Financialization and private finance in the agricultural sector of developing countries: exploring its socio-environmental impacts and alternative ways to finance the ecological transition

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Financialization and private finance in the agricultural sector of developing countries: exploring its socio-environmental impacts and alternative ways to finance the ecological transition.

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Abstract
The objective of the present essay is to shed light on the impacts of financialization and private finance on agriculture with a particular emphasis on developing countries, as well as alternative ways to finance the ecological transition. It will be studied the main social and environmental problems caused by financialization and private finance in developing countries, how this process will evolve in the light of climate change and what are alternative ways to finance the green transition in agriculture.
1. INTRODUCTION

Financialization has brought about a radical transformation of the economic structure and production systems throughout the world. According to Zwan (2014) financialization is a process that has three main elements: a new way of accumulation by means of an increase of the use of new and more complex financial instruments, a change in the behavior of firms towards the maximization of the returns for shareholders rather than productive investments, and finally a higher intromission of finance in the daily lives of normal people. Lazonick (2010) claims that the origins of this process are strictly related to a period of structural change in the 80’s defined by rationalization, marketization and globalization. This encouraged firms to reduce costs by off-shoring production to low-wage areas, to involve in merger and acquisition operations, to reduce expenses related to R&D and to carry out massive share buybacks to increase profits and payments to managers.

Similarly, climate change has become a new way to accumulate financial profits. Originally, green or climate finance has two main purposes: to fuel capital into green projects and industries, and to protect against the natural risks derived from climate change (CBI, 2019a). To this end, new stock exchanges have emerged worldwide that include social and environmental criteria. However, as documented by Oxfam and Les amies de la Terre (2019), the 3 main banks of France have financed controversial polluting projects due to the blurry and unsettled distinction between green and brown investments. On the other hand, insurance companies have developed new financial instruments such weather derivatives and catastrophe bonds to protect countries or economic agents from the physical risks of climate change (Blackman et al., 2018). Nonetheless, they have been criticized due to the restrictive conditions in which users can claim the
Insurance, which only makes these instruments very profitable for insurance companies due to the high risk involved.

Financialization has not only been extended to climate change, but also to agriculture with important environmental and social issues. According to Clapp and Isakson (2018) this process has radically transformed agriculture in three different ways: the creation of new financial instruments to profit from weather related risks; the restructuration of top agricultural companies towards speculation activities, mergers & acquisitions and cost-cutting practices; and finally the expansion of finance and debt as a part of everyday lives of peasants around the world. Additionally, the need to transit towards a carbon-neutral economy has channeled private finance to fund adaptation and mitigation projects in developing countries. However, this type of finance has set-in international agreements and projects that have increased financial speculation of agricultural commodities and firms, but that have rarely set off structural transformation (Wittman, Powell, & Corbera, 2015). As a result, current social and environmental problems of agriculture due to private finance and financialization are likely to worsen off with climate change.

Hence, the objective of the present essay is to shed light on the impacts of financialization and private finance on agriculture with a particular emphasis on developing countries, as well as alternative ways to finance the ecological transition. The main research questions are the following:

- What have been the main social and environmental problems caused by financialization and private finance in developing countries?
- How will this process evolve in the light of climate change?
• What are alternative ways to finance the green transition in agriculture?

For this reason the present work will be divided in three sections. The first part will deal with the main environmental and social issues coming from financialization, understood as the creation of complex instruments. Later, a critical review of the “climate or green finance” literature will be presented to understand how financialization and private finance might improve or worsen the ecological transition. The last section will try to look at alternative ways to finance the green transition beyond purely private initiatives, such as cooperation between public, private and cooperative initiatives. A concluding block will present the results of the research and potential further lines of research.

2. MAIN SOCIO-ECOLOGICAL IMPACTS OF FINANCIALIZATION

The relationship between finance and agriculture has experienced a dramatic change in the past decades due to the development of new ways of accumulation, mainly by the creation of complex financial instruments (Clapp & Isakson 2018). On this regard, commodity index funds (CIF) and Real Estate Investment Trusts (REITS) are two important examples of this process. These instruments are bought indirectly by significant investors, such as universities, pension funds and hedge funds. The direct purchase is guaranteed by an insurance or investment company, who usually acquires many future contracts of the commodities in the CIF to hedge from possible risks. On the other hand, REITS are an empirical example of the commodification of land.

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Future contracts are institutional agreements by which the seller (buyer) of a commodity fixes a given price to sell (buyer) its product to someone in each period of time. In the case of a seller these instruments are known as a put option, whereas it is called a call option for a buyer.
in the developing world, driven by the cooperation of significant agro-food companies and its financial subsidiaries². These products cover multiple instruments (such as properties or mortgages) and consolidate all of them into a single holding, who is latter sold to investors in different subparts. According to some authors a more complex and developed financial market in the agricultural sector might be at the core of food price spikes in recent decades (Irwin & Sanders, 2011; WRI, 2008).

The shares of agri-food companies and insurance instruments have also become an important area for capital accumulation, and they have concentrated financial resources into large-scale corporations (Clapp & Isakson, 2018). In 2014, agricultural shares amounted to 45 billion dollars, some of which belonged to exchange-traded funds (ETF) and over-the-counter index products (OTC). Funds identified with the ticker symbols such as MOO, COW, SOIL and PBJ are among the most important financial vehicles within agriculture. According to the Global agribusiness index of the fund MOO, the top ten companies control as much as 57% of the total shares (Vaneck, 2020). Among these firms it is possible to find the biggest agri-food companies such as Bayer, Deere & Co and Tyson Foods. Other insurance instruments have also been created to protect farmers against risks coming from the variability of price or natural hazards, such as weather derivatives and catastrophe bonds. However, they have been criticized for their very restrictive guidelines to claim the insurance and for becoming a new profitable area for the institutions that provide it, such as the World Bank. For

² A case study of the case of Philippines is provided by the work of Salerno (2014), in which it is presented the collaboration between Cargill and its sub-unit “Blackriver”, mainly devoted to the acquisition of land in developing countries. To this end, it creates strategic alliances with national companies and governments in order to bypass regulations that avoid the interference of international corporations in the local land market.
example, Mexico has subscribed to this insurance but after several earthquakes and hurricanes (Odile in 2014) it has barely benefited from it (Blackman et al. 2018)

3. PRIVATE FINANCE ON AGRICULTURE IN THE LIGHT OF CLIMATE CHANGE

Climate change has already increased the use of these type of instruments and new ways of financial accumulation within agriculture in developing countries. An interesting paper by Atteridge (2011), sets up a useful classification of all the different private commercial finance flows that might be directed towards climate change mitigation, as presented in figure 1. Three main financial flows are identified: equity, non-equity modes and debt. Equity involves those transactions aimed at obtaining the ownership of a firm either by portfolio investment (buying shares) or by direct investment equity, also known as foreign direct investment (FDI). Debt involves the lending process from an institution based in a country to clients in a developing country. Non equity modes all correspond to foreign direct investments and transactions that usually take place across different branches of multinational companies around the world, such as subcontracting, licencing, franchising, etc.

Figure 1: Private commercial (non-trade) finance flows.

Source: Taken from Atteridge (2011).

A review of the historical data for each type of financial flow reveals concerning flaws of private finance to set off the
climate transition in developing countries:

- From 1990 to 2004 foreign direct investment to developing countries has been more stable than portfolio equity and debt. However, it is important to notice that in the case of agriculture and water projects, most of the FDI have not been greenfield projects, but rather brownfield or rehabilitation activities that usually have a lower potential to enhance adaptation to climate change.

- Debt instruments are claimed to be the most flexible to tackle local issues in comparison to the other two types, since they can finance projects designed nationally. Nonetheless, according to the data this type of finance has been concentrated in East Asia and Europe, but rarely in Africa or developing countries.

  - Additionally, carbon markets and international debt programs targeted to developing countries are still very incipient and characterized by ecological and social controversy (Spash, 2010). As documented by Wittman et al. (2015), nearly 50% of the total projects of the CDM are concentrated into the agriculture or land-use sectors and have had controversial effects on the governance of land. Corporations have obtained direct funding from the CDM to purchase or to lease land in order to cultivate “flex crops” such as sugar cane, who are among the most important

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3 Latina America region represents only 2% of total emissions (CBI, 2019b).
drivers of land-dispossession and land use change. Moreover, there is increasing evidence that these projects might increase rather than to reduce carbon emissions due to increased consumption or some sort of “rebound effect”.

An analysis of geographical and sectorial features of private finance also reveals other weaknesses of this type of finance. Firstly, both equity and debt finance have been concentrated in a small number of developing countries, usually those with the highest income and favorable institutional conditions. For instance, for 2010 almost 66% of all the direct inward FDI was directed to high-income developing countries6, whereas least developed countries have only received 15% of this finance. Secondly, private finance has been directed towards high-profitability sectors (energy and mining), but not to those that will be affected the most by climate change, such as agriculture and water: from 2005 to 2007 FDI inflows to the primary sector represented only 0.8% out of the total inflows to developing countries. Indeed, according to UNCTAD (2009) private finance has favored large-scale industrial agricultural projects, usually water-intensive and surrounded by land-grabbing issues.

Overall, international organizations such as the World Bank, Climate Bonds Initiative and independent researchers have pinpointed to some crucial drawbacks of private finance and the

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4 In the central area of Brazil (Mato Grosso) the number of ethanol related projects has nearly quadrupled from 1991 to 2011.
5 CDM has also financed livestock projects for methane and waste management in order to cope with the increasing demand for meat consumption, but this has exacerbated the purchase of land to feed the animals, such as soy plantations which in turn will to an increase rather than to a decrease of carbon emissions.
6 A reveling example of the concentration of private finance in very few countries comes from the Clean Development Mechanism of the Kyoto protocol. From 2006 nearly 80% of all the funding has been allocated to projects in two countries: China and India.
need to include other alternatives, such as a public finance. For instance, the World Bank (2016) claims that agricultural projects are not attractive for private finance due to the low profitability and long-term of this type of investments. Additional barriers are inadequate enabling environments, insufficient capacity to manage exposure to different risks (such as place-based or agricultural risks) and high transaction costs. Climate Bonds (2019) also highlights that multilateral development banks and international funds might not be the able to tackle local issues without a strong coordination with national public entities. The two major shortcomings of this type of finance are its short termism (usually between 3 and 5 years), as well as its unawareness of the conditions and risks of the local populations. Thus, there is a considerable room for public and cooperative finance to address the shortcomings of private finance (Atteridge, 2011).

4. BEYOND FINANCIALIZATION AND PRIVATE FINANCE: ALTERNATIVES TO FUND THE ECOLOGICAL TRANSITION

As reviewed earlier, purely private finance has important shortcomings to address the ecological transition in the agricultural sector. Thus, it becomes relevant to find alternative ways to finance low-profitability and long-term investments that characterize this sector, which implies going beyond classical cost-benefit analysis and focusing on mission-oriented policies (Mazzucato & Semieniuk, 2017). In this sense, public and cooperative or social finance can cover unattractive sectors for private investments, such as water and agriculture, to leverage private investments or to be aligned with current international funds (Atteridge, 2011). The present part will explore three different finance alternatives in developing countries: public-private, mostly public and mostly cooperative initiatives.
Public-private partnerships have been characterized by the role of state as a facilitator for private finance, mainly by reducing risks and by levering private finance. The Interamerican Development Bank (IDB) has proposed a new financial instrument called the B-bond to allow institutional investors to engage in long term projects by increasing the term of the investment, ensuring market comfort and investment rating (IDB, 2020). An example is the solar and hydropower project “La Jacinta”, developed by the utilities state company and the IDB with one of longest-term bonds in Latin America (25-year maturity), also rated GB2 by Moody. Additionally, México is the most advanced country within Latin America with regards to private finance initiatives, but they have been strongly supported by state lending (CBI, 2019b). Bankool and Finterra are two private banks that have worked with big and medium size agricultural producers to provide finance to the smaller ones, however lending has been significantly backed by two state agencies, such as the FND⁷ and FIRA⁸.

Mostly public initiatives seem to be channeled towards structural transformation and cooperation with international bodies (Junghans & Köhler, 2016). The Henan Green Agriculture Fund Project is an interesting initiative led by the World bank in cooperation with the Chinese government that will provide nearly 300 million euros in the form of equity investments or lending to eligible firms to finance green agricultural investments (World Bank, 2020). Interestingly, it is directed towards the creation of public goods to increase energy efficiency as well as to improve the quality and the environmental standards of agri-food products. Another example comes from Kenya, where the state has strongly collaborated with the International Fund for Agricultural

⁷ Financiera Nacional de Desarrollo Agropecuario, Rural, Forestal y Pesquero. ⁸ Fideicomisos Instituidos en Relación con la Agricultura.
Development (IFAD) to encourage local producers to undertake mitigation investments in the dairy sector (Odhong’ et al., 2019). In this case, public climate finance was useful in the form of concessional loans, credit guarantee funds and grants, which strengthened the links between farmers and financial institutions, managed credit risks and also leveraged private finance. Finally, a third way of cooperation is the one between south-to-south financial institutions, since they share similar problematics and as a result they might be in a better position to design more adequate policies (Ha, Hale, & Ogden, 2016). Three main ways of cooperation are identified: the increase of contributions of developing countries to already established multilateral funds, to strengthen bilateral initiatives led by major players (China, Brazil and India) and to encourage the participation of south-south multilateral institutions (BRICS Bank and the Asian Infrastructure Investment Bank).

Nonetheless, under some circumstances public finance might not be the best to deliver the green transition. For instance, according to Rahaman & Rahman (2020) public climate finance projects in Bangladesh directed towards the agricultural sector have not considered vulnerability, social or economic risk analysis. Moreover, it is argued that national plans have not considered regional, racial and gender specificities, neither it has involved local stakeholders. As a consequence, it has increased food insecurity for the most vulnerable populations.

For this reason, mostly cooperative or state-cooperative solutions might trigger structural transformation projects with a lower profitability compared to the other alternatives, but with a stronger emphasis on local needs and stakeholder involvement. Nonetheless, currently there are very few examples of projects already in place in developing countries under this framework. For instance, in Mexico the community banking system
of the Zapatistas\(^9\) represents a novel example to finance collective needs (Garduño García, 2016). This anti-capitalist financial system is composed of two main banks\(^{10}\), and it is directed at providing nearly zero interest rate loans for projects considered to be socially relevant for the assembly, such as agro-ecology projects. A study case of the FarmWorks Investment Cooperative in Canada is another example of how social finance can prioritize social and environmental impact over economic profit, mainly by means of value-driven social investments (Duncan, 2020; Geobey, Westley, & Weber, 2012; Moore, Westley, & Nicholls, 2012). Members of this cooperative can purchase common shares that will be invested in a diversified portfolio to finance local agri-food companies. Initiatives coming from FarmWorks have contributed to up to 70% of total employment generation in the region of Nova Scotia in the decade of 2010. Besides, this cooperative encourages “relationship lending”, namely the provision of personalized technical assistance to the borrowers in-situ by agricultural experts, as well as the possibility to renegotiate the terms of payment of the loan in case of necessity.

Furthermore, some lessons can be learned from the New Deal regarding public and cooperative initiatives. After the crash of 1929, the Reconstruction Finance Corporation (RFC) was a key institution that channeled massive amounts of idle capital for social investments such as housing, rural electrification and defense (Louis, 2019). Agricultural investments were targeted as a strategic sector, but the low profitability and long-term of investments discouraged private investors. Thus, the rural electrification administration (REA) was created as a part of the RFC and collaborated with

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\(^9\) “The Zapatista Army of National Liberation, often referred to as the “Zapatistas”, is a far-left and libertarian socialist political and militant group that since 1994 controls a substantial amount of territory in Chiapas, the southernmost state of Mexico (Garduño García, 2016)”.

\(^{10}\) One is directed towards all the population, whereas the second one is only targeted at women.
rural cooperatives to electrify rural areas of US. Two main elements were considered: 20 years loans at low interest rates (nearly 3%), as well as 5-year loans to finance the electrification of farmstead and plumbing systems. The program had incredible results in a very short span of time: from 1935 to 1950 the electrification of rural areas dramatically increased from 10% to 90% and enhanced productivity of farms in the US. The strong link between the state and cooperatives remained until today, such as the Tennessee Valley Authority for rural electrification. This initiative thrived in other areas beyond electrification such as the creation of consumer co-ops, farmer co-ops and banking co-ops, some of which are still present today like Sunkist (Schneider, 2019).

5. CONCLUSIONS

The present paper explored the impacts and potentiality of different types of finance in developing countries to sustain the ecological transition in the agricultural sector. Three interrelated elements were explored: the role of financialization and its main socio-ecological problems, the potential and limitations of private finance to tackle climate change issues and alternative ways of finance coming from the cooperation between public, private and cooperative actors.

Financialization was defined as the creation of new accumulation opportunities to get funding by means of the creation of complex financial instruments. Firstly, two important examples that illustrate this process in the agricultural sector are the so-called Commodity index funds (CIF) and Real Estate Investment Trusts (REITS). It has been argued that they were successful to deliver liquidity for significant institutional investors, but they have also mainly driven food insecurity for developing countries by volatilizing the price of agricultural commodities.
Secondly, insurance instruments (such as weather derivatives or catastrophe bonds) have also become an important area for capital accumulation. Nonetheless, they have increased the vulnerability of users insofar as countries affected by natural disasters have not been properly been covered by these instruments, such as in the case of the hurricane Odile in Mexico in 2014.

A review of the historic data on private capital flows to developing countries to fund climate adaptation and mitigation projects casts doubts on its potential to deliver the transition needed. Agriculture remains unattractive for private capital to tackle climate change: from 2005 to 2007 FDI inflows to primary activities (including agriculture) represented less than 1% of total inflows to developing countries. Energy, transport and intensive scale agricultural projects have been favored due to its higher profitability, but this kind of projects have been surrounded by controversial land-grabbing process and human rights violations as highlighted by UNCTAD. Moreover, there are key restrictions that make very difficult for private capital alone to deliver the transition: high transaction costs, the inability of national and foreign financial institutions (FI) to manage agricultural risks and the scarce knowledge of FI about the local and national legal and social environments. Therefore, alternative ways of cooperation among public, private and cooperative actors are required to fill the gap left by purely private finance.

In the last part, three finance alternatives were presented: public-private, mostly public, and mostly cooperative initiatives were reviewed as interesting alternatives. Firstly, public-private partnerships have been characterized by the role of state as a facilitator for private finance, mainly by reducing risks and by levering private finance. Two practical examples were reviewed, such as the B-bonds created by the IDB and the cooperation between private banking
institutions in Mexico and federal financial bodies. Secondly, mostly public initiatives seem to be channeled towards structural transformation and cooperation with international bodies. The cases of China, Kenya and the cooperation links coming from south-to-south multilateral banks were reviewed as interesting examples to finance the creation of public goods. Thirdly, mostly cooperative initiatives were claimed to be in a better position to meet the local needs of communities, although at a smaller scale and with lower profitability than the other two cooperation links. Moreover, it remains difficult to analyze this topic since until now there are very few projects already in place under this framework. However key insights can be learned from the two study cases reviewed from Mexico and Canada: the cooperative banking system of the Mexican Zapatist liberation army and the successful case of FarmWorks. Some additional insights about the potential of collaboration between cooperatives and the state was found by reviewing the original New Deal. The Reconstruction Finance Corporation stands up as a very successful example of how this collaboration, since it nearly guaranteed 100% electrification rate in rural areas and improved agricultural productivity in a short span of time.

More research is needed about how alternative ways of cooperation between the private, public and cooperative sector. However, state and cooperative solutions result more relevant for developing countries, insofar as private initiatives in the agricultural sector have been characterized by cumbersome socio-ecological issues. Furthermore, the specificity of climate change adaptation projects requires an active participation of local inhabitants to design projects that fit best their needs. Hence, a bottom-up approach led by the state and cooperatives might be most effective way to deliver the agricultural transition in developing countries.
REFERENCE LIST AND STATISTICAL SOURCES


BLACKMAN, JEREMY; MAIDENBERG, MICAH; ARNHAM O’REGAN, S. (2018). Mexico’s disaster bonds were meant to provide quick cash after hurricanes and earthquakes. But it often hasn’t worked out that way. Retrieved from https://www.latimes.com/world/mexico-americas/la-na-mexico-catastrophe-bonds-20180405-htmlstory.html


https://doi.org/10.1111/1758-5899.12293


