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The dangerous rise of Land Grabbing through Climate Change Mitigation policies: the examples of Biofuel and REDD+

O perigoso avanço do Agarro de Terras por políticas de Mitigação das Mudanças Climáticas: exemplos de Biocombustíveis e REDD+

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Abstract

This paper seeks to investigate the interconnections between climate change and land grabbing. It offers a nuanced understanding of the critical intersections of climate change mitigation policies with land grabbing, before and after the Paris Agreement. There are various considerations associated with climate change that drive land grabbing tendencies. This increase of land grabbing has been observed to exacerbate climate change and the recurrence of strategies that produce harmful effects on socio-ecological systems. The term 'climate grabbing' is coined to describe the phenomena related to the appropriation of land and resources for the purposes of climate change mitigation. In particular, this paper will focus on two instruments that have been created to manage the complications of climate change and have been reinforced by the Paris Agreement in 2015: biofuel production and the Reduced Emissions from Deforestation and Forest Degradation Plus initiatives (REDD+). The article will analyse how those measures increase the phenomenon of land grabbing.

Keywords: Mitigations policies, Climate Change, Land grabbing, Biofuel, REDD+.

Resumo

Este artigo procura investigar as interconexões entre mudança climática e apropriação de terras. Ele oferece uma compreensão detalhada das

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interseções críticas das políticas de mitigação das mudanças climáticas com a apropriação de terras, antes e depois do Acordo de Paris. Existem várias considerações associadas às mudanças climáticas que impulsionam as tendências de apropriação de terras. Observou-se que esse aumento da apropriação de terras exacerba as mudanças climáticas e a recorrência de estratégias que produzem efeitos nocivos nos sistemas socioecológicos. O termo "apropriação climática" é cunhado para descrever os fenômenos relacionados à apropriação de terras e recursos para fins de mitigação das mudanças climáticas. Em particular, este documento se concentrará em dois instrumentos que foram criados para gerenciar as complicações das mudanças climáticas e foram reforçados pelo Acordo de Paris em 2015: a produção de biocombustíveis e as iniciativas Reduções de Emissões por Desmatamento e Degradação Florestal Plus (REDD+). O artigo analisará como essas medidas aumentam o fenômeno da apropriação de terras.

Palavras-chave: Políticas de mitigação, Mudanças Climáticas, Apropriação de terras, Biocombustível, REDD+.

Introduction

Some of the repercussions of food, fuel, and climate crises, is the increased demand of flexible crops, especially processed for biofuels. Another result of these crises is the proliferating acquisition of farmland in developing countries by both private and public entities. There has been an increase in pressure on natural resources, water scarcity, and export restrictions imposed by major producers. Water scarcity, imposition of export restrictions by major producers, increased pressures on natural resources, and an increased attention to alternative solutions to fossil fuels are all characterized by the lack of huge quantities of available land and water. As such, many countries have been pushed to find, or better, to "grab" alternative land and resources from foreign sources, particularly in developing countries.

The term "land grabbing", as it is usually found in the media and in academic literature, is associated with negative connotations. This is owing to its use and links to practices that do not contribute to sustainable development and are generally connected with violations of human and environmental rights. There is no commonly agreed legal definition of "land grabbing"[2], but a possible definition of this modern phenomenon[3] may be the taking of control

[2] Despite is no commonly agreed legal definition of "land grabbing", some studies offer the idea of three key interlinked defining features of contemporary land grabbing:
1. The idea that land grabbing is essentially "control grabbing", inherently relational and political aspects, because it involves political power relations, and it is only a part of a greater problem, which is manifested in the power to control lands and resources, in order to draw benefits. The phenomenon can occur with green grabbing, mineral grabbing, water grabbing and, of course, land grabbing. All resources that are essential to ensure the livelihood of local populations in developing countries and fundamental for the preservation of the indigenous cultures, strongly connected with their ancestral lands.
2. The idea that considers land grabbing in relation with the dimension of the phenomenon, where the dominant view that defines "large-scale" land acquisitions as those that pass 1000-ha benchmark, or also with the scale of capital involved . The acquisition of lands may take place through various instruments, such as contracts of purchase, lease, contract farming, forest conservation.
3. The idea that the first two features are the same characteristics of land grabs that happened worldwide historically, because the distinction from the new phenomenon of land grabbing is the fact that new land grabbing occurs in response to the

of relatively vast tracts of land through a variety of mechanisms and forms that involve large-scale capital. This is a result of capital's response to the convergence of food, energy, financial crises, and climate change mitigation imperatives (Borras et al, 2012).

Land grabbing can be distinguished into "direct" and "indirect" methods. The former occurs when the subject is entitled to a natural resource, such as land, and is illegally deprived of it. For example, this can be due to land obtained through a violation of the property rights of the owner or without the respect of the applicable procedural requirements[4].

A type of "indirect" land grabbing can be climate grabbing. In other words, it is the appropriation of land and resources for the means of climate change mitigation strategies. Indeed, climate change mitigation instruments have been used to justify the expansion of flex crops. For example, "by sugar producers claiming to lower emissions by creating electricity from bagasse"[5] (Hunsberger, 2017) and by palm oil producer associations supporting biodiesel and biomass (Hunsberger and Alonso-Fradejas 2016). The climate change mitigation policies "have been employed to "green" the agribusinesses image and "climate change institutions have offered flex crop producers opportunities for additional capitalisation" (Wittman et al, 2015) (Hunsberger, 2017).

The issue of climate change and its mitigation policies are compounded by the fact that they have the possibility to increase land grabbing. The Paris Agreement that was conferred in December 2015 validates the potential to inject more investment into agriculture and rural areas in poor developing countries (Friis and Reenberg). Indeed, both phenomena – climate change and land grabbing - have impacted each other in significant ways (Odoemene, 2015). Climate change is an established driving force to increasing severe weather events, the degradation of food security, and the increasing demand for land grabbing. Contemporary land acquisition development, with its unprecedented velocity, was activated by the "demands to reduce carbon dioxide and other greenhouse gases, increased by human

convergence of multiple crises: food, energy, climate change and financial crises. This stimulated the development of the growth of "flexible crops" (Crops that have multiple uses (food, fuel, feed, industrial material), such as soy and sugarcane.) and the creation of alliances: for example, major multinational players such as Cargill and Monsanto are involved in a "feed-fuel alliance" based on genetically modified soy, rapeseed and maize and Cargill, ADM-Kuck-Wilmar and Synergy Drive are involved in the "palm-oil alliance" in Indonesia.

[3] Land grabbing is not a new thing, but a phenomenon that has always been present in human history. For example, in pre-colonial land seizures were linked with territorial wars, European enclosures in the North and dispossession of native people in North America and Australasia. In many regions of the global South, land was first grabbed by pre-colonial leaders in chronic territorial wars, then by colonial governments and, a second time, by foreign or domestic corporations. In the late-colonial and post-colonial decades, both governments and civil society groups in many countries tried to correct some of these historical distortions by land reforms or by other means to stimulate the land redistribution to smallholders. Some of these initiatives were modest reformist tentatively intended to stem the radicalization of the rural poor as a political force, as in Kenya's Swynnerton Plan of 1954, while others were adopted by newly independent post-colonial states engaged in projects of indigenization, creating a stable and productive mass of relatively homogeneous 'family farms' or socialist collectivisation (Ghose, 1983). This phase was also characterised by low prices of agricultural products, surplus production in Organization for Economic Cooperation and Development (OECD) countries and barriers imposed on their marketing, which had made agriculture an unattractive sector for investments (Violi, 2015). Today, all these policies are being overturned as governments and international development organisations support the acquisition of great areas of land by large corporations, foreign and domestic, usually in the form of long-term concessions or leases rather than outright purchase, in the name of development and supporting a large-scale capitalist farming idea.

[4] This is the case for lands accessed without the consent of indigenous peoples who legitimately own them. The "indirect" land grabbing relates to the unsustainable management of the resources, which caused negative effects on the local populations' fundamental rights, the environment and on the other stakeholders involved.

[5] SugarCane.org 2016

activities, lead the international society to seek alternative energy sources, biofuels and agrofuels thus esteemed as alternative energy sources that produce less CO2 and greenhouse gases" (Seo and Rodriguez, 2012). Despite this, several studies accumulated over the last decade have provided substantial evidence that climate change mitigations policies have profound land implications, and its issue was not solved during the Paris Conference in 2015. Indeed, the challenge is the obvious lack of, or the weakness of, political will by global political leaders to solve the dangerous interconnections between climate change and land grabbing.

Thus, the paper contributes in this context and seeks to interrogate the interconnections between climate change and land grabbing. It offers a nuanced understanding of the critical intersections of climate change mitigation policies with land grabbing, before and after the Paris Agreement. For this purpose, this paper is divided into two sections. The first section will examine the various considerations associated with climate change that drive land grabbing tendencies. The increase of land grabbing has been observed to exacerbate climate change and the recurrence of strategies that produce harmful effects on socio-ecological systems. As such, the interconnections between the two phenomena will be analysed. The term 'climate grabbing' is coined to describe the phenomena related to the appropriation of land and resources for the purposes of climate change mitigation. In particular, this paper will focus on two instruments that have been created to manage the complications of climate change: biofuel production and the Reduced Emissions from Deforestation and Forest Degradation Plus (REDD+) initiatives. Following this, the section will analyse how the Paris Agreement and its resolutions substantiate the missed opportunity for legitimate climate change mitigation strategies. The proposed solutions to the negative interaction between the Paris Agreement and the climate change mitigation interventions will be appraised and reveal its subsequent consequences to climate grabbing.

Climate change and land grabbing: "climate grabbing"

The term 'climate change', as a biophysical phenomenon, generally refers to alterations to the Earth's climate systems. This is a result of human activities that have forced persistent anthropogenic changes in the composition of the atmosphere or land. Currently, human society practices are negatively influencing these variables and thus, exacerbating this atmospheric phenomenon. Practices such as fuel burning and deforestation for agricultural purposes, production of industrial goods, and excessive consumption lifestyles have had a great influence on the world's climates (Kihwan, 2012). These activities are all high emitters of greenhouse gases (GHG), which are responsible for the relentless warming of the planet's temperature.

In the 1980s, a global political concern about climate change emerged as a result of increasing scientific evidence about global warming and its potential consequences on social-ecological systems in the short and long term. Climate change policy actions were originally promoted under the guidance of the United Nations Framework Convention on Climate Change (UNFCCC). The intended aim of those strategies is to create the capacity to cope with

climate change impacts. However, some of these measures "are likely to render rural communities more vulnerable and dependent on external inputs and techniques, and result in the loss of precious local knowledge about food, medicinal plants, soil, water and coastal management, agricultural production, forest and biodiversity protection, etc." (Guttal, 2010).

In this section, the interconnection between the two phenomena will be analysed: firstly, how land grabbing can exacerbate climate change (1.1.) and then how climate change mitigation strategies can increase land grabbing (1.2.).

(a) Land grabbing can exacerbate climate change

The land grabbing phenomena has demonstrated a strong link with monoculture, which has been widely accepted as the most efficient type of large-scale agriculture. Despite this, a number of negative climatic and environmental impacts have been recorded. The influence of land grabbing on climate change has significantly increased with activates such as the deforestation of tropical rainforests, where protected natural areas are also located (Ramankutty, 2010). Indeed, as some studies show

> deforestation itself, particularly in tropical rainforest, has an adverse effect on reducing carbon dioxide and greenhouse gases through the process of photosynthesis" and "that large amount of trees cleared for palm oil crop field can actually hold up to 150 years of carbon savings, and biofuels, which are initially proposed to decrease carbon dioxide and greenhouse gases, also negatively affect climate change by increasing CO2 and greenhouse gases (Burley, 2010) (Kihwan, 2012).

Moreover, researchers have calculated that 80-100 percent of fauna species in tropical rainforests cannot survive in oil-palm monocultures. This is a result of increased pressures from various crop illnesses and pests, which habitually demand a large-scale use of chemical pesticides, fungicides, and herbicides (UNEP, 2011). In addition, an increased use of fertilisers to protect the crop's yield may increase the pollution of downstream water and the emissions of nitrous oxide (OI 2011a).

Much of the land area under biofuel crops will come at the expense of forests and pasture (Melillo et al, 2009), An example is the propagation of soya beans and sugarcane for agro-fuels in Brazil, which have destroyed protected areas of the Amazon and Cerrado, a savannah with almost 160.000 species of plants and animals. Nearly 22.000 km2 of savannah is cleared each year only for the production of sugarcane (Mendonça, 2011). In spite of that, the production of substances that are harmful to the environment may be generated by methods used to produce the feedstock and to process the biofuel. Some crops are able to generate greater GHG than fossil fuels, such as nitrous oxide. This GHG has a global warming potential around 300 times greater than that of carbon dioxide, which is released from nitrogen fertilizers (Fao, 2008). The consequences of deforestation have spread to every region affected by the land grabbing phenomenon. In Malaysia, almost 60% of the oil palm production is on deforested lands.

Thus, the increase of land grabbing has negative impacts on climate change. At the same time, the current expansion of climate change mitigation strategies, as we will see in the following part, has not been intended to resolve environmental degradation. Instead, it has supported the corporate capital accumulation with a model that destroys communities and environment and increases land grabbing for the means of climate mitigation strategies.

(b) Climate Grabbing: biofuels and REDD+

Although it is not intuitive to link climate change initiatives with land grabbing, there are studies that demonstrate that climate change mitigation policies have often increased land grabbing. "Biofuels" (b1), are a form of mitigation policy that supports the cultivation of crops like corn, oil palm, sugarcane or soybeans, that can be used to produce biofuels. Similarly, REDD+ (b2) policies increase land grabbing. Studies identify several risks in both these mitigation activities and implementation.

(b1) Biofuel a dangerous panacea

Governments around the world have embraced agrofuels (biofuel produced from ethanol and sugarcane, as well as biodiesel) as a low-carbon energy source (Bailis and Baka, 2011). The United States, European Union, and other OECD countries have supported agrofuel production and invested heavily "in research and experimentation, including the development and testing of genetically modified crops and trees" (Guttal, 2010). Biofuels are being widely promoted by agribusinesses as environmentally-friendly and clean alternatives to fossil fuels.

The main propaganda of biofuels[6] is framed in their promoted GHG neutrality. Indeed, as crops grow, they fix carbon from the atmosphere. When biofuel is burned "this carbon is simply released back, so that over the lifecycle of the fuel, the net impact on atmospheric carbon is neutral" (Oxfam, 2008). For this reason, the growing demand for agrofuels as a climate change strategy has increased rapidly over the past years. Oil-dependent countries have established targets for agrofuel production and for the incorporation of biodiesel and bioethanol with traditional transport fuels. The proponents of biofuels have argued that ethanol and biodiesel will allow us "to continue our love affair with the internal combustion engine, while simultaneously reducing our greenhouse emissions" (Oxfam, 2008). Some of the reasons for its promotion is to avoid the fuel crisis and the fears of rising and volatile fuel prices. Oil peaks, the loss of national sovereignty through 'foreignization' of energy resources, and the desire to reduce dependence on Middle Eastern oil also drives governments to develop an industrial biofuel complex that delivers ''energy security'' (White, 2012).

[6] "What are biofuels? Biofuels are liquid fuels made from organic matter – typically crops. There are two principal kinds – ethanol, produced from carbohydrates (e.g. sugarcane, sugar beet, corn, wheat) and biodiesel, manufactured from oilseeds (e.g. rapeseed [canola], oil palm, soy, jatropha). They can be blended in relatively small quantities with existing petroleum fuels for use in unmodified internal combustion engines, making them most relevant to transport. Ethanol can be blended with petrol (gasoline) in blends of up to 5 per cent or 10 per cent, and new 'flex-fuel' technology now allows much higher blends. Biodiesel can be blended with diesel in blends up to 20 per cent, above which relatively modest engine refinements such as replacement of rubber hoses may be required": Worldwatch Institute (2007)

However, biofuels "currently provide a solution neither to the oil nor to the climate crisis". Studies have demonstrated that in reality, biofuels are not GHG neutral: "There are emissions associated with all stages of their lifecycle, particularly if the crops are grown intensively, using nitrogen-based fertilisers and machinery, or if the refining process requires large inputs of (fossil) energy" (Oxfam, 2008).Other proponents of biofuels have argued that for the biofuels to be of benefit they do not have to have zero GHG emissions; they only need to emit less than the fossil fuel alternative. Nevertheless, new studies published by the Nobel Laureate Paul Crutzen has seriously questioned the idea that biofuels provide net GHG savings (Crutzen, 2008; Oxfam, 2008). In fact, the conversion of arable land and forests to monocultures for agrofuels' production has serious negative impacts on food security. There are significant risks to converting native ecosystems into farms for biofuel, and this increases global warming rather than mitigating it. Indeed, "the carbon released by converting rainforests, peatlands, savannas or grasslands outweighs the "carbon savings" from agrofuels"[7] (Guttal, 2010).

Other consequences of biofuels are its negative social impacts. The production of biofuels has many consequences which are well documented, such as on land rights, working conditions (Hunsberger, 2017), shortages of food stocks, the rise of food prices, and the "mass evictions of rural peoples worldwide" (Guttal, 2010; Lran et al, 2007). The transformation of farmlands from food to fuel production is for the purposes of rich countries to be able to meet their "clean" energy targets. This is at the expense of millions of smallholder farmers, pastoralists, and indigenous peoples that "are pushed off the lands and forests that they depend on for survival" (Guttal, 2010).

Terribly true is the declaration made by Jean Ziegler, UN Human Rights Rapporteur, who affirms that biofuels are a "crime against humanity". The lands over which biofuel production is currently expanding are by no means uninhabited. In many cases, plantations are expanding over the territories of now displaced communities (Lohmann, 2008). As such, "green fuel" "glosses over the abuses and dispossessions enacted by development companies" (McMichael, 2010, 609) (Work, 2015). This opinion also supported by La Via Campesina, the transnational agrarian movement, has declared:

> The current massive wave of investment in energy production based on cultivating and industrial processing of (…) corn, soy, palm oil, sugar cane, canola, etc., will neither solve the climate crisis nor the energy crisis. It creates a new and very serious threat to food production by small farmers and to the attainment of food sovereignty for the world population. It is claimed that agrofuels will help fight climate change. In reality, the opposite is true (…) If we take into account the whole cycle of production, transformation, distribution of agrofuels, they do not produce less greenhouse gases than fossil fuels, except in some cases. Meanwhile, the social and ecological impacts

[7] For example "conversions for corn or sugarcane (ethanol), or palms or soybeans (biodiesel) release 17 to 420 times more carbon than the annual savings from replacing fossil fuels. Scientific analyses also show that not all agrofuels are "clean" or "efficient" energy sources. Many ethanol agrofuels are proving to be far less "efficient" than other fuels for every unit of energy produced. The production of agrofuel crops (particularly for ethanol) and the fuel itself are chemical, water and even fossil fuel intensive, and result in land, soil and water contamination, and destruction of agricultural and natural biodiversity." Guttal, 2010

> of agrofuel development will be devastating (…) They drive family farmers, men and women, off their land. It is estimated that five million farmers have been expelled from their land to create space for monocultures in Indonesia, five million in Brazil, four million in Colombia. (La Via Campesina, 2008).

To sum up, the current biofuel policies do not offer effective means to combat climate change and allow governments to avoid urgent decisions and solutions on reducing consumption. Biofuel productions provide only new avenues to continue to indirectly support climate grabbing and abandon the real costs of these policies onto developing countries (Oxfam, 2008).

(b2) Cashing in on climate: the REDD+

Deforestation of the world's tropical forests is responsible for about 10% of net global carbon emissions. Therefore, saving tropical forests is at the centre of any concerted efforts to combat climate change (Parker, 2009). REDD initiatives are a combination of the strategies for reducing deforestation rates and greenhouse gases emissions. REDD "is a way through which developing countries are rewarded financially for any emissions reductions achieved associated with a decrease in the conversion of forests to alternate land uses" (Parker, 2009). In 2010, at the 16th Conference of the Parties (COP-16) (Peskett, 2008) as set out in the Cancun Agreements, REDD became REDD-plus (REDD+), to reflect new components. REDD+ includes: "(a) Reducing emissions from deforestation; (b) Reducing emissions from forest degradation; (c) Conservation of forest carbon stocks; (d) Sustainable management of forests; (e) Enhancement of forest carbon stocks" (Parker, 2009).

Many states and non-governmental organizations have acquired hundreds of thousands of hectares of so-called 'empty' land all over the world. In response to the imperative to reduce the impact of climate change, there has been the creation of "forest reserves, national parks and often severe interventions to reduce assumed degradation by local people" (White, 2012). Thus, the REDD+ supposedly aims to reduce GHG emissions by promoting the conservation and enhancement of forest carbon through "a particular version of sustainable management of existing forests and redistributing money from countries in the Global North to countries in the Global South that have significant forest cover and hence stored carbon" (Hunsberger, 2017).

However, the REDD+ program presents potential conflicts on many levels and has the potential to have a negative impact, as it reinforces the existing inequitable social exclusions and land and climate grabbing (Mustalahti and Rakotonario, 2014; Chomba et al. 2016; Poudyal et al. 2016; Hunsberger, 2017). Indeed, the benefits of those activities favour the international organisations over ordinary people. Evidence for this is that the World Bank is actively supporting REDD+, as do several international environmental conservation agencies and private carbon trading companies (Guttal, 2010). In addition, many studies already proved that "most REDD+ projects are located in low-vulnerability countries where low

transaction costs and higher carbon revenues ensure profits for the international private and consulting companies that develop and manage the projects" (Work, 2015; Atela, et al 2014).

Furthermore, the costs of REDD+ implementation at the community level do not seem to protect villages and community assets (Work, 2015). First, REDD+ reduces forests "to a single commodity that can be bought and sold without regard to their myriad other values" (Corbera, 2012) (Hunsberger, 2015). Then, REDD+ initiatives ``provide incentives to governments and large landholders to apply a 'you-pay-or-I-cut' approach to every hectare of forest land that they succeed in wrestling from indigenous peoples and landless farmers" (Guttal, 2010). Using this approach, REDD+ strategies disregard the views of rural communities and Indigenous Peoples and fail to address the fundamental causes of deforestation and degradation (Hunsberger, 2015), while increasing climate grabbing.

The Paris Agreement a missed opportunity

(a) Paris Agreement

As illustrated, biofuels and the REDD+ do not reduce global warming. On the contrary, they create greater incentives and opportunities for the expansion of climate grabbing and of existing inequities. Climate grabbing could be reduced and controlled if countries invested in new alternative energy sources, for instance in "hydrogen fuel, wind power, solar power, and tidal power" (Seo and Rodriguez, 2012). The investment in those innovative alternatives could increase food and energy security and will likely reduce land grabbing. (Seo and Rodriguez, 2012).

However, this path has not been undertaken yet and not much has been learnt from preceding negative experiences, as the Paris Agreement proved. The 21st Conference of Parties (COP21) met in Paris, France from November 30th – December 11th, 2015 was organised by the UNFCC to achieve a legally binding and universal agreement on how to mitigate the effects of climate change (www.cop21paris.org). Out of COP21 came the Paris Climate Agreement, an agreement signed by 196 countries. It requires the Parties to limit temperature increases to 2° or 1.5°C below pre-industrial levels. It even mentions "pursuing efforts" to keep warming below 1.5°C." (Lang, 2015).

After the failure of Copenhagen, the agreement was celebrated by the parties as a historical achievement. Even so, does such an agreement effectively hold governments liable in case of non-compliance with its ambitious goals? The answer is, no, not really. As George Monbiot comments, "By comparison to what it could have been, it's a miracle. By comparison to what it should have been, it's a disaster." (Monbiot, 2015). The Agreement is very general about emissions reductions. It is more of an outline that is the basis for future meetings, and it has not specified ways in which countries should reduce emissions, particularly in using alternative-fuelled vehicles.

Part of the public opinion and environmental activists have also affirmed their frustration. Pat Mooney, from ETC Group, lamented: "What we have is something much worse than

Copenhagen (…) because people believe that governments have achieved something here and they have not" (La Via Campesina, 2016; Claeys, 2017). This opinion is followed by part of the climate scientists' community. An example is James Hansen who calls the Paris Agreement a "fraud": "It's a fraud really, a fake. It's just ironic for them to say: 'We'll have a 2C warming target and then try to do a little better every five years.' It's just worthless words. There is no action, just promises. As long as fossil fuels appear to be the cheapest fuels out there, they will continue to be burned." (Milman, 2015).

Thus, if the Paris Agreement will not address climate change (Lang, 2015), will it at least do something to tackle climate grabbing? The answer is also no in this case, since redressing the negative effects of preceding climate change mitigation strategies was not in the Paris agenda.

(b) Biofuel and REDD+ in the Paris Agreement

The Paris Agreement emphasises building adaptation and resilience as key factors to anticipate climate change (Anderson, 2017). At the same time, it recalls for mitigations instruments that, as explained above, are inefficient. No references to land grabbing were included in the Paris Agreement and the text gives no guidance on land use, despite climate policies have been increasingly influencing territorial and natural resources (Claeys, 2017).

In particular, even if biofuels failed to provide a genuine renewable energy option, the Paris Agreement did not address the problems related to the harmful impacts of biofuels and reiterates that burning biofuel produces no emissions. This statement has the potential to increase the search for new lands for crop plantations and can considerably accelerate the phenomenon of land grabbing. (Anderson, 2017).

Moreover, the Paris Agreement applies not only to developed countries, unlike the Kyoto Protocol, but also to developing countries that now have the responsibility for reducing GHG emissions. The majority of those countries do not have a developed industrial sector, but they are more focused on the land sector as forests and agriculture. This new obligation will bring more risks to land compared to the previous agreements. Alike the developed countries, there is now the face of new pressure from developing countries that need to compensate for their carbon emissions. Thus, under the new agreement the negative impacts of climate change mitigations policies used by developing countries could risk making matters worse. To put this in perspective, the recent report made by IPCC 5th Assessment Report (AR5) estimates "that between 500 million and 3 billion hectares of land would be needed to grow the biomass required to keep global warming below 2˚.26". In fact, "global cultivated cropland today covers only 1.5 billion hectares" (Anderson, 2017).

Moreover, the strategies included in the agreement are risky for the land because they lead to the expansion of biofuels, as well as of Bioenergy with Carbon Capture and Storage (BECCS)[8], and biochar[9]. The implementation of these strategies would require vast areas of

[8] "Bioenergy with carbon capture and storage (BECCS) involves the growing of biomass (often turned into wood pellets), which is then burned to produce energy. The CO2 emitted in the burning phase is piped away and buried deep underground using still unproven Carbon Capture and Storage (CCS) technologies. However, the IPCC acknowledged that there are serious questions about the technological feasibility of these strategies. None have been tried at the scale required, and the ability of CCS to

land for carbon sequestration and could fuel huge land grabs in Africa, Asia and Latin America. As underlined by Teresa Anderson (2015), the BECCS:

> is the large-scale growing of biomass crops, which are then burned and the resulting CO2 stored underground. It is one of several "negative emission" techniques that are proposed for removing carbon emissions from the atmosphere. Like all negative emission technologies, BECCS faces considerable hurdles, including: the amount of land required, competing uses for that land, whether the technology actually works at scale, as well as the financial costs. It is unproven, its supposed benefits are unrealistic, and it could have disastrous socio-economic and environmental consequences.

Thus, communities that are already extremely vulnerable to climate impacts are likely to suffer the impacts of biochar expansion and BECCS. In addition, the Paris Agreement searches for a balance between emissions and absorption by greenhouse gas sinks, has enshrined the principle of compensation in the case of the climate crisis. This notion does not mean that the emissions actually have to decrease, but that emissions and absorption can cancel each other out. This approach has already begun with forests through the REDD+[10], but now it has started to target farming land and has been noted in becoming "the new carbon Eldorado" (Cidse, 2016)[11]. As such, "rather than attempting to reduce greenhouse gas emissions drastically, agriculture is becoming a unit of accounting permitting emissions to continue or even increase" (Cidse, 2016). There is the danger of more pressure on land and the risk to increase its grabbing by putting a value, through compensation, on farming land as a tool in combating climate change. Thus, "the small-scale farmers who were already the first victims

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guarantee the long-term containment of CO2 is still uncertain. Furthermore, the amount of land required to implement BECCS on a significant scale is likely to bring it in conflict with other necessary demands on land" (Anderson 2015).

[9] "Biochar is made from turning biomass into charcoal, which its proponents claim is a more stable form of carbon that is less likely to biodegrade or release CO2. Trees and other plant material such as crop residues can be used to draw carbon out of the air, which is then burned at high temperatures in a low oxygen environment to produce charcoal. Those who propose this approach as a large-scale climate solution claim that adding large volumes of biochar to soils could sequester up to 12% of global GHG emissions. However, these same proponents have also admitted that nearly 1 billion hectares of land could be required to grow and burn enough biomass to achieve this goal. Critics of this approach point out that this would fuel major land acquisitions for large plantations of fast-growing trees, that there is not enough land available to grow sufficient biomass to burn on this scale, and that the CO2 benefits and the long-term stability of biochar are also highly questionable. The use of any or all of these approaches as strategies for climate change mitigation will involve a huge scaling-up of biomass production, requiring vast areas of land. They will inevitably conflict with food production and communities' land rights." (Anderson, 2015).

[10] REDD appears in the two paragraphs of Article 5 of the Paris agreement. Here's the first:

"1. Parties should take action to conserve and enhance, as appropriate, sinks and reservoirs of greenhouse gases as referred to in Article 4, paragraph 1(d), of the Convention, including forests".

This paragraph refer to article 4 of the 1992 UNFCCC that provides as follows: "All Parties, taking into account their common but differentiated responsibilities and their specific national and regional development priorities, objectives and circumstances, shall: And paragraph 1(d) reads as follows:

(d) Promote sustainable management, and promote and cooperate in the conservation and enhancement, as appropriate, of sinks and reservoirs of all greenhouse gases not controlled by the Montreal Protocol, including biomass, forests and oceans as well as other terrestrial, coastal and marine ecosystems;

Article 5, Paragraph 2 of the Paris Agreement on REDD is stated:

"2. Parties are encouraged to take action to implement and support, including through results-based payments, the existing framework as set out in related guidance and decisions already agreed under the Convention for: policy approaches and positive incentives for activities relating to reducing emissions from deforestation and forest degradation, and the role of conservation, sustainable management of forests and enhancement of forest carbon stocks in developing countries; and alternative policy approaches, such as joint mitigation and adaptation approaches for the integral and sustainable management of forests, while reaffirming the importance of incentivizing, as appropriate, non-carbon benefits associated with such approaches" (Lang, 2015).

[11] Statement signed by civil society organizations calling out against false solutions around land use at COP22.

of climate change become doubly threatened" (Cidse, 2016) with an increased risk of land grabbing.

Conclusion

As the Grain's research on *"The global farmland grab in 2016: how big, how bad?"* showed, the number of land grabbing initiatives has surged from 100 in 2008 to 491 in 2016. These initiatives have spanned 78 countries across the globe with large concentrations in Africa and to a lesser extent in Latin America, East Asia, and the Pacific. The developed countries are worsening climate change and then profiting from it, with an unprecedented number of land grabbing over the last eight years, according to the report (Grain, 2016).

Moreover, the report states clearly for the first time that climate change and land grabbing "are inextricably linked" and that climate change is compounding the situation: "We now have even more evidence that climate change is caused not just by burning coal and oil for transport and energy, but by the industrial food system itself and the corporate quest for profits that drives its expansion". (Grain, 2016)

In addition, although they have been introduced as "climate solutions", biofuels and REDD+ are not measuring up to their promise of reducing GHG emissions. The climate mitigations strategies have been transformed into opportunities for corporate profits and land, water, and other natural resources are being monetized, reassessed, and exploited (Anderson, 2015). The Paris agreement that supports climate mitigation strategies has the potential to drive more land grabs and probably on a much larger scale (Anderson, 2015). Despite there being many studies and reports for the causal relationship between climate change and land grabbing, the Paris Agreement does not take any steps to mitigate climate change. Rather than combating climate change, the Paris Agreement puts small scale farmers' rights at risk even more severely than in the past and increases climate grabbing. It has demonstrated to focus on inefficient climate change mitigation strategies, which have been presented as "a way for the developed world to continue unchanged, the lifestyles and objectives of the developed world" (Work, 2015).

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