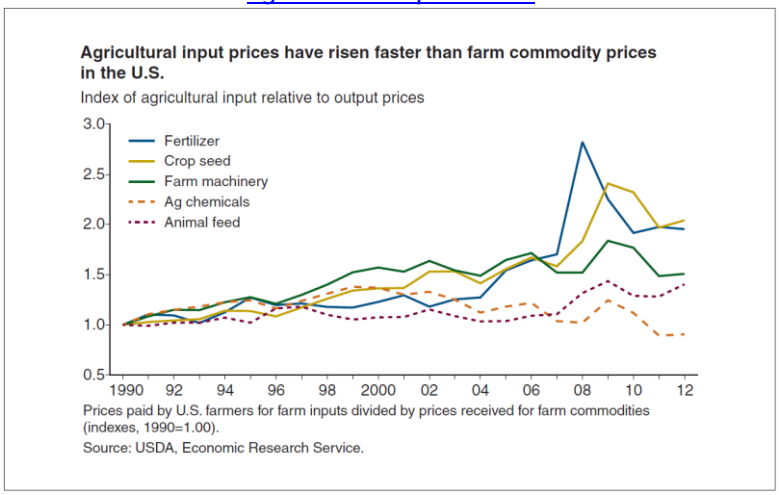
Source: [Company websites; ETC Group 2015]

Figure 2.3
Cereals Price Index



Source: [FAO Amis]

Figure 2.4
Agricultural Input Prices



Source: [Fuglie 2012]

At the same time, Clapp (2017) mentions the strategic reasons for vertical integration: the seeds and agrochemicals nexus offering farm packages for seeds and pesticides, the creation of new products, the technological development related to digital farming platforms, the dematerialization of genetic resources (Digital Sequencing Information – DSI) as big data become increasingly important for farming, and the access to plant genetic material. Chapter 6 discusses the main drivers leading the concentration of the agricultural inputs market, where we can find complementary technologies and economy of scales in animal and plant breeding and genetics.

Even if Clapp (2017) recognizes all the above mentioned factors as leading the concentration of the agricultural sector, in her analysis these trends lead to the maximization of the shareholder value, considering that few institutional investors as Black Rock (see figure 7) control part of the equity capital of the big six through asset managers that have incentives based on short-term investment performance, including the return on equity based on the short-term period.

Figure 2.5
Driving Factors for Market Concentration in Agricultural Input

Factors driving changes in market structure varied by industry	
Farm input sector	Factors driving consolidation and concentration
Crop seed and biotechnology	Acquisition of complementary technology and marketing assets, economies of scale in crop biotechnology research and development (R&D)
Agricultural chemicals	Stricter environmental and safety regulations; maturing markets; rise of generic products
Farm machinery	Financial losses of major manufacturers during farm-sector business cycles (which strongly influence demand for large capital purchases)
Animal breeding and genetics	Vertical integration of poultry and livestock industries; economies of scale in animal biotechnology R&D
Animal health	Spillover from consolidation in the human pharmaceutical industry, which is being driven by loss of profit streams and idled capacity when major drugs go off-patent
Source: USDA, Economic Research Service using Fuglie et al. (2011).	

Source: [Fuglie 2012]

Figure 2.6
Percentage of Shares Held in the Big Six by Large Asset Management Firms

	Monsanto	Bayer	Dow	DuPont	Syngenta	BASF
BlackRock	5.76%	10.09%	6.11%	6.61%	6.00%	8.30%
Capital Group	2.68%	3.68%	3.60%	10.69%	4.01%	0.91%
Fidelity	3.12%	1.71%	1.17%	3.54%	0.21%	0.50%
The Vanguard Group, Inc.	7.33%	2.30%	6.27%	6.87%	2.28%	2.31%
State Street Global Advisors	4.63%	0.50%	4.14%	5.01%	0.40%	0.45%
Norges Bank Investment Management (NBIM)	0.81%	1.64%	0.43%	0.63%	1.75%	3.00%
% Owned by the Top 6 Firms Before Mergers:	**24.34%**	**19.93%**	**21.72%**	**33.36%**	**14.65%**	**15.47%**

Source: [Clapp 2017]

"It was in this broader context that shareholder pressure came down on agribusiness for companies to improve their returns, including pressure to restructure as a means to save costs and shore up profits" states Clapp.

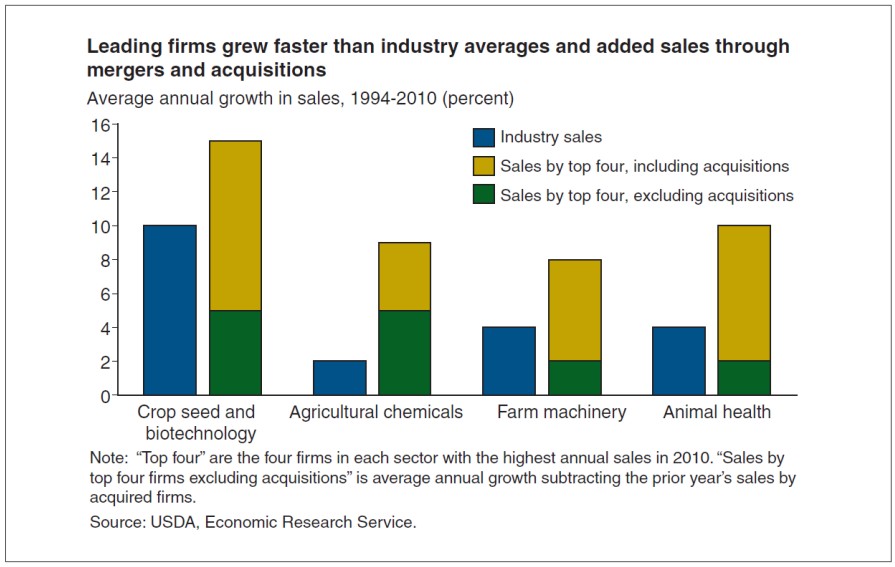
This passage clarifies how the analysis of financialization can radically differ depending on whether we apply Epstein's definition of financialization (2005), i.e. an increasing presence of financial actors, or the definition developed by Arrighi (1994) – Krippner (2005), i.e. "*the tendency for profit-*

making in the economy to occur increasingly through financial channels rather than through productive activities".

The fact that the actors involved in the restructuring are financial firms is relevant for Epstein and it is insignificant for Arrighi and Krippner since the restructuring and Mergers and Acquisitions aim at increasing the returns of the companies (Clapp 2017), which is simply an improvement of the productive activities.

The fact that the acquisitions are production-oriented is confirmed by figure9. This shows how the new acquisitions have increased the growth of sales of the top four firms—which, in turn, witnessed a lower-than-average growth in each agricultural input sector. This proves decreasing returns for the biggest firms that follow the horizontal and vertical integration strategy. Indeed, the IPES food report on market concentration (2017) concludes that *"the scope of research and innovation has narrowed as dominant firms have bought out the innovators and shifted resources to more defensive modes of investment".*

Figure 2.7
Trend of Market Concentration (a)



Source: [Fuglie 2012]

The OECD (2018) too shows that consolidation in global seeds markets depends on the high fixed costs of R&D, which push for horizontal M&A, and the complementarities among seeds, biotechnology, chemicals, and precision agriculture, which push for non-horizontal integration.

> *"Consolidation in global seed markets has been ongoing for several decades and has two main causes. High fixed costs, in particular for R&D, create pressure for "horizontal" mergers that combine firms with activities in the same domains. In parallel, technological and commercial complementarities between seeds, GM technology, and crop protection chemicals create incentives for "non-horizontal" mergers between companies active in these different domains. A new complementarity may be emerging today with digital technologies and precision agriculture. Major seed and crop protection companies have been investing in digital agriculture in recent years, as big data could enable customised advice to farmers on the best seeds or crop protection products to use and could, in turn, inform R&D".* (OECD 2018 p. 13)

Clapps' reading of the low financial performances and the strategic motives fr concentration, should not allow concluding that the shareholder value is the driving factor of financialization.

The trend to vertical and horizontal concentration (figure 2.8, figure 2.9) can be easily read as the falling of profit rates (figure 2.3, figure 2.4) in a mature economy (figure 2.7) in which big corporations control markets with a low rate of growth, sitting on a *large pile of cash* (Clapp 2017) since there are no profitable opportunities for real investments. IPES 2017 supports this vision of a "*significant horizontal and vertical restructuring […] underway across food systems"*, led by the emergence of new data technologies as a powerful new driver of consolidation to control plant genomics, chemical research, farm machinery, and consumer information.

Figure 2.9 describes the increasing trend of mergers and acquisition, both in number and value, with a specific peak during the financial crisis of 2007-2008. If we look just at the agricultural sector, we can see more than 400 changes in property in the seed sector, starting from 1996 after the approval of TRIPs.

Figure 2.8
Trend of Market Concentration (b)

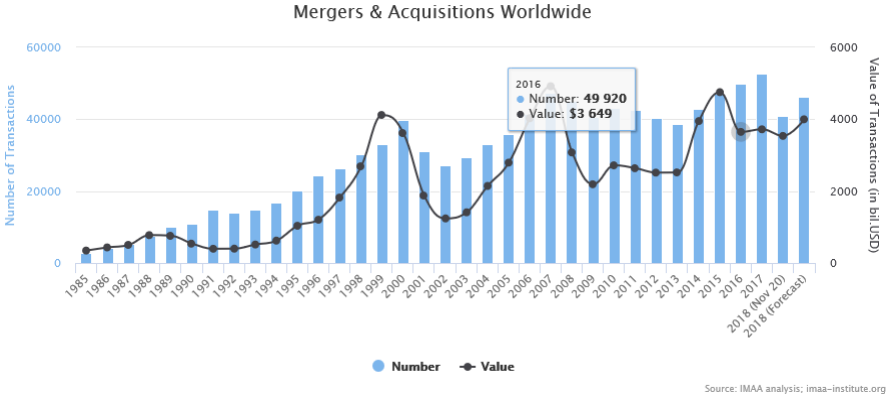
Market concentration is rising in global agricultural input industries

	Year	Four-firm concentration ratio	Eight-firm concentration ratio
		Share of global market (percent)	
Crop seed and biotechnology			
	1994	21.1	29.0
	2000	32.5	43.1
	2009	53.9	63.4
Agricultural chemicals			
	1994	28.5	50.1
	2000	41.0	62.6
	2009	53.0	74.8
Farm machinery			
	1994	28.1	40.9
	2000	32.8	44.7
	2009	50.1	61.4
Animal health			
	1994	32.4	57.4
	2000	41.8	67.4
	2009	50.6	72.0
Animal genetics			
	1994	na	na
	2000	na	na
	2006/07	55.9	72.8

na = data not available.
The concentration ratio measures the share of global market sales earned by the largest four or eight companies in the sector.
Source: USDA, Economic Research Service estimates from Fuglie et al. (2011).

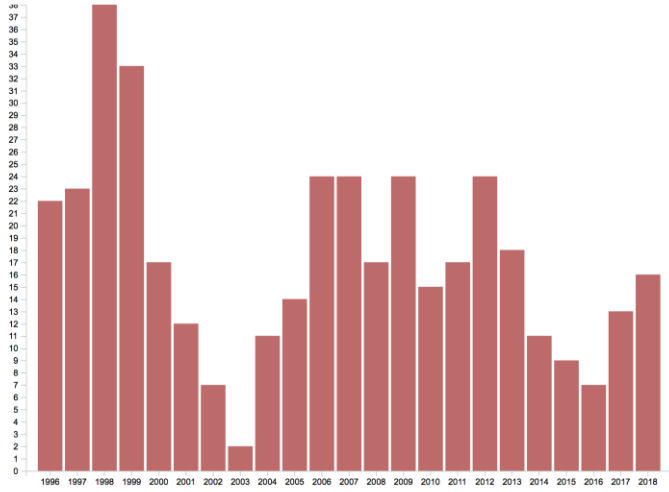
Source: [Fuglie 2012]

Figure 2.9
Mergers and Acquisition worldwide



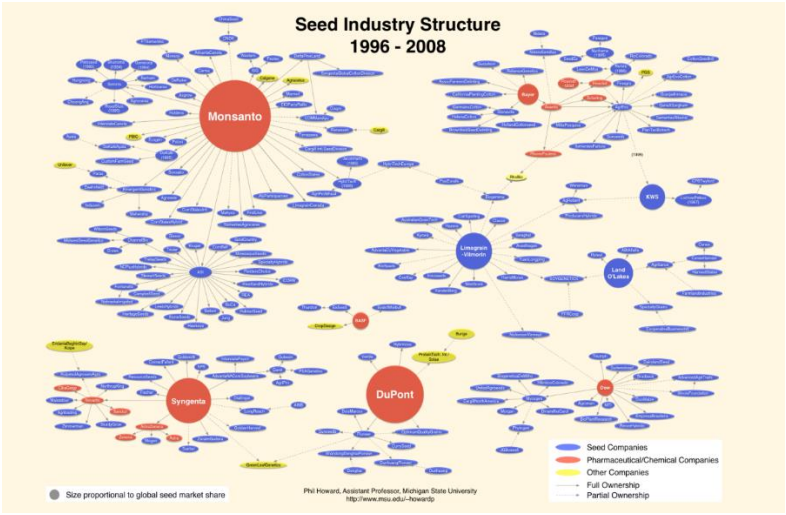
Source: ***[****IMAA – Institute IMAA (Access October 2018)****]***

Figure 2.10
Number of Seed Industry Ownership Changes by Year, 1996 to 2018



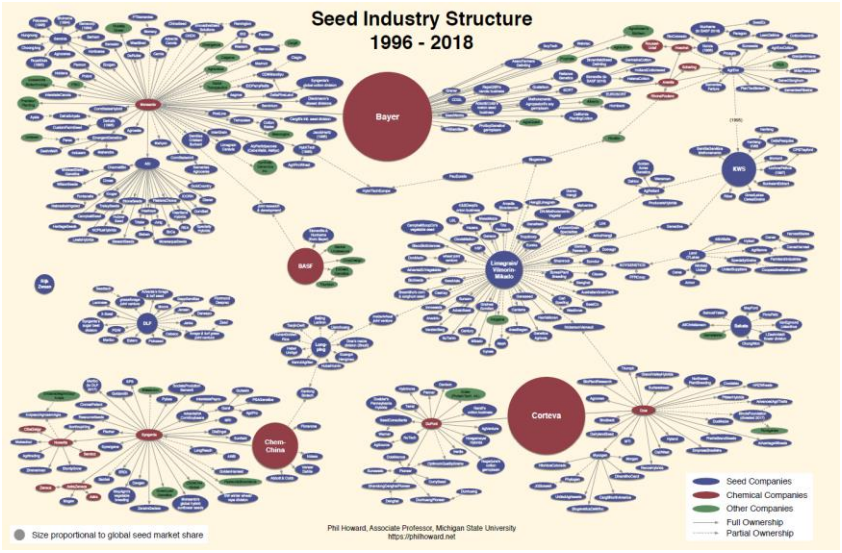
Source: [Howard 2018]

Figure 2.11
Seeds Industry Structure 1996-2008



Source: [Howard 2018]

Figure 2.12
Seeds Industry Structure 1996-2018



Source: [Howard 2018]

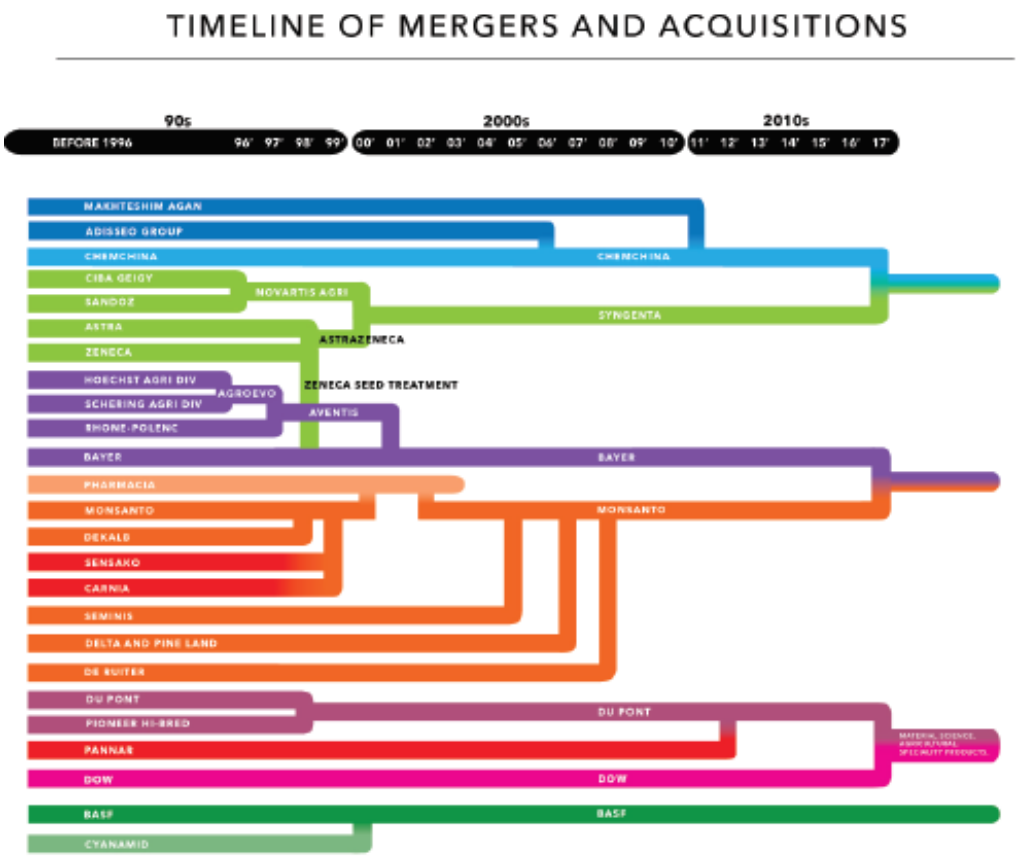
Figures 2.11 and 2.13 show the increasing concentration of the seeds industry with chemical companies, increasing control of the seeds companies and merging among themselves, with China controlling two among the first ten seed companies. ChemChina is the largest chemical firm in China, operating a wide range of businesses from basic chemicals to high-end manufacturing. In June 2018 ChemChina announced a merger with Sinochem, another large state-owned chemical conglomerate, which resulted in the world's largest industrial chemicals group, providing ChemChina with sufficient financial strength to absorb Syngenta.

A similar process is described by Arrighi (1999) as occurring during the Great Depression, in the shift from the United Kingdom to the USA hegemony, when existing enterprises had to organize among themselves to skip the high level of competitiveness in the market through horizontal and vertical integration:

> *"The Great Depression […] marked the beginning of the transition from the British system of the family business to the American system of vertically integrated,*

bureaucratically managed multinational corporations. Like the earlier transition from the Dutch system of joint-stock figured companies to the British system of family business, this transition was thoroughly embedded in the broader, synchronous processes of the interstate power struggle […] As Adam Smith had predicted a century earlier, the intensification of competitive pressures inherent in the process of trade liberalization had resulted in a curtailment of profits to a barely "tolerable" level[…] One obvious means in this endeavour was horizontal combination the fusion through association, merger, or takeover of enterprises using much the same inputs to make much the same outputs for much the same markets. Through combinations of this kind, competing enterprises could reduce market uncertainties for one another; they could set their combined production, purchases, and sales at levels that would guarantee larger profits; and they could pool resources to break into unregulated markets, to develop new technologies, and to organize their operations more effectively. Horizontal combinations, however, were not easy to enforce in overcrowded markets-that is, precisely where they were most needed-especially in the absence of support by governments. A more roundabout but, where feasible, more effective means of bringing the competition under control was vertical integration-the fusion, that is, of an enterprise's operations with those of its suppliers and customers, so as to ensure supplies "upstream" toward primary production, and outlets "downstream" toward final consumption. The multi-unit enterprises chat resulted from this fusion were in a position to reduce the transaction costs, risks, and uncertainties involved in moving inputs/outputs through the sequential sub-processes of production and exchange that linked the procurement of primary inputs to the disposal of final outputs. By routinizing the transactions between units, the costs of the transactions were lowered. By linking the administration of producing units with buying and distributing units, costs of information on markets and sources of supply were reduced. Of much greater significance...more effective scheduling of flows achieved a more intensive use of facilities and personnel employed in the process of production and distribution and so increased productivity and reduced costs. In addition, administrative coordination provided more certain cash flow and more rapid repayment for services rendered". (Arrighi, 1999 p. 121-124)

Figure 2.13
Timeline of Mergers and Acquisitions



Source: [The three agricultural input megamergers ACBIO 2017]

This is relevant in order to find similarities in the same financial phases of the cycles of capital accumulation. Arrighi defines the financialization phase as a period of over competition and reorganization of the corporate structure in order to overcome the fall of the rate of profit and reestablish the opportunities to invest in the real economy. In order to move from the financialization phase to a new material expansion, what is needed is an organizational revolution at the business level which can shift capital accumulation from the financial to the real channels again. In particular, Jason Moore (2000, 2003c, 2007, 2008, 2010c) elaborates on this aspect of

Arrighi's theory, in which the organizational revolutions of the production process during the financialization phase is the starting point for new material expansion. According to Moore's reading of Arrighi and the World System Theory, this shift from the financial to the material phase is centred on agriculture.

Indeed, each period of crisis emerges as the exhaustion of the *organizational structures* which originated the new cycle of "material" accumulation and expansion. After a period of chaos and uncertainty, the cycle of accumulation comes to an end through the emergence of new business organizations revolutionizing each state-capitalist relation and creating new opportunities for *organizational revolutions* of classes, states, and business organizations. According to Moore, Arrighi internalizes spatial-temporal transformations as constitutive of systemic cycles, since restructuring and organizational revolutions (e.g. modern sugar plantation, biotech IPRs, etc.)are necessarily systemic and cyclical in the model. It is in this framework that Moore observes "*that the financial circuit of capital and the commodity-centred transformation of human and extra-human natures are more tightly linked than Arrighi appears to suggest"* (Moore 2011, p. 123), trying to explore a cyclically-deepening relation between financialization and material life.

Moore redefines the nature-capital categories at the core of the world-systems analysis, with the accumulation of capital as a socio-ecological process and reading capitalism as environmental history.

In order to do that, Moore assumes two key concepts: the ecological surplus and the capitalization of nature.

The ecological surplus is provided by four main socio-ecological relations:

i) labour-power

ii) food

iii) energy

iv) non-energy inputs (metals, wood and fibres)

All these socio-ecological relations or inputs can be considered "cheap" in relation to the organic composition of global capital – the fixed and circulating moments of constant capital.

The ecological surplus stems from the combination of capitalized production (e.g. farm mechanization) and appropriation of nature at zero cost: e.g. energy-intensive agriculture is based on the appropriation of geological production of nature as water and oil. In this sense, there is a dialectical unity of intensive capitalization and extensive appropriation. Moore traces back to food surplus the achievement of capitalist agricultural revolutions:

> *"For the greater part of six centuries, the relation between capitalism and agriculture has been a remarkable one. In contrast with all previous civilizations, capitalism organized a series of extraordinary expansions of the food surplus, through successive agricultural revolutions. The 'golden ages' of pre-capitalist civilizations invariably turned to the crisis so long as cultivation remained in the hands of peasants, who were not subject to market discipline. Sooner or later demographic expansion undercut land and labour productivity, and along with it, the agricultural surplus available for commercial and manufacturing growth in the broader social economy. Such had been the case with feudalism*."(Moore 2003b)

It is important to highlight that the capitalist system started with the subjection of peasants to the market discipline. In Moore, agriculture plays a foundational role in the capitalistic system. It is not by accident that Moore identifies in the cheapness of food the main driver that defines the cost of reproduction for the whole economic system—cheaper food means lower wages and increasing profits:

> *"In contrast, capitalism achieved its long-run economic expansion by means of imposing bourgeois property relations in the countryside, compelling the transition from peasant producer to capitalist farmer. With the transition to capitalism, the imposition of private property in land, backed by the power of the modern state (and its imperial formations), propelled a process of dispossession and differentiation that enabled rising labour productivity in agriculture and a rising food surplus. Vast reservoirs of labour-power took shape to feed the satanic mills, and vast agricultural surpluses were mobilized to feed these workers. From the Dutch and English agricultural revolutions of the early modern era to the family farm and Green Revolutions of the nineteenth and twentieth centuries, the bloody expropriations of capital have justified themselves on the basis of this signal achievement ('modernization'). The road to the modern world, it seems, has been paved with cheap food.As noted earlier, food, energy and inputs are 'cheap' to the degree that they are produced, and otherwise mobilized, at significantly lower costs than the system-wide average, and*

at significantly high volumes to drive down the costs of production for the system as a whole. The price of food is so pivotal because it conditions the price of labour.The great eras of capitalist development have always been conditioned on massive demographic expansion and massive proletarianization. The signal contribution of agricultural revolutions to the course of capitalist development can be found here, in driving down the relative cost of food while driving forward proletarianization" (Moore, 2010c, p.395)

Cheap food influences the price of labour, which determines the production costs for the system as a whole: historically the development of capitalism was rooted in demographic expansion, thus increasing the process of proletarianization. In this sense, Moore clarifies the food-labour relationship as the core relationship of capitalistic development, since the price of food determines the value of commodified labour-power and the capacity of capital to extract surplus value.

All the hegemonic cycles of accumulation in Moore are therefore based on agriculture (organizational) revolutions. In the British period, too, capitalist accumulation developed along two frontiers: a vertical one, for coal extraction *into* the Earth, and a horizontal one, producing commodities *across* the Earth. Adapting Arrighi's language (1994), Moore affirms that we are facing the *crisis* of an ecological regime when the conditions for an expansion of the ecological surplus start to erode and "*food, energy and inputs become more, rather than less", expensive*(Moore 2010c).

Ecological regimes ensure adequate flows of energy, food, raw materials, and labour surpluses to the recenter of the worldwide system of accumulation. Markets and institutions organize nature and, the decisive divide is the town (consuming surplus) – countryside (producing surplus) one.

"All great waves of capital accumulation have unfolded through a greatly expanded ecological surplus, manifested in cheap food, cheap energy and cheap inputs. The creation of this ecological surplus is central to accumulation over the Longue durée. There is a dialectic between capital's capacity to appropriate biophysical and social natures at low cost, and its immanent tendency to capitalize the reproduction of labour power and extra-human natures. Marx's theory of underproduction crisis – he calls it a 'general law' of accumulation – argues that 'the rate of profit is inversely proportional to the value of the raw materials' (1967 III, 111). […] There is an important tension between the 'overproduction of machinery', and the 'underproduction 'of raw materials" (Marx 1967 III, 119). (Moore, 2010c, p.393)

It is possible to find a lot of similarities in Moore's approach and David Harvey's chapter on accumulation by dispossession:

> *"It is also possible to accumulate in the face of stagnant effective demand if the costs of inputs (land, raw materials, intermediate inputs, labour-power) decline significantly. Access to cheaper inputs is, therefore, just as important as access to widening markets in keeping profitable opportunities open. […] Wholly new mechanisms of accumulation by dispossession have also opened up. The emphasis upon intellectual property rights in the WTO negotiations (the so-called TRIPS agreement) points to ways in which the patenting accumulation by dispossession and licensing of genetic material, seed plasma, and all manner of other products can now be used against whole populations whose practices had played a crucial role in the development of those materials […]The result is the periodic creation of a stock of devalued, and in many instances undervalued, assets in some part of the world, which can be put to profitable use by the capital surpluses that lack opportunities elsewhere The analogy with the creation of an industrial reserve army by throwing people out of work is exact. Valuable assets are thrown out of circulation and devalued. They lie fallow and dormant until surplus capital seizes upon them to breathe new life into capital accumulation" (Harvey, 2003, pp. 139-150)*

The contradiction in historical capitalism has been to preserve and create—while simultaneously undermine and appropriate—the ecologies reproducing autonomously from the circuit of capital: the "*rising capitalization of nature creates a world-historical situation of rising production costs stemming from the degradation of the conditions of production"* (Moore 2010d). Therefore, rising socio-ecological exhaustion and rising nature capitalization are two sides of the same coin.

The Green Revolution was characterized by an incredible expansion of relative ecological surplus constituting a new phase in the capitalization of global nature: both extra-human nature (cheap grains and energy) and human nature (relative surplus population: expanding the army of labour's reserves through mechanization and labour-intensification, and through the class differentiation of peasantries) created the conditions for the lowest food market prices in world's history. On one hand, capitalism has massively expanded the relative ecological surplus (cheap food, energy, materials) through an imperialist policy of new resource appropriation. On

the other hand, capitalism tried to intensify its penetration in the marginal zones of undercapitalized nature.

Concurrently, the Green Revolution experienced different problems: it registered a trend towards farm concentration and energy inefficiency, with arise in energy price while witnessing an erosion of the capacity to govern biophysical natures, which in turn escalated the resource depletion of water and soil and the super-weed effect. In the age of the Green Revolution, the two contradictions of agriculture came into play, gradually eroding the mechanisms to deliver (or even sustain) an ecological surplus sufficient to expand accumulation. The opportunities and obstacles of the political ecology of nature as capital circulate through (and not merely around) biophysical circuits: the faster these ecological revolutions are, the more they function toward imprisonment—rather than a liberation—of accumulation. Moore concludes that *as the capitalization of global nature proceeds, the relative ecological surplus falls*.

This theoretical framework based on the historical analysis of capitalist development allows Moore to question whether the present neoliberal phase of financialization represents the final moment of a structural crisis of capitalism or whether it is just a phase that can be resolved through new conditions of accumulation. If the ecological surplus characterized every phase of capitalism, where today can such surpluses be found and produced? Is the neoliberal world order bringing the world system toward an 'agricultural revolution in reverse' (Braudel, 1972, p. 427), with a constant decline in labour productivity and the relative food surplus?

Moore analyzes neoliberalism (which in Arrighi corresponds to the financialization phase of the U.S.hegemonic cycle of accumulation) in agriculture as characterized by the Uruguay Round in 1986 and the Marrakech Agreement in Agriculture and WTO, leading to the decoupling of world market prices from production costs (McMichael 2005) and therefore to two major consequences:

a) the decrease of world food prices:

Figure 2.14
Trend of World Food Prices

Figure 1 Cheap food and the neoliberal ecological regime

Source: FAO (2009).

Source: [FAo 2009]

according to FAO data on food prices in the XX century, *"world food prices dropped by 39 per cent between 1975 and 1989, and still further in the decade that followed"* (Moore 2010c, p. 278) up until the world food crisis in 2007-2008 (see also figure 6 on the price of agricultural inputs)

b) the concentration and centralization of capital in the agro-food sector (see figure 2.7, 2.8, and 2.9)

The data used by Clapp to support the shareholder value hypothesis fits better in the explanation given by Moore. In Moore's analysis, neoliberalism as a historical phase of the actual cycle of capital accumulation has not generated the conditions for new growth and real social development: the neoliberal phase has not generated a 'third technological revolution', which could have led to an organizational revolution lifting the profits and starting a new material expansion.

Moore summarizes the neoliberal failure in transforming agriculture: "*nearly three decades of experimentation with genetically modified organisms has succeeded in transferring wealth and power from farmers to big capital without any success in raising intrinsic yields*" (Moore, 2010c, p.390).

How does the financialization in agriculture fit in this analysis? Moore separates the actual cycle of accumulation into two parts: the first part acts as a redistribution of resources, the second part based on a financial 'bubble economy' (e.g. the 1997 Asian-centered financial crises).

> *"The transition from 'old' to 'new' agrarian questions during the 1970s, suggested for very different reasons by Bernstein (2001) and McMichael (1997), points to the exhaustion of capitalism's agro-ecological frontiers, set in motion during the long sixteenth century. While there are still forests and tracts of 'underutilized' land to enclose and exploit, today's frontiers are but drops in the bucket relative to the demands of value accumulation. Frontiers are not merely places 'out there' (and out of time) but are constituted by the varying logics of systemic reproduction in its successive developmental phases. This closure of the 'Great Frontier' (Webb 1964) marks an epochal transition in the history of capitalism. The closure of resource, labour and waste frontiers has cut off a key avenue of capital's escape from the rising costs of production. The rising capitalization of world agriculture – through which the farm becomes the agro-ecological pivot of 'downstream' and 'upstream' commodification – not only amplifies the tendency towards a declining rate of profit but in equal measure amplifies the pressures to escape it, through efforts to extend the frontier of 'technical control' (Edwards 1979)."* (Moore, 2010c)

Moore enlarges the approach of Arrighi by introducing the great frontier concept as a premise for the appropriation of natural resources and a deeper understanding of the Marxian metabolic rift. The frontier may be external or internal to capital circuits: external for un-commodified nature, internal for existing circuits by eliminating "inefficiencies" and restructuring production. The crucial theoretical passage is the introduction of the Marxian dialectic between underproduction (too few inputs) and overproduction (too many commodities): according to this vision, the actual crisis emerges as an insufficient flow of cheap food, fuel, labour, and energy to the productive circuit of capital (M-C-M').

The neoliberal crisis has to do with the incapacity to produce the relative ecological surplus which previous cycles of accumulation produced through an agricultural revolution that generated a great leap in the yields (with a small capital investment), rather than a simple increase based on a better allocation of resources.

In Moore's view, in order to start a new era of cheap food neoliberalism relies on the biotechnological revolution and the wave of new "enclosures". Even if this process supports the redistribution of income, deepening the class differentiation process among farmers and the proletarianization process, at the same time it has not delivered any real leap in yields,[20]or not enough to create a new expansion of production within a new systemic cycle of accumulation. According to Moore, the new GMO varieties are the core of a new yield revolution but are not delivering the expected leap in food production with small capital investment. Gurian-Sherman (2009), in the *Evaluation of the Performance of Genetically Engineered Crops* published by the Union of Concerned Scientists, concludes that "*most yield gains are attributable to non-genetic engineering approaches [...]GE technology has produced neither intrinsic nor operational yield gains in commercialized varieties".*

Moore considers the superweed effect as an explanatory phenomenon of the biotech field's failure in delivering a new agricultural revolution and a new cycle of accumulation based on commercial expansion:

> *"This 'superweed effect' marks one aspect of agriculture's differentia specifica in Marx's important – if too often neglected – argument, noted earlier, that the 'overproduction' of machinery (fixed capital) tends towards the 'underproduction' of raw materials (circulating capital). Rising costs of energy and inputs used in a given production cycle reinforce the tendency towards a declining rate of profit inscribed in rising mechanization. As capital invested in machinery overtakes that spent on wages, therefore, the very productivity gains achieved by mechanization and standardization set in motion widening demands for circulating capital (inputs). But the production of energy, wood, metals, fibres and other inputs is rooted in socio-ecological processes that do not respond quickly or easily to market signals."* (Moore, 2010c, p. 400)

Moore uses Marx'stheory of value to define the overproduction of machinery as the consequence of the under-production of raw materials. This

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[20]In reality, the aim of the globalization of agricultural biotechnology was not to increase the yields, but to stop the progressive decline in yield growth worldwide.In this case too,the failure was clear, (e.g. RoundupReady® crops) as super weeds have evolved to survive herbicides (Benbrook 2012). The result wasa quicker evolution of biopsycal nature than what capital can control.

means that in the neoliberal age, agriculture should find a way to increase labour productivity. To do so, the new strategy is to discipline and organize this increase of productivity by intervening on the biophysical nature at a cellular and even genetic level, therefore extending the area for commodity production and exchange to include in the capitalistic cycle nature not yet subsumed by capital.

The assumption of Moore is that in the neoliberal phase, the opportunities for capital to appropriate nature are reduced. The superweed effect exemplifies how biotech cannot keep the yields of the Green Revolution.

The closure of the Great Frontier (Webb 1964) leaves a small margin for a better allocation of under-utilized resources, as these are not able to restart the capital accumulation process and avoid the rising costs of production. Moore underlines how the previous drivers of agricultural revolutions were based on different forms of bourgeois territorial and property relations, technical innovations, *and* still available un- or undercapitalized nature. After the end of Bretton Woods and during the neoliberal financial expansion, there was an increase in property claims on the genetic diversity of the biosphere. Even if Moore suspends his judgement on whether the biotech revolution could provide a way forward, he notices how the financialization of the neoliberal era marks the transition from formal to *real subsumption of nature to capital*. Moore does not agree with the vision of Neil Smith (2007), who sees GMOsas creating the conditions for a new phase of accumulation characterized by '*capitalization all the way down' to the genetic relations of life itself*:

> *Rather, partly in response to these increasing constraints, a new frontier in the production of nature has rapidly opened up, namely a vertical integration of nature into capital. This involves not just the production of nature 'all the way down', but its simultaneous financialization 'all the way up'. Capital is no longer content simply to plunder an available nature but rather increasingly moves to produce an inherently social nature as the basis of new sectors of production and accumulation. (Neil Smith 2007 p.33)*

The role of GMOs and biotech in deepening the internal and external frontier will be discussed further in chapter 4.

Moore's analysis follows the Arrighi - Krippner definition of financialization (*an increasing mass of money-capital that "sets itself free" from its commodity*

form, with accumulation proceeding through financial deals) and allows to reinterpret the data on Mergers & Acquisitionsnot as a verification of Clapp and Isakson's shareholder value hypothesis, but as a demonstration of the fall of the rate of profit and the tendency to concentration while attending an organizational revolution of the business. While the vision of Moore, Clapp, and Isakson coincide on the characterization of financialization through new financial arenas for investments, Clapp and Isakson's understanding of financialization as shareholder value can be replaced by Moore's organizational revolutions, which assume implicitly a definition of financialization not based on the nature of the actors involved but on the phase of the cycle of accumulation.

Moore's analysis of capitalism as a world-ecology is relevant to update the analysis of Arrighi on agriculture and connect with the analysis on the financialization of nature (including agriculture) summarized by Friends of the Earth International.

a) For what concerns Arrighi's analysis on agriculture, he noticed how the diversion of over-accumulated capital from the countryside is an important component of the financialization process in order to penetrate rural structures and deepen the process of proletarianization of peasantry. He notices how the surplus capital accumulated in the cities brought into existence in contiguous rural areas commercial agriculture oriented towards the production of food for the urban population, incorporating these contiguous rural spaces within urban political jurisdictions either for strategic or for economic reasons, and to promote further their commercialization and modernization. In Arrighi (1994) the penetration of capital in the countryside is mostly related to the surplus of capital flowing in the agricultural sector and to urban gentrification. Arrighi (2007) also recalled the Smithian distinction between the *natural progress* of China and the *unnatural progress* of European nations, being the former directed towards the agricultural sector first, then to manufactures, and lastly to foreign trade, while European progress started with foreign trade, to then develop manufacturing, and finally agriculture. According to this scheme, the capital invested in agriculture was more stable and secured.

   What is relevant is how the overaccumulation of capital during the financialization flows to the countryside to find *new financial arenas*. By reshaping agriculture and investing in organizational revolutions of the

production system, the financialization phase shifts back to material expansion.

A good example of this trend is the land in the analysis of Fairbairn (2014), where the overaccumulation of capital reaches the farmland with the objective of portfolio differentiation, but at the same time does not prevent the reorganization of production:

Land plays two different economic roles; it is an essential factor of production, but it also acts as a reserve of value and creates wealth through passive appreciation. In other words, it is a productive asset that moonlights as a financial asset (Fairbairn, 2014, p. 779)

b) The analysis of Moore on Capitalism as a World Ecology allows connect to another approach to financialization: the so-called financialization of nature, as defined by Friend of the Earth International (2015). In order to allocate efficiently natural resources and ecosystem services, new markets are generated with titles to be exchanged (in order to efficiently allocate resources through the market) or payment schemes.

The UNEP, the World Business Council for Sustainable Development, the World Bank and others promoting a Green Economy say that 'green growth' will address these multiple crises in one sweep. Green growth, they claim, will relieve states of the growing financial burden of environmental protection while fixing the environmental damage corporate destruction of nature has already caused. 'Green growth', however, redefines 'green' not 'growth': Nature is described in the language of financial capital to better suit the new Green Economy. This Green Economy needs a flexible idea of nature. A nature divided into different "ecosystem services" that can be quantified, measured and above all, broken up into individual units, so profit can be made from selling rights to these individual units of nature. We call this financialization of nature. (FOEI, 2015, p. 2)

Therefore, natural resources, or any other underlying asset, must be efficiently allocated according to a neoclassical approach, thus creating a new market of titles virtually representing the underlying assets.

Studies on Environmental Economics claim that the pricing of nature will promote the e*nvironmental sustainability* of the markets, leading to a new green economy.

> *The green economy, therefore, constitutes a new capitalist strategy involving the redirecting of investments towards nature, which is transformed into "natural capital", with markets created and prices established around it. Pollution and conservation serve as the basis for new business activities; new supposedly "clean" technologies like agrofuels are promoted, but implemented under the same intensive, large-scale model that implies more land grabbing and social and environmental impacts; new markets are created around nature, such as the "carbon emissions market", which forms part of the financial markets; and a leading role is given to corporations. Thus financialization forms part of the green economy and complements it perfectly because both concepts aim in the same direction: commodification and speculation around all aspects of life. It is an intolerable approach for those of us who are struggling to stop the destruction of forests and other important natural areas around the world, which do not have a price but do have enormous value for local communities and humanity as a whole.* (WRM 2012)

It is interesting to observe how financialization and the green economy are understood as sharing the aim of commodifying and speculating on all the aspects of life. The relationship between financialization and commodification seems to be a circular one. In this sense, it is enlightening to start with the definition of financialization in agriculture developed by Luigi Russo:

> *In a "financialized" economy, the expansionism of the economic system under the pressure of the financial system increasingly translates into the dismembering of organic cycles of production, as embodied in peasant co-production, into linear input-output chains subject to the metric of financial profit. Farm production is increasingly dependent on external inputs (e.g. chemical fertilizers, pesticides, hybrid or genetically modified seeds, mechanical implements such as tractors) and on external output markets for agricultural commodities. When it is not outright displaced by the re-articulation of land into new assemblages which may or may not serve to produce food (e.g. biofuel production in the "land grab"). In this new environment, transnational corporations both in the processing and the retail sector increasingly have the ability to exert control over the food chain and enact new orderings that are streamlined for the extraction of financial value.* (Luigi Rossi, 2013, pp. 93-94)

Luigi Rossi describes financialization as dismantling and linearizing the complex relations of co-production between man and nature embodied in the food systems, in order to be swallowed up by an expanding economic system. In reality, the process of a linear transformation of the model of

production in an input-output chain is no different from the commodification process that has been put in place already by the green revolution and industrial agriculture.

> *Harriet Friedmann (1980, 158) defined commoditization as the 'penetration into reproduction of commodity relations'. Accordingly, 'commoditization is a process of deepening commodity relations within the cycle of reproduction. Commoditization occurs to the extent that each household ... comes to depend increasingly on commodity relations for reproduction'.* (Van Der Ploeg, 2010, p. 1)

The commodification of agriculture, therefore, serves as a precondition for financial products (e.g. derivatives), since it pre-exists to the financialization process itself. The incomplete transition to capitalism in agriculture is what concerns the process of financialization of agriculture, as assumed by Moore with the *great frontier* closure. In the context of the closure of the *great frontier*, it is important to keep a clear distinction between the commodification process (related to the commercial expansion phase of the capitalistic cycles of accumulation) and the financialization phase: the commodification is still oriented toward the generation of profits through the production process, while financialization is not. Having clarified the distinction and the relation between commodification and financialization, the confusion stems from the fact that as the financialization penetrates the countryside, it polarizes and proletarianizes rural areas.

Shifting the focus again on the green economy as the creation of new markets for capital investments, if we apply Arrighi and Moore's approach, we should assume that carbon credits and carbon finance are not part of the financialization of agriculture, since they are not oriented towards an organizational revolution, even if they are part of the financial capital flow towards new financial arenas.

> *Nature's appeal to capital markets and corporations differs in this latest redefinition because they are not primarily interested in creating a new physical commodity from nature. There will be no value extraction through a physical good.No visible product will be extracted, transported, processed and sold. In the case of ecosystem services, the value lies in the potential to reduce corporate compliance costs arising from environmental legislation and to enable continuing industrial production despite increasing global limits on 'resource use'. The economic value lies in a market that offers permission to destroy or pollute nature in places that are of interest to capital markets*

> *and corporations but where legal or moral restrictions limit the destruction. Ecosystem service markets offer this permission in the form of offset credits.* (FOEI, 2015, p.6)

In this case, too we can use the term of financialization to indicate capital free of its commodity form. As mentioned above, in Arrighi and Moor ethe over-accumulation of capital leads to the overflow of capital in the countryside, while this is intended as one of the *many new financial arenas* (Clapp Isakson 2017), equal to flex crops (Borras et al. 2012), real estate, and nature in general. The financialization process, therefore, creates new markets, with tradable stocks of an underlying asset (e.g. carbon emissions) absorbing a relevant part of the financial capital. The case of the financial derivate on commodities is crystal clear, as carbon market is. In the capital flow across different financial arenas and due to the fall of profits and the Merger and Acquisition processes, the increasing inter-state and inter-business competition for financial resources pushes towards new organizational processes, which in agriculture allow to decrease the cost of reproduction and the cost of labour for the worldwide system while increasing the margins and re-establishing profitability. This distinction is relevant to understand the distinct significance of the financialization process as a whole and its specific role in agriculture.

Gosh (2012) is correct in assuming that the food price crisis cannot be treated as a separated issue from the global financial crisis.

Even McMichael (2012) reads the actual penetration of international capital markets in agriculture, including land grabbing, as a search for safe investments that allow for capital to undermine the conditions of its reproduction. Capitalization of non-human nature corresponds to what Moore calls the under-reproduction of nature. In this phenomenon, capital predates the natural world and exhausts the ecosystem service, progressively expanding and penetrating new frontiers of accumulation that serve as temporary solutions to the accumulation crisis.

McMichael identifies the framework for this further penetration in the 2008 World Bank's World Development Report on "agriculture for development", where the crisis was tackled through further inclusion of small scale food producers into global value chains, transforming the low-yield model of peasant production in a highly capitalized productive model with intense use of natural resources. According to McMichael, the land and

water enclosure is the premise to a new extractive paradigm that is centred on biomass and synthetic biology and that legally appropriates living systems through technology and by way of patents and titles.

Even Harvey (1989) discusses the mechanism of accumulation by dispossession to undervalue raw materials. In the specific case of agriculture, TRIPS agreements are the ones undervaluing the peasant seed systems through Intellectual Property Rights:

> *"Wholly new mechanisms of accumulation by dispossession have also opened up. The emphasis upon intellectual property rights in the WTO negotiations (the so-called TRIPS agreement) points to ways in which the patenting accumulation by dispossession and licensing of genetic material, seed plasma, and all manner of other products can now be used against whole populations whose practices had played a crucial role in the development of those materials […]The result is the periodic creation of a stock of devalued, and in many instances undervalued, assets in some part of the world, which can be put to profitable use by the capital surpluses that lack opportunities elsewhere. The analogy with the creation of an industrial reserve army by throwing people out of work is exact. Valuable assets are thrown out of circulation and devalued. They lie fallow and dormant until surplus capital seizes upon them to breathe new life into capital accumulation […] the umbilical cord that ties together accumulation by dispossession and expanded reproduction is that given by finance capital and the institutions of credit, backed, as ever, by state powers".* (Harvey, 1989, pp. 139-152)

Finance is intended as money capital that creates a new market on underlying assets outside of the accumulation regime, and does not increase profits through growth in productivity or material expansion of trade,but through capital gains that appropriate *raw materials* outside of the capitalist market: in the specific case, some inputs are crucial to agricultural production.

In the Arrighi – Moore paradigm, the capitalistic accumulation regime finds its funding premise in the capital penetration of the countryside: it increases yields and lowers the cost of raw materials (agricultural inputs) to reduce the cost of food, lower wages, and increase profits.

If the capital penetration of the countryside does not generate agriculture innovation, the accumulation regime will shift to a financialization phase in order to maintain profits and will revert back to the countryside as an agrifinancialization process, which operates through accumulation

by dispossession, and intensifies the proletarianization and class differentiation of peasantry that still persists in the fields through the Chayanovian model of peasant agriculture. This process involves the dispossession of collective rights and forms of property (such as seeds), ultimately increasing accumulation.

It is worth noting how Harvey describes the mechanism of financialization assuming the framework of austerity policies:

> *"What accumulation by dispossession does is to release a set of assets (including labour power) at very low (and in some instances zero) cost. Over accumulated capital can seize hold of such assets and immediately turn them to profitable use[…] Another way would be to release cheap raw materials (such as oil) into the system.[…]The same goal can be achieved, however, by the devaluation of existing capital assets and labour power. Devalued capital assets can be bought up at fire-sale prices and profitably recycled back into the circulation of capital by over accumulated capital. But this requires a prior wave of devaluation, which means a crisis of some kind. Crises may be orchestrated, managed, and controlled to rationalize the system. This is often what state-administer austerity programs, making use of the key levers of interest rates and the credit system, are often all about. Limited crises may be imposed by external force upon one sector or upon a territory or whole territorial complex of capitalist activity. This is what the international financial system (led by the International Monetary Fund) backed by superior state power (such as that of the United States) is so expert at doing. The result is the periodic creation of a stock of devalued, and in many instances undervalued, assets in some part of the world, which can be put to profitable use by the capital surpluses that lack opportunities elsewhere. Wade and Veneroso capture the essence of this when they write of the Asian crisis of 1997-8: Financial crises have always caused transfers of ownership and power to those who keep their own assets intact and who are in a position to create credit, and the Asian crisis is no exception". (*Harvey, 1989,p.150)

In this case, austerity policies and financial crisis devalue and grab resources through accumulation by dispossession. This financial mechanism functions thanks to the crisis and devaluation of assets and aims to transfer property.

Harvey, therefore, contributes to the understanding of how financialization functions through accumulation by dispossession: the lack of protection of a collective resource or right (i.e. a raw material crucial to define the cost of food production) allows for its dispossession and integration in the capitalistic production system, ultimately fostering a new material expansion.

The next chapters will discuss which raw materials agrifinancialization is devaluing and investing on, in the context of the closure of the agroecological frontier as described by Moore. Moore already described GMOs as the failure of such an attempt, due to the superweed effect and the lack of ability to increase the yields of agriculture production.

It is also worth to notice the common definition of financialization as an abstraction of food, which has similarities with the definition of financialization as an abstraction of capital from the commodity form into M-M'. Moore (2010) mentions the concept, explaining the *deepening of the abstraction of food through its conversion to fuel.*

The next chapter will discuss how this abstraction works and will include in the analysis the work on cognitive bio capitalism based on the fact that

> *The general intellect is the result of social cooperation that lies at the very basis of the accumulation process and allows the passage from tacit to codified knowledge í process that enables the production of value in capitalistic terms. Such a passage is regulated by the evolution of the juridical forms of intellectual property rights. This property, in conjunction with the control of the means of production, allows private property to control the process of generation (intellectual property) and diffusion of knowledge (ownership of the means of production). Because the exploitation of the general intellect implies the valorization of the individuals' entire life, the process of wealth creation is no longer limited to the extraction of value from the singular working day but is extended to the point of incorporating the entire life of human beings* (Fumagalli, Lucarelli; 2011, p. 100)

Going back to Arrighi'sdefinition, financialization should imply capital not assuming the commodity form. This has nothing to do with the distinction on whether investors are part of the financial sector or the commercial one: what makes the difference is the form in which capital is invested in order to reproduce itself and generate profits.

For instance, if we identify the financial sector with banks, could the fact that banks are investing in companies rather than providing credit be seen as a financial investment in which capital is not assuming the commodity form? This is not the case. Even if the capital investment is directed to the control of the company, the capital is still part of the circulating capital of the company and can feed therefore the productive cycle of the company.

What about the case in which the control of a company's capital majority leads to a merger with other companies? The Mergers & Acquisitions process could be a symptom of a fall of profit (which is typical of the financialization phase in Arrighi) and the reorganization of production. However, in Arrighi, the M&A process on a vast scale is not financialization per se: it is just a context in which financialization happens, in which capital does not find any remuneration and will search for it through a) a reorganization of production, so as to reduce the costs of production and reinforce the monopolistic position or b) through direct investment in a financial asset on a short-term base. For instance, if the investment in the shares of a company leads to an M&A that can increase the share value of the company, and the shares are then sold on the short term in the markets, that is a financial investment describable as financialization and financial speculation at the same time. However, this is not the case: firstly, the actual M&A leads to a concentration of the sector, and there is no evidence of the dismissal of shares on the market after the M&A or the spin-off of part of the company (as it happened on a vast scale in the 1980s). Secondly, it would be questionable to define this speculative movement as M-M', since the capital investment would be illiquid and immobilized in a productive system for a while.

This is not the case of financial derivatives on commodities, which are assimilated to cash being totally liquid. The case of financial derivatives on agriculture commodities goes in this direction: agriculture commodities are used as collateral (a real product to be consumed) to justify the financial exchanges on the futures markets. Due to the financial markets' deregulation, the quantity of commodity exchanged in the futures markets is higher than the real quantity produced in the world. Therefore, financial speculation does not provide liquidity to the commodity market in order to make it frictionless and perfect in the definition of prices. Instead, the

prices of agriculture commodities are defined by financial speculation itself, as this drives the price of the commodity according to financial speculation trends and not the real underlying production. Agricultural production (including stocks and food reserves) is a secondary aspect driven by financial speculation. The case of financial derivatives clearly shows how finance uses an underlying asset (the collateral) to create a financial market and generate profits and capital gains through speculation, in the broader framework of the deregulation of financial markets.

Coming back to Arrighi-Moore, financialization in agriculture is the consequence of the fall of profits: there is disinvestment from real agriculture production and a shift toward financial deals. Overaccumulation/underproduction explains through the fall of profitability both the Mergers & Acquisitions driving the concentration of the agribusiness (aiming to increase profitability through the monopolist control of the market, rather than the minor effect of cost-saving) and the financialization of agriculture. Mergers & Acquisitions are therefore still part of the final phase of commercial expansion of the capital accumulation cycle. In the particular case of agriculture, financialization relies on the process of commodification that the *agribusiness* generated through the capital penetration in the countryside (from this we derive the term agrifinancialization, which highlights the consequentiality and unity of the historical processes of accumulation in agriculture). The streamlining of the complexity of food systems into an input-output process (as Luigi Russo clearly explained and as mentioned above) through the Green Revolution is the precondition for the financialization process, even if separated from the financialization itself.

The question therefore is: what is financialization in agriculture and how does it work?

If we assume the definition of financialization as *money-capital* that *"sets itself free from its commodity form",* and *the abstraction of food from its physical form* fostering capital accumulation through financial deals, the result is derivatives on agriculture commodities as pure money capital that has been liberated from its commodity form through financial abstraction. At the same time, agrifinancialization works to produce organizational innovation in agriculture so as to trigger a new phase of material expansion, working along the internal and external frontiers of capital accumulation: GMOs and synthetic biology are clearly identified by Moore, Smith, Har-

vey, and McMichael as the new frontiers. Moore assumes that the superweed effect marks the end of GMOs as the innovation meant to restart capital accumulation. Smith sees GMOs as the vertical integration of nature into capital. Harvey considers them the target of accumulation by dispossession as perpetrated by the WTO and TRIPS agreements, while McMichael as the base of the bioeconomy transforming the hydrocarbons industry. In the next chapter, this rich theoretical discussion will be compared with the ongoing negotiations and processes in FAO and the United Nations

3 Globalizing the Struggles: The Transnational Governance of Agriculture

Chapter 3 will discuss how the transnational governance of agriculture has been shaped by financialization in the 1990s and has shaped the current political orientation of transnational agrarian movements.

The emergence of new TAMs is mostly connected to the food sovereignty agenda and, in the late 1980s and 1990s, it can be read as a reaction to the broader financialization process generated by the end of the Bretton Woods Agreements, which resulted in neoliberal policies in agriculture mainstreamed through the central role of the International Monetary Fund, the World Bank, the United Nations, and other global governance institutions due to the crisis of nation-states in the era of neoliberal globalization. The International Monetary Fund, the World Bank, and the United Nations-supported U.S. policies, otherwise they were hindered from functioning. The General Agreement on Tariffs and Trade (GATT) was the main instrument of support to the formation of a world market under the jurisdiction of the U.S. government, which controlled the pace and direction of the liberalization of trade. The final outcome was not a free trade system, but a patchwork of agreements between the USA, Japan, Europe, and other minor countries.

After WWII, the hegemony of the United States of America (Arrighi 1994, Arrighi and Silver 1999) in the global markets was based on a process of "internalization" of the world market within giant domestic business organizations, leaving U.S. economic activities organically integrated into a single national reality to a greater extent than they ever were during the British cycle. Foreign Direct Investment (FDI) represented the central tool of the capitalist world economy reconstruction after WWII (Arrighi 1994, 2007).

Direct investments by U.S. transnational corporations transferred managerial control over substantial sectors of foreign economies to U.S.nationals. The TNCs integrated mass production and mass distribution processes within a single organization and internalized the whole sequence of sub-processes, from the procurement of primary inputs to the disposal of final outputs. TNCs were in the position to subject the costs, risks, and uncertainties along the value chain in long-term corporate planning that was coordinated administratively and meant to increase productivity and reduce costs.

> *"US corporations began to move to foreign countries almost as soon as they had completed their continent-wide integration. . . . In becoming national firms, US corporations learned how to become international" [...] The spectacular domestic and trans-statal expansion of US multi-unit, vertically integrated business enterprises, and the organizational barriers to entry which they created, were associated with an equally spectacular growth of managerial hierarchies and bureaucratic structures. Once in place, these hierarchies and structures themselves "became a source of permanence, power and continued growth".* (Arrighi, 2007, p. 248-249)

In the 1950s and for most of the 1960s, the U.S. government had effective control over the world's liquidity and was able to promote and sustain a generalized expansion of world trade in a way that has few precedents in capitalist history.

Until the 1970s the U.S. Federal Reserve System played a major role compared to the International Monetary Fund and the World Bank in the regulation of the world money. It was only with the crisis of the U.S. hegemony in the 1970s and, above all, in the 1980s that for the first time the Bretton Woods organizations rose to prominence in global monetary regulation. By the end of Bretton Woods agreement, TNCs were embodied into a world-scale system of production, exchange, and accumulation that was independent of any state authority and ruled the members the interstate system, including the USA.

TNCs played a role in the accumulation of surplus capital in European and offshore markets that led to a crisis of the Central Banks' regulation of money supply in accordance with the Bretton Woods regime. The phase of financial expansion began in 1968 with the explosive growth of (TNCs) deposits in the London-centered Eurodollar market, forcing the U.S. government to abandon the gold-dollar exchange standard and hand over to the free forces of the market the ability to fix the prices of national

currencies. U.S. monetary policies tried to support material expansion, but the expansive policies fuelled the petrodollar and Eurodollar deposits through the private interbank mechanism of the money supply.

> *From the 1980s onward, nation-states have been squeezed three ways by neoliberalism: (1) 'from below' through a widespread push for political and fiscal decentralization and administrative de-concentration; (2) 'from the side' through far-reaching privatization of governance structures and responsibilities; and (3) 'from above' through globalization and the partial giving up of significant state powers to international inter-governmental and financial institutions.* (Borras 2016 p. 13)

The end of Bretton Woods originated a new neoliberal economic framework of austerity, economic structural adjustment programs, and bi- and multi-lateral trade agreements led by the World Bank and International Monetary Fund—such as the Uruguay Round GATT negotiations that culminated in 1995 in the formation of the World Trade Organization.

This process created new space for what is called global governance, with the triple squeeze of national state regulatory powers, or *non territorial governance* (Coleman and Wayland 2006), which transcends the concept of a territory created by nation-states and focuses on the relationships between social actors, nation-states, and international organizations. In this sense, governance can be seen as series of different sites of policy decision-making that may lack coherence: the agreed actions and political outcomes emerging in two different places might not be coordinated and may contradict each other. The triple squeeze of national state powers corresponds to fragmentation and an un-ordered political space, characterized by a mixture of formal and informal structures and the penetrability of hierarchies:

> *"[…] borders and boundaries for policymaking are variable and porous and are being created and re-created in response to globalizing processes and policy developments. In transnational spaces, states "act" alongside a range of nonstate actors. In these spaces, however, the symmetry and congruence between decisionmakers and citizens characteristic of "territorial governance" is lost. Some analysts suggest that global civil society can help address this loss by creating direct linkages between global policymaking and citizens."* (Coleman and Wayland 2006 p. 246)

Until the 1970s, agricultural policies were discussed among the different ministries, while the global organizations were not involved. Not even

the developed countries attended OECD meetings. As a result, relationships at the transnational level were practically episodic.

In order to leave the power of decision-making at the domestic market level, GATT had established some exceptions for health and safety and for agricultural trade, such as quantitative restrictions on imports of agricultural goods, to control domestic supply and export subsidies on primary products.

The Uruguay Round Agreement on Agriculture (URAA) replaced non-tariff barriers with Bound tariff rate,[21] and export subsidies were limited in expenditure and quantity of product. In general, URAA brought the regulation of agricultural markets more in line with the other products, but did not manage to reduce tariff barriers and liberalize the markets, since the average height of agricultural tariffs was still at 61% and domestic policies had to do little to get adjusted to the standards of URAA (Coleman, Grant, Josling 2004) even if we can consider the Uruguay Round as a global negotiation on domestic policies

In the agricultural sector, neoliberalism meant sharp reductions in tariffs and rising imports of cheap staples, cuts in direct and indirect subsidies for producers—except fora few developed countries granted exceptional flexibilities, especially the European Union and the United States—, and streamlining of sanitary and phytosanitary regulations that could constitute non-tariff barriers to trade(Edelman and Borras, 2016, p.30).

The emergence of new TAMs for food sovereignty in the 1990s is generally recognized as a reaction to oppose the GATT /Uruguay Round process, which led to the birth of the World Trade Organization and the increasing importance of Global Governance institutions, including the United Nations, and the squeezing of the sovereignty of nation-states under the neoliberal financialization phase.

The emerging transnational policy space in agriculture was part of a broader neoliberal moment generated by the change of mode of capital accumulation, which shifted from materialism to financial expansion.

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[21]Most-favored-nation tariff rate resulting from negotiations under the General Agreement on Tariffs and Trade (GATT) and incorporated as an integral component of a country's schedule of concessions or commitments to other World Trade Organization members

Farming, which up until that point had been at the core of key policies for state-building, became just one economic activity among many others: national food security and family farming have since then been challenged by the new context based on global trade that defines normative and policy frameworks on agriculture. The previous governance was rooted in the nation-state, being the national self-sufficiency in food at the base of national security, with farmers creating a bulk of conservative landowners embedded in the process of building the national state (Coleman, Grant, Josling 2004). The shift of governance from the national level to a global one, where the corporate sector was organized and pushed for capital and technology-intensive model of production in agriculture, profoundly affected national and local farmer organizations, which ultimately reacted to the new state of things and organized into transnational agrarian movements. The state withdrawal from support to agriculture coincided with the increasing pressure on the control of natural resources through privatization, which affected the most vulnerable part of rural communities, especially the ones working with ecological processes rather than capital- and technology-intensive models of production. The institutional shift generated threats and opportunities for rural populations (Bernestein 2006, McMichael 2008) and caused two trends in rural movements: the further localization of work, so as to occupy the governance space left by state decentralization, and the internationalization of the work of advocacy and lobbying through horizontal networking. The common targets at the international level and the need to be effectively the organizations to build alliances at both international and local levels.

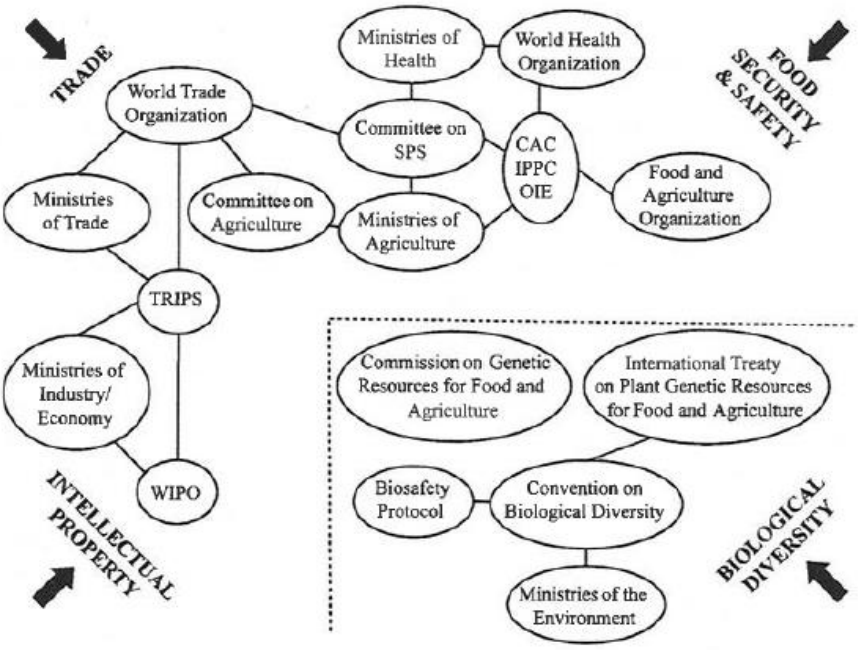
In this context, different groups of actors emerged: transnational corporations and other interest groups on one side, and TAMs and NGOs on the other. Both sides push for the establishment of opposite frameworks of agricultural policies, which in turn are defined in the transnational and contested spaces of the United Nations, WTO, IMF, and the World Bank, where bothTNCs and TAMs are more or less dominant. In these contested spaces, nation-state governments are the central players in rural development (Keohane and Nye 2000, Borras and Franco 2009) even if their role has been transformed by the triple trends of globalisation, decentralization, and privatisation policies. National governments are often the mean that groups with opposite interests use to act in the transnational space of governance (Coleman, Grant, Josling2004).Nation-state govern-

ments are therefore contested spaces, as they are connected with the national class and politics of TNCs and TAMs: in this sense, intellectual property, biodiversity, and food security are defining the space with TRIPS - Trade-Related Aspects of Intellectual Property Rights, the World Intellectual Property Organisation (WIPO), the Convention on Biological Diversity, the Cartagena Protocol on Biosafety, the food and Agriculture Organization, the Committee on World Food Security, the International Treaty on Plant and Genetic Resources for Food and Agriculture (ITPGRFA), the Codex Alimentarius, the World Health Organisation. The transnational space of agriculture is composed by different processes, information flows, and policymakers connected with regional or national political disputes.

This space transformed the way in which Civil Society and the Farmer Organizations organizes transnational organizations that act as pressure groups at transnational level and affect the structures and policy agendas at the national level. The neoliberal framework and the internationalization of the discussion on trading rules brought the ministries of trade and finance to influence the definition of agriculture policies according to the logic of the international trading system and the competitive paradigm. The producers are therefore seen from a different perspective, which takes into consideration the interest in the processing and retail industry. As a result, the different sectors of the national government are almost obliged to coordinate in order to internalize at the domestic level the discussions happening at the global level (Coleman, Grant, Josling2004).

This space has changed the way of working on domestic policy networks. The partnership approach at the global level has redefined the implementation role of CSOs at the national level, given that the way in which normative and policy frameworks generating at the global level are internalized at the national one has changed the way in which public policies are built in the first place. A clear outcome was the increasing interdependence between different policy areas that up until that point had been discussed in different spaces: international trade, intellectual property rights, food security, and biodiversity conservation (Coleman, Grant, Josling 2004). These different emerging spaces have been summarized as follows:

Figure 3.1
Transnational Policy Space in Agriculture



Source: [Coleman, Grant, Josling 2004 pg. 167]

Figure 3.1, dating to 2004, shows the emerging conflict between intellectual property in the international trade (defined as TRIPS) and the negotiation on biodiversity conservation. During the Earth Summit in Rio de Janeiro (1992), governments signed a Convention on Biological Diversity (CBD) which also hosts an international agreement on biological security, the Cartagena Protocol on Biosafety to the Convention on Biological Diversity, signed in 2000 and ratified by 65 states, which came into effect in 2003. The Cartagena Protocol is an international agreement setting the procedures to ensure the safe handling and transboundary transport and use of living modified organisms (LMOs).

LMOs are defined as a living organism that possesses a novel combination of genetic material obtained through the use of modern biotechnology which includes a. In vitro nucleic acid techniques, including recombinant deoxyribonucleic acid (DNA) and direct injection of nucleic acid into cells or organelles b. The fusion of cells beyond the taxonomic family, that overcome natural physiological reproductive or recombination barriers and that are not techniques used in traditional breeding and selection.

This area of biodiversity/biotech global governance allows broader participation of non-state actors, and it presents the field where opposing interests have been clashing since the signing of the Convention on Biological Diversity in 1992 and the 1994 WTO agreements on agriculture, sanitary and phytosanitary measures, and intellectual property. As a result, two contrasting spheres of authority emerged: 1. the international trade system (including the WTO) and the intellectual property rules defined as TRIPS—which are agreements overseen by the World Intellectual Property Organization and the International Union for the Protection of New Varieties of Plants (UPOV) 2. the CBD, its associated biosafety protocol, and the International Treaty on Plant and Genetic Resources for Food and Agriculture (ITPGRFA), which derives from the voluntary International Undertaking on Plant Genetic Resources, established in 1983 in the the Commission on Genetic Resources for Food and Agriculture and culminating in 2001 in the adoption of the legally binding International Treaty on Plant Genetic Resources for Food and Agriculture, which entered into force on 29 June 2004. The Commission on Genetic Resources for Food and Agriculture (CGRFA) is concerned with preserving genetic resources, whether on-site (in situ) or in special collections (ex-situ), and it is the host of the International Treaty on Plant Genetic Resources. ITPGRFA recognizes that the benefits stemming from the use of genetic resources in a place other than the one in which these originated should favour the peasants and indigenous peoples that conserve and multiply biodiversity in the fields, by recognizing the farmers' rights due to their enormous contribution to biodiversity and by increasing their participation in decision-making processes. The Benefit Sharing Fund planned by ITPGRFA was clearly in conflict with the intellectual property planned by TRIPS.

Figure 18 does not fully capture the relationships among the different actors in the transnational policy space in Agriculture. Even by considering the institutional level only (and therefore leaving the Civil Society and

the Private Sector out our analysis) it is crucial to remember that each nation-state participates through different Ministries (Agriculture, Health, Economy, Trade, Environment, including Foreign Affairs—which is absent in figure 18) and official delegations in different institutional spaces, such as FAO and the Committee on World Food Security (also not included in figure 18).

As the following sections will discuss, TAMs managed to include the United Nations in the picture, making clear reference to the Humar Right Approach (f.i. the Right to Food Guidelines, the UN declaration on the rights of peasants and other peoples in rural areas). From this complex space emerged the strategy for an institutional guerrilla, with various entry points to achieve policy and normative outcomes that could be used in other negotiations and leveraging the lack of coherence and coordination among different spaces—even among different delegations of the same government. A clear example was the utilization of previous negotiations to build the text of the UN declaration on the rights of peasants and other people in rural areas, as the Article 19 on Right to seeds was based on the ITPGRFA, in particular, the art. 9 on Farmers Rights.

The new space of transnational governance of agriculture, shaped by financialization and neoliberal policies, emerged with an inherent dichotomy between two spheres: one related to Intellectual Property Rights, international trade, and industrial agriculture, the other related to collective and community rights, public policies, and peasant agriculture. As we will see in the following chapter, the renovated relevance of the transnational space and this constitutive dichotomy were the conditions for the differentiation of TAMs and the emergence of new formations of them.

4 Transnational Agrarian Movements

Chapter 5 will explore the implications of assuming TAMs as an object of analysis as a political agency, in order to understand the relationship between their political orientation and contemporary financialization.

TAMs have been in existence since the late 19th century (Edelman and Borras 2016), making reference to different political traditions (communist, populist, and feminist) and mainly aiming at building solidarity among farmers organizations beyond nation-state borders. These movements were mainly linked to national governments, which historically supported agriculture as a core policy of the process of nation-state building.

The study focuses particularly on the TAMs that selected the space of global governance, such as WTO, FAO and the United Nations, as advocacy space to reach their political or normative objectives, and had a role in defining the policy and normative framework for agriculture (including access to natural resources) with specific reference to GMOs and agroecological frontiers, which in turn are relevant for the financialization process in agriculture.

As Sydney Tarrow (2005) suggests, the emergence of international institutions to serve the "collective interest" of nation-states (or to govern the Cold War post-WWII scenario and the national independence processes, as Arrighi and Silver would suggest), created incentives for transnational activism.

The new space of transnational governance of agriculture reshaped the existing TAMs according to the new priorities and processes developing in the international space, and it was in turn reshaped by TAMs: civil society at the international level built new norms and institutional arrangements, contributing to the emergence as a central actor of the space of global governance.

I will try to present an overview of the main TAMs and networks currently active in the space of transnational governance of agriculture, with their politics and dynamics.

The International Federation of Agricultural Producers (IFAP) was established in 1946 to bring together national farmer organizations (FOs) as an advocacy organization at the domestic and international level, mainly to be a counterpart of FAO in the private sector. IFAP consisted of many small, medium and large farmer organizations from all over the world and claimed to advocate for farmers' interest at the global level.

IFAP members participated in various times in governmental delegations (Edelman and Borras 2016). The IFAP vision considered the potential of the liberalization of agricultural trade and the wide use of agrobiotechnology to ensure food security and therefore participated in the processes of WTO, the World Bank and the United Nations. IFAP also organized farmer-to-farmer exchanges on the technology of farming, biotechnology, and information technology. IFAP evolved from an organization coordinating the national organization to a network connecting policy specialists and learning from NGOs. IFAP was dissolved by a court judgement dated 4 November 2010 of the Tribunal de Grande Instance de Paris[22], which ordered the judicial liquidation of IFAP. IFAP was reconstituted as the World Farmers Organization (WFO) in Rome, composed of 54 organizations claiming to represent 1,5 billion farmers from 54 countries all over the world (McKeon 2009b).

In 1972, IFOAM was founded as an international umbrella organization for the organic world, uniting a diverse range of stakeholders: the origins are in the general assembly of Nature et Progrès, in France, meant to coordinate the different actions at the national level and to enable the exchange of scientific and experimental knowledge on organic agriculture. Nowadays, IFOAM has more than 754 affiliates in 116 countries and collects certified organic data from 160 countries with over 80 million hectares of certified land. In the 1980s the IFOAM structure started to grow with a central office, and IFOAM started to participate in key United Nations fora, such as FAO, IFAD, WFP, UNFCCC, UNCFS, UNCTAD, UNEP, and UNCCD (www.ifoam.bio).

[22] Procédures collectives, No. RG: 10/13970

In 1993, 46 farmer organizations met in Mons (Belgium) to give birth to La Via Campesina, misrecognizing the role of IFAP in representing the voice of farmers in the United Nations and other global governance spaces. IFAP, in fact, supported privatization, capitalization and export-oriented policies in agriculture in consultation and negotiation with WTO, the Organization for Economic Cooperation and Development (OECD), and the World Bank (WB) (FAO 1996b).

La Via Campesina comprises 182 local and national organisations across 81 countries, representing about 200 million farmers and their demands for social justice.

Together with La via Campesina, many other TAMs defending a peasant model of production emerged from the mid-1990s until the beginning of the 2000s:

- MAELA (1989) emerged in the context of the crisis caused by the economic policies of the 1980s. It formally constituted itself in 1992, reaching a geographical coverage in 20 countries of the American continent. It comprises 210 organizations articulated in three regions: Mesoamerica - the Caribbean, Andean and Conosur, ultimately representing more than 1,000,000 peasants, indigenous and small family producers, men and women who work with Agroecology as the guiding focus for the construction of their proposals. MAELA's focus is on agro-food and the rural, and it is based on the attainment of food sovereignty and the respect of nature. It is a social, pluralistic, democratic, multicultural, movement whose main objective is the cdefence of peasant agroecological agriculture and small family producers for the provision of food and other goods to the entire population (www.maela.org).
- COPROFAM (1994) The Coordinator of Organizations of Family Farmers of Mercosur is an organization integrated by representatives. Of family producers of the expanded Mercosur. It is composed of 12 organizations from 7 countries in South America, representing 35 million rural workers, family farmers, peasants and indigenous people (www.coprofam.org).
- WFF - World Forum of Fish Harvesters and Fishworkers (1995) was formed as the result of a meeting between national organizations for coastal fishing and the fishing industry in the city of Québec. It followed the World Trade Organization (WTO)'s Doha mandate, which

declared that the priority of the then ongoing round of negotiations was to lift people out of poverty and promote sustainable development. Current WTO negotiations fail to incorporate the concerns and priorities of these groups, as well as those of traditional fishing communities worldwide. WFF works towards the establishment and upholding of fundamental human rights, social justice and the culture of fish harvesters and fish workers, affirming the sea as the source of all life and committing to sustain fisheries and aquatic resources in order to protect livelihood (www.worldfisherforum.org).

- WFFP - the World Forum of Fisher Peoples (1997) is a mass-based social movement of small-scale fisher peoples from across the world, founded in India by a number of mass-based organizations from the Global South. WFFP was established in response to the increasing pressure on small-scale fisheries, including habitat destruction, anthropogenic pollution, and the encroachment on small-scale fishing territories by large-scale fishing fleets, illegal fishing, and overfishing. WFFP has 29 member organizations from 23 countries and represents over 10 million fisher people from all over the world (www.worldfishers.org).
- ROPPA (2000): The Network of Peasant Organizations and Agricultural Producers in West Africa has as its mission to favor the development of the family farms and peasant agriculture while controlling the policies related to the liberalization of the national economies and to globalization of trade, and promote and defend the values of a sustainable and efficient peasant agriculture at the service of family farms and agricultural producers. (http://roppa-afrique.org);
- Asia Farmers Association (2002) is an alliance of national farmer organizations composed of small scale women and men family farmers, fishers, indigenous peoples, forest users, herders, and pastoralists. It was established in 2002 after a series of farmers' exchange visits organized by AsiaDHRRA, an Asian regional NGO. Its objective is to "build solidarity, raise a collective voice, and empower members as key drivers and actors for sustainable rural development." (www.asianfarmers.org)
- WAMIP the World Alliance of Mobile Indigenous Peoples (2003) is a global network of nomadic peoples spractising various forms of mo-

bility as a livelihood strategy based on sustainable use of natural resources. WAMIP aims to establish a common vision among mobile peoples worldwide and promote policies supporting freedom of movement as a strategy to maintain their livelihoods in a flexible and sustainable way. (www.cenesta.org)

- Propac (2005): is a network of the national peasant platforms from the ten member countries of ECCAS / CEMAC. Propac aims to influence agricultural policies in Central Africa by coordinating the different actions and strategies of national peasant platforms. The vision of Propac is to improve the livelihoods of rural populations by strengthening their organizations and their advocacy and lobby skills. (https://infopropac.org).
- Urgenci (2008) The International Network of Community Supported Agriculture is the leading organization for networking and promotion of CSA worldwide (https://urgenci.net)

At the same time, the assumption of TAMs as an object of research has some theoretical implications.

Following the classical agrarian Marxist tradition (Lenin 1964, Bernestein 2010, 2014) on class dynamics and class differentiation in the countryside, peasantry and TAMS are not a relevant category of analysis: the inhomogeneous and ambiguous composition of peasantry and local communities is an inconsistent formation of different classes and class fragments, with different relations to the means of production. Therefore, the Transnational Agrarian Movements most of the times agglomerates different classes with diverging interests (Edelman and Borras 2016, Bernstein 2010, 2014, 2015).

This classical take of agrarian Marxism identifies Peasantry and local communities mostly as pre-capitalistic formations, which the penetration of capital in the countryside will polarize permanently at the economic level in a dualistic class structure: rural bourgeoisie and rural proletarians. (Lenin 1964, Edelmann and Borras 2016)

In this framework, the emergence of TAMs can be interpreted as a pre-capitalistic resistance to the penetration of capitalism in the countryside in order to oppose the polarization and differentiation of the rural proletariat and the rural bourgeoisie, which is the precondition of the full development of productive forces (Edelmann and Borras 2016, Bernstein 2010, 2014, 2015).

The resistance to capital penetration in the countryside is simply delaying the full development of a more efficient model of production, maintaining a pre-capitalistic situation in the countryside. This classical approach to Marxist class analysis (not shared for instance by Kautsky 1988) helps to shed light on the internal class composition of the (Transnational) Agrarian Movements, which becomes clear and relevant once the discussion on the connection/integration of farmers to markets, or land reform and land tenure issues are discussed in the political agenda of TAMs, where the interests of different classes come to a clash.

This specific Marxist approach has been mainly criticized by other scholars who refer to the *radical agrarian populism tradition,* which defines peasantry as a political category and not simply an as an analytical one. In this case, the peasants as such and the local communities in their undifferentiated composition are identified as political actors (Edelmann and Borras 2016, McMicheal 2016, Bernstein 2014). This perspective considers the composition of TAMs more broadly than through a strict class analysis. In fact, the dimensions of ethnicity and gender, as well as rtheir convergence as a food sovereignty movement and a climate justice one, are not captured by the classical Marxist analysis (Clapp, Newell & Brent 2018).

An alternative take named the Arrighian approach to agrarian political economy (Bair J, Harris K., Hough, P. (2019) Silver B (2019)) reframes the analysis of agrarian dynamics into a broader historical perspective by building on Arrighi and Piselli's essay on Capitalist Development in Hostile Environments. This approach assumes that 1) there are different pathways for capitalist development, even starting from the same social relations of production 2) the unit of analysis is a particular outcome of a *historically integrated process* (incorporated comparisons McMicheal 1990) 3) social struggles are relevant for the territorial redistribution of the economic surplus. This perspective states that there are different paths for capitalist development in the countryside, and not only the full proletarianization (Bair et 2019) of the classical Marxist approach, and that the analysis of a single case should be conducted by putting in relation the local with the national and the global. This is represented by the unity of the different national and local *fragments of classes* in the TAMs that tackle the global level defining the capital flows and the peripheralization of a region. The linkage between local struggles and global market forces emerges as a systemic constituency of the analysis.

More explicitly, the political subjectivity of TAMs and Peasantry is recognized in two different forms: the first one, following McMichael (2013 and 2016), who refers to the confrontation that peasantries from the 1980s and 1990s have been developing as a singular block against the global complex of trade rules and policies of structural adjustment, which differentiates the context of analysis of peasantry from previous periods of colonialism and nation-building. This form of political subjectivity of peasantry is rooted in a second one, which is defined as everyday politics in peasant societies (Scott 1986) and describes the everyday forms of resistance of a food sovereignty agenda as a prefigurative politics in the face of global capital. The everyday resistance of peasants has to do with the resilience and persistence of peasant agriculture as a model of production, despite the attempts of global capital penetration in the countryside. Resistance is happening within the spaces of production and in the production processes. This everyday resistance is also referred as "quite food sovereignty" (A. Visser, N.V. Mamonova, M. Spoor & A. Nikulin, 2015) in some countries as Russia were social movements are weak due to the semi-authoritarian regime. This resistance in spaces of production and in the production processes is exactly what can be observed in the following chapters on the TAMs struggle, moving from the general claim on food sovereignty to the horizontal exchanges on agroecology as a different model of production and to use agriculture to build society. As for the relation with the means of production, the definition of TAMs of food sovereignty refers to a small-scale food production system (also referred to as smallholders, small- and middle-farmers, peasant family farming, etc.) which is oriented toward a labour-intensive production model that remunerates labour (even if with difficulties at times) and not capital, and works with nature by maintaining the fertility of soils and managing biodiversity dynamically. According to this approach, peasantries generated multiple agroecological models of production in different regions of the world that reduce the impact of the inputs and debt on the margins of agricultural production and support a process of de-commodification and re-peasantization (Ploeg 2009 and 2010) based on a co-production practice with land as an ecological capital, self-provisioning practices for social reproduction, partial integration into markets, circularity of coproduction and availability of resources, alteration of the (re)production processes, and food networking. It is worth to notice how the TAMs for food sov-

ereignty include consumers as co-producers in the food sovereignty movement, in order to have a food system approach and to avoid the circular conflict between the double role of wage workers and consumers.

Bernstein (2010) noticed how in Marxism the class struggle was oriented to the take over of state power, while in TAMs agenda this aspect is totally absent. TAMs emerged as an autonomous network disconnected from traditional political parties, oriented towards advocacy at the global level, and meant to support local struggle through international tools but without taking over any political power. Even if TAMs are professing their autonomy from political parties, their connections with institutions at the national level differs from one region to another. For instance, in Latin America, the role of TAMs has been crucial since the 1980s in supporting the rise of new political parties and their electoral campaigns, with ambivalent relations once these rose to power.

In this case, the definition of everyday politics and resistance in rural areas helps to clarify why TAMs and the food sovereignty movement do not aim to take over the central or local government or the State power. TAMs are building a different type of struggle from within the model of production, through a wide range of diverse forms of everyday politics (Scott 1986; A. Visser, N.V. Mamonova, M. Spoor and A. Nikulin, 2015), not to conquer institutional political power but rather to influence the political agenda by rewriting policy and normative frameworks at different level (United Nations, national governments, local authorities). TAMs use the negotiating power they derive from their base on the ground, which can adopt and implement or block the policies negotiated and approved at the different levels. In order to have an effective policy implementation process, the involvement of the most affected actors on the ground is necessary to avoid that the everyday resistance practices in the model of production (controlled by the actors) make ineffective the policy defined at the institutional level.

This explains also the United Nation' space for Partnerships with Civil Society, which provides the opportunity to elevate resistance practices to the policy framework, but also presents the risk of co-opting grassroots practices into a stronger integration with the industrial model of production and global value chains.

Class analysis is applied in an unorthodox way to the emergence of TAMs for food sovereignty. A class differentiation from other TAMs is

due to further capital penetration in the countryside in the financialization phase:

> *"The rise of significant peasant and farmer movements in many countries in the late twentieth century is an indication of the incompleteness of the transition to capitalism in agriculture. Concretely, the impetus for organizing movements that eventually formed cross-border ties came from the remaining areas of peasant and small-farm agriculture, which large-scale industrial farming had failed or not tried to subordinate or oblige".* (Edelman and Borras 2016)

Peasants and other small-scale food producers recognized the impact neoliberalism was having on peasant and traditional agriculture and on their livelihoods and got organized at the global level through TAMs supporting the food sovereignty agenda and opposing the capitalization of agriculture. The "class struggle" divided TAMs into two opposing groups, in the absence of the national state policies that traditionally built the national state security, starting from agriculture.

> *"The peasant wars of the past century ended or waned at the same time that neoliberalism surged in the beginning of the 1980s. Soon thereafter a key context for peasant wars, namely, the Cold War, ended. Most socialist experiments collapsed, and so did their agricultural pillars such as the agricultural collectives and state farms. Conventional land reform disappeared from official policy agendas save for a few national initiatives. Promotion of market-based land reforms, land markets, formalization of private land property rights, and partial reversals of previous land reforms dominated the land policy thinking from the 1980s to the present. During this period, as national liberation movements and communist party-led insurgencies either took state power and got institutionalized in their own contexts, or were weakened and/or decimated, different types of agrarian movements started to emerge worldwide. These are largely autonomous agrarian movements that emerged in reaction to neoliberalism on the one hand and with ideological and political orientations and organizational forms that are significantly different from the past national liberation movement-oriented groups on the other hand. Many of these agrarian movements would take varying forms of ideological inspiration from Marxism, but in less dogmatic and sectarian ways than their predecessors. Most are non-party social movements and are zealously protective of their autonomy from political parties."* (Borras, 2016, p. 3)

If we assume a perspective broader than the Transnational Governance in Agriculture to assume the transnational space and global governance as

such, the news TAMs for food sovereignty are part of what Evans calls 'counter-hegemonic globalization', which he defines as 'a globally organized project of transformation aimed at replacing the dominant (hegemonic) global regime with one that maximizes democratic political control and makes the equitable development of human capabilities and environmental stewardship its priorities' (Evans, 2008).

Arrighi too, in a World System Theory perspective, recognizes the necessity of a political subjectivity acting at the transnational level:

> *"Formally democratic governments in much of the world are likely to make key economic and social policy decisions with "an eye at least as much on pleasing the International Monetary Fund as appealing to an electorate." For Markoff, "the challenge of recreating democracy in the emerging world of transnational decision-making" can only be met by the organization of transnational democratic movements capable of extracting "concessions from the new holders of transnational power."* (Arrighi, Silver1999, p. 11)

Arrighi and Silver also foresaw the emergence of the social conflict during the financialization phase and the consequent proletarization process, giving an emerging role to the Social Movements beyond the dimension of class analysis, to include the worldwide dynamics of capitalism and colonialism:

> *"The disempowerment of social movements – the labour movement in particular – that has accompanied the global financial expansion of the 1980s and 1990s is largely a conjectural phenomenon. It signals the difficulties involved in delivering on the promises of the U.S.-sponsored global New Deal. A new wave of social conflict is likely and can be expected to reflect the greater proletarianization, increasing feminization, and changing the spatial and ethnic configuration of the world's labour forces".* (Arrighi, Silver 1999, p. 282)

This structured social resistance influenced the capitalist development, since the two main forms of anti-systemic movements (class-based or ethnic/nation-based) reached the medium-term objective of attaining state power but failed in the long-term objective of ending class and ethnic oppression, giving space to new movements that—without the aim to attain the state power—contributed to the systemic crisis of the 1970's. At the same time, Arrighi recognizes the difficulty of finding a new ideology and a set of strategies to foster social transformation. The outcome of this process of social transformation will depend on the dynamics of social

conflicts (relevant at the worldwide level, and not at the local/national one) emerging from the systemic chaos of the financialization phase.

> *"The dilemmas of the anti-systemic movements seem to be even more profound than those of the dominant forces of the world-system. In any case, without a strategy, there is no good reason to believe there is any invisible hand that will guarantee transformation in a good direction, even when and if the capitalist world-economy falls apart."* (Arrighi et al 1992:242)

In particular, following the Peasants Wars (Wolf 1973), the peasantry is identified as a revolutionary force that influenced global power during the XX century:

> *"Thus the widespread current tendency to dismiss the working class as an important social force may be as premature as late nineteenth and early twentieth-century dismissals of the peasantry as a revolutionary force. For just as peasant rebellions from China to Vietnam were fundamental to the formation and crisis of U.S. hegemony, so workers' rebellions in the same region of the world may turn out to be: fundamental to an understanding of the social origins of world hegemony in the twenty-first century. But just as the twentieth century Peasant rebellions were enmeshed in a broader revolt against the West, so we can expect future class conflict to be enmeshed in the changing balance of power between the Western and non-Western worlds is to this changing inter-civilizational balance of power."* (Arrighi Silver, 1999, p. 216)

In this analysis of the role of TAMs as a peasant agency with a specific function in the post Bretton Woods space of global governance, it is important to observe their relationship with national governments in the space of transnational governance—in what Arrighi (following Gramsci) identifies as a *passive revolution* in which a state substitutes a class in leading the struggle for renewal:

> *"The function of Piedmont in the Italian Risorgimento is that of a "ruling class". In reality, what was involved was not that throughout the peninsula there existed nuclei of a homogeneous ruling class whose irresistible tendency to unite determined the formation of the new Italian national State. These nuclei existed, indubitably, but their tendency to unite was extremely problematic; also, more importantly, they...were not "leading".... They... wanted a new force, independent of every compromise and condition, to become the arbiter of the Nation: this force was Piedmont.... Thus Piedmont had a function which can from certain aspects, be compared*

> *to that of a party, i.e. of the leading personnel of a social group (and in fact people always spoke of the "Piedmont party"): with the additional feature that it was, in fact, a State, with an army, a diplomatic service, etc.*" (Gramsci 1971: 104-5 Selections from the Prison Notebooks. New York: International Publishers in Arrighi 2003b)

Gramsci applies this function of passive revolution, which consists of a revolutionary restoration to different States (Serbia, France). Arrighi extends the passive revolution (a restoration-revolution comparable to a repression-accommodation) to all the hegemonic passages of world capitalism, with the hegemonic State exercising a Piedmontese function in respect to the World system.

In the actual phase, despite the crisis and squeezing of the functions of the nation-state, Arrighi clearly individuates the East Asia region, and China in particular, as a possible state-region leading the hegemonic passage.

It is worth to notice that China has been indicated by Moore as the main actor leading to a new commercial expansion based on agriculture productivity (and actually the most titled candidate to the FAO General Direction):

> *"Worldwide, agricultural ulabour productivity ticked upwards slowly after 1990, rising to just 1.36% through 2005, over the 1.12% average of 1961-90 (Alston, Babcock &Pardey, 2010: 461). The modest increase was largely attributable to Chinese agricultural reform, which has yet to provide a kind of hegemonic model for the world-system along the lines of the Dutch, British, and American agricultures in their golden ages. Indeed, for all the remarkable accomplishments of the Chinese "miracle," ulabour productivity in industry and agriculture both remain one-quarter (or less) the average obtaining within the Global North (Jefferson, Hub & Su, 2006; Jin, Huang &Rozelle, 2010). There are few signs that China's ascent, however successful on its own terms, offers the kind of hegemonic model for industry and agriculture that might be emulated by our era's rising powers. […] China does not appear poised to launch an agricultural revolution of the sort we have known in the history of capitalism—one that not only feeds the ascendant power but leads the system to a new expansion."* (Moore, Bad money and Cheap Food, 244-252)

In this case, it is relevant to understand the counter-hegemonic role of TAMs, which have no official membership in China but can still play a

role in countries outside of China, including the United Nations and other global governance spaces.

In conclusion, in this chapter, we saw how TAMs can be an object of analysis and how new TAMs have emerged through a differentiation process in relation to the financialization that shapes agricultural policies at the grassroots and transnational levels. The squeeze of nation-state powers and the definition of a global space for transnational governance of agriculture, shaped in a dichotomy tension, has generated the emergence of new TAMs supporting Food Sovereignty. These new TAMs, opposing the WTO - Intellectual Property Rights space and supporting the Human Rights and collective rights approaches, struggle from within the production process instead of following the classical take-over of state power.

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5 Rio Earth Summit, WTO and the World Food Summit

Chapter 6 reconstructs the way different groups of TAMs have been acting within transnational governance of agriculture as it was shaped by financialization and neoliberal policies. The analysis starts from the Rio Earth Summit and the WTO negotiations until approximately the reform of the Committee on World Food Security and the election of the new FAO Director-General, Graziano Da Silva.

In June 1992, the Earth Summit Rio de Janeiro (Brazil) adopted the principle of sustainable development, aiming to preserve the environment whilst meeting the needs of present and future generations. Moreover, the Earth Summit approved the so-called Rio Conventions: the Convention on Biological Diversity (CBD), the United Nations Convention to Combat Desertification (UNCCD), and the United Nations Framework Convention on Climate Change (UNFCCC) – addressing the need to adapt to climate change by limiting average global temperature increases in their activities. In 1997, the Kyoto Protocol became a legally binding obligation for the developed country parties to comply with emission reduction targets. Besides the Rio conventions, the summit adopted a global blueprint for sustainable development (Agenda 21), which in Chapter 14[23] promotes "*sustainable agriculture and rural development with the aim of increasing sustainable food production and enhancing food security".*

Indeed, paragraph 32 of the Rio declaration[24]recognizes farmers as major actors, whose activities had strong ties to environmental and developmental issues.

[23] http://www.un-documents.net/a21-14.htm

[24] http://www.unesco.org/education/pdf/RIO_E.PDF

Paragraph 32 of the Rio declaration incorporated the indications of the 47th General Assembly of the United Nations of 28 May 1992, which specified the central role of Farmers' organizations in the definition of policies with Governments and international agencies, and mainly in the implementation of them through service providing to their members:

> *"Organizations of farmers, including agricultural cooperators, are key institutions in the revitalization of agriculture and the development of rural areas, and hence to economic revival particularly in Africa, Asia and Latin America. Their role, in terms both of faithfully representing farmers' views, and of providing practical services to their members, appears often to have been given less attention by Governments and international agencies than they deserve, and consequently, their potential has not been fully utilized. Seeking farmers' views through consultations with farmers' representative organizations, and encouraging and supporting the latter in their efforts to provide services to their members, are prerequisites for sustainable rural development. The current absence of consultation of farmers, including cooperators, by researchers, is a serious constraint upon accumulation of relevant knowledge and successful diffusion of innovation." (A/47/216-E/1992/43 para. 46(b))*

The indications of using the full potential of farmers' organizations to develop rural areas, can be read in connection with the withdrawal of the nation-state from public policies under the neoliberal age, and in particular from the agricultural sector. In this case, the squeeze of the nation-state (Edelman and Borras 2016) from above (global governance perspective) and from below (local governance and decentralization perspective) in addition to the the budget cuts in agricultural policies further hindered and isolated the partnership with farmers' organizations an important tool to convey and directly implement new agricultural policies in the rural areas.

At the same time, the GATT negotiation that began in the Uruguay Round of Multilateral Trade Negotiations in 1986 were progressing towards the Marrakech Agreement (April 15, 1994) establishing the World Trade Organization, which would enter into force on January 1, 1995, with no expiration date. The Marrakech Agreement included the Agreement on Agriculture[25] which intended to reform the agricultural sector by addressing the subsidies and high trade barriers that were distorting agricultural

[25] https://www.wto.org/english/docs_e/legal_e/14-ag_01_e.htm#fntext-1

trade, this was done by increasing market competition and access, true to its founding neoliberal vision.

It is in the context of increasing the role of farmers' organizations in transnational spaces that in Mons, Belgium, 1993, forty-six peasants' organizations met to "*define a progressive alternative to the further liberalization of agriculture and food reflected in the Uruguay Round of the General Agreement on Tariffs and Trade (GATT)*"[26] This moment dissociated themselves from the conservative vision of IFAP which supports privatization, capitalization and export-oriented policies in agriculture in consultation and negotiation with WTO, the Organization for Economic Cooperation and Development (OECD), and the World Bank (WB).

> *"The majority of farm and peasant organizations that gathered in Mons in 1993 did not recognize IFAP as the legitimate voice of peasant and small-scale farmers. Many had direct experience with IFAP organizations at the national level" (Desmarais, 2007, p 18)*

This distancing resulted in the creation of Via Campesina, a transnational peasant space defending a peasant-based agricultural model (relying on family labour and not capitalization of farming) focused on the principles of social justice, environmental sustainability, and cultural diversity, strengthening local struggles over access and control to natural and productive resources such as land, credit, seeds, and water (via Campesina 2006). Via Campesina positioned itself requesting WTO to recuse itself from agriculture and asking national governments to promote people's food sovereignty, which was defined as *the right to produce food on our own territory* (Desmarais 2002) through agrarian reform, stopping trade liberalization, defending biodiversity and genetic resources, improving gender relations, migrant farmworkers' rights, and human rights in rural areas, and overall promoting policies for sustainable peasant agriculture.

During the last stages of WTO negotiations, in 1994 in Geneve, Vía Campesina had over 5,000 farmers marching on the GATT in Geneva (Desmarais 2002)

The foundation of Via Campesina and other TAMs supporting food sovereignty was the result of a process over ten years in the making, in which

[26]Viacampesina 2006

rural organizations engaged in numerous horizontal organizational exchanges all over the globe, learning what was happening in each country as a result of IMF structural adjustment programs and the incumbent free trade agreements, and at the same time how farming peoples were reacting, their strategies and which alternatives they were building. These exchanges were at the core of the consolidation of a transnational movement defending peasant livelihoods and modes of existence.

So the new space of consultation between farmers organizations and international institutions, which was designed by the 47thUN general Assembly and the Earth Summit in Rio, was expected to be occupied by IFAP as the traditional organization representing family farming in the United Nations, WTO and World Bank, as it is reflected in its statute[27] which identified among its objectives to speak on behalf of the world farmers ("*virtually all the agricultural producers in the industrialized countries, and several hundred million farmers in the developing countries"*) in the meetings with governments. As the *Contribution of Co-operative Enterprises and the International Co-operative Movement to Implementation of UN AGENDA 21*: prepared jointly by the International Co-operative Alliance and the United Nations Department for Policy Coordination and Sustainable Development in April 1995 was reaffirming the role of IFAP in the global governance space. Most of the efforts at the UN level were directed towards *strengthening organizations of small farmers, landless tenants and labourers, other small producers, fisherfolk, community-based and workers cooperatives,* as reaffirmed by World Summit for Social Development in Copenhagen in 1995.

Indeed, in 1995 IFAP published a policy statement entitled "*Farmers for a sustainable future - the leadership role of agriculture*" identifying a policy framework allowing agriculture to contribute to a more sustainable society.

The emergence of Via Campesina alongside other TAMs composed by small scale food producers and supporting food sovereignty was going to reclaim this space in the global governance of United Nations mainly oriented towards peasants from the global south.

Indeed Paul Nicholson, a founding leader of Via Campesina, at the Second International Conference of Via Campesina in 1996 stated

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[27] http://www.uwcc.wisc.edu/icic/orgs/copac/member/IFAP-International-Federation-of-Agricul1/What-is-IFAP--1.html

"to date, in all the global debates on agrarian policy, the peasant movement has been absent, we have not had a voice The main reason the very existence of the Via Campesina is to be that voice and to speak out for the creation of a more just society the Via Campesina must defend the "peasant way" of rural peoples" (Desmarais, 2007, pg 7).

In this sense, the rise of TAMs for food sovereignty that were defending a peasant model of production against further penetration of capital in the countryside could be seen as a clear signal of the incomplete transition of agriculture into capitalism(Edelman and Borras 2016). It is in this sense, TAMs for food sovereignty are reacting to the attempt of further penetration of capital in the countryside and the consequent proletarianization process under the financialization phase of the capital accumulation cycle after the end of Bretton Woods' agreements. It is in this context that peasants organizations and other small scale food producers realized the impact that neoliberal policies were having on their livelihoods, and having lost the support of the public sector, they got organized at global level as TAMs through a class struggle of sorts, resisting the differentiation process from other farmers' organizations oriented towards the production of commodities for export and for the international markets.

During the Rio Earth, Summit IFOAM also started to engage systematically in UN processes to promote organic agriculture as a possible solution to tackle hunger and climate change while preserving biodiversity.

So new TAMs are emerging in the '90s demanding a food sovereignty agenda in the space of global governance institutions, to defend small scale farming, and labour intensive models of production to opposing the process of further transition of agriculture to capitalism, fostering the polarization of society and the squeezing of the middle class, which in turn ignites social conflicts in a contest of reduced powers of the nation-states.

In order to occupy this global governance space with the voice of small-scale food producers, the different TAMs for food sovereignty convened in Rome for the *NGO parallel Forum* to the FAO World Food Summit, in 1996, demanding publicly for food sovereignty inside the FAO space:

"The concept of food sovereignty was developed by Via Campesina and brought to the public debate during the World Food Summit in 1996 and represents an alternative to neoliberal policies. Since then, that concept has become a major issue of the international agricultural debate, even within the United Nations bodies. It was the

main theme of the NGO forum held in parallel to the FAO World Food Summit of June 2002" (.https://viacampesina.org/en/food-sovereignty)

In 1996, the alternative NGOs Forum in Rome, convened 1,200 Civil Society Organizations (CSOs) from eighty countries, which participated in the parallel *NGO Forum* parallel to the FAO World Food Summit, rejecting the vision of the FAO *Food for all*[28] documents which promoted more liberal markets to provide food security for all. The background documents also proposed a more liberal market to increase food security.

"The FAO was felt to be a politically interesting intergovernmental forum for social movement advocacy and an alternative to the WTO and the World Bank/International Monetary Fund. There were several reasons for this: more democratic governance with universal membership and - formally - a one county-one vote decision-making process, specific focus on food and agriculture and a mission to eliminate hunger, a mandate that includes a strong normative role, and relative openness to engagement with civil society and rural" (IPC Handbook internal living document)

Therefore FAO was seen as an entry point to raise the voice of peasants and other small scale food producers' claims for public policies versus other spaces such as WTO or World Bank, as well as being a UN body, based on Human Rights, that worked directly with peasants' organizations.

Out of the numerous global UN summits of the '90s, the 1996 parallel NGO forum in Rome held in connection with the World Food Summit, was characterized by social movements and food producers organizations in the majority among the delegates, leading to the drafting of the statement that was adopted, even if Via Campesina did not sign it since it was still too influenced by the NGOs narrative (Desmarais 2002). In any case, the NGOs forum asserted the principles of autonomy and self-organization of civil society, which has been taken as guiding principles for the CSOs' participation in the FAO processes in the following decades (see CFS reform 2009[29] and FAO Strategy for Partnership with CSOs[30]).

[28] http://www.fao.org/docrep/x0262e/x0262e00.htm

[29] http://www.fao.org/3/a-k7197e.pdf

[30] http://www.fao.org/3/a-i3443e.pdf

The CSOs' statement, *Profit for few or food for all,* rejected this position, claiming for the recognition of the right to food, ensuring food sovereignty as the leading macro-economic policy and prior, to trade liberalization, abandoning the notion of food as a commodity:

> *International law must guarantee the right to food, ensuring food sovereignty takes precedence over macroeconomic policies and trade liberalisation. Food cannot be considered [simply] as a commodity, because of its social and cultural dimensions' (Statement by the NGO Forum to the World Food Summit, see Annex 2)*

One of the main aspects of the proposal from the NGO Forum was the participation of Civil Society Organizations in UN platforms and at national level, understanding CSOs as food producers, not working for profit nor business-oriented, but rather based on a Chayanovian model of agriculture, with the autonomy and self-organization of peasant organizations, extending those principles to the participation in the United Nation platforms.

In the vision of the new TAMs for food sovereignty, national governments should keep the main responsibility in guaranteeing food security, instead of Transnational Corporations and the structural adjustment programs of the International Monetary Fund and the World Bank where there is no accountability whatsoever. The request for a Right to Food convention ensuring "*that the Right to Food will have precedence over any other international agreements such as the World Trade Organization* is a strong and concrete request "*(Statement by the NGO Forum to the World Food Summit, see Annex 2)*

Moreover, public policies should be directed towards the local and regional food systems, supporting agroecological and sustainable production.

The Uruguay Round and the Agreement on Agriculture consequently underwent and revision, therefore, launching the Food Sovereignty Movement, creating a new international space of discussion on Global Food Policies with TAMs, renewing the class dynamics and the political agenda of the TAMs acting at the global level.

This steered the new food sovereignty movement composed by TAMs and support NGOs towards claiming a new space in the United Nation

System to discuss public policies in support of peasant agriculture and create new legal and policy frameworks to confront the pure neoliberal agenda of the WTO.

Apart from the concrete and immediate results, the coordination among CSOs at a global level can be considered as the major outcome of the World Food Summit (Mulvany 1997), giving birth to the Transnational Policy space to the Food Sovereignty Movement challenging what Binu Thomas called the U*nholy Trinity* comprising transnational corporations, global capital and international crop institutes.

Also, IFOAM scheduled its world board meeting to coincide with the FAO World Food Summit in order to raise concern. This achieved the recognition of the role of organic agriculture in objective 3.1 (b) of the FAO Rome Declaration on World Food Security, and in 1997 became officially recognized as a liaison to FAO.

In the following years, the CSOs focused on the implementation of the Right to Food as was agreed in the *International Covenant on Economic, Social and Cultural Rights*, Article 11.2 in 1966:

> *"11.2 The States Parties to the present Covenant, recognizing the fundamental right of everyone to be free from hunger, shall take, individually and through international co-operation, the measures, including specific programmes, which are needed:*
>
> *(a) To improve methods of production, conservation and distribution of food by making full use of technical and scientific knowledge, by disseminating knowledge of the principles of nutrition and by developing or reforming agrarian systems in such a way as to achieve the most efficient development and utilization of natural resources;*
>
> *(b) Taking into account the problems of both food-importing and food-exporting countries, to ensure an equitable distribution of world food supplies in relation to need"*

Also in 1996, Singapore hosted the first WTO ministerial conference, in which the European Union pushed for the establishment of four permanent working groups on what was called *the Singapore issues*:

a) transparency in government procurement: to allow foreign companies to participate in non-discriminated competitions
b) trade facilitation (customs issues): rules that require governments to simplify and reduce the cost of transactions.

c) trade and investment: rules for the investors' rights against any interference of the host country.

d) trade and competition: rules to ensure fair competition, without discrimination between foreign and domestic companies, including for government monopolies

The developing countries opposed to the Singapore issues and they were pushed at successive ministerial by the European Union, Japan and Korea, and opposed by most developing countries:

> *"Some cynics suggest that the Singapore issues are just chaff thrown up by the EU and Japan to disguise their own intransigence over agriculture. Ever since the current round of trade talks was launched in 2001, Japan and the EU have been on the defensive. The Doha round's focus on agricultural liberalisation has forced them to defend some of the most illiberal but well-entrenched systems of agricultural protection in the world. Japan's import tariffs on rice go up to 1,000%, for instance. The EU spends more on annual subsidies for each of its cows than most sub-Saharan Africans earn in a year. Both insist on progress on the Singapore issues as a quid pro quo for long-overdue agricultural reforms that still seem politically beyond them. If poor countries refuse to yield ground, the EU and Japan can blame them for their inflexibility over the Singapore issues, rather than taking the blame for their own inflexibility over agriculture." (The Economist 2003)*

The Millennium Round in 1999 in Seattle was suspended due to the march of the different Social Movements, including the Transnational Agrarian Movement, which blocked the city to protest against neoliberal policies, in what w be remembered as the *Battle of Seattle*.

Vía Campesina protested in the streets of Geneva and Seattle reclaiming agriculture from WTO as was clearly said in the statement delivered at events surrounding the ministerial meeting of the WTO in Seattle31 in November 1999: in asking to take WTO out of agriculture, Via Campesina recognized that food became a central issue for neoliberal policies and global institutions such as WTO, IMF and World Bank that were destroying the family farm economies. Thus Via Campesina emphasized the strategy initiated with the World Food Summit in 1996 which requested to

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31 https://viacampesina.org/en/seattle-declaration-take-wto-out-of-agriculture/

strengthen the new instruments developing withing United Nations system to increase transparency and democratic control to ensure food security and fair trade.

The WTO discussion was supposed to tackle the issue of intellectual property rights and biotechnologies, having the European Commission[32] blocked all applications for approval and not considered any application for final approval since 1998.

It was decided to reattempt the negotiations in the following ministerial conference in November 2001 in Doha, Qatar. These negotiations would continue until 2005 (Doha Round) to make trade rules more just for developing countries, mainly on opening agricultural and manufacturing markets, as well as trade-in-services (GATS) negotiations and expanded intellectual property regulation (TRIPS). The Doha negotiations were centred on the aforementioned Singapore issues.

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[32] WT/DS291/23 8 August 2003 (03-4170) Since October 1998, the European Communities ("EC") has applied a moratorium on the approval of products of agricultural biotechnology ("biotech products") . Pursuant to the moratorium, the EC has suspended consideration of applications for, or granting of, approval of biotech products under the EC approval system. In particular, the EC has blocked in the approval process under EC legislation[1] all applications for placing biotech products on the market, and has not considered any application for final approval. The approvals moratorium has restricted imports of agricultural and food products from the United States.In addition, EC member States maintain a number of national marketing and import bans on biotech products even though those products have already been approved by the EC for import and marketing in the EC. The national marketing and import bans have restricted imports of agricultural and food products from the United States. The measures affecting biotech products covered in this panel request are: (1) as described above, the suspension by the EC of consideration of applications for, or granting of, approval of biotech products; (2) as described above, the failure by the EC to consider for approval applications for the biotech products mentioned in Annexes I and II to this request; and (3) national marketing and import bans maintained by member States, as described in Annex III to this request. These measures appear to be inconsistent with the following provisions of the *Agreement on the Application of Sanitary and Phytosanitary Measures* ("SPS Agreement"), the *General Agreement on Tariffs and Trade 1994* ("GATT 1994"), the *Agreement on Agriculture* ("Agriculture Agreement"), and the *Agreement on Technical Barriers to Trade* ("TBT Agreement") https://www.wto.org/english/tratop_e/dispu_e/cases_e/1pagesum_e/ds291sum_e.pdf

During this period the private sector and the different biotech companies started to get reorganized in order to influence the discussions and negotiations: after witnessing the failure of the WTO at the Seattle Ministerial meeting, BASF Bayer, Dow, DuPont, FMC, Syngenta, Monsanto and Sumitomo gave birth to CropLife International in 2001, which was composed by regional networks including national agricultural chemical associations.

The following year in 2002, FAO organized a World Food Summit and well as another summit five years later (/fyl) while Civil Society organized *The Forum for Food Sovereignty* in Rome, at *Palazzo dei Congressi* from the 8th to the 13th of June that same year hosting more than 700 NGOs and CSOs as the result of an international consultation and interaction process spanning over two years.

During the conclusive day of the FAO World Food Summit/fyl, the International Planning Committee for food sovereignty delivered a final statement on behalf of the CSOs Forum for food sovereignty at the presence of the Heads of State and the Governmental Delegations.

The 2002 declaration[33]*Food Sovereignty: A Right for All* finally affirmed the leadership of TAMs in the rising food sovereignty movement, opening the declaration to criticize the lack of political will in the implementation of the WFS 1996 Plan of Action. Food sovereignty was presented as the fundamental approach to guarantee the access to productive resources and end the neoliberal policies of World Bank, WTO and IMF, aiming at overruling the WTO at Cancun in September of 2003.

The CSO declaration contested the official Declaration of the World Food Summit: Five Years Later indicating that the neoliberal policies of privatization of natural resources in favour of few Transnational Corporations were the main reasons for failure in implementing the 1996 World Food Summit Plan of Action.

The declaration reaffirms food sovereignty as the right of peoples to produce for themselves, domestic and local markets, and not for export. For this reason, access to land, water, seeds and other productive resources are essential. Even within this statement, there is a clear position against the World Bank, WTO, and the International Monetary Fund.

[33] https://nyeleni.org/spip.php?article125

In this context, the International Planning Committee for Food Sovereignty was institutionalized and recognized as the space articulating food sovereignty and giving priority to Social Movements and not NGOs. FAO recognized the importance of becoming an ally to Social Movements to change the political attitude of governments in their fight against hunger.

After the World Food Summit: Five Years Later, IPC signed a formal agreement with FAO recognizing the principles of bottom-up participation of CSOs:

> *"FAO accepts the principles of civil society autonomy and self-organization on which the IPC bases its work and will apply them in all of its relations with NGOs/CSOs. [...] FAO recognizes the IPC as its principal global civil society interlocutor on the initiatives and themes emerging from WFS:fyl and the NGOs/CSOs Forum of June 2002.[…] Both parties concur with the need to distinguish between the interests of social movements/ non-profit NGOs and those of private sector associations, and to make separate interface arrangements for these two categories of organizations".*

Through this agreement, IPC started to participate in FAO processes as the main interlocutor for Civil Society Organizations.

This agreement allowed IPC to participate in the negotiations to draft the Right to Food Guidelines as guidance for the implementation of the 1996 WFS Plan of Action. The *WFS: Five years later* final recommendations invited FAO Council to establish an Intergovernmental Working Group to develop Voluntary Guidelines to support Member States' efforts to achieve the progressive realization of the right to adequate food in the context of national food security". This Intergovernmental Working Group was set up November 2002 and after two years of negotiation, the *Voluntary Guidelines to support the progressive realization of the right to adequate food in the context of national food security* were adopted by the FAO Council in November 2004. The Voluntary Guidelines have been a soft law approach to have an international non-binding voluntary, as the name indicates, instrument, that is to say, an international reference for policies on the subject discussed. Ideally, all national governments that want to revise their policies and legislation should make some reference to the voluntary guidelines. The strategy of the food sovereignty movement was to negotiate the guidelines with the governments in order to open spaces at a national level and create an international framework to provide access to

productive resources such as land, water, seeds, etc. Once having this international framework to access natural resources, this would have established the base to then discuss Agroecology beyond a simple model of production, in order to achieve food sovereignty

Returning to the year 2002, Johannesburg hosted the (Rio+10) UN World Summit on Sustainable Development, wherein IFOAM managed to include organic agriculture as a 'means of implementation' in paragraph 99(b) of the Summit outcome document (the Johannesburg Plan of Implementation):

> "*Support voluntary WTO-compatible market-based initiatives for the creation and expansion of domestic and international markets for environmentally friendly goods and services, including organic products, which maximize environmental and developmental benefits through, inter alia, capacity building and technical assistance to developing countries contribution to both food security and biodiversity*."

Clearly the IFOAM lobby was positioned towards defending an organic market in the WTO framework and consequently, two years later IFOAM jointly organized the *first World Conference on Organic Seed*[34] with FAO and the International Seed Federation at the FAO headquarters in Rome concluding the *"real need for a consultative process between organic farmers, the seed industry, consumers and civil society organizations on co-existence between GM and organic agriculture"*.

The following year in 2003, at the WTO ministerial meeting in Cancun, mainly for the subject of the *Singapore issues*: Brazil, China, India and South Africa formed part of a group of over twenty countries (G22) that negotiated as a bloc on agriculture, and did not support any negotiation on these topics, illustrating the wide gap between developing and developed countries, particularly the north versus south divide, which was more prominent in agriculture in reference to the Common Agricultural Policy of EU and the agro-subsidies of Unites States (Coleman, Grant, Josling 2004).

Via Campesina and World Forum of Fish Harvesters and Fishworkers, both part of the IPC process in Rome, delivered a statement[35] underlining

[34] http://www.fao.org/docs/eims/upload/229953/organic-seed-conf.pdf

[35] https://viacampesina.org/en/statement-on-agriculture-after-cancun/

the failure of the negotiation in Cancun, and requesting national governments to protect domestic food production and distribution, following a human rights-based approach, and calling upon FAO, UNCTAD and ILO to develop an alternative international framework for food and agriculture.

During the 2008 ministerial meeting, U.S and India could not find common ground on how much latitude developing countries should have to raise tariffs when prices are falling and imports are rising. Moreover, the United States, China and India did not reach an agreement on how developing countries could use the threshold for the safeguard mechanism. (www.ictsd.org)

While the TAMs and some governments who had close ties to their agenda (such as Brazil under President Lula, and in some way China and India) were blocking the WTO negotiations on agriculture, in the Rome process after the approval of the *Right to Food Guidelines*, IPC contributed to the preparation and organization of the International Conference on Agrarian Reform and Rural Development (ICAARD) in 2006, which promoted the agrarian reform as a crucial element to fight hunger and poverty and opening the way to the negotiation of *the Voluntary Guidelines on the Responsible Governance of Tenure of Land, Fisheries and Forests in the Context of National Food Security* adopted in the Committee for World Food Security in May 2012 (Gaarde 2017, Margulis et 2016).

During the ICAARD, the IPC facilitated and organized the NGO parallel forum attended by an estimated 500 civil society leaders representing different groups comprised of peasants, pastoralists, nomads, indigenous peoples, and subsistence fisherfolk, among others (Gaarde 2017, www.movimientos.org).

At the same time, TNCs began to lobby FAO with the support of governments from Global North, and CSOs' participation in these spaces was difficult at the regional and national level.

La Via Campesina launched the idea of organizing a world forum on food sovereignty five years after the last NGO Forum. The IPC general meeting in November 2005 decided to allocate more than 500 seats to different food producers' constituencies (farmers, fisherfolk, indigenous peoples, pastoralists, women's groups, workers, environmentalists, consumers, NGOs, youth) from around the world in order to have a common definition of food sovereignty and collectively build strategies based on

concrete practices of the delegates. Finally it was agreed to hold the meeting in Mali in February 2007, and to focus the discussion on the recognition of food sovereignty; after eleven years since the launch of food sovereignty, it was the time to give a better definition and clarify the implications that Food and Agriculture policies had at regional and national level. The meeting of Nyeleni 2007 was also strategic in establishing a common definition of food sovereignty, which resulted in the Six Pillars of food sovereignty, going beyond the previous declarations, giving concrete indications for its implementation (see figure 12). During the same year, 2007, the food price crisis put food policies at the top of the global governance agenda. Retaking the 1996 proposal for *A Global Convention on Food Security,* The International Planning Committee for Food sovereignty, alongside FAO and the regional group of Latin American governments (GRULAC) proposed a reform of the Committee of World Food Security to become an inclusive forum for policy dialogue and coherence towards Food Security and Nutrition. This proposal defeated the proposal to have United Nations in NYC and G8 at the head of world food governance. The CFS reform was adopted in 2009, and for the following years, the International Planning Committee was piloting the creation of the Civil Society Mechanism for the Committee of World Food Security based on autonomy and self-organization with the leadership of the Social Movements. The reform of the CSM was adopted in 2010, and the first negotiation was on the drafting and approval of *Voluntary Guidelines on the Responsible Governance of Tenure of Land, Fisheries and Forests in the Context of National Food Security (VGGT).* After the approval of the VGGT, following the momentum of the CFS reform, also FAO entered in a new phase of inclusion of Civil Society in its processes (Gaarde 2017, McKeon 2016).

Once the Right to Food Guidelines was achieved, the strategy of the TAMs for food sovereignty aimed to discuss access to different natural and productive resources to transition towards agroecology, so the food system built on the access to productive resources was also a tool to reach food sovereignty. The reform of the CFS was giving the opportunity to advance in this agenda, but right after the approval of the Tenure Guidelines in May 2012, with the election of Ms Louise O. Fresco of the Netherlands as CFS chair in 2013-15, the CFS went through a bureaucratization process in the definition of the agenda and the emerging priorities, which no longer reflected the priorities of the TAMs for food sovereignty. The block of the agenda for the following year corresponded to the veto on

any discussion on genetic resources or agroecology in the MYPOW Open-Ended Working Group. The same slow demolition of the reform impacted the World Farmers Organization (ex IFAP) which claimed a slot for them outside of the official mechanisms of the CFS (Private Sector and Civil Society Mechanisms) (Mckeon 2015, 2017, Duncan and Zanella 2016)

During these years, IFOAM negotiated the inclusion of organic agriculture in the agriculture section of the agreement document adopted at the 17th session of the Commission on Sustainable Development (CSD 17) in New York City.

Similarly, in (2012-2013) IPC worked towards the approval of the FAO Strategy for Partnership with CSOs (2013)[36]which was institutionalizing the CSOs' participation in the FAO normative bodies and in the regular program.

From 2012 onwards, IPC achieved the approval of the *Voluntary Guidelines for Securing Sustainable Small-Scale Fisheries in the Context of Food Security and Poverty Eradication (SSF Guidelines)*, the Global and regional Symposia on Agroecology resulting in the FAO Scaling Up Initiative for Agroecology, the implementation process for art.9 of the International Treaty for Plant Genetic Resources for Food and Agriculture on Farmers' collective Rights to Seeds, and the active participation in the FAO regional offices and processes.

World Farmers Organization did not play such an active role in FAO until recent years. The general strategy on the FAO process is to blur the actual distinction between the private sector and civil society, in order to then present themselves as representatives of all the farmers and food producers.

Chapter 6 reconstructed how the different TAMs shaped their contemporary political orientation confronting the space of global governance of agriculture and its evolution in the last two decades according to the evolutions of the financialization phase of capitalism.

[36] http://www.fao.org/docrep/018/i3443e/i3443e.pdf

Table 5.1
Six principles of food sovereignty

NYÉLÉNI 2007: FORUM FOR FOOD SOVEREIGNTY DEFINITION OF FOOD SOVEREIGNTY (FROM THE DECLARATION OF NYÉLÉNI)			
Food sovereignty is the right of peoples to healthy and culturally appropriate food produced through ecologically sound and sustainable methods, and their right to define their own food and agriculture systems. It puts the aspirations and needs of those who produce, distribute and consume food at the heart of food systems and policies rather than the demands of markets and corporations. It defends the interests and inclusion of the next generation. It offers a strategy to resist and dismantle the current corporate trade and food regime, and directions for food, farming, pastoral and fisheries systems determined by local producers and users. Food sovereignty prioritises local and national economies and markets and empowers peasant and family farmer-driven agriculture, artisanal - fishing, pastoralist-led grazing, and food production, distribution and consumption based on environmental, social and economic sustainability. Food sovereignty promotes transparent trade that guarantees just incomes to all peoples as well as the rights of consumers to control their food and nutrition. It ensures that the rights to use and manage lands, territories, waters, seeds, livestock and biodiversity are in the hands of those of us who produce food. Food sovereignty implies new social relations free of oppression and inequality between men and women, peoples, racial groups, social and economic classes and generations.			
SIX PRINCIPLES OF FOOD SOVEREIGNTY (FROM SYNTHESIS REPORT)			
	Food Sovereignty:	**is FOR**	**is AGAINST**
1.	**Focuses on Food for People:**	Food sovereignty puts the right to sufficient, healthy and culturally appropriate food for all individuals, peoples and communities, including those who are hungry, under occupation, in conflict zones and marginalised, at the centre of food, agriculture, livestock and fisheries policies;	and *rejects* the proposition that food is just another commodity or component for international agri-business
2.	**Values Food Providers:**	Food sovereignty values and supports the contributions, and respects the rights, of women and men, peasants and small scale family farmers, pastoralists, artisanal fisherfolk, forest dwellers, indigenous peoples and agricultural and fisheries workers, including migrants, who cultivate, grow, harvest and process food;	and *rejects* those policies, actions and programmes that undervalue them, threaten their livelihoods and eliminate them.
3.	**Localises Food Systems:**	Food sovereignty brings food providers and consumers closer together; puts providers and consumers at the centre of decision-making on food issues; protects food providers from the dumping of food and food aid in local markets; protects consumers from poor quality and unhealthy food, inappropriate food aid and food tainted with genetically modified organisms;	and *rejects* governance structures, agreements and practices that depend on and promote unsustainable and inequitable international trade and give power to remote and unaccountable corporations.
4.	**Puts Control Locally:**	Food sovereignty places control over territory, land, grazing, water, seeds, livestock and fish populations on local food providers and respects their rights. They can use and share them in socially and environmentally sustainable ways which conserve diversity; it recognizes that local territories often cross geopolitical borders and ensures the right of local communities to inhabit and use their territories; it promotes positive interaction between food providers in different regions and territories and from different sectors that helps resolve internal conflicts or conflicts with local and national authorities;	and *rejects* the privatisation of natural resources through laws, commercial contracts and intellectual property rights regimes.
5.	**Builds Knowledge and Skills:**	Food sovereignty builds on the skills and local knowledge of food providers and their local organisations that conserve, develop and manage localised food production and harvesting systems, developing appropriate research systems to support this and passing on this wisdom to future generations;	and *rejects* technologies that undermine, threaten or contaminate these, e.g. genetic engineering.
6.	**Works with Nature:**	Food sovereignty uses the contributions of nature in diverse, low external input agroecological production and harvesting methods that maximise the contribution of ecosystems and improve resilience and adaptation, especially in the face of climate change; it seeks to "*heal the planet so that the planet may heal us*";	and *rejects* methods that harm beneficial ecosystem functions, that depend on energy intensive monocultures and livestock factories, destructive fishing practices and other industrialised production methods, which damage the environment and contribute to global warming.

Source: nyeleni declaration (2007).

6 Climate change and Family Farming: the fight for the appropriation of world biodiversity

. Chapter 7 will elaborate on the current phase of financialization, to see how its acceleration is impacting agriculture and reshaping contemporary political orientation of transnational agrarian movements.

In this complex and multi-level discussion in the transnational space of governance of agriculture, in which the different spaces are connected by different actors and different organizations, I will focus on a set of FAO processes that characterized the last 4 years, and how the manner in which these interlinked between them and other processes created a new narrative aiming at legitimizing appropriation by dispossession through patenting world biodiversity, which is not only the founding pillar of peasant family farming but also the agroecological model of production. This appropriation will allow further capitalist penetration in the agroecological frontier and the inclusion of the external frontiers into capitalist agriculture.

In order to understand the general framework under which this appropriation is taking place, we should start with *The Paris Agreement*[37], adopted at the COP21 meeting on December 12th 2015, marking the latest stage in the evolution of the UN climate change regime and building on the work initiated under the Convention; *The Paris Agreement* seeks to accelerate and intensify the actions and investment needed for a sustainable low carbon future. Its central aim is to strengthen the global response to the threat of climate change by keeping the global temperature rise this century well

[37]https://unfccc.int/process-and-meetings/the-paris-agreement/the-paris-agreement

under two degrees Celsius above pre-industrial levels and to pursue efforts to limit the temperature increase even further to 1.5 degrees Celsius.

An OECD background document for COP21 recognizes that agriculture is accountable for a significant share of the greenhouse gas (GHG) emissions that are causing climate change –17% directly through agricultural activities and an additional 7% to 14% through land-use changes. (OECD Agriculture and Climate Change, 2015[38])

Furthermore, a publication from the European Environmental Agency reads:

> *"Agriculture both contributes to climate change and is affected by climate change. The EU needs to reduce its greenhouse-gas emissions from agriculture and adapt its food-production system to cope with climate change. But climate change is only one of many pressures on agriculture. Faced with growing global demand and competition for resources, the EU's food production and consumption need to be seen in a broader context, linking agriculture, energy, and food security" (Agriculture and Climate Change, 2015[39])*

The weight of agriculture in *the Paris Agreement* is explicitly referenced within the preamble of the agreement on food security and production, which acknowledges "*the fundamental priority of safeguarding food security and ending hunger, and the particular vulnerabilities of food production systems to the adverse impacts of climate change*". In addition, the preamble includes references to human rights, development, gender, ecosystems and biodiversity, all of which are of key importance to agriculture.

The role of farmers and smallholders in tackling climate change was also reiterated in 2016 during the COP22 in Marrakech:

> *"Many participants noted the importance of gender mainstreaming and addressing the needs of smallholder farmers. They highlighted the active engagement of local communities as a key factor for the successful implementation of adaptation measures in agriculture. Some Parties expressed a preference for bottom-up projects that are designed by farmers groups or other local initiatives and employ the traditional know*

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38 https://www.oecd.org/tad/sustainable-agriculture/agriculture-climate-change-september-2015.pdf

39 https://www.eea.europa.eu/signals/signals-2015/articles/agriculture-and-climate-change

how and practical wisdom of those stakeholder groups".[40] *(par. 32, Subsidiary Body for Scientific and Technological Advice Forty - Fifth session Marrakech, 7–14 November 2016)*

So the Climate Change policy framework discredits the Green Revolution and the industrial agriculture models of production as climatic inefficient, even if there is no change to the narrative on the necessity to boost food production for the estimated global population of up to nine billion inhabitants in 2050.

"The UN Environmental Program's recent report on the 'environmental food crisis' (Telemann et al.2009) predicts, inter alia, climate change-driven reduction in cropland by 8–20 per cent by mid-century; mounting pressures on aquifers and above all glaciers, signalling looming water scarcity; the proliferation of invasive species, and rising biological resistance to pesticides and herbicides; rising fertilizer prices, and their declining effect on yields; escalating competition for arable land from agrofuels (already one-third of the US maize crop in 2008); and, perhaps most ominously, 'an absolute decline in the productive land area (Net Primary Productivity) across 12 percent' of the planet, with the areas most affected home to nearly one-fifth of world population – all of which will be amplified still further by climate change and the mounting 'risk of abrupt and major irreversible changes' (ibid., 40, 43).The progress of global warming is, moreover, already implicated in the yield suppression of major cereal crops (Cline 2007)" [Moore,2010c, p 400]

This narrative on climate change is important to effectively analyze the FAO processes of the last four years, mainly the International Year of Family Farming, the Agroecology symposia and the related biotech/innovation symposia, and also to understand the attempt to use the New Breeding Techniques (NBTs) and the regulation of Digital Sequencing Information (DSI) in order to appropriate world biodiversity.

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[40] Item 7 of the provisional agenda Issues relating to agriculture Workshop on the identification of adaptation measures, taking into account the diversity of the agricultural systems, indigenous knowledge systems and the differences in scale as well as possible co-benefits and sharing experiences in research and development and on – the ground activities, including socioeconomic, environmental and gender aspects

The discussion on regulating New Breeding Techniques has been quite strong, as the promoters are claiming their divergence from GMO regulations; No alien DNA is inserted in the plant, instead, the genome from the same plant is rearranged (as could occur naturally):

> *"Breeding techniques that do not involve genomic modification from one species to another and only accelerate potentially natural changes should not be considered first-generation genetic modifications."* [41] *Paolo De Castro, Vice-Chairman of the Agriculture Committee in the European Parliament 31 October 2017*

So New Breeding Techniques are presented as an opportunity to protect biodiversity and intensify food production, while at the same time reducing the input of pesticides and the effects of climate change.

In 2014, FAO celebrated the International Year of Family Farming (IYFF), in which World Farmers Organization, Via Campesina and the World Rural Forum (a basque NGO advocating for family farming policies, which includes some regional farmers organizations such as COPROFAM and Roppa on its board) on the Steering Committee. It is worth noting that the inclusion of two opposite groups of food producers, with different and conflictive production models, neglected the ongoing process of class differentiation and the fact that the concept of family farming, deriving from Chayanov (1966, 1989), and did not consider wage workers as part of the model of production. In any case, without delving into theoretical details, the final outcome document reads as follow:

> *"5. Family farms are by far the most prevalent form of agriculture in the world. There are more than 570 million farms in the world out of which more than 500 million are family farms. Statistics show that they produce more than 80 percent of the world's food in value terms. While there is diversity, the vast majority of world's family farms are small or very small. Family farms are collectively the largest source of employment worldwide. Family Farming is much more than a mode of food production, it is also a way of life".*[42] *(Legacy of iyff 2014 and the way forward)*

The legacy of one year of discussions about family farming was its very recognition as the dominant model of production in agriculture, the one feeding the world.

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[41] http://www.info-New Breeding Techniques.fr/2017/10/selection-d-articles-2eme-quinzaine-d-octobre.html

[42] http://www.fao.org/3/b-mm296e.pdf

In the FAO infographics[43] which summarize the outcome of the International Year of Family Farming, the main figures are the following:

- Family and individual farms are 90% of the total farms, they produce 80% of the food occupying only 70-80% of the farmland
- 72% of Family farms take up less than one hectare, and only 6% have more than 5 hectares of farmland

The IYFF illustrated the centrality of Family Farming for food security and recognized its efficiency as a model of production. The process thus put forward a different narrative that was contesting that of the the mainstream one (World Bank World development Report 2008, FAO SoWA 2016): small holders are feeding the world in a sustainable way, while in the mainstream vision small holders are still inefficient and the improvement of their model of production aims to reduce their vulnerability to climate change.

The IYFF was therefore a crucial process, which lead to a narrative shift on the efficiency and productivity of family farming, which we can find reflected in the chayanovian approach of Van Der Ploeg:

> *"In peasant agriculture the longing for better incomes translates, both at the level of the single households and at the level of the sector as a whole, into increased production. When all the relevant conditions are the same, peasant farming produces more food in a given area than entrepreneurial farming […] The well-known inverse relationship (under which small peasant units produce more per unit of land than far larger entrepreneurial or capitalist units) and the law of diminishing returns (implying that intensification meets clear limits beyond which agrarian involution will emerge) 25 are clear examples of this" (Douwe van der Ploeg (2010), p 14)*

According to this new approach, peasant production is considered the most efficient way to feed the world and no longer perceived as the inefficient and suboptimal part of agriculture.

This vision of peasant farming is closely linked to the closure of the *great frontier* which implies a better allocation of resources (internal frontier) and the inclusion of new areas (external frontiers):

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43 http://www.fao.org/resources/infographics/infographics-details/en/c/270462/

"Entrepreneurial and capitalist farming tend to limit themselves to fertile deltas, where the ecological, infrastructural, and social conditions meet the assumptions and requirements of modernized farming. This marginalizes other areas, which come to lay barren. Peasant agriculture can revitalize these uncompetitive areas and make them productive once again.

Ecological capital supplies the main natural resources, co-production allows for steady but ongoing improvements in technical efficiency (the ratio between total production and the resources used), and self-provisioning implies that all the technical and social means required to convert natural resources into production are available. Through such mechanisms, food production can be sustained over long periods and steadily enlarged. Following this pattern, the capacity to respond to increased demand for food is an endogenous quality: growth is not necessarily triggered by external interventions". (Douwe van der Ploeg (2010), p 16)

The new narrative may potentially restructure current food production on a small scale, with more integration on global value chains (internal frontier), but mainly the opportunity to expand the external frontier of capitalism on what is the base of the peasant farming: unpatented (for now) world biodiversity.

This opportunity was given by coupling the outcomes of the International Year of Family Farming and the discussion on Agroecology, in the framework of climate change discussion, and include in it the New Breeding Techniques as a trojan horse, allowing the appropriation of world biodiversity as the principal, core resource of peasant farming.

In fact, in 2014, together with the IYFF, FAO organized an *International Symposium on Agroecology for Food Security and Nutrition*[44]as a technical dialogue which

"*provided an opportunity to share experiences and build the evidence base on agroecology, as well as reaching a consensus on the priorities for achieving more sustainable food systems through agroecology [and]…endorsed FAO's role in supporting further implementation and promotion of agroecological approaches" (*http://www.fao.org/about/meetings/second-international-agroecology-symposium/about-the-symposium/ar/*)*

[44]http://www.fao.org/about/meetings/afns/en/

During the final plenary session, the governments of Brazil and Senegal offered to host a symposium on agroecology in their region to better understand the agroecological practices and experiences at the regional level. As a result, right after the end of the International symposium, Brazil and France, in close contact with CSOs, supported FAO the mainstreaming of agroecology into its regular program as a potential tool to be offered as technical assistance to the member states.

The FAO symposia on Agroecology were framed as a technical discussion in order to avoid any conflict in the follow-up process: as we observed in the previous chapter, the strategy of the TAMs for food sovereignty was to discuss access to different natural and productive resources (Land, Seeds, Water, Markets) in the Committee for World Food Security or in the FAO committees and from there transition to the agroecology discussion. However, right after the approval of the *Tenure Guidelines* in the extra session of the CFS in May 2012, any attempt to discuss genetic resources or agroecology in the CFS through the Multi-Year Programme of Work was rejected from North American and Pacific regions, despite the support of the African and Latin American Regions for the proposal of CSOs and consequently, after a series of informal talks, the governments of France and Brazil, with the support of the TAMs for food sovereignty through the IPC, decided to strongly support a technical discussion on Agroecology with a strong process (two International Symposia and at least one for each region) in order to have enough discussions to then mainstream it in the FAO regular programme. Indeed, the outcomes of the second International Symposium on Agroecology were presented to the FAO Committee on Agriculture on October 2018[45], and then sent to the FAO Council in order to include agroecology in the FAO Strategic Plan for the years to come.

The *1st International Symposium on Agroecology* registered a strong engagement on behalf of Social Movements, under the leadership of the International Planning Committee for food sovereignty acting in the Steering Committee and having many panellists in each session of the discussion. After the statements coming from Brasil and Senegal, the International Planning Committee for food sovereignty announced that it was going to

[45]http://www.fao.org/fileadmin/user_upload/bodies/Conference_2019/MY349_21/MY349_C_2019_21_en.pdf

organize a global CSOs meeting in Nyeleni (Mali) in order to find a common understanding of Agroecology and establish some coordination among the different regional discussions in Asia, Latin America, Africa and Europe. The main purpose of the Nyeleni Agroecology Forum organized by IPC in February 2015 was to define Agroecology as a total alternative to industrial agriculture; Via Campesina denounced after the end of the 1st International Symposium[46] that it could not be reduced to a series of techniques or considered as yet another toolbox among others, as. The final declaration of the International Forum for Agroecology, Nyéléni, Mali stated the following: 27 February 2015[47] in the part of *Our common pillars and principles of agroecology* in the first sentence defines Agroecology as *the language of Nature* that can not be reduced to "*a mere set of technologies or production practices. It cannot be implemented the same way in all territories".* Evidently the social dimension of different territories, communities and their customary rights (translated into collective rights in the modern laws) are at the core of agroecology and cannot be reduced to an agronomic technique. So the rejection of the commodification of life and of the global markets led agriculture objectives *to challenge and transform structures of power in society*, so the ethical and solidarity base of agroecology is incompatible with the capitalist agriculture that is addressed as the cause of the climate crisis and unable to feed the world due to its internal contradictions which deplete the natural resources needed for the food production.

This IPC declaration was catalyzed by some governments' attempts to narrow down Agroecology to a simple technique, but it was not truly taken into consideration during the Agroecology Symposium closing remarks from FAO Director-General Graziano da Silva, saying that "*today a window was opened in what for 50 years has been the Cathedral of the Green Revolution"*[48] and that FAO should be an open and neutral space to ensure the policy dialogue on agricultural policies and tools, including GMOs.

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[46]https://viacampesina.org/en/international-symposium-on-agroecology-at-the-fao-in-rome/

[47] http://www.foodsovereignty.org/forum-agroecology-nyeleni-2015-2/

The informal bilateral talks inside the FAO building made clear that this FAO opening to GMOs was the result of strong pressure from governments of the Global North (mainly United States, Netherlands, and Australia) and CropLife in order to counterbalance the process on agroecology with a similar one on biotechnology.

Indeed, in 2015 all the FAO regions celebrated a regional FAO symposium on agroecology (with the exception of Europe, too preoccupied organizing the COP21), shedding light on most of the outcomes from regional processes on agroecology. FAO then celebrated a symposium on *the role of agricultural biotechnologies in sustainable food systems and nutrition* with the financial support of USAID, Australia and the Netherlands the following year in 2016.

The Biotech symposia were quite problematic since the CSOs were not confirmed interpretation in three languages and the support for their participation until few days before the meeting, furthermore the FAO officers in charge of the symposium gave unclear indications on the process to the unit in charge of the partnership with CSOs. For these reasons La Via Campesina published a critical statement[49] the day before the symposium, which created some tensions during the discussion. Finally TAMs for Food sovereignty participated through IPC and obtained only one panelist, with a limited delegation participating from the floor, the main outcome of the biotech symposium was to promote biotechnologies that are compatible with agroecology, in order to avoid the mutual exclusion of the two approaches and integrate family farming, agroecology and its work with biodiversity and nature, within the capitalist agriculture. So, as it was expected by IPC and in particular by La Via Campesina, the governments of US, Canada and Australia and the private sector reacted favourably to the FAO processes that were mainstreaming family farming and agroecology, boiling the social and economic dimensions (incompatible with capitalist accumulation) down to a technique which can be integrated with other techniques in a capitalist model of production. This assumption was underpinned by Louise Fresco (Wageningen UR, the Netherlands and member of the Steering Committee of the Biotech Symposium) during the closing plenary session:

[49]https://viacampesina.org/en/fao-symposium-on-biotechnology-the-biotechnology-industry-runs-the-show/

"As stated very clearly in this symposium, the biotechnology toolbox needs to be linked to the agroecology toolbox and coordinated in a comprehensive and inclusive fashion. This new linkage will be a real challenge technically as it requires an interdisciplinary approach [..] What is important here is that we move the discussion past the black and white view of patenting versus open access and make sure that small farmers, poor countries and poor consumers do not become the victims of this debate. […] One issue that was only briefly mentioned during this symposium is that of open data or big data. As genetic data becomes available online, we can combine it with climate data and soil data to form an enormously powerful tool to fine-tune research efforts as well as farmers' activities to get the best out of the environments in which they work. However, that data is valuable and so it must be considered in terms of intellectual property rights. How should we deal with this massive data? This an issue that we have barely begun to address. What does all this mean for FAO? By hosting this symposium, FAO has positioned itself right in the heart of a new debate on biotechnology. This is very different from the old black versus white, pro versus contra GMO debate. It is a debate which goes beyond just talking about small farmers but instead addresses the entire food chain. It also goes beyond science and involves governments, civil society and the private sector". (FAO Proceedings of the FAO International Symposium on the Role of Agricultural Biotechnologies in Sustainable Food Systems and Nutrition, pg 258-60)

This final statement from Ms Fresco presents an obvious vision behind the support of the Dutch government to the Biotech process: there is the clear will to overrule the definition of Living Modified Organism of the Cartagena Protocol, and consider the New Breeding Techniques as non-GMOs, and use the Digital Sequencing Information of genetic resources (not explicitly mentioned here, but extensively discussed in the ITPGRFA and CBD) with an open-source approach to generate a new policy framework and move beyond all the conflicts that blocked the old GMOs.

The closing statement of FAO Director-General José Graziano da Silva recaptures the suggestion to integrate biotechnologies in agroecology:

"Not one single tool, technology or approach will provide a complete solution for all the problems we have. Responding to the urgent and diverse challenges of the twenty-first century will require a combination of responses. And our responses will also evolve as our knowledge advances. Ladies and gentlemen, we have unlocked the door to discuss and analyses how agroecology and biotechnology can live together and, perhaps, be used as complementary options. This is an outstanding achievement of

> *this symposium. It opens a window of opportunity for the development of new technologies that could make agricultural sectors more sustainable in the years to come. We have also agreed that tools and approaches must be useful and accessible for farmers, in particular, family farmers. […] Some presentations made in this symposium highlighted the possible contributions of new biotechnologies, both low-tech and high-tech, that could best serve the interests of farmers, in particular, family farmers. Several presentations also reiterated that agricultural biotechnologies are much broader than genetically modified organisms." (FAO Proceedings of the FAO International Symposium on the Role of Agricultural Biotechnologies in Sustainable Food Systems and Nutrition, pg 260)*

What lies beneath the complementarity underlying *agricultural biotechnologies and agroecology* can be reflected in the discussion during one of the side events of the Symposium: on February 16th 2016 in the FAO Sheikh Zayed Centre on *New breeding technologies for smallholders' challenges* by the Dutch Ministry of Economic Affairs who was addressing the issue, proposed the recommendation of not regulating New Breeding Techniques since there is no evidence of risk for environment and Health (Niels Louwaars, Director, Dutch association for the plant reproduction material sector) and in the absence of an alien genome there is no basis for safety risk analysis (Rene Smulders; Business Unit Manager, Wageningen UR, Plant Breeding).

It is implicit that this open-source approach should be directed towards the genetic resources that are not protected by Intellectual Property Rights, which are precisely those farmers and peasants are using for the agroecological productions. The angle of the discussion towards the smallholders is clearly captured by *capacity4dev*:

> *"Despite the controversy on GMOs, there seemed to be an emerging awareness that biotechnologies are broader than GMOs and that biotechnologies and agroecology have to live together and be more integrated if agriculture is to be more sustainable particularly for smallholder farmers. FAO is ready to play a role as a platform for further developing this integration" (https://europa.eu/capacity4dev/hunger-foodsecurity-nutrition/blog/role-agricultural-biotechnologies-sustainable-food-systems-and-nutrition-international-fao-symp)*

In any case, during the International Biotech Symposium, Guy Kastler from La Via Campesina, participating through the IPC, as the only panelist

from TAMs for food sovereignty, addressed the failure of GMOs in preserving the yields of the Green revolution, and condemned the attempt to rewrite the GMOs definition of the Cartagena Protocol[50] as any *in vitro nucleic acid techniques*:

> *"Facing consumers' rejection of GMOs, the industry has come up with new techniques of genetic modification and is now willing to have them escape GMO regulations. Those genetic engineering techniques aim at modifying in vitro the genes of cropped plants' cells. They undoubtedly produce living modified organisms as defined by the Cartagena Protocol on Biosafety. Under the pretext that some of those techniques leave no trace of the genetic material introduced in the cells to modify their genome, the industry is willing to have those plants not qualified as GMOs in order to escape the international rules of the Cartagena Protocol and the mandatory labelling, risk assessment and follow-up as imposed by many national regulations. It, therefore, tries to modify the GMO definition in order to reduce it to the insertion of recombinant DNA found in the final product. It is totally unacceptable that FAO endorses in its own publications this obvious violation of the only accepted international definition of GMOs given by the Cartagena Protocol. […] This new move from industry is all the more perverse by allowing it to patent genes without distinguishing them from naturally occurring genes in peasants' seeds and in seeds stored in gene banks. The entire cropped biodiversity available is this way being brought under the control of a few multinationals owning the biggest patent portfolios". (FAO Proceedings of the FAO International Symposium on the Role of Agricultural Biotechnologies in Sustainable Food Systems and Nutrition, pg 201)*

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[50](g) "Living modified organism" means any living organism that possesses a novel combination of genetic material obtained through the use of modern biotechnology;

(h) "Living organism" means any biological entity capable of transferring or replicating genetic material, including sterile organisms, viruses and viroids;

(i) "Modern biotechnology" means the application of:

a. In vitro nucleic acid techniques, including recombinant deoxyribonucleic acid (DNA) and direct injection of nucleic acid into cells or organelles, or

b. Fusion of cells beyond the taxonomic family,

that overcome natural physiological reproductive or recombination barriers and that are not techniques used in traditional breeding and selection;

What Guy Kastler quickly refers to in the few minutes of this statement, is the possibility for these New Breeding Techniques (NBT) to access crop diversity in its entirety: this appropriation of biodiversity in order to be effective should work in the peasant agriculture, which constitutes 75% of Family Farming (80% of the food consumed) and which is mostly based on agroecology, working with nature according to ecological principles. This was clarified even further in the informal talks with the governments of the global south which could not participate in large numbers during the technical discussions as per usual during official FAO meetings.

Contrarily, other TAMs such as the World Farmers Organizations are supporting the inclusion of New Breeding Techniques in family farming: *"Farmers and plant breeders need to be increasingly innovative to feed a growing world population with limited resources and increasingly variable weather events, from floods to droughts" (Thor Korfoed Seeds Working Group Copa-Cogeca)*

So Peasant Family Farming constitutes a reserve of natural resources and production models that are not yet fully captured inside the internal frontier of capital accumulation, therefore they represent a great opportunity for capital penetration in agriculture to expand the agroecological frontiers and to lower the cost of food production through an *innovative technique* which, more than the promise to increase yields, will allow the appropriation of biodiversity and all the farming systems.

This new narrative built upon climate change, family farming and agroecology assumes that family farmers are feeding the world and are (subtly) the most sustainable and efficient food producers. So in order to create the conditions to intervene in this agroecological model of production, there is the need to stress why family farmers need the support of biotechnologies.

In order to understand this inclusion of biotech into family farming, the FAO State of Food and Agriculture (SoFA) 2014 *Innovation in family farming*[51] and 2016 *Climate change, agriculture and food security*[52] are helpful. Usually, SOFA reports are the annual FAO global analyses that are used as a background for policy dialogue.

The SOFA 2014 report, *Innovation in family farming,* recognizes that farmers have been often seen as an obstacle for the development of a country

[51]http://www.fao.org/3/a-i4040e.pdf

[52]http://www.fao.org/3/a-i6030e.pdf

and have been denied the support of the government, although they are central to solving the hunger issue, but they indeed need support to *access to technologies that bolster sustainable increases in productivity without unduly raising risks* and *improved participation in value chains,* since they are more vulnerable to the effects of climate change.

The FAO SOFA 2016 report, C*limate change, Agriculture and Food Security,* focuses more on the effects of climate change for smallholders and which support they need to adapt to climate change. The report establishes the discourse around climate change as a framework which leads to acknowledging agroecology and sustainable intensification as integrated approaches for yield improvement and resilience-building: the depletion of natural resources caused by conventional agriculture can be tackled through diversified food productions systems harmonized with ecological processes, but this does not change the fact that food producers seem to be the most vulnerable to climate change, so they should innovate to be resilient and increase production by 2050:

> *"A major finding is that there is an urgent need to support smallholders in adapting to climate change. Farmers, pastoralists, fisherfolk and community foresters depend on activities that are intimately and inextricably linked to climate – and these groups are also the most vulnerable to climate change. They will require far greater access to technologies, markets, information and credit for investment to adjust their production systems and practices to climate change. […] It will also affect food availability by reducing the productivity of crops, livestock and fisheries, and hinder access to food by disrupting the livelihoods of millions of rural people who depend on agriculture for their incomes" [FAO SOFA 2016, pg. V]*

The policy framework is directed towards increasing resource-use efficiency of smallholders while reducing fossil fuels and environmental degradation; enhance sustainable production and taper off chemical input dependance. Indeed, agricultural sectors should decouple the emissions from production increases, with a specific focus on smallholder farm families and the threats to their livelihoods posed by climate change.

> *"Most of the world's poor and hungry are rural people who earn meagre livings from agriculture. In 2010, some 900 million of the estimated 1.2 billion extremely poor lived in rural areas. About 750 million of them worked in agriculture, usually as smallholder family farmers" (Olinto et al., 2013).*

The basis of the report is that because those small farmers are more vulnerable to climate change and the most malnourished, then they should be supported in adapting to climate change. The main focus is on small farmers and innovation in farming systems: "*innovation often builds on and adjusts local knowledge and traditional systems, in combination with new sources of knowledge from formal research systems" (FAO, 2014a).*

The innovation is referred to in two different contexts: in local knowledge and traditional systems, we have agroecology, informal research systems we have sustainable intensification and biotechnologies (low and high tech) which can also lead to innovative management practices. So agroecology is described as the local and traditional ground of peasant farming working with nature, providing the most significant portion of the food produced in the world, on which innovation should be incorporated.

Having made clear this analytical framework in FAO, we return to the Biotech symposia: they were supposed to follow the same format as the Agroecology symposium, with a regional chapter and a final wrap up Symposium sending recommendations for the different FAO Committees.

Asia was going to hold the first regional symposium in Malaysia, in September 2017. The IPC tried to facilitate the participation of CSOs in the Advisory Panel and as panellists, but with few results due to the lack of time to consult and the continuous changes in the process. In any case, the framework of the negotiations had a palpable, underlying attempt to co-opt agroecology: even if the IPC member was excluded from the first preparatory meetings, through informal contacts we received an internal document on the preparatory meetings of the Asian biotech symposium, where it is clear how the vision of Moore on the failure of GMOs to increase yields is correct and shared by the pro-GMOs organizers of the FAO symposium:

> *"Meantime we see innovation as an engine to drive economic developments to facilitate and enable especially family farmers to achieve the development goals is not necessarily turned on in many developing countries. So in other words, the engine of innovation has not played its role as it should have been. Biotechnology is one of these innovations. One of approaches. Biotechnology is continued to be developed but not in speed and scope as we hoped. We have seen over these years that lots of different ideas and debates come up, especially sort of polarized debate. Also focus on one hand, research, science and technology are been developed rapidly. But other hand in*

terms of application and adaption of these technologies and access to these technologies by smallholders and family farmers is very much lacking behind. Regulatory aspects in many countries still lacking. Also, another polarized situation is equaling biotechnologies with transgenic and GMOs. We see governments also confused whether or not they should promote the development and application of biotechnologies. As these could be perceived as promoting GMOs in certain countries. Or maybe perceived as promoting benefit of multinationals". (Notes from the preparatory process for the regional FAO symposia, internal document)

Despite the few panellists selected, the IPC got organized to participate with a delegation of 15 people from the floor in the first Regional Biotech Symposium in Malaysia (11-13 September 2017). This small delegation, all English speaking, got organized to raise its concerns on the presentations coming from the panels[53] since all of them were pro-GMOs despite the background document of the symposium[54]which declared:

"The meeting will focus on a broad range of agricultural biotechnologies, including many 'low-tech applications', for example, fermentation processes, bio-fertilizers, artificial insemination, the production of vaccines, disease diagnostics, the development of biopesticides and the use of molecular markers in developing new varieties and breeds. None of these involves the production of genetically modified organisms (or GMOs) and it is inaccurate to equate biotechnologies to GMOs only."

After various informal talks with the FAO officers in charge of the process, who tried to avoid the public expression of any opposing view in the plenary discussion, the concerns of the IPC were presented in a formal letter to the regional and the central FAO offices:

In summary, *"the conference was biased towards agricultural biotechnologies, especially GMOs, from the very beginning. Only three Civil Society Organizations (CSOs) were allowed in a line-up of over 40 presentations, most of which spoke about lab research, with little mention of demonstrated socioeconomic and ecological impacts on smallholders. The moderation of most sessions was very limited in their encouragement of balanced discussions, especially suppressing genuine concerns of smallholders" [extract from Civil Society Feedback to FAO]*

[53]http://www.fao.org/3/a-bt683e.pdf

[54]http://www.fao.org/3/a-bt514e.pdf

The unexpected result was the cancellation of the symposia in Latin America and the Middle East since USAID (participating in Malaysia) withdrew its support in the process. The same funding countries (US, The Netherlands, Switzerland) decided to request the same FAO officers to organize in any case the final global symposium as a standalone event, and, taking advantage of the celebration of the International Decade for Family Farming starting from 2019, they changed the name of the symposium to *Innovation for Family Farming*, which was no longer based on the regional biotech processes.

The FAO Biotech symposium drove towards a deeper the discussion on New Breeding Techniques regulation, which became institutionalized by the *International Seed Federation* (ISF) during its 2017 annual congress: the ISF *World Seed Congress* in Budapest gathered 1680 delegates from sixty-eight countries around the world, with the specific aim to "*re-emphasize the seed industry's commitment and contribution to finding solutions for an effective access and benefit-sharing system as part of the International Treaty for Plant Genetic Resources*"[55] as declared by the ISF President Jean – Christophe Gouache. The Congress saw the launch of the *World Seed Partnership*[56], a joint effort by OECD, International Seed Testing Association, UPOV and ISF to support the development of the seed sector in countries worldwide to achieve internationally harmonized seed systems. The harmonization of the seed systems is a matter of urgency since the governments are discussing right now the regulatory frameworks for New Breeding Techniques, as the seed industry magazine *SeedWorld* states:

> *"Pro Innovation Policies Needed: The fact is that regulatory policy will determine the methods used across companies and across crops. Policies that place an overly high regulatory burden on new plant breeding innovations will limit use to only the largest companies and only the highest value crops, such as corn and soybeans. While countries around the world figure new territories in determining how plant breeding innovations should be handled, the international seed industry hopes policymakers will create frameworks that give legal certainty to plant breeders and developers, foster innovation and ensure safety". Seed World May 2017 p. 28*

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[55] http://www.worldseed.org/congress/isf-world-seed-congress-2017/

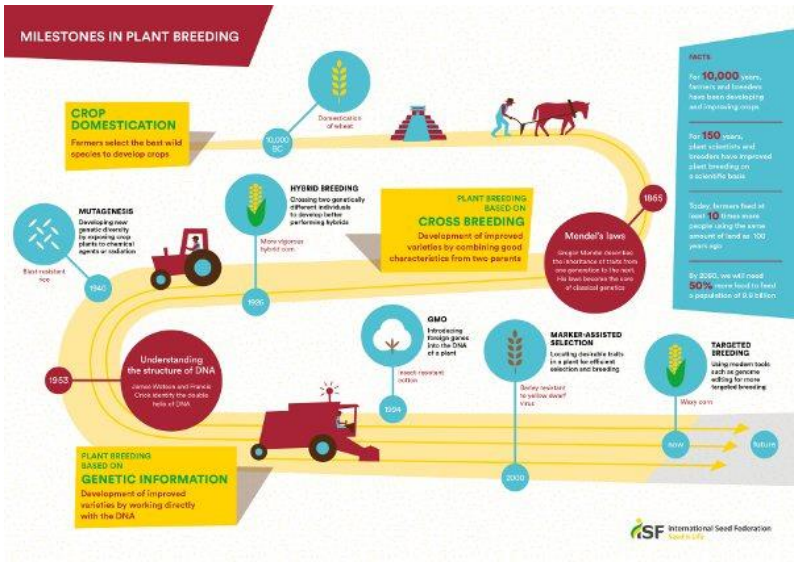
[56] http://www.worldseedpartnership.org/

The World Seeds Partnership (WSP) auspices are that the governments would adopt a zero-regulation approach to gene-editing techniques (as was presented in the side event of the FAO Biotech Symposium). Indeed, WSP developed the *Consistent Criteria for the Scope of Regulatory Oversight*[57] concept paper, affirming as a central concept that:

> *"Plant varieties developed through the latest breeding methods should not be differentially regulated if they are similar or indistinguishable from varieties that could have been produced through earlier breeding methods".*

In order to support its campaign, the WSP developed a toolkit[58] to guide the public discussion of its members in order to present New Breeding Techniques as a natural evolution in the history of agriculture and human selection of seeds:

Figure 6.1
WSP Toolkit for NBT



[57] http://www.worldseed.org/wp-content/uploads/2018/03/ES_2018-v5-i1-18-19-ISF-on-Consistent-Criteria.pdf

[58] https://corporateeurope.org/sites/default/files/attachments/isf_pbi_discussion-guide_feb-2017.pdf

Source: [CorporateEurope 2017]

The final part of the toolkit focuses on the public policies and regulatory frameworks for New Breeding Techniques to promote a harmonized normative which could exclude some categories of products from the current GMO regulations, and use common scientific principles to build public policies in order to give legal certainty to plant breeders when adopting innovative solutions as the NBTs. The toolkit reaffirms that WSPs *want governments to consider plant varieties developed using the latest breeding methods as those produced using earlier methods*. Plant varieties developed under the latest breeding methods should not be regulated differently if they are similar or indistinguishable from varieties that could have been produced through earlier breeding methods. So the final goal is to find a loophole that would exclude the New Breeding Techniques from the current GMO regulation, and present them as a natural process. This would allow the penetration of the European Market and condone the lack of labelling for consumers.

It is interesting to note the evident role of public policies as regulation since it reduces costs due to homogenous regulation on NBT:

"Research & Development

• Plant breeders need a clear policy framework and predictability to enable a long-term approach to the investment in developing new varieties. The development of new varieties from concept to commercialization takes many years and considerable investment.

Movement of Seed & Trade

• A consistent approach is needed to facilitate the movement of seed around the world.

• A "level playing field" for all products reduces trade disruptions.

• Inconsistent policies and practices put plant breeders at a competitive disadvantage and make it more costly to get innovative products onto the market.

Rules & Regulations

• *Plant varieties are already subject to various rules and regulations, so any additional regulation may be unnecessary.*

• *The cost of over-regulation: - means it takes longer to develop new varieties as pre-market assessments are - needed before a new variety can enter the market. - limits access to the latest breeding methods for most companies."(ISF HOW TO TALK ABOUT Plant Breeding Innovation, a discussion guide 2017)*

In order to be effective in the lobbying, a Bruxelles-based consultant produced a mapping[59] of the different actors participating in the discussion of the regulatory framework. Indeed the European Market is a clear target of the lobby work, and there is a case at the European Court of Justice: in December 2015, nine peasant and civil society organizations from France stormed the French State Council demanding a moratorium for the cultivation of varieties which have developed a tolerance against herbicides (Variétés rendu tolérantes aux Herbicides – VrTH) which poison soils, water and food. They also demanded strict implementation of the GMO regulation for new GMOs. Before it published its decision, the French State Council decided to refer the matter to the European Court of Justice (ECJ) in October 2016 asking it to clarify the legal status of organisms which are the result of "classic" mutagenesis and new techniques of site-directed mutagenesis, such as CRISPR-CAS9. The State Court also wanted to clarify whether European states have the right to regulate varieties resulting from mutagenesis which wouldn't be classified under the European regulation on GMOs. The European Court of Justice would thus give a ruling which the states and the Commission would have to respect on whether new GMOs enter the current regulation or not. At the same time, the European Commission has made use of its Scientific Advice Mechanism (SAM) to get a scientific opinion on new GMOs. In January 2018, the Commission's lawyer argued that the exemption of those techniques cannot be made for safety reasons but rather internal market issues. Finally, The European Court of Justice in July 2018 clarified

[59]https://corporateeurope.org/sites/default/files/attachments/final_stakeholder_and_issue_mapping_on_New Breeding Techniquess_04-2017.doc

that GMO regulation should apply to CRISPR-CAS9. This debate was further bolstered by the Dutch government releasing a proposal for a modification of GMOs Directive 2001/18 exempting all New Breeding Techniques from any obligations, granting the release of unknown modified organisms into the environment without any kind of monitoring. The claim from the anti-New Breeding Techniques front is that it's the techniques that should follow under the regulation and not the final product.

TAMs for Food sovereignty raised the issue of how New Breeding Techniques could lead to patenting what is called *native traits* of genetic resources: indeed, the mapping of the genome of a plant allows to identify a gene of interest for the researcher, and if the researcher attaches some new characteristics to this gene (f.i resistance to flood) it can be considered as an invention and patented. After patenting, the intellectual property rights (IPRs) can be transferred to all local varieties and wild crop relatives worldwide. For instance, any plant containing the "natural" equivalent of the biological material patented can be patented according to the European Directive 98/44 :

> *"This framework does not protect a technique, a process, a biological material but it allows patenting the genetic information, meaning a series of plants or animals very different each other, that cannot be reduced to a single plant variety or one animal species: all might contain one similar genetic information and express a hereditary character or function associated with this specific genetic information – which stands for the resistance to an insect or herbicide, precocity, nutritional quality, taste, etc. So, varieties breeders and peasants will not be owners of those patents, but if they work or cultivate that plants, they will face great difficulties in demonstrating that they did not use the patented plants, but natural vegetables before the planned modification of the gene and patented. In this sense, they could be accused of theft and forgery. Within this patenting framework, seeds industries will have an exclusive monopoly for the commercial utilization of those seeds" (Centro Internazionale Crocevia 2017).*

In 1998 the EU adopted legislation on patents (Directive 98/44/EC of 6 July 1998 on the legal protection of biotechnological inventions1). This directive essentially stated that: a) Plant Varieties and animal breeds and b) Essential biological processes to obtain plants or animals (such as breeding or selection) are not patentable. What is patentable according to the directive? a) Microbiological processes. A manipulation happening at the cell level (GM techniques) is a microbiological process; b) Isolated gene or

produced with a microbiological process, even if it is identical to a natural gene; c) genetic material (the chemical material composing the gene); d) genetic information (the digitalized information on the composition of gene). The protection of patents on biological material and genetic information also covers the products that contain these biological materials (genes, proteins) or this genetic information. At the time in which the directive was adopted, mainly only transgenic GM products were covered by the patent. But the industry tried to find a way to patent also non-GM plants since GMOs are rejected by society. Given the fact that the directive has been mainly written under a strong influence of the industry, it contains several loopholes.

The first problem was the fact that the directive does not say that a *product* issued by an essentially biological process is not patentable. The directive just says that an *essential biological process* is not patentable. This is why the industry has been looking for ways of patenting material that are not regulated as GMs. At first, the industry tried to put a patent on the native gene of a plant for which they could explain the functioning (tolerance to a herbicide, resistance to an insect...). Even though this would not constitute an invention, the knowledge of the link between the gene and its function was not made public before (through a patent, a catalogue or a scientific publication...) is what makes it new and allows the company to put a patent on it. It doesn't matter if the plants are bred through essential biological processes. This is usually called a patent on a native trait. The European Commission published an interpretation on this issue stating that the legislator when writing the directive on patent, intended that the products issued by a biological essential process cannot be patented. But the European Patent Office (EPO) is still granting such patents.

The EPO not only grants a patent for EU countries but also for other countries who signed the convention (around forty countries in total). Moreover the EU directive in articles 8 and 9 state that the protection of a patent, extends to all the products that have this gene or this genetic information and expresses its function, regardless of whether it is a patent on genetic material (the chemical material composing the gene) or genetic information (the digitalized information on the composition).

In the past, transgenesis (insertion of genes coming from different species), was not a problem because it was easy to distinguish the transgenic material in the plant. But with the new techniques of genetic engineering,

it is no longer easy to distinguish the modified biological material or modified genetic information from a gene or genetic information already existing in a wild plant stemmed exclusively from biological processes.

Both the patenting of genetic information and the possibility to patent the native traits of seeds raise a strong question on data about Digital Sequencing Information (DSI), which generally refers to the information component of genetic resources, or of their parts and components: DSI can be acquired by technicians and may lead to the resynthesis of genetic resources in a lab, making it unnecessary to physically access the genetic resource. DSI is not included in the International Treaty for Plant and Genetic Resources for Food and Agriculture or any other instrument for Access Benefit Sharing, but it is affecting its functioning; given the lack of governance and regulatory framework, exchange of DSI evades the Treaty's benefit-sharing requirements, even if it may well lead to commercial applications and privatization of traditional seeds and related knowledge.

The FAO International Treaty of Plant Genetic Resources (ITPGRFA) has a central role in this discussion since it aims at establishing a global system to provide farmers, plant breeders and scientists with access to plant genetic materials. *On ratifying the Treaty, countries agree to make their genetic diversity and related information about the crops stored in their gene banks available to all through the Multilateral System (MLS).* The access to the MLS allows access to the world's gene banks including the vast collections of the Consultative Group for International Agricultural Research (CGIAR), a consortium of 15 international research centres. So in the last Governing Body of the ITPGRFA, the issue of DSI was raised by the International Planning Committee for food sovereignty during the last Governing Body of the Treaty in Rwanda, requesting to protect these public resources by applying the same rules to both genetic information and genetic material:

> *"Agenda item 13- ITPGRFA GB 7: Global Information System: Thank you, Chair, for giving me the floor. Open internet access to digital sequencing information on PGRFAs, shared by the Treaty's Global Information System, could act in breach of either the Treaty or the Convention on Biological Diversity.*
>
> *The digital sequencing information found in each PGRFA could be considered as an integral part to the latter, and accessing such information is linked to benefit-*

sharing obligations and to the ban on claiming intellectual property rights, and indeed any other right that may limit access to: the PGRFA, its genetic parts or components. It is clear to us, peasant farmers, that living plants can only be considered as a whole.

Some researchers and the industry, however, believe quite the opposite. They believe that digital sequencing information is not linked to the PGRFA that it is found in. In this scenario, the Convention on Biological Diversity and the Declaration on Indigenous Peoples thus applies, and in particular, the obligations regarding free informed prior consent and benefit-sharing. Digital sequencing information that bears information on an associated function does not constitute a scientific creation once it has been patented. The information directly comes from the traditional knowledge of the farmers and indigenous communities who have bred and conserved the PGRFAs that contain these sequences and describe their function.

Against this background, the Treaty should not disseminate such digital sequencing information that comes from PGRFAs without restriction, until the following have been achieved: ensure that benefit-sharing is upheld, a ban is in place on claiming intellectual property rights or any other rights that limit facilitated access to the PGRFAs found in the Multilateral System, their genetic parts or genetic components." Guy Kastler – La Via Campesina and the International Planning Committee (IPC) for food sovereignty 31 October 2017, Kigali, ITPGRFA GB7

The issue was so central that it was reiterated in the final declaration made by TAMs for food sovereignty, which asked the Treaty to protect the genetic material in CGIAR centres from the risks of dematerialization which is leading to a patenting of traits of in-trust material. IPC requested

the Treaty [to] act urgently before more patents on native traits fall under the control of an ever-smaller number of multinational seed companies that would privatize all PGRFA essential for food security, and thus control the entire food chain (Joint Statement by Civil Society and Farmers' Organizations to the Final Plenary of the 7th GOVERNING BODY (GB7) of the IT PGRFA))

During the ITPGRFA GB7, the IPC also took the chance to lobby the European Union requesting the European Commission for a new interpretation of the directive saying that the scope of a patent cannot be extended to the biological material or genetic information that can be produced by essential biological processes, even if they have been obtained by new GM patentable techniques.

The European Union has said that "access to sequential digital information is not linked to access to physical resources". This is not what Article 9 of its own 1998 Directive on the protection of biotechnological inventions (98/44 / EC) says:"The protection conferred by a patent on a product containing genetic information or consisting of genetic information extends to any subject, subject to Article 5 (1), in which the product is incorporated and in which the information Genetics is contained and performs its function."According to the European Union, sequential digital information would be independent of biological material when it comes to access, but would no longer be so when it comes to patents on genetic information that allow claim rights to biological material. These patents infringe plant breeders' rights to free access to relevant PGRFA for research and breeding, and the rights of farmers to cultivate and trade them. They are therefore not in line with the commitments of the Contracting Parties that have approved the Treaty's Material Transfer Agreement, and in particular Article 6.2 which prohibits the beneficiary of access to plant genetic resources of the Multilateral System from claiming a right to property. Intellectual property that would limit facilitated access to the material provided, its parts or genetic components, within which the patented genetic information has been identified. (Guy Kastler, LVC, IPC delegate intervention in plenary during the ITPGRFA GB7DSI, Agenda Item, 18)

New Breeding Techniques are on the verge of success in patenting native traits of existing varieties and patenting genetic information will allow the appropriation of the biodiversity and peasant farming. During the Treaty GB7, IPC explained its concerns to the governments in the meeting, especially Latin America (for whom IPC provided interpretation during the evening sessions, which the governments from Global North usually use to discuss the most contentious issues, having a bigger delegation to cover the different schedules)

The national patent legislation could not allow the patenting of plants or animals that stemmed exclusively from essential biological processes: both the elements which constitute them or the genetic information they carry.

The seed industry wants to reform the Convention from 1991 which lays the foundation of the work of UPOV as well as the plant breeders' rights in order to make them as restrictive as patents. This project, known as UPOV 2021, will suppress for 5 years (after the acquisition of the breeders' rights), the exception that allows the use of a protected variety to breed another one. It also wants to replace the current description of a variety

(by the physical traits of the plants from which they originate) with dematerialized genetic information "easily identifiable, thanks to genetic markers". These markers enable the industry to easily identify in the fields of farms, in the produce and the processed products that are made from a certain variety or even a new variety coming from a crossing with the protected variety. The physical characteristics which are currently used can only be identified on the farmer's field by sending a group of experts into the field and this method only generates a small amount of royalties. Thanks to its traceability, the new plant breeder's rights would become as efficient as the current patents in detecting frauds in silos and ships transporting grain or in flour as well as in shops' inventory. But opposed to the current patent it would have the advantage (for the seed producer who seeks to hide his GMOs) that a description of the breeding process is not mandatory. The Netherlands presided over Europe in the first semester of 2016 and announced their intention to put on the agenda the GMO vs GMO-free status for products issued from New Breeding Techniques and the future patents on *native features* of plants facilitated by these new techniques. The Netherlands is opposing patents on plants and plant traits and if patents are still permitted, there should at least be a complete breeder's exemption. So, traceability is still a crucial issue to be discussed since it confronts the toxicity or any GMO related problems for humans, animals, or the environment.

In addition, TAMs for food sovereignty requested traceability in order to allow differentiation between products from the patented invention vs other products and thus prevent the extension of patent protection to native traits: without traceability, there is no patent.

On the specific issue of agrofinancialization and NBT, WFO supports the introduction of New Breeding Techniques using the narrative of climate change, supporting the decrease chemical and nutritional inputs, thus reducing the weight agriculture has on the environment, as well as improving production efficiency and increasing food safety. According to WFO, the New Breeding Techniques will grant Farmers access to new varieties in a shorter time period than traditional breeding. In reality, the WFO positions on New Breeding Techniques are expressed by its European

component Copa[60] Cogeca[61], considering that the main concern for New Breeding Techniques is the GMOs regulation at European level. The main issue for WFO/Copa Cogeca has to do with the patenting of non-essential biological processes:

> *"Copa & Cogeca have constantly stressed that patent law is an inappropriate instrument for the EU agriculture sector. All genetic resources must remain readily available for farmers and breeders so that they can make progress in the breeding sector", Copa & Cogeca Secretary-General Pekka Pesonen said. "But the Commission's recommendation is not clear on excluding natural traits obtained by non-essentially biological processes from patentability. These New Breeding Techniques (*New Breeding Techniques*) are yet to be defined and classified by the Commission. Moreover, the Commission's recommendation is not legally binding and the EPO is an independent body. We, therefore, call on national governments to ensure that the EPO respects the Commission's recommendation in order to ensure that existing plants do not fall under the scope of patent law",*

WFO/Copa Cogeca raise the issue of patenting essential biological processes, but at the same time consider these New Breeding Techniques as a matter of urgency for the Farmers. WFO is defending and representing the interests of commercial farmers, aiming to maximize profits from agriculture. The main concern derives from the WFO membership, where Coldiretti (Italy) and COAG (Spain) are opposing the adoption on New Breeding Techniques, mainly because they can be used in the Organic sector and appropriate the basic resources of the organic sector through patenting.

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[60]COPA (Committee of Professional Agricultural Organisations) is made up of 60 organisations from the countries of the European Union and 36 partner organisations from other European countries such as Iceland, Norway, Switzerland and Turkey.This broad membership allows COPA to represent both the general and specific interests of farmers in the European Union..

[61] COGECA, now called the "General Confederation of Agricultural Cooperatives in the European Union", currently represents the general and specific interests of some 40,000 farmers' cooperatives employing some 660,000 people and with a global annual turnover in excess of three hundred billion euros throughout the enlarged Europe.

The only concern expressed directly by WFO at an international level has to do with the application of New Breeding Techniques to livestock, which is also a matter of concentration of the sector due to the high level of investments in technology to apply it to the sector.

Indeed, many of the members of WFO have a historically strong connection with the national government, due to the national funds that have been supporting their foundation. If we apply the 3 layers of Arrighi (State and Capitalism, Market Economy, Material Life) to the vision of WFO, it fully supports the class differentiation in the countryside (material life) through polarization and proletarianization processes. The transformation of Peasantry into more efficient inconsequential commodity producers, trading commodities in the global value chains, thus reinforcing the capital accumulation process and the driving force of capitalism over the formation of nation-states.

The integration in the global value chains is halted with the limit of the concentration of the agricultural sector, mainly in Europe where TNCs are in direct competition with Family Farmers. So on one side, WFO takes on the New Breeding Techniques (and the financialization process) as a way forward to increase productivity and profitability of farming (with some safeguards for the organic sector), however, on the other side, WFO doesn't consider the concentration process needed to develop the New Breeding Techniques, which is seen in the actual trend of Mergers and Acquisitions in the agricultural sector.

The third relevant actor on the topic of seeds and agricultural biodiversity is IFOAM. In general, IFOAM participates in FAO with a technical officer who is following the different processes, and it engages in CSO processes to a lesser extent, probably due to the mixed nature of its constituency (e.g. in the CSM processes IFOAM participated as an NGO, not having only food producers in its membership). The participation in FAO is happening more at technical level on normative processes. The only relevant participation at European level it has been in the Agroecology Symposium for Europe (November 2016)

The main strategy of IFOAM is to accurately classify and regulate products derived from New Breeding Techniques in order to avoid their penetration in the organic sector, assessing them not on the basis of the product, but the process. In 1993 IFOAM claimed that organic farming was excluding the use of GMOs. Since 1999 the EU Regulation prohibits the use of GMOs in the organic production process. This regulation has been

considered as a benchmark from all private organic standards and governments who prohibited the use of GMOs in organic production at any stage of the value chain. Due to the increasing attention on NBT, A new position paper was released by IFOAM in 2015 to reaffirm the principles of Organic Agriculture (Health, Ecology, Fairness, and Care) to be applied when evaluating all the new techniques used in creating genotypes. IFOAM is trying to prevent New Breeding Techniques from capturing the Organic Sector, keeping it separated through a regulatory framework.

IFOAM requests to impose the disclosure of the breeding techniques in organic production to avoid the penetration of new GMOs in the organic system. The approach assumes the role of public authorities in guaranteeing transparency and the guaranteeing consumers the freedom to make an informed decision. At the same time, it is clear that patenting native traits or traits deriving from traditional breeding (for both older or newly bred varieties) should not be permitted. In IFOAM, the class analysis is mostly absent: the definition of the model of production (organic farming) could be both, peasant farming or commercial farming, with no specificity on the role of labour. On the markets, IFOAM elaborated innovative solutions, mostly working on the short circuits and local markets, and connecting consumers and producers through the Participatory Guarantee System. In this sense, markets are separated from capitalism as it is in the model of Arrighi. The opposition to capitalist accumulation is not expressed, considering that TNCs are investing in organic certified production.

So the transnational governance of agriculture is where the contrast on the regulation of agriculture biodiversity is intensifying since CBD and ITPGRFA are connecting with new policy frameworks in agriculture discussed in FAO to tackle climate change. It is along these lines that, the mapping proposed in figure 18, from 2004, should be revised with less space for WTO and TRIPS, since after the failure of Round in Cancun and the following negotiations, the international trade moved forwards through bilateral Free Trade Agreements (with a similar fragmentation observed in GATTs), while the space for governing biodiversity became more complex with the new technological development and the increasing relationship between the different international sites as CBD, FAO, ITPGRFA, CFS and Human Rights Council.

FAO organized the 2nd International Symposium on Agroecology[62] that in April 2018, with more than 600 participants from governments, International NGO, TAMs and private companies, to "*synthesize and build on the outcomes of the regional meetings, and provide an opportunity to share and discuss policies that can help scale-up and scale-out agroecology in order to achieve the Sustainable Development Goals"*[63]. The symposium was also the opportunity to shift the process from a technical dialogue to a political one, with the pressure of the FAO Director-General (almost at the end of his term) to have a clear legacy in FAO's Strategic Programmes and Regional Initiatives, so the final outcome of the symposium should have been sent to the next FAO Committee on Agriculture for endorsement and then to the FAO Conference. The first proposal from the Director-General was to have a final declaration agreed in plenary by all the governments and the different participants: after a first meeting of the *drafting team* with a small group of governments, FAO officers, Civil Society represented by IPC[64] and some experts, it became clear that the governments would have never accepted to negotiate a text among them and with all the other stakeholders. So the final declaration was just presented as a Chair's Summary[65], in which IPC achieved to remove some problematic wording such as "*taking advantage of new opportunities for digitalisation, communications, and networking based on open-source software"* that were appearing in the first versions. At the same time, the 2nd International Symposium on Agroecology received the FAO proposal to follow up the work through a *Scaling Up Agroecology Initiative*[66], and the definition of Agroecology for FAO through 10 elements[67]describing common interlinked and interdependent characteristics of agroecological

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62 http://www.fao.org/about/meetings/second-international-agroecology-symposium/en/

63 http://www.fao.org/about/meetings/second-international-agroecology-symposium/about-the-symposium/en/

64In this case the coordination of the IPC Working Group on Agroecology, composed by La Via Campesina and MAELA, took in charge the negotiation with the support of the IPC Secretariat

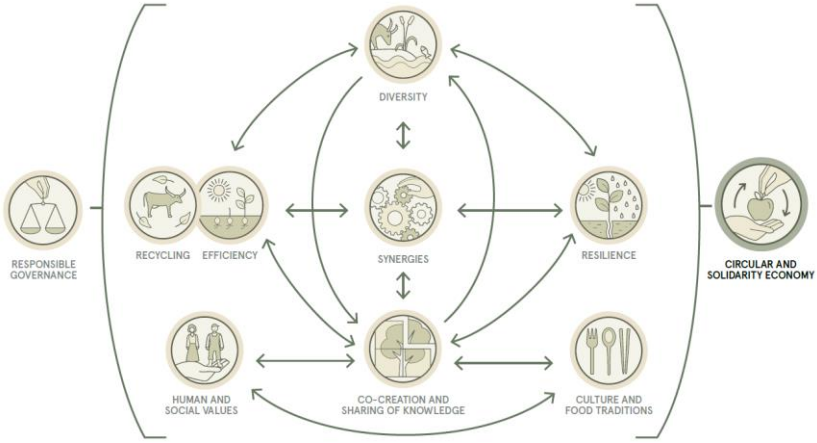
65 http://www.fao.org/3/CA0346EN/ca0346en.pdf

66 http://www.fao.org/3/I9049EN/i9049en.pdf

67 http://www.fao.org/3/I9037EN/i9037en.pdf

systems as foundational practices, innovation approaches, context features and enabling environment.

Figure 6.2
10 Elements of Agroecology



Source: [FAo 2018]

From 1st to 5th of October 2018[68], the FAO held its Committee on Agriculture meeting, where the *Scaling up Agroecology Initiative* was to be decided on and as well as the request to endorse the 10 elements of agroecology as a guide to the transition to sustainable agriculture and food systems. The request coming from the North American region, with the support of the Netherlands, was "*to further revise them to reflect the discussions of this session (to be presented to the Council together with the COAG report)"* as it is reflected in paragraph 14 of the final report[69]. The explicit request coming from the floor during plenary was to include innovation among the principles and to refer to the outcomes of the Innovation for Family

[68]http://www.fao.org/about/meetings/coag/coag-26/list-of-documents/en/

[69] http://www.fao.org/fileadmin/user_upload/bodies/Conference_2019/MY349_21/MY349_C_2019_21_en.pdf

Farming symposium happening in the late November 2018 to be included in the elements to be sent to the FAO Council in the first week of December[70]. So *The International Symposium on Agricultural Innovation for Family Farmers: Unlocking the potential of agricultural innovation to achieve the Sustainable Development Goals* held in Rome from 21st to 23rd November was playing a central role in contrasting the incorporation of NBT in agroecology through the inclusion of the innovation principle. The preparation process was again quite problematic for CSOs' participation since the officer in charge of the organization were fearing a similar result to the Biotechnology Symposium in Asia in 2017. In any case, IPC worked through the informal contacts with governments and FAO officers to make clear how exactly the process was following up the symposia on biotechnologies. At the end of the symposium, despite the wide participation (about 600 participants), there was no vibrant discussion and the final outcome as a Chair's summary[71] was contested by the delegations of Iran, Netherlands and Switzerland for the lack of innovative recommendations, even if the delegation of United States of America intervened to defend the Chair's Summary, making clear a division in the block of governments that were pushing for NBT inside agroecology through open-source on Digital Sequencing Information. Civil Society led by the IPC played a rather active role intervening from the floor and claiming the unequal participation of Family Farmers in the panel and protecting the outcomes of the four years long Agroecology process from the outcomes of a standalone event.

In the same week, the 14th Conference of Parties of the Convention on Biological Diversity (CBD) met in Sharm El Sheikh (Egypt), with a clear

[70]The council delayed the revision of the 10 element to the FAO Conference in June 2019: 6 *e) the Ten Elements of Agroecology to be further revised by FAO to reflect the discussions of the 26th Session of COAG and to present the revised version to the 41st Session of the Conference (www.fao.org/fileadmin/user_upload/bodies/CL_160/CL160_Report/MY722_CL_160_REP_en.pdf)*

[71] http://www.fao.org/3/CA2632EN/ca2632en.pdf

agenda point on Digital Sequencing Information, and an IPC delegation condemned[72] the attempt to block any discussion on the DSI, since

> *"by reducing the genetic modifications thus obtained to a simple dematerialized "information" to fit into computer algorithms, the industry extends the scope of its patents to all plants, animals or microorganisms that naturally contain the same "information". The patent on the genetic information associated with genes that accelerate the growth of chickens thus allows the appropriation of all naturally fast-growing chickens! We had hoped that this genetic information would be verified so that we could ban these patents on "native genes" (foodsovereignty.org, IPC press release COP 14)*

In order to influence the discussion of the COP 14, IPC also published a policy analysis[73] of the COP 14 negotiation, in which it was requested to

> "*Contracting Parties to guarantee the regulation on the use of DSI according to the Nagoya Protocol. In this way, Free and Informed Prior Consent must be guaranteed when accessing material genetic resources, and also when accessing digital information. The mention of "open access" of the information must not mean the absence of regulations on the use of this information. The people or institutions that want to access this information must clearly state what is the final objective of the use of this information. Due to the fact that information is useful for scientific research and for the conservation of genetic resources, digital information can not be used for economic purposes, and for this reason can not be used to patent new genetic resources that are generated by this information. If digital information on sequences of genetic resources, serve for science or research, should be excluded all commercial uses that derive from the information".(foodsovereignty.org, Observations and position of the CIP to the 14th Conference of the Parties of the Convention on Biological Diversity and the Protocols of Nagoya and Cartagena, pg 5)*

The confrontation is still ongoing and the fact that TAMs for food sovereignty are able to intervene in a coordinated fashion in two parallel

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72 http://www.foodsovereignty.org/the-biotech-industry-is-trying-to-block-the-un-conference-on-biodiversity-but-it-wont-block-farmers/?fbclid=IwAR0XoaITeo75s_qy6dclTtruwlOkRuMO4L49DBEw_fNkZl4HclIZHwuO_7w

73 http://www.foodsovereignty.org/wp-content/uploads/2018/11/2018_11_23_ES_Declaracion-del-CIP-sobre-la-participacion-a-la-CDB.pdf

fora is a first attempt to scale up their organization in the space of Transnational Governance of Agriculture.

Digitalization of agriculture pertains to a broader process whereas New Breeding Techniques, DSI and synthetic biology, are mostly linked to big data and precision agriculture This collection and privatisation of data in virtual clouds is strongly underway – lead by the TNC John Deere, AGCO and CHN[74]:

1) *Production*

a) Digitalization of information on genetic resources:

i) New Breeding Techniques and DSI will allow the patenting and the control of world biodiversity evading any particular regulation. Synthetic biology reconfigures the genome of an organism transforming it into a new entity: using computers you can design DNA sequences, 3D print them, and insert them into microorganisms:

ii) *It's a plug-and-play approach. Eager researchers can order DNA sequences online in much the same way electronics enthusiasts buy parts on eBay. Working components are listed in inventories of standardized biological parts. The culture is highly collaborative, with synthetic biologists sharing data and tools in the same spirit that drives the open-source, copyleft and maker movements.*[75]

b) Land:

i) Digitalization of land information relevant for investors, i.e. soil quality, production outputs, water access, land price developments.

ii) The digitalisation of the very cadastral data of land. The main vehicle under which this happens right now is the blockchain method where – related to virtual currency bitcoin – actors started establishing 'bitland' as a private virtual/digital cadastral record keeping and transfer platform – a land-eBay of sorts

[74]ETC Group (2016) Software vs. Hardware vs. Nowhere, at http://www.etcgroup.org/content/deere-co-becoming-monsanto-box. The demand for related agricultural drones, robots, sensors, cameras, etc. is expected to grow from $2.3 billion in 2014to $18.45 billion in 2022.

[75]https://cosmosmagazine.com/biology/life-2-0-inside-the-synthetic-biology-revolution

with no public authority in effect. The main narrative mainly proclaims inefficient state administration and therefore, if privatized systems take over land administration will be run much more "efficiently"

2) *Supply Chain*

3) *Circulation*

   a) digitalization of the downstream for process optimization. For instance, mismanaged food waste causes economic losses, harms natural resources, and exacerbates food-security issues: This can be streamlined through integrating planning along the value chain, infrastructure optimization.

4) *Consumption*

   a) Digitalization of consumption: anticipating food waste, altering supply in retails.

ETC group predicted a second round of agribusiness mega-mergers among Big Data genomics commanded by the seed/agrochemical companies and the Big Data satellites and sensors controlled by the machinery majors, with fertilizer industry waiting to be incorporated. Furthermore, there should be a third round of mergers dominated by Farm Insurance Companies: *the company that knows the most about the planting inputs, the harvest outcomes as well as the historic and real-time market conditions.*

The vision Big Data has for the connection between production, circulation and consumption depicts a possible innovation in agriculture within a different model of production. This means a new possible material and commercial expansion, which could lower the price of food production and increase productivity.

This is where cognitive bio capitalism (Fumagalli, Lucarelli, 2011) becomes relevant for Digital Sequencing Information, given that it explains how Intellectual Property Rights can appropriate a general intellect into codified knowledge. This is formulating a new phase of material expansion "*through accumulation by dispossession* (or appropriation)*, intensifying the proletarianization and class differentiation of peasantry, still persisting in the fields through the Chayanovian model of peasant agriculture"* (Fumagalli, Lucarelli, 2011)

this is patenting biodiversity, not producing new varieties but rather capturing into the capital the actual peasant varieties and wild crops relatives that are supplying raw materials for a fraction of the cost.

7 Conclusion

This study focused on the mutual interaction between the financialization of agriculture, that after the end of the Bretton Woods agreements reshaped the countryside generating the emergence of new TAMs supporting the food sovereignty agenda, and the reaction of TAMs in reshaping their policies in the context of the broader process of financialization of capital accumulation generating neoliberal policies.

So the driving research question is how has contemporary financialization impacted agriculture and how has it politically shaped contemporary political orientation of transnational agrarian movements?"

Financialization in agriculture generated a global governance dichotomic space in where TAMs entered and established a new political take on food sovereignty, resisting any further penetration of capital in agriculture from within the production process and through policy dialogue for public policies with governments rather than taking over the state powers.

We have seen that actual financialization in agriculture, as part of the general financialization process, is engaging in the dichotomic space of global governance to drive capital penetration in the countryside, to create the conditions for a new material expansion through the appropriation of world biodiversity. This appropriation of world biodiversity would intensify capital penetration in the internal agroecological frontier, and mainly expand the external frontier including all the biodiversity in the capital accumulation system.

This movement has been generating a sort of class differentiation among TAMs, with the arrival of the food sovereignty movement, which is trying to oppose the financialization phase fostering a new material expansion based on agroecology and the re-peasantization of the mode of production, which compensates labour and natural resources rather than capital.

The drop-in rate of profit causing the end of Bretton Woods was due to a crisis of over-accumulation and under-production (too few raw materials) being the rate of profit is inversely proportional to the value of the raw materials (Marx 1967 III, 119). Paradoxically, it was the end of the Bretton Woods agreements that gave new centrality to the Bretton Woods institutions: International Monetary Fund and World Bank via Structural Adjustment Policies which imposed macroeconomic stabilization policies based on privatization, free-market development and agro exporting in the 1980s and throughout the 1990s. The new neoliberal policy framework of austerity and economic structural adjustment programs, bi- and multi-lateral trade agreements led to the Uruguay Round GATT negotiations from 1986 to 1994 that culminated in the formation of the World Trade Organization in 1995. These institutions, together with the United Nations, gained a central role in global governance. Neoliberal economic policies, deregulation and liberalization of global markets have characterized the financialization of the economy, that we defined in relation to the mode of capital accumulation, and not according to which actors are more active in the economy (e.g. financial institutions or corporate sector): so financialization means capital accumulation proceeding through financial deals according the M-M formula, being free from its commodity form. The accumulation through financial deals implies the absence of a trickle-down effect to the workers in the accumulation process, resulting in an increasing social polarization and class differentiation process, with a disappearing middle class, as well as a rising competition for money-capital among nation-states and among enterprises.

Beyond the main narrative, which portrays financialization as destabilizing the economy, we discovered that financialization emerges from the fall of the rate of profit and it has a stabilizing effect of the economic cycle, guaranteeing the continuity of capital accumulation. The increasing competition leads to a growing number of vertical and horizontal integration of enterprises, pushing towards new organizational processes, in order to reestablish profitability.

In this context, the literature on financialization must be reconsidered in the framework of this broader process. The studies focusing on the research of new markets or financial arenas to allocate the excess of capital are indeed referring to a typical diffusion of financialization to other sectors in order to differentiate a portfolio, as was the case in agriculture with commodity derivatives after the subprime crisis. On the other hand, the

studies referring to the shareholder value cannot be considered as studies on financialization, since spin-offs, mergers or the internal reorganization of an enterprise in order to increase its value can not be identified as money-capital freeing itself from its commodity form, but rather the research for a new form of organization that could increase the profitability. Even the Keynesian approaches, aiming to a regulation of the financial markets are missing the root causes of the financialization process as if the fall of profit and the research of profitability could be regulated.

Indeed, it is a research of new financial arenas for portfolio differentiation and new modes of organization of production which brings the capital to seep into agriculture, on one side creating new markets (as in the financialization of nature), but on the other side creating the conditions for an organizational revolution.

In the agricultural sector, neoliberal policies meant sharp reductions in tariffs and rising imports of cheap staples, cuts in direct and indirect subsidies for producers and streamlining of sanitary and phytosanitary regulations that could constitute non-tariff barriers to trade. Neoliberal policies consequent to the end of Bretton Woods resulted in a reduction of the central government's engagement in supporting agriculture, with privatization processes affecting agrarian classes in their access to natural resources, credit, markets and social services. The rural areas of the Global South were affected by the Structural Adjustment Programs imposed by the World Bank and the International Monetary Fund: the complete deregulation of agricultural markets through the elimination of marketing boards, price guarantees and erasing public research and extension systems, allowed U.S. and Europe dumping practices in foreign markets selling subsidized grain at prices far under the costs of production and capturing southern food security and linking it to global value chains controlled by rich northern countries. These policies of dumping from the northern rich countries and the penetration of capital in the countryside meant the substitution of labour with capital, smallholders labour-intensive farming with modern capital-intensive one with high productivity. At the same time the Uruguay Round and the WTO negotiations had the goal of developing a powerful institutional framework to regulate the rules oft rade for world agriculture which the Bretton Woods agreements had left out. The WTO negotiations included the Trade-Related Aspects of Intellectual Property Rights (TRIPS) which were aiming to dispossess genetic resources through patenting and imposing GMOs with the explicit intent

to increase productivity and the implicit intent to further capitalize agriculture through biopiracy. The failure of the negotiations on the Agreement in Agriculture starting from Cancun in 2003 and the commercial ban of GMOs from the European Union (as false promise to increase yields through GMOs technologies) all resulted in foiling the WTO – TRIPS attempt to decrease the cost of production and the cost of labor for the worldwide system, pushing towards new organizational processes, which in agriculture allow, increasing the margins and reestablishing profitability.

This is how the study undertakes as financialization in agriculture: if capital penetration in the countryside is not generating an agricultural innovation, the accumulation regime will shift to a financialization phase in order to maintain profits, and will revert back to the countryside as an agrofinancialization process, which operates through accumulation by dispossession, intensifying the proletarianization and class differentiation of peasantry, still persisting in the fields with the model of peasant agriculture model, in order to finally spur an organizational revolution reestablishing profitability and restarting the material cycle of expansion. This organizational revolution did not happen with GMOs due to the commercial ban and the lack of increase in productivity, so the actual agrofinancialization process is targeting New Breeding Techniques and Digital Sequencing Information to allow the complete penetration of capital into the peasant agriculture, appropriating world biodiversity through the patenting of native traits, which are the very foundation of the peasant mode of production. This appropriation is allowing a new ecological surplus through the expansion of the agroecological frontier, allowing the capitalist cycle of accumulation to include resources that were outside of the frontier. This process does not require the material seeds, but thanks to DSI, having a similar process, it is really similar to the future commodity market, which defines a virtual process driving the real one.

Notwithstanding, I have found that this organizational revolution in agriculture could follow a different path, as TAMs for food sovereignty are imposing agroecology as a framework for agricultural policies in the United Nations space, especially in FAO. In this case, the material expansion would start again without compensating the invested capital, rather the labour of a labour-intensive model of production.

Indeed, in the evolving space of transnational governance of agriculture, the study identified opposite poles: on one side, the international trade framework WTO and TRIPS, on the other side the biodiversity

framework discussion started in the Rio Earth Summit in 1992, with the creation of the Convention on Biodiversity, connected to the International Treaty on Plant and Genetic Resources hosted in FAO, and FAO itself.

The new TAMs for food sovereignty, coming to the fore in the '90s as a reaction to neoliberal policies and to oppose to the GATT/Uruguay Round, not only protested in the streets of the WTO meetings, but also positioned themselves in the dichotomic space of global governance of agriculture electing FAO and the United Nations as a space to confront proactively this financialization process, claiming a new paradigm for public policies based on food sovereignty as the right of peoples to define their own food and agriculture systems. In this sense, their formation, called the International Planning Committee for (IPC) Food sovereignty, was the main tool for their participation and influence in FAO and Rome process in general. IPC has been a crucial instrument to implement the strategy to make national governments accountable for the national policies and Food Security and to have Food Producers at the table of negotiations through an autonomous and self-organized process. The TAMs' strategy was to oppose collective and customary rights to intellectual property rights, so they created a framework for discussion with the Right to Food Guidelines, and progress towards access to natural and productive resources, to finally arrive at agroecology not only as a mode of production but one that included the social, economic and political dimension. In this strategy the major obstacle was the impossibility to discuss collective rights to genetic resources: even if the ITPGRFA was recognizing the collective rights of farmers to their seeds in its preamble and in art. 9, it was impossible to put any discussion on genetic resources in the agenda beyond what was already agreed in the WTO–TRIPS–UPOV framework. In this sense, the discussion on the governance of genetic resources that are part of the informal seeds systems is emerging together with the discussion on the model of production, since the seeds system is determinant for the definition of the model of production in agriculture.

The negotiation on Climate Change and the celebration of Family Farming created the opportunity to discuss Agroecology in FAO (2014-2018). Agribusiness and the hegemonic governments took the chance to claim a similar process for biotechnologies, attempting to integrate them into Agroecology and Peasant Farming: if new GMOs as New Breeding Techniques will be unregulated, and the Digital Sequencing Information of Genetic Resources will be accessed in open source, the private sector

will have the capacity to patent and appropriate the existing biodiversity. Through this appropriation, peasant agriculture will lose its autonomy, and agribusiness will have opportunity to squeeze the peasants' compensation, lowering the cost of food, and pushing the process of material expansion forward.

The IPC reacted accordingly, blocking the process of the regional symposia and fighting back in the FAO processes the attempt of the private sector. The opposing visions are continuously clashing with some organizations as World Farmers Organizations quietly supporting the private sector, and IFOAM only opposing at the technical level in a limited fashion, mostly at European level.

On the other hand, the IPC (and the other TAMs) are lacking an analysis on the role of agriculture in the capitalist system and a broader analysis of the roots causes of neoliberal policies: so the strategy and alliances are limited to the organizations and the movements that directly deal with agriculture and the food system.

The result is that the space of transnational governance of agriculture is the one in which financialization and TAMs are confronting one another, and TAMs are attempting to reshape financialization but not just as they please. Indeed, the tensions and conflicting streams in the transnational governance of agriculture are increasing and fragmenting the space itself, to the point that at the moment it is impossible to find a hegemonic state or actor able to create some coherence in the governance, even if the rumours of a Chinese candidate to FAO General Direction could change the actual scenario .

The methodological implications of the research are related to the particular methodology of observant participation, based on the background analysis and the impossible separation from the object of research. The actual research would not have been possible without being embedded in the political struggle to change the actual food policies. Most of the analysis and access to data and unofficial information derives from being part of the process. Until now, the TAMs strategy has been centred in the Rome process, but according to the latest trends bringing the food sovereignty struggle beyond Rome process, the methodology for further investigation would require a broader number of researchers or the direct commitment of TAMs within the scholar activism paradigm. For the actual research, it was enough to distinguish the position of the researcher as

situated and part of the process, but still keeping a strong intellectual rigour which can be traced back to the arguments provided.

The theoretical implications concern the distinct lens of analysis that I built bridging the Critical Agrarian Studies and the World System Theory of Arrighi (and its interpretation from Jason Moore's perspective) in order to examine the new political space of transnational governance of agriculture and the emerging TAMs (or peasant agencies) in the broader framework of capital accumulation. In this framework class analysis, it is not strictly applicable, however the discussion has to deal with an external and internal side of capitalist agriculture. The study confirmed the relevance of TAMs as a peasant agency which is able to take back the agrofinancialization process, since the early '90s with the WTO and Rio negotiations, until the most recent discussions on Family Farming and governance of biodiversity.

This is relevant also for the theories and groups that are neglecting the usefulness of struggling in the transnational space of governance, as Harvey wrote

Hostility between the two trains of thought and style of organizing is already much in evidence within the anti-globalization movement. A whole wing of it sees the struggle to command the state apparatus as not only irrelevant but an illusory diversion. The answer lies, they say, in localization of everything […] falling into the trap of my community, locality, or social group right or wrong'. Above all, the connectivity between struggles within expanded reproduction and against accumulation by dispossession must assiduously be cultivated (Harvey 1989)

From the theoretical point of view, the arrighian approach to agrarian political economy is opening the possibility to further develop the analysis of this connection of struggles among the three different layers a) Cycles of Accumulation: the upper floor of the "anti-market" where capitalists are meeting the political powers, b) Market Economy, related to the circulation phase: dependency and world system theory focused on the polarization of the production in centre-periphery relations, c) The material life on labor-capital relations at the level of production. The traditional class differentiation discussion (Lenin 1964) relates with this lower layer, focused on the local dynamics and not affecting the top layer of the Capital Accumulation, which is not based on the internal social dynamics of a nation-state (Arrighi, Piselli 1986). In this sense, the study contributes to

connecting the social and the global struggles and their relations with institutions and global market forces using the TAMs as a relevant agency acting in this connection.

Moreover, the research defined a clear framework of analysis for financialization in agriculture as a differential concept useful to analyse the actual phenomena, considering the overlapping of the concepts of financialization, dematerialization and digitalization of food.

The policy implications, are on one side related to policies for biodiversity conservation, including the full implementation of the CBD, Nagoya Protocol, ITPGRFA and all the other agreements in the area, overcoming the dichotomy with the regulation of Intellectual Property Rights, especially on the information embedded in the genetic resources, and the utilization of the database of the CGIAR research centers and gene banks. On the broader side, the policy implications should look at the model of agriculture and development that public policies and private investments should support, in which agroecology and family farming are playing a central role to successfully tackle climate change.

The political activism implications concern the strategizing in the broader framework of the capital accumulation to understand the roots of the actual policies and elaborate a strategic mapping of the space of transnational governance of agriculture, considering how to develop the institutional guerrilla warfare in the different institutional spaces, considering the original dichotomy and the actual internal fragmentation of this space, and the lack of coherence in some actors, including the different government delegations. Furthermore, this strategic mapping should be able to include not only the spaces beyond the Rome process but also the regional and national spaces, in order to be more effective in the policy change. An additional level is the connection of horizontal struggles and practices of alternative systems, in order to coordinate and organize the everyday resistance in the fields. This approach is emerging in some regions, where the regional organizations are able to bring the political struggle to the level of the economic and market organization

Appendices

Appendix 1
List of the events

1. 5-7 September 2017 Seventh meeting of the Ad Hoc Open-ended Working Group to Enhance the Functioning of the Multilateral System of Access and Benefit-sharing

2. 11-13 September 2017 Regional Meeting on Agricultural Biotechnologies in Sustainable Food Systems and Nutrition in Asia-Pacific

3. 22 September 2017 FAO Community seed bank workshop

4. 20-23 September 2017 IPC Global Consultation on FR in Mali

5. 27 October - 3 November 2017 7th Session of the Governing Body of the ITPGRFA in Rwanda

6. 29 October - 3 November 2017 Agroecology Stocktaking Meeting in Rome

7. 9-12 December 2017 Youth training on agroecology and global governance

8. 19-23 February 2018 30th Session Regional Conference for Africa (ARC)

9. 5- 8 March 2018 35th FAO Regional Conference for Latin America and the Caribbean
10. 12-17 March 2018 IPC General Meeting in Cape Town
11. 3-5 April 2018 International Symposium on Agroecology: Scaling Up agroecology to achieve the Sustainable Development Goals (SDGs
12. 9-13 April 2018 34th session of the Regional Conference for Asia and the Pacific
13. 17-20 April 2018 Latin American and Caribbean Consultation on Farmers' Rights in Brasil
14. 7-11 May 2018 "34th Session Regional Conference for the Near East (NERC)
15. 16-18 May 201831st session of the FAO Regional Conference for Europe (ERC)
16. 23-25 May 2018Informal Expert meeting on the implementation of the sustainable use of PGRFA and the Joint Programme on biodiversity in agriculture
17. 29-31 May 2018Multi-stakeholder Dialogue on Biodiversity Mainstreaming across Agricultural Sectors
18. 21-22 June 2018 Third meeting of the Scientific Advisory Committee on Article 17 ITPGRFA (SAC-GLIS-3)
19. 26 June 2018 FPA Forum Bruxelles
20. 8-12 July 2018 Asian Consultation on Farmers' Rights in Indonesia
21. 14-18 July 2018 African Consultation on Farmers' Rights in Mali
22. 10 - 14 September 2018 ITPGRFA Ad Hoc Technical Expert Group on the Implementation of Farmers Rights

23. 17 September 2018, at 11:30 CEST, in FAO-HQ, Sheikh Zayed Center: Launch of the FAO State of the World of Agricultural Commodity Markets 2018

24. 1-5 October 2018 FAO Committee on Agriculture

25. 6-8 october 2018 Coordination meeting of the IPC Facilitation Committee and the IPC WG Coordinators

26. 8-9 October 2018 FAO workshop: Indicadores / Indicators

27. 10-12 October 2018 Eight meeting of the Ad Hoc Open-ended Working Group to Enhance the Functioning of the Multilateral System of Access and Benefit-sharing

28. 17 - 29 November 2018 COP 14 -Fourteenth meeting of the Conference of the Parties to the Convention on Biological Diversity

29. 21-23 November 2018 International Symposium on Agricultural Innovation for Family Farmers

Appendix 2
IPC declarations

A) PROFIT FOR FEW OR FOOD FOR ALL

Food sovereignty and Security to Eliminate the Globalization of Hunger

A Statement by the NGO FORUM to the World Food Summit. Rome Italy 17 November 1996

PREAMBLE

In the next few minutes, the diverse voices of civil society will speak as one. We are representatives of more than 1,200 organizations from some 80 countries, from all regions of the world. We seek to bring the message of the more than one billion hungry and malnourished people of the world, most of them children and women. Through regional and global consultations we have discovered and affirmed our mutual solidarity. Our collective vision derives from our knowledge that food security is possible. We regret that we will have but four minutes to share this vision with you.

We affirm first and foremost the basic human Right to Food. Everyone has the right to secure access at all times to safe and nutritious food and water adequate to sustain an active and healthy life with dignity.

Neither food nor famine can be used as a national or international political weapon. Access to food cannot be denied to any nation, ethnic or social group for political, economic, religious or other reasons. Economic embargoes or international sanctions affecting populations are incompatible with food security. Those currently in place must be terminated.

The shame of global hunger and malnutrition compels action by all. At the same time, we insist that governments have the primary and ultimate responsibility to ensure national and global food security.

The representatives of civil society gathered at the NGO Forum are in full agreement on some of the fundamental causes of food insecurity.

The globalization of the world economy, along with the lack of accountability of transnational corporations and spreading patterns of overconsumption have increased world poverty. Today's global economy is characterized by unemployment, low wages, destruction of rural economies, and bankruptcy of family farmers.

Industrialized agriculture, intensive animal husbandry methods, and overfishing are destroying traditional farming, poisoning the planet and all living beings. Subsidized exports, artificially low prices, constant dumping, and even some food aid programs are increasing food insecurity and making people dependent on the food they are unable to produce. The depletion of global grain stocks has increased market instability, to the detriment of small producers.

Family farmers and vulnerable people are forced under the International Monetary Fund and World Bank policies to pay the price of structural adjustment and debt repayment. National policies too often neglect these same groups. Official corruption erodes all efforts to achieve food security.

The proliferation of war, civil conflict, and environmental degradation is a growing source of hunger and food insecurity. Hunger and malnutrition are most severe in cases where these combine with natural disasters.

CIVIL SOCIETY PROPOSALS TO ACHIEVE FOOD SECURITY

We propose a new model for achieving food security that calls into question many of the existing assumptions, policies and practices. This model, based on decentralization, challenges the current model, based on a concentration of wealth and power, which now threatens global food security, cultural diversity, and the very ecosystems that sustain life on the planet.

We highlight six key elements of this alternative model, along with steps toward its development and implementation. An integrated approach is required, thus simultaneous action is needed in each of these areas.

1. The capacity of family farmers, including indigenous peoples, women, and youth, along with local and regional food systems must be strengthened.

1.1 All aspects of food and agriculture must be reoriented in favour of family farmers. This should include technical, managerial and financial support, credit, and direct access to markets for farmers' associations. It also should include a greater emphasis on safe and sustainable urban agriculture.

1.2 Women play a central role in food security and must be guaranteed the right to productive resources and equal opportunities to use and develop their skills.

1.3. Resources must be shifted in favour of local and regional food producers and food systems. Investment resources should be made available through debt exemption and debt relief, through a reallocation of existing international cooperation and allocation of additional resources by rich countries who should fulfil their commitment to appropriate 0.7 percent of Gross National Product to official development assistance.

1.4 Family farmers must be assured access to information and communications systems.

2. The concentration of wealth and power must be reversed and action taken to prevent further concentration. In particular:

2.1 Agrarian reform in favour of rural poor people who will work the land must be implemented immediately and priority placed on integrated rural development.

2.2 Genetic resources are essential to food security and must never be subject to intellectual property rights. Farmers' and community rights and the rights of indigenous peoples must be self-defined and implemented nationally and globally.

3. Agriculture and food production systems that rely on non-renewable resources, which negatively affect the environment, must be changed toward a model based on agro-ecological principles.

3.1 National and international research, education and extension services must be reoriented to integrate the agroecological paradigm, which incorporates the knowledge and experience of men and women farmers. Agro-ecological mapping should be carried out to detail areas of partial and total environmental degradation.

3.2 To prevent and reduce the impact of drought and desertification, access and sustainable management of water resources, rehabilitation, conservation and sustainable use of natural vegetation must be ensured.

3.3 Policies and practices that favour organic agricultural production should be adopted, with the goal of reducing or eliminating the use of pesticides and other agro-chemicals.

3.4 Environmental and social costs of industrial agriculture should be included in the prices of products in order to avoid unfair competition with sustainable agriculture.

3.5 A diversified, culturally acceptable, well-balanced diet and safe, high-quality food for all must be ensured.

4. National and local governments and States have the prime responsibility to ensure food security. Their capacity to fulfil this role must be strengthened and mechanisms for ensuring accountability must be enhanced.

4.1 National policies to overcome poverty by guaranteeing means for sustainable livelihoods, employment opportunities for all, and an equitable income distribution must be implemented to improve the access of poor and vulnerable people to food products and to resources for agriculture.

4.2. States must guarantee the political and economic rights of those within their borders, including consumers' rights. States also must ensure a climate favourable to development and democratic processes, with efforts to protect the environment and prevent violence, terrorism, and discrimination of all kinds. States should respect international law.

4.3 Current structural adjustment programs imposed by the International Monetary Fund and the World Bank should be suspended. Future economic reforms and plans for debt repayment must be formulated with the participation of civil society.

4.4 States must make greater efforts to prevent and resolve conflicts peacefully; together with donor agencies, they must guarantee food for vulnerable populations, including displaced persons and refugees.

5. The participation of peoples' organizations and NGOs at all levels must be strengthened and deepened.

5.1 The right to free association must be guaranteed, including the right of family farmers, consumers, women, indigenous peoples, youth, and others to organize themselves.

5.2. Civil society should monitor the impact on food security of policies, programs, and actions of international financial and trade organizations and should participate in the formulation and monitoring of national policies and programs.

5.3. Civil society organizations also should participate in the efficient implementation of projects for food and agricultural development.

6. International law must guarantee the right to food, ensuring that food sovereignty takes precedence over macro-economic policies and trade liberalization. Food cannot be considered as a commodity, because of its social and cultural dimension.

6.1 Each nation must have the right to food sovereignty to achieve the level of food sufficiency and nutritional quality it considers appropriate without suffering retaliation of any kind. Market forces at national and international levels will not, by themselves, resolve the problem of food insecurity. In many cases, they may undermine or exacerbate food insecurity. The Uruguay Round agreements must be reviewed accordingly.

6.2 All countries and peoples have the right to develop their own agriculture. Agriculture fulfills multiple functions, all essential to achieving food security.

6.3 Negotiations should be carried out to develop more effective instruments to implement the right to food. These instruments should include:

- *A Code of Conduct to govern the activities of those involved in achieving the Right to Food, including national and international institutions as well as private actors, such as transnational corporations.*
- *A Global Convention on Food Security to support governments in developing and implementing national food security plans and to create an international network of local, national, and regional food reserves. Such a convention must be signed to ensure that the Right to Food will have precedence over any other international agreements such as the World Trade Organization.*

6.4 Structural food aid must be replaced progressively by support to local agriculture. When aid is the only alternative, priority should be given to local purchase and triangular aid, in which food is purchased in one country for distribution in the country of need in the same region.

FOLLOW UP

Civil society organizations are committed to ensuring follow-up to this World Food Summit, particularly in monitoring the Food Summit commitments and active participation in the Food for All Campaign. In addition to the Global Convention on Food Security and the Code of Conduct, the Food for All initiative should become the basis for broad-based, participatory implementation at the local, national, and international levels of efforts to ensure the legal right to food. We also call for an expansion of the Committee for World Food Security to include all actors of civil society in the follow-up tasks assigned to the Committee.

*Finally, hunger and malnutrition are fundamentally a question of justice. Unless we agree that the right of every human being to the sustenance of life comes before the quest for profit, the scourge of hunger and malnutrition will continue. Our message is simple: "Queremos una tierra para vivir en paz"*source: http://www.ukabc.org/wfs+5.htm

B) NGO/CSO Forum for food sovereignty

Food sovereignty: A Right for All Political Statement of the

NGO/CSO Forum for Food sovereignty

The Failure since 1996 and the New Official Declaration

The social movements, farmer, fisher folk, pastoralists', indigenous peoples', environmentalist, women's organizations, trade unions, and NGOs gathered here in Rome, express our collective disappointment in, and rejection of, the official

Declaration of the World Food Summit: five years later. Far from analysing and correcting the problems that have made it impossible to make progress over the past five years toward eliminating hunger, this new plan of action compounds the error of "more of the same failed medicine" with destructive prescriptions that will make the situation even worse.

The 1996 Plan of Action has not failed because of a lack of political will and resources, but rather it has failed because it supports policies that lead to hunger, policies that support economic liberalization for the South and cultural homogeneity, which are backed by military force if the first wave of prescriptive actions fail. Only fundamentally different policies, which are based on the dignity and livelihoods of communities can end hunger. We affirm our belief that this is possible and urgently needed.

Since 1996 governments and international institutions have presided over globalization and liberalization, intensifying the structural causes of hunger and malnutrition. These have forced markets open to dumping of agricultural products, privatization of basic social and economic support institutions, the privatization and commodification of communal and public land, water, fishing grounds and forests. Parallel to this, we witness the increasingly brutal repression of social movements resisting the New World Order.

This political will has also opened the doors to the unbridled monopolization and concentration of resources and productive processes in the hands of a few giant corporations. The imposition of intensive, externally dependent models of production has destroyed the environments and livelihoods of our communities. Furthermore, it has created food insecurity and has put the focus on short-term productivity gains using harmful technologies such as GMOs.

The results have been the displacements of peoples and massive migration, the loss of jobs that pay living wages, the destruction of the land and other resources that peoples depend on, an increase in polarization between rich and poor and within and between North and South, a deepening of poverty around the world, and an increase of hunger in the vast majority of nations.

There will be no progress toward the goal of eliminating hunger without a reversal of these policies and trends, but the current declaration offers no hope of such a reversal. It emphasizes trade liberalization, the greatest force undermining livelihoods around the world, has diluted the concept of the human right to food, proposes more enhanced neoliberal structural adjustment in the guise of IPC programs, recommends more emphasis on biotechnology and genetic engineering, and fails to support strengthening of production by the poor themselves for local markets or the radical redistribution of access to productive resources that is fundamental to real change for the better. On the basis of this plan of action, no amount of political will or resources will lead to a major reduction in hunger or the poverty that underlies it.

Food sovereignty: The Fundamental Approach

In contrast to the proposed International Alliance Against Hunger, which is worse than "more of the same medicine", we counterpoise the unifying concept of Food sovereignty as the umbrella under which we outline the actions and strategies that are needed to truly end hunger.
What is Food Sovereignty? Food sovereignty is the right of peoples, communities, and countries to define their own agricultural, labour, fishing, food and land policies which are ecologically, socially, economically and culturally appropriate to their unique circumstances. It includes the true right to food and to produce food, which means that all people have the right to safe, nutritious and culturally appropriate

food and to food-producing resources and the ability to sustain themselves and their societies.

Food sovereignty requires:

- *Placing priority on food production for domestic and local markets, based on peasant and family farmer diversified and agro ecologically-based production systems*
- *Ensuring fair prices for farmers, which means the power to protect internal markets from low-priced, dumped imports*
- *Access to land, water, forests, fishing areas and other productive resources through genuine redistribution, not by market forces and World Bank-sponsored "market-assisted land reforms."*
- *Recognition and promotion of women's role in food production and equitable access and control over productive resources*
- *Community control over productive resources, as opposed to corporate ownership of land, water, and genetic and other resources*
- *Protecting seeds, the basis of food and life itself, for the free exchange and use of farmers, which means no patents on life and a moratorium on the genetically modified crops which lead to the genetic pollution of essential genetic diversity of plants and animals.*
- *Public investment in support for the productive activities of families, and communities, geared toward empowerment, local control and production of food for people and local markets.*

- *Food sovereignty means the primacy of people's and community's rights to food and food production, over trade concerns. This entails the support and promotion of local markets and producers overproduction for export and food imports.*

To achieve Food sovereignty:

- *We will strengthen our social movements, and develop the organizations of farmers, women, indigenous peoples, workers, fisherfolk and the urban poor in each of our countries*

- *We will advance regional and international solidarity and cooperation, and strengthen our common struggles*

- *We will struggle to realize genuine agrarian and fisheries reform, rangeland and forestry reform, and achieve comprehensive and integral redistribution of productive resources in favour of the poor and the landless*

- *We will fight for the strong guarantee of the rights of workers to organize, bargain collectively, have safe and dignified working conditions and living wages*

- *We will struggle for the equal access of women to productive resources and the end to patriarchal structures in agriculture and socio-economic and cultural aspects of food.*

- *We will fight for the right of Indigenous peoples to their cultures, domain, and productive resources.*

- *We call for an end to the neoliberal economic policies being imposed by the World Bank, WTO, the International Monetary Fund and Northern countries and other multilateral and regional free trade agreements, such as the FTAA and NEPAD*

- *We demand the removal of agriculture from the WTO*

- *We will fight to stop genetic engineering and the patenting of life and demand an immediate ban of terminator and similar genetic use restriction technologies*

- *We demand an end to the passing off of GMO food in food aid*

- *We demand an immediate stop to the war on people and the land around the world and an end to the repression of peoples' movements, as well as an immediate end to the illegal occupation of Palestine, the embargoes of Cuba and Iraq and the use of food as an instrument of blackmail*

- *We demand support for the development and dissemination of agroecological systems of production*

- *We call for a Convention on Food sovereignty in order to enshrine the principles of Food sovereignty in international law and institute food sovereignty as the principal policy framework for addressing food and agriculture.*

Finally, "one size fits all" policies like those emanating from the World Bank, WTO and International Monetary Fund must be replaced with a vision of "one world with room for many worlds," where strength and human dignity are built

through solidarity and respect for diversity, and all countries and peoples have the right to define their own policies. To that end, we resolve to build social awareness and our movements for the fight to defeat the WTO at Cancun in September of 2003. https://nyeleni.org/spip.php?article125

C)

DECLARATION OF THE INTERNATIONAL FORUM FOR AGROECOLOGY

Nyéléni, Mali

27 February 2015

We are delegates representing diverse organizations and international movements of small-scale food producers and consumers, including peasants, indigenous peoples and communities (together with hunter and gatherers), family farmers, rural workers, herders and pastoralists, fisherfolk and urban people.

Together, the diverse constituencies our organizations represent produce some 70% of the food consumed by humanity. They are the primary global investors in agriculture, as well as the primary providers of jobs and livelihoods in the world.

We gathered here at the Nyéléni Center in Sélingué, Mali from 24 to 27 of February 2015, to come to a common understanding of agroecology as a key element in the construction of food sovereignty, and to develop joint strategies to promote Agroecology and defend it from co-optation. We are grateful to the people of Mali who have welcomed us in this beautiful land. They have taught us through their example, that the dialogue of our various forms of knowledge is based on respectful listening and on the collective construction of shared decisions. We stand in solidarity with our Malian sisters and brothers who struggle – sometimes sacrificing their lives – to defend their territories from the latest wave of land grabbing that affects so many of our countries. Agroecology means that we stand together in the circle of life, and this implies that we must also stand together in the circle of struggle against land grabbing and the criminalization of our movements.

BUILDING ON THE PAST, LOOKING TO THE FUTURE

Our peoples, constituencies, organizations and communities have already come very far in defining food sovereignty as a banner of joint struggle for justice, and as the larger framework for Agroecology. Our ancestral production systems have been developed over millennia, and during the past 30 to 40 years this has come to be called agroecology. Our agroecology includes successful practices and production,

involves farmer-to-farmer and territorial processes, training schools, and we have developed sophisticated theoretical, technical and political constructions.

In 2007 many of us gathered here at Nyéléni, at the Forum for food sovereignty, to strengthen our alliances and to expand and deepen our understanding of food sovereignty, through a collective construction between our diverse constituencies. Similarly, we gather here at the Agroecology Forum 2015 to enrich Agroecology through dialogue between diverse food producing peoples, as well as with consumers, urban communities, women, youth, and others. Today our movements, organized globally and regionally in the International Planning Committee for food sovereignty (IPC), have taken a new and historic step.

Our diverse forms of smallholder food production based on agroecology generate local knowledge, promote social justice, nurture identity and culture, and strengthen the economic viability of rural areas. Smallholders defend our dignity when we choose to produce in an agroecological way.

OVERCOMING MULTIPLE CRISES

Agroecology is the answer to how to transform and repair our material reality in a food system and rural world that has been devastated by industrial food production and its so-called Green and Blue Revolutions.

We see agroecology as a key form of resistance to an economic system that puts profit before life.

OUR COMMON PILLARS AND PRINCIPLES OF AGROECOLOGY:

Agroecology is a way of life and the language of Nature that we learn as her children. It is not a mere set of technologies or production practices. It cannot be implemented the same way in all territories. Rather it is based on principles that, while they may be similar across the diversity of our territories, can and are practiced in many different ways, with each sector contributing their own colours of their local reality and culture, while always respecting Mother Earth and our common, shared values.

The production practices of Agroecology (such as intercropping, traditional fishing and mobile pastoralism, integrating crops, trees, livestock and fish, manuring, compost, local seeds and animal breeds, etc.) are based on ecological principles like building life in the soil, recycling nutrients, the dynamic management of biodiversity and energy conservation at all scales. Agroecology drastically reduces our use of externally-purchased inputs that must be bought from industry. There is no use of agro toxins, artificial hormones, GMOs or other dangerous new technologies in Agroecology.

Territories are a fundamental pillar of Agroecology. Peoples and communities have the right to maintain their own spiritual and material relationships to their lands. They are entitled to secure, develop, control, and reconstruct their customary social structures and to administer their lands and territories, including fishing grounds, both politically and socially. This implies the full recognition of their laws, traditions, customs, tenure systems, and institutions, and constitutes the recognition of the self-determination and autonomy of peoples.

Collective rights and access to the Commons are fundamental pillars of Agroecology. We share access to territories that are the home to many different peer groups, and we have sophisticated customary systems for regulating access and avoiding conflicts that we want to preserve and to strengthen.

The diverse knowledge and ways of knowing of our peoples are fundamental to Agroecology. We develop our ways of knowing through dialogue among them (diálogo de saberes). Our learning processes are horizontal and peer-to-peer, based on popular education. They take place in our own training centres and territories (farmers teach farmers, fishers teach fishers, etc.), and are also intergenerational, with exchange of knowledge between youth and elders. Agroecology is developed through our own innovation, research, and crop and livestock selection and breeding.

The core of our Cosmo visions is the necessary equilibrium between nature, the cosmos and human beings. We recognize that as humans we are but a part of nature and the cosmos. We share a spiritual connection with our lands and with the web of life. We love our lands and our peoples, and without that, we cannot defend our Agroecology, fight for our rights, or feed the world. We reject the commodification of all forms of life.

Families, communities, collectives, organizations and movements are the fertile soil in which Agroecology flourishes. Collective self-organization and action are what make it possible to scale-up Agroecology, build local food systems, and challenge corporate control of our food system. Solidarity between peoples, between rural and urban populations, is a critical ingredient.

The autonomy of Agroecology displaces the control of global markets and generates self-governance by communities. It means we minimize the use of purchased inputs that come from outside. It requires the re-shaping of markets so that they are based on the principles of solidarity economy and the ethics of responsible production and consumption. It promotes direct and fair short distribution chains. It implies a transparent relationship between producers and consumers and is based on the solidarity of shared risks and benefits.

Agroecology is political; it requires us to challenge and transform structures of power in society. We need to put the control of seeds, biodiversity, land and territories, waters, knowledge, culture and the commons in the hands of the peoples who feed the world.

Women and their knowledge, values, vision and leadership are critical for moving forward. Migration and globalization mean that women's work is increasing, yet women have far less access to resources than men. All to often, their work is neither recognized nor valued. For agroecology to achieve its full potential, there must be equal distribution of power, tasks, decision-making and remuneration. Youth, together with women, provide one of the two principle social bases for the evolution of agroecology. Agroecology can provide a radical space for young people to contribute to the social and ecological transformation that is underway in many of our societies. Youth bear the responsibility to carry forward the collective knowledge learned from their parents, elders and ancestors into the future. They are the stewards of agroecology for future generations. Agroecology must create a territorial and social dynamic that creates opportunities for rural youth and values women's leadership.

STRATEGIES

I. Promote agroecological production through policies that…

1. Are territorial and holistic in their approach to social, economic and natural resources issues.

2. Secure access to land and resources in order to encourage long term investment by small-scale

food producers.

3. Ensure an inclusive and accountable approach to the stewardship of resources, food production, public procurement policies, urban and rural infrastructure, and urban planning.

4. Promote decentralized and truly democratized planning processes in conjunction with relevant local governments and authorities.

5. Promote appropriate health and sanitation regulations that do not discriminate against smallscale food producers and processors who practising agroecology.

6. Promote policy to integrate the health and nutrition aspects of agroecology and traditional medicines.

7. Ensure pastoralists' access to pastures, migration routes and sources of water as well as mobile services such as health, education and veterinary services that are based on and compatible with traditional practice.

8. Ensure customary rights to the commons. Ensure seed policies that guarantee the collective rights of peasants' and indigenous peoples' to use, exchange, breed, select and sell their own seeds.

9. Attract and support young people to join agroecological food production through strengthening access to land and natural resources, ensuring fair income, knowledge exchange and transmission.

10. Support urban and peri-urban agroecological production.

11. Protect the rights of communities that practise wild capture, hunting and gathering in their traditional areas – and encourage the ecological and cultural restoration of territories to their former abundance.

12. Implement policies that ensure the rights of fishing communities.

13. Implement the Tenure Guidelines of the Committee on World Food Security and the Smallscale Fisheries Guidelines of the FAO.

14. Develop and implement policies and programs that guarantee the right to a dignified life for rural workers, including true agrarian reform, and agroecology training.

II. Knowledge sharing

1. Horizontal exchanges (peasant-to-peasant, fisher-to-fisher, pastoralist-to-pastoralist, consumer-and-producer, etc.) and intergenerational exchanges between generations and across different traditions, including new ideas. Women and youth must be prioritised.

2. Peoples' control of the research agenda, objectives and methodology.

3. Systemize experience to learn from and build on historical memory.

III. Recognition of the central role of women

1. Fight for equal women's' rights in every sphere of agroecology, including workers' and labour rights, access to the Commons, direct access to markets, and control of income

2. Programs and projects must fully include women at all stages, from the earliest formulation through planning and application, with decision-making roles.

IV. Build local economies

1. Promote local markets for local products.

2. Support the development of alternative financial infrastructure, institutions and mechanisms to

support both producers and consumers.

3. Reshape food markets through new relationships of solidarity between producers and

consumers.

4. Develop links with the experience of solidarity economy and participatory guarantee systems,

when appropriate.

V. Further, develop and disseminate our vision of agroecology

1. Develop a communications plan for our vision of agroecology

2. Promote the health care and nutritional aspects of agroecology

3. Promote the territorial approach of agroecology

4. Promote practices that allows youth to carry forward the permanent regeneration of our

agroecological vision

5. Promote agroecology as a key tool to reduce food waste and loss across the food system

VI. Build alliances

1. Consolidate and strengthen existing alliances such as with the International Planning as International Committee for Food Sovereignty (IPC)

2. Expand our alliance to other social movements and public research organizations and institutions

VII. Protect biodiversity and genetic resources

1. Protect, respect and ensure the stewardship of biodiversity

2. Take back control of seeds and reproductive material and implement producers' rights to use,

sell and exchange their own seeds and animal breeds

3. Ensure that fishing communities play the most central role in controlling marine and inland waterways

VIII. Cool the planet and adapt to climate change

1. Ensure international institutions and governments recognize agroecology as defined in this document as a primary solution for tackling and adapting to climate change, and not "climate-smart agriculture" or other false versions of agroecology

2. Identify, document and share good experiences of local initiatives on agroecology that address climate change.

IX. Denounce and fight corporate and institutional capture of agroecology

1. Fight corporate and institutional attempts to grab agroecology as a means to promote GMOs and other false solutions and dangerous new technologies.

2. Expose the corporate vested interests behind technical fixes such as climate-smart agriculture, sustainable intensification and "fine-tuning" of industrial aquaculture.

3. Fight the commodification and financialization of the ecological benefits of agroecology.

We have built agroecology through many initiatives and struggles. We have the legitimacy to lead it into the future. Policymakers cannot move forward on agroecology without us. They must respect and support our agroecological processes rather than continuing to support the forces that destroy us. We call on our fellow peoples to join us in the collective task of collectively constructing agroecology as part of our popular struggles to build a better world, a world based on mutual respect, social justice, equity, solidarity and harmony with our Mother Earth.

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clarify legal status of new breeding techniques to give breeders certainty when developing varieties and a wellfunctioning EU single market
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EDUCATION

University of Calabria, Italy and International Institute of Social Studies (ISS) - Erasmus University Rotterdam, The Netherlands	**2016–2019** **PhD Candidate in Politics, Culture and Development, Department of Sociology and Political Science:** *Agrifinancialization and Transnational Agrarian Movements* Prof. Anna Maria Vitale, the University of Calabria in joint supervision with Prof. SaturninoJunBorras Jr- International Institute of Social Studies (ISS) – Erasmus University of Rotterdam
Venice International University, Italy	**January–July 2002** **Master in Economics and Finance**, directed by Prof. Alfredo Medio Quantitative Methods for Economics (Le Van, CERMSEM: Static and Dynamic Optimization–An Outline; Calzolari, Univ. Firenze: Econometrics); Microeconomics of Uncertainty, Insurance and Financial Markets (Grandmont, CREST: Complete Financial Markets; Cazzavillan,Ca'Foscari: Economics of Uncertainty); International Economics (MusuCa'Foscari); Microeconomics of Financial Markets (Li Calzi,Ca'Foscari);Corporate Finance (Parigi,Univ.Padova; Torous; Anderson School of Management, UCLA); Financial Markets (Pelizzon,Univ.Padova; Schaefer, London Business School: Options, Stocks and Derivatives); Quantitative Methods for Finance (Berardi,Univ.Verona: Term Structure of Interest Rates; Sartore,Univ.Venezia: Introduction to Stochastic Processes); Financial Institutions (Cunat, Univ. PompeuFabra:Monetary Policy Transmission, Financial Instability and Systemic Risk; Da Rin, Univ. Torino e IGIER: Financial Intermediaries and Capital Allocation); Analysis and Prediction of Financial Data (Dacorogna,Convenium:High Frequency Data to Understand Market Dynamics; Monfort, INSEE: Analysis and Prediction of Financial Time Series); International Finance (Dunnis, Liverpool Business School:New International Financial Markets; Bottazzi, Univ. Bocconi, IGIER, andCEPR:Financial and Currency Crises); Risk Management in Banking (Trezzi, Intesa BCI London)
Università degli Studi di Roma "La Sapienza", Italy	**2009** **Bachelor of Arts in Philosophy (108/110)** Final dissertation on Aesthetics: "Relational Aesthetics: Studio Azzuro at Santa Maria della Pietà*"* (Prof.PietroMontani) **2001** **Master of Arts in Economics (110/110)** Final dissertation on Corporate Finance: "International financial literature on the cost of capital*"* (Prof. Francesco Colombi) published as the second volume of Francesco Colombi.*Finanza Condizionata e Teoria del Valore*.ARACNE, Roma, 2003
Intersos, Rome, Italy	**2010** **Training course: "Emergency and Post-Emergency Projects Administration"**
Energy Derivatives - Istituto Internazionale di Ricerca, Milan, Italy	**2008** **Training course: "Market Analysis"** Oil, Gas & Power; Pricing: Oil Linked Formulas, Spot-Trading, Futures Based Pricing; Hedging Policy; Energy Futures, Energy Swaps; Energy Options
Istituto Internazionale di Ricerca, Milan, Italy	**2004** **Training course: "Business Development and Strategic Planning"** Strategic Planning Tools; Strategic BusinessUnits, Balanced Scorecard;Eva, BCGand GE-McKinsey Matrix;SWOT Analysis; Budget, Business Plan and Strategic Control: Strategic and Operational Steps; Scenario Planning and Knowledge Management

PROFESSIONAL EXPERIENCE

International Planning Committee for Food Sovereignty, Rome, Italy	**Jan 2011–present:** **Secretariat of the International Planning Committee for Food Sovereignty** (www.foodsovereignty.org) International Secretariat and liaison officer with United Nations Rome based Food Agencies - *Institutional relationships with the Cabinet of FAO Director-General* - *Official relationship with governments' delegations at FAO and CFS* - *Participation at FAO Technical Committees*: Commission on Genetic Resources, ITPGRFA, Committee on Fisheries, Committee on Agriculture; FAO Conference, FAO Council - *Technical and advisory support to small scale food producers' organizations for* drafting FAO Strategy on Partnership with Civil Society (2012), organizing and coordinating CSOs consultation before FAO regional conferences in Africa, Asia, Europe, MENA and Latin America (2014-2016-2018), implementing the Voluntary Guidelines on the Responsible Governance of Tenure (VGGT) and publishing the People's Manual, organizing and negotiating during the International and Regional Agroecology Symposia (2014-2018), participating and negotiating in the Global Dialogue of International Year of Family Farming (2014), consultation with FAO on Climate-Smart Agriculture (2015) participating in the consultation on implementation of CFS Principles for Responsible Investments in Agriculture (2016), Migration and Agriculture (2017), participating and negotiating in The International Symposium on Agricultural Innovation for Family Farmers: Unlocking the potential of agricultural innovation to achieve the Sustainable Development Goals (2018) participating at the launch of the International Decade of Family Farming (2019) Digital agriculture transformation seminar (2019) - *Technical and advisory support to IPC working group on Agriculture Biodiversity:* IPC Global consultation on Genetic Resources in Aiguillon (September 30-October, 2012); participation and negotiation at the ITPGRFA Governing Bodies (2015-2019); Global consultation on Farmers' Rights (ITPGRFA Art. 9) in Bali (2016), Representative of CSOs at ITPGRFA Sustainable Use Working Group (2016), Launching and organizing Regional consultations of CSOs in Latin America, Africa and Asia (2018) - *Technical and advisory support to IPC working group on Fisheries* Technical negotiation and implementation of Voluntary Guidelines for Securing Sustainable Small-Scale Fisheries in the Context of Food Security and Poverty Eradication (VGSSF), drafting and negotiating the Small Scale Fisheries Global Strategic Framework (SSFGSF), supporting the Advisory Group SSF GSF meeting and negotiations as secretariat of AGSSFGSF, including *Strengthening non-state actor (NSA) platforms and their representation at regional and global levels for sustainable small-scale fisheries in Africa (2019), Towards Resilient and Equitable Small-Scale Fisheries;* weekly coordination with FAO Fisheries and Aquaculture Department, Learning Framework for VGGT and SSF Guidelines implementation, awareness-raising and capacity building national and sub-regional workshops, - Committee for World Food Security: 2012-2019 Civil Society Mechanism: participation in the annual Forum, support to the discussion on priorities, support in the regional and constituency renewal process, 2012 -2015 CFS Advisory Group meetings and CSM preparatory meetings, 2012-2015 participation for the CSM to the meetings of the CFS OEWG on the MultiYear Programme of Work, 2013-2014 Responsible Investments in Agriculture 2015 HLPE Reports - IPC international meetings (September 4, 2012; June 1-3, 2012; October 9-10, 2012; October 2013) IPC Agroecology Nyeleni Mali (2015), IPC General Meetings (Brasil 2013, India 2015, South Africa 2018) - Mena Land Forum in Tunis (5-7 December 2014), Workshops on implementation of VGGT at European level (13 -16 April 2015), Expo dei Popoli Steering Committee (June 2015), Coordination Group (CG) on a participatory approach to data collection on territorial markets
Centro Internazionale Crocevia, Rome, Italy	**October 2010 to present:** ***President of Centro Internazionale Crocevia*** *(www.croceviaterra.it)* **January 2016 - ongoing** Acting as a sounding board for and provide counsel to the executive staff, including helping to identify problems, reviewing strategy, maintaining accountability, building relationships. Lead the board in the ongoing process of monitoring and evaluating the

performance of the executive staff. Ensure strategic plans, the annual operational plan and budget, capital budgets, and quarterly/year-end reports are considered by the board. Provide input into long-range goals. Monitor achievement of goals and objectives. Provide linkage to other organizations. Plan the agenda for board meetings. Promote a positive, team-based working environment within the board. Communicate with board to keep it up to date on major developments and emerging issues. Direct management to ensure council has sufficient information to permit it to make decisions. Chair board meetings. Serve as the official spokesperson of the Association and represent the association with the institutions (Ministries, UN Agencies, Local Authorities, MEPs) and partners.

Policy officer and Project Manager
FAO
Project Manager and Policy officer for
2019-2021

- *Support to strengthen small-scale fisheries actors capacity to meaningfully engage with governments and other partners in the context of the Global Strategic Framework in Support of the implementation and monitoring of the Voluntary Guidelines for Securing Sustainable Small-Scale Fisheries in the Context of Food Security and Poverty Eradication (SSF-GSF)* to support the functioning of the Advisory Group of the SSF GSF

2018

- *Global meeting of the International Planning Committee for Food Sovereignty a preparation for the participatory process of Small-scale food producers' organizations and CSOs in the FAO Regional Conferences* facilitate the implementation of the FAO Strategy for Partnership with Civil Society Organizations and will provide support for small-scale food producer- and grassroots organizations to participate in the upcoming FAO Regional Conferences in 2018
- *Increase the use of the Voluntary Guidelines on the Responsible Governance of the Voluntary Guidelines for Securing Sustainable Small Scale Fisheries in the Context of Food Security and Poverty Eradication among fisherfolk organizations*: to create learning modules that are tailored to social movements and CSOs and which can be utilized in their efforts to bridge the VGGT and SSF Guidelines. These learning modules were adapted and used during the training workshops in Sri Lanka, South Africa, Honduras, Peru, Argentina, Tanzania, Uganda, Brazil.

2016

- *Global Exchange Meeting on the Regional CSO consultation held along the FAO regional conferences 2016:* evaluation of Civil Society participation in FAO regional conferences and recommendations for the 2018 conferences
- *support the participation of Small Scale Food Producers in the workshop on the role of FAO and CSOs to translate the Principles for Responsible Investments in Agriculture and Food Systems (CFS RAI) into action*
- *Supporting IPC in the implementation of the FAO Strategy for Partnership with Civil Society Organizations* to support and strengthen smallholder and grassroots participation in FAO's technical work and policy processes through increased collaboration between the constituencies
- *Organization and coordination of the Active participation of CSO representatives at the 32nd Session of the FAO Committee on Fisheries to promote inclusion of principles of the Voluntary Guidelines for Securing Sustainable Small-Scale Fisheries in the Context of Food Security and Poverty Eradication (SSF Guidelines) in relevant UN and other global and regional policy processes/strategies/initiatives:* participation at COFI 2016, including the organization of a side event on the SSF GSF, meeting with FAO on Users' Rights and an informal meeting with other NGOs participating at COFI to present the SSF GSF.

2015

- *Support to the International Planning Committee for Food Sovereignty in the implementation of the FAO Strategy for Partnerships with CSOs* implement the renewed FAO Strategy for Partnerships with Civil Society Organizations and the process of decentralization emerged from the last Regional Conferences, in order to facilitate the inter-sessional work with full participation oft he CSOs
- *Global meeting of the International Planning Committee for Food Sovereignty a preparation for the participatory process of Small-scale food producers' organizations and CSOs in the FAO Regional Conferences* to strengthened organization and cooperation of small scale food producers through increased representation and participation in FAO policy dialogue

- *Organizing a meeting on Indigenous Food Systems, Agroecology and the Voluntary Guidelines on Governance of Tenure* to support and strengthen indigenous peoples' participation at a global level and to identify concrete areas of collaboration between FAO and indigenous peoples.

2014

- *Support to the International Planning Committee for Food Sovereignty in the implementation of the FAO Strategy for Partnerships with CSOs*
- *Case studies of Successful Experiences of Peasant Family Farming* to publish a report with case-studies from each FAO region
- *Facilitation of the effective participation by Global Social Movements/community-based organizations in the Global Agenda for Sustainable Livestock*
- *Possible CSO contributions to the Thematic Study for the State of Biodiversity for Food and Agriculture in the World (SoW-BFA)*
- *Support the participation of representatives of IPC in the 2014 International Year of Family Farming*

ERASMUS Projects

October 2018 – September 2021

Project Manager and Teacher at EARTH (Education Agriculture Resources for Territories and Heritagehttp://www.earth.unimol.it):Design and delivery of international course in rural development in Argentina (Universidad Nacional del Sur (UNS), Universidad Provincial del Sud Oeste), Bolivia (Universidad Católica Boliviana, Universidad Mayor de San Andres), Paraguay Universidad Nacional de Asunción, San Carlos University), France (University of Toulouse 2 – Jean Jaurès), Italy (University of Molise), Spain (Universidad de Granada); Knowledges and tools for territorial development, white book – good practices, Method manual of planning and management of rural territorial development, On-line library for territorial development

IFAD projects

Project Manager and Policy officer for

October 2015 – June 2017

Capacity Building for Implementation of the International Guidelines for Securing Sustainable Small Scale Fisheries promoting awareness about the SSF Guidelines among fish workers and their communities to mobilize support for their implementation at the grass-roots, national and international level and capacity building programs for the Fisherfolks organizations to position them as key actors in the implementation of SSF Guidelines

May 2013 – June 2014

International Guidelines for Securing Sustainable Small-Scale Fisheries (IG SSF)

EuropeAid Projects

Project Manager and Policy officer for

February 2017 – January 2021

Civil Society and Local Authorities - Strengthening Regional, European and Global CSO Umbrella Organisations: Strengthening La Via Campesina for Peasant Action Social Justice Organising

February 2015 – January 2018

Hand on the Land for Food Sovereignty (2015–2018): Nyeleni Europe 2016 (Romania), Land Report European Parlament, Seeds Regulation, CAP. General Assembly European Coordination Via Campesina (Paris 2016, Rome 2017)

February 2011 – January 2013

Farmers Seeds Project (2011–2013): meetings with the ITPGRFA Secretariat at FAO: May 21, 2011 Seminar on Bali at Festival delle Terre; October 19, 2011 Farmerseeds Round Table on ITPGRFA implementation; Let's Liberate Diversity Forum, Szeged, Hungary, 2011 and Strathpeffer, Scotland, 2012; Maison de Semences Paysanne, Perigueux, September 27-29, 2012; Peliti 2012 Africa: 3° Sub-regional Fair on local varieties, Djimini, Senegal organized by Association Senegalaise de Producteurs de Semences Paysanne, instituting Coordination Ouest Afrique Semence Paysanne; 1° Festival de les Terres a Beni Kedache: new seeds law and strengthening of the Maghreb seeds network.

Chief Financial Officer

February 2014 to July 2019

development of the financial restructuring plan (recapitalization + 1000k; current ratio +2.2%), cash flow and asset management (+141k). Financial forecasting and budgets, financial reporting, advising on long-term business and financial planning, speed and accuracy of billings and client payments; Accomplishes finance human resource strategies by determining accountabilities; communicating and enforcing values, policies, and procedures; implementing recruitment, selection, orientation, training, coaching,

	counseling, disciplinary, and communication programs; planning, monitoring, appraising, and reviewing job contributions; and planning and reviewing compensation strategies.
Food and Agriculture Organization, Rome, Italy	**May 2014–March 2015** **Consultant for the International Treaty on Plant and Genetic Resources for Food and Agriculture** - Report for the ITPGRFA 6th Governing Body on relevant discussions relating to Farmers' Rights within the FAO fora, including the Committee on Food Security: o Background documents on the second meeting of the Ad Hoc Technical Committee on Sustainable Use of Plant Generic Resources for Food and Agriculture, March 3-4, 2015: o Item 5 - Resolution 8/2013 Implementation of Art. 9, Farmers' Rights.Review of documents based on knowledge, views, experiences and best practices submitted by Contracting Parties and other stakeholders as options for national implementation of Art.9. o Item 4 - Resolution 7/2013 Implementation of Art. 6, Sustainable use of PGRFASubmissions from Contracting Parties, other Governments and relevant institutions and organizations on how to improve sustainable use of plant genetic resources for food and agriculture. o Item 5 - Identification of possible areas of interrelations among respective instruments ofUPOV, WIPO, CBD, their respective roles and establishment of a ToRs for a rapport of an impact analysis evidence based on the Implementation of Farmers' Rights. o Item 5 - Resolution 8/2013 Implementation of Art. 9, Farmers' RightsReport on relevant discussions that relate to Farmers' Rights within FAO processes, including the Committee on World Food Security - Analysis of the Civil Society Organizations and FAO Committees, Departments and Units working on Farmers' Rights, Traditional Knowledge and Indigenous People - Facilitatedliaisons within FAO and organized an ITPGRFA side event with relevant Farmers Organizations and International Research Institutionsduring the official agenda of the CFS 41 - Updated the Treaty Resource Kit for FAO officers on Farmers' Rights
Un Ponte Per, Beirut, Lebanon	**November 2009–February 2010** **support to the Country Representative** for monitoring the performance of the project "Supporting the return of Palestinian refugee population of Nahr el-Bared through the reestablishment of essential services."Collaboration with the online news site Osservatorioiraq.it
AceaElectrabel Elettricità, Rome, Italy	**February 2005–February 2011** **Administration, Finance & Controlling - Business Unit** Economic, Balance-sheet and Financial budgeting; Budgeting and Reporting (monthly, quarterly, yearly); Medium-Term Business Planning Balance Sheet Reconciliations; Balanced Scorecards, Key Performance Indicators and MBO Pact; Unbundling and Regulation
Progetto Sur Onlus, Rome, Italy	**March 2007–September 2010** Support for Argentinian grassroots movements: public conferences and fundraising events in Italy
Ferrovie dello Stato – R.F.I., Rome, Italy	**January 2003–January 2005** **Strategic Marketing and Planning** - Strategic Market Analysis; project manager's staff expert for International Union of Railways EURAILINFRA - Market Analysis Group: working approach and common tasks definition; socio-economic indicators analysis; infrastructural data collection and processing at different horizons (2000, 2010, 2015, 2020); total forecasted demand assignment to the network and principal corridors definition; European market scenario analysis; strategic analysis for infrastructural development; international infrastructure managers meetings' coordination - Strategic Investment Planning: Investment Priority Plan (PPI) for Ministry of Infrastructure and Transports: investments strategic classification; costs/toll revenues analysis; indemnifications for financial losses institutions and of contributions for the conduct and circulation costs - Monitoring on the state of investments for the Relation to the Parliament: cost and revenues analyses; valuation economies of times and costs and additional financing requirements necessary for the realization of the investment - High-Speed Dossier: scenarios analysis, provisional Balance Sheets Analysis - Key Performance Indicators; Pricing and Regulation
	October–December 2001

Mediocredito Centrale, Rome, Italy	**Financial Analyst** Evaluation of financial sustainability of project proposals for local development
Nestlè, Milan, Italy	**June–September 2001** **Controller Export Division Intern: financial and break-even analysis for the export division, pricing**

SKILLS

Languages	Italian : native speakerEnglish : C1/fluent Spanish: C1/fluent French : B1/intermediate
IT	Windows operating systems and Microsoft Office: proficient

PUBLICATIONS

Mauro Conti, "Seed system and differentiation of production and distribution models. Italian organic farming between peasant and commercial agriculture", *Meridiana* 2019

Mauro Conti and Antonio Onorati. "Italian agriculture and peasant agriculture. The unfair competition between production models and systems."*AGRIREGIONIEUROPA* n. 45, June 2016

Mauro Conti, Isabella Giunta, Stefano Mori. "La Campagna Popolare per l'Agricoltura Contadina e le proposte per una legge di tutela. Intervista ad Antonio Onorati."*AGRIREGIONIEUROPA* n. 45, June 2016

Mauro Conti. "FoodSovereignty Agenda of Transnational Rural Social Movements in the UN Global Governance." *ICASColloquium 2016: Global Governance/Politics, Climate Justice and Agrarian/Social Justice*.ISS The Hague, February 2016

Mauro Conti."Agrofinancialization: Food Price Volatility and Global Value Chains".*Food Right Watch*, 2012

Mauro Conti and Antonio Onorati."Terra e Agricoltura. Il caso italiano. Land Grabbing Case Studies in Italy". Centro Internazionale Crocevia – *EuropAfrica*, 2012

Mauro Conti and Antonio Onorati."Italia. Vino, olio, case e petrolio. Chi vince?LandGrabbing Case Studies in Italy." Centro Internazionale Crocevia – *EuropAfrica*, 2012

Mauro Conti and Antonio Onorati."Agrofinancialization: Food Price Volatility and Global Value Chains. A Background Analysis on Price Transmission to Local and Internal Markets".*EuropAfrica*, 2012

Mauro Conti. "From Cage to Schoenberg - Genealogies of Silence".*Boudu.it* 2012

Mauro Conti. "Libano, proteste nel Nord per il razionamento dell'elettricità."*Osservatorioiraq.it*, 2010

Mauro Conti."L'economia tra scienza e sociale."*Il Cannocchiale: Rivista di studi filosofici*, n°2, ESI, 2006

Mauro Conti.*Eurailinfra – Infra-structure*. Commission International Railway Union, UIC, 2003-2004

Francesco Colombi. *Finanza Condizionata e Teoria del Valore*, Vol.II, Aracne, 2003

Mauro Conti."Global History of the Last 50 Years."*Avvenimenti*, 1995

Conferences:

- Patents on biodiversity: new agricultural production frontiers and material expansion of the world-system, XII Conference of Italian Environmental Sociologists Politics, ecology and society in the Anthropocene Università di Salerno, 26 September 2019
  https://xiiconvegnosociologiambiente.wordpress.com/programma-e-presentazione-del-convegno-conference-and-sessions-programme/
- Past and present of international cooperation: a critical perspective starting from the world system theories 20-22 June, 2019, University of Calabria.
  https://www.unical.it/portale/portalmedia/2019-06/COOPERACION-AL-convertito.pdf
- VI Conference of BRICS Initiative of Critical Agrarian Studies, University of Brasília, Brasil, November 12-14, 2018. GT 4 - Crise Ambiental e Agroecologia na América Latina e Sul Global.Paper:"Agroecology: an opening to capital penetration in the Global South?"
  http://conferencias.unb.br/public/conferences/51/schedConfs/88/program-en_US.pdf
- 4th Annual Conference of the World-Ecology Network – Extractivisms, Social Movements and Ontological Formations. University of Helsinki, Finland, August 15-18, 2018. Sub-Ses-sion 1.3: Climate Crisis & Planetary Justice. Paper: "GMOs for biodiversity appropriation - The narrative of Climate Change and Agroecology and the NBTs Role for a New Capitalistic Cycle of Material Expansion"
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- The 4th BICAS International Conference: New Extractivism, Peasantries and Social Dynamics, Moscow, Russia, October13-16, 2018. Paper: "Financialization, Agro-extractivism and the Role of China: Readings from the World System Theory Perspective"
- Capitalist Development in Hostile Development. University of Calabria, Cosenza, Italy, June 6-8, 2017. Thematic Session #3: Social Conflict and Anti-systemic Movements. Paper: "Social Struggles and Worldwide Capitalistic System: Strategies From The Transnational Agrarian Movements"
- The Future of Food and Challenges for Agriculture in the 21st Century. Europa Congress Palace, Vitoria Gasteiz, Álava, Basque Country, April 24-26, 2017
- The 4th BICAS International Conference: Agro-extractivism inside and outside BRICS: Agrarian Change and Development Trajectories. China Agricultural University, Beijing, China, November 28-30, 2016
- International Initiative for Promoting Political Economy: 7th Annual Conference in Political Economy. Instituto Superior de Economia e Gestão (ISEG) (School of Economics & Management), University of Lisbon, Lisbon, Portugal, September 7-9, 2016. Finance XIII. Extension of Finance into Land, Agriculture and Pensions. Paper: "Financialization and Capital Accumulation in Agriculture"
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Reviews

- Journal of Peasant Studies

Lectures:

- 2019 University La Sapienza, Rome: Food Sovereignty and Right to Food
- 2018 University La Sapienza, Rome: Food Sovereignty: a strategy of political economy
- 2017:University of Calabria, Cosenza Social Movements for Food Sovereignty and CFS Reform.
- 2012: Conversion of Microenterprise of Primary Production for Sustainable Development: Cost Analysis, Pricing, and Market Analysis. Altraeconomia, Rome