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Limitations to Social-Ecological Transformations

The Case of Soybean Cultivation and Lithium Mining in Argentina

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Abstract: The following article contributes to the debate on social-ecological transformations by exemplifying and giving response to the concept's analytical dimension. Considering the cases of soybean cultivation and lithium mining in Argentina, barriers and limitations of social-ecological transformations are elucidated by pointing out recent transformations towards unsustainability. Retrospectively, the country has missed the historic chance relating to social-ecological transformations, which has opened up with a progressive government in times of a global commodity boom. With the change of government and the end of the resource super-cycle, social-ecological transformations have moved into the far distance.

Introduction

During the past decade the various tendencies of crises – financial crisis, economic crisis, growth crisis, development crisis, environmental crisis, climate crisis, political crisis and identity crisis – have condensed into the acknowledgement of a multiple crisis. The debate about sustainable development, which has initially been initiated by the Brundtland Report "*Our Common Future*" in 1987, has simultaneously come to a standstill. Besides its focus on just two crisis dimensions – environmental and developmental crisis – the sustainable development approach is increasingly criticized for its overly uncritical reliance on existing structures and institutions. Therefore, claims for a Social-Ecological Transformation – following Karl Polanyi also

frequently referred to as a Great Transformation[1] – have recently become a substantial part of the scientific research agenda as well as of the political discourse.

Although the terms transition and transformation are frequently used synonymously, I adhere to the definition of Brand (2014), understanding transition in terms of political-intentional control and intervention. Instead, he specifies transformation as a comprehensive process of change, which includes political, sociocultural as well as socioeconomic spheres. Although keywords like *decarbonization* and *overcoming a fossil-nuclear economy* are often in the center of discussions, the concept goes way beyond hitherto dominating perspectives of sustainability (Brand/Wissen 2017). As a consequence, transition or transition management has to be seen as part of an overarching and fundamental transformation process.

Even though, in view of the earth's systems planetary boundaries, which have been picked up at the latest since the famous report "*The Limits to Growth*" (Meadows et al. 1972) to the Club of Rome, alternative economic theories have now been postulated for decades (cf. Daly 1991 [1977]; Daly/Cobb, John B., Jr 1994 [1989]), in recent years the quantity and density of alternative concepts has accelerated noticeably. Therefore, I argue that the various emerging approaches, such as different versions of a solidarity economy, steady-state economy (Daly 2014), degrowth (Latouche 2009), post-growth economy (Jackson 2009; Paech 2012), economy for the common good (Felber 2010) and – with particular relevance for the Latin American context – buen vivir (Acosta 2011, 2012), have to be seen as elements of an encompassing social-ecological transformation.

While this undeniably opens up new perspectives and possibilities, it also gives rise to the danger of degenerating to a new non-descript and non-committal concept. Many, if not all of the initially stated crises are triggered by the inner contradictions of the capitalist mode of production (Brand 2014). Economic expansion and the commodification of nature for

1 Analogically to Karl Polanyi it seems that under capitalist conditions the variety of crises is just selectively manageable. Therefore, Ulrich Brand and Markus Wissen (2017) plead for following Karl Polanyi not just terminologically, but also textually. Transformation may thus be taken as a process that goes beyond capitalism.

capital accumulation purposes compulsorily lead to overexploitation and destruction. In order to conceptualize the 'all-and-nothing' fashionable term of a social-ecological transformation, I go along with the approach of Görg et al. (2017), which categorizes the concept into three dimensions: First, the analytical dimension is dedicated to finding and investigating unsustainable structures and processes. Second, the political-strategic dimension aims at contributing to change processes towards sustainability on a policy-making level and third, the normative dimension points at investigating socially desirable and achievable objectives.

In what follows, I exemplify and give response to the analytical dimension by elucidating barriers and limitations of social-ecological transformations, explaining recent transformations towards unsustainability, for the case of soybean cultivation and lithium mining in Argentina.

Neoliberal Globalism

In the 1990s, neo-liberal orientations and policies spread across Latin American countries. The so-called *Washington Consensus* promised economic growth and prosperity on the basis of comparative advantages and free trade. For Latin America, this development strategy implied the expansion of the extractive frontier, the intensification of existing extraction (Bebbington 2009) and a re-focus on the production of a few primary goods for export (Harvey 2005). While these policies are often mentioned as ideas of the Washington Consensus, Gerardo Otero (2008) refers to the ideological and policy context as Neoliberal Globalism and thus indicates that these neoliberal reforms are highly intertwined with and take place in the course of a globalized world market.

In Argentina, the strategy of economic openness had already been initiated by the military regime under General Jorge Rafael Videla in 1976. Nonetheless, things drastically accelerated when Carlos Menem was elected president in 1989. Soon after, as a response to the economic problems of the preceding years, he and his Minister of Economy Domingo Cavallo passed the Deregulation Decree and the Convertibility Plan to stop inflation and to

promote economic growth. Besides establishing a fixed parity arrangement between the Argentine Peso and the U.S. Dollar, Menem and Cavallo privatized public services and utilities and decreased public investments. The Deregulation Decree ended regulations protecting domestic economic activities. Specifically, in relation to agriculture, the Decree eliminated many regulations and committees controlling Argentine agriculture since the 1930s. At a single stroke, Argentine agriculture was transformed to be one of the most deregulated in the world. As foreign direct investment rose at the beginning of the 1990s (Grugel/Riggirozzi 2007), foreign investments in the Argentine campo started to rise as well. From the mid-nineties, rural leasing prices – thus land prices – rose sharply, so that many farmers started to look for new land in the Northern provinces. This tendency was further reinforced after the approval of genetically modified (GM) soybeans in 1996. The new technological package, consisting of the broad-spectrum herbicide RoundUp®-glyphosate, RoundUp®-Ready soybean seeds and direct seeding, enabled pest control over large areas, and therefore allowed for large-scale expansion (Goldfarb/van der Haar 2016). In addition, the potency of cost benefits is only developed if the technological package is applied in sufficiently large scales, so that processes of production concentration were and are promoted by the application of new technologies (Coy 2013). Many small-scale farmers were forced to leave the Pampas area, the country's traditional core of the agricultural export production. The first wave of agricultural expansion to the northwest of the country was generated (Reboratti 2010).

In the mining sector, a similar alignment towards the global market can be stated. By means of article 124, the constitutional reform of 1994 transferred the provinces to control and decide on the natural resources in their territories. Due to these changes in the Argentine Mining Code, the exploitation of mining resources is nowadays administered by the provinces. The national state only maintains a certain grade of jurisdiction, for example relating the participation and involvement of indigenous people as well as concerning environmental issues. Many provincial governments saw this not only as a possibility to increase their fiscal resources, obtain external investments and create jobs in their regions, but also to gain political independence and increase their fields of action (Zícari 2015).

At the end of the millennium, the country entered its most severe crisis in history: On the one hand, this can be traced back to the tequila crisis, which started in 1995 in Mexico and implicated a loss of investors' confidence in emerging markets, so that foreign investments were reduced. On the other hand, a highly overvalued Peso and a heavily negative Current Account balance during two decades[2] (World Bank 2016) contributed to a major financial crisis. The trade deficit made it impossible to use foreign exchange earnings to service the interest rates of the country's external debts. Argentina ended up in a circle of borrowing more and more money, without any chance of reducing its foreign debt. Unemployment rose from 5.8 percent in 1991 to 14.1 percent in 1999, reaching its highest value – 18.3 percent – at the peak of the crisis in 2001 (ibid.). Besides the economic collapse, the political-institutional collapse was the inevitable consequence.

Political Shift and new opportunities: The Kirchner era

The abandonment of the Peso-Dollar parity in January 2002, implemented by then President Eduardo Duhalde (2002-2003), highly increased the country's competitive position. As Argentine commodities and products became comparatively cheaper on the world market, this led to an important export expansion. Starting in 2003, the Kirchner administration[3] combined economic nationalism and populist strategies of reallocation with a persistent export boom, trying to achieve a more equal distribution with the help of 60+ social subsidy plans. Originally startin with Hugo Chávez (Movimiento Quinta República) in Venezuela, a similar trend, the return to a stronger government and away from neoliberalism, was observable throughout many Latin American countries, for example with Evo Morales (Movimiento al Socialismo) in Bolivia, Luiz Inácio Lula da Silva (Partido dos Trabalhadores) in Brazil,

2 Argentina's Current Account balance was negative in every year between 1981 and 2001, with only one exception in 1990.

3 In 2003, Néstor Kirchner was elected president and replaced the previous interim government. After the end of his mandate in 2007, his wife Cristina Fernández de Kirchner assumed and stayed in office until the end of November 2015.

José Mujica (Frente Amplio) in Uruguay as well as Lucio Gutiérrez (Partido Sociedad Patriótica) and Rafael Correa (Movimiento PAÍS) in Ecuador.

Facing unemployment and poverty was a central aim of the Kirchner administration. Making use of social subsidy plans, mostly financed by the re-introduction of export taxes on soybeans and its derivatives – so-called retenciones – Argentina took up the social redistribution program initiated with the bolsa-familia program in Brazil. A promising perspective of a possible social transformation opened up. Moreover, during the first decade of the new millennium, a global commodity boom, mostly driven by increasing demands from the emerging economies, offered a unique opportunity. The export of primary products and agro-industrial manufactures increased significantly between 2001 and 2005 (INDEC 2016).

The expansion of soybean cultivation

In the context of soybean cultivation, Argentina's agro-export based model of GM soy production was benefitting extraordinarily from the global context: Rising middle classes – especially in India and China – were increasing their demand for animal protein, increasing financial speculation as well as the appearance of a potential market for biofuels contributed to what Amalia Leguizamón (2014: 157) denoted as the "*perfect storm*". As a result, in the course of a new agricultural paradigm an enormous expansion of soybean cultivation took place. In 2014/15, Argentina already produced around 60.1 million tons of soybeans within an area of 20.2 million cultivated hectares (Calzada/Rossi 2016).

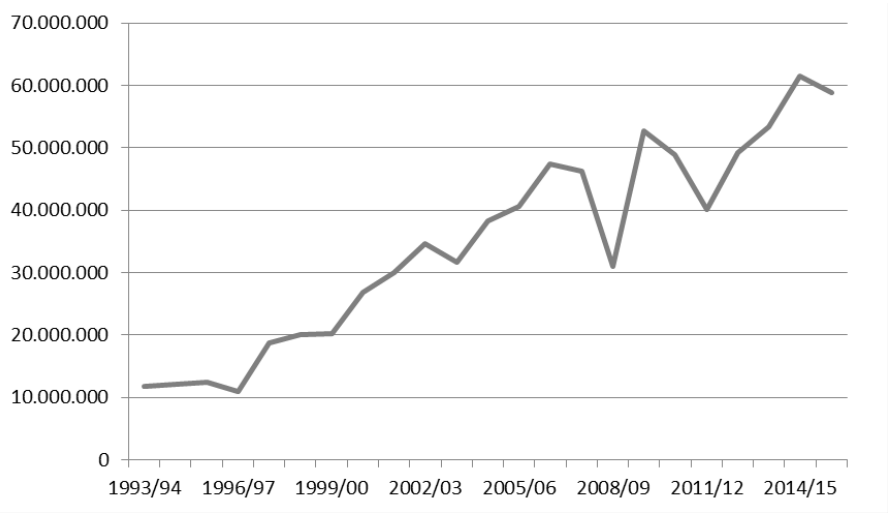

Fig. 1: Argentine soybean production (in metric tons). Source: own elaboration, based on MAGyP 2016.

Within framework of agribusiness as the "*current hegemonic logic of capital accumulation*" (Gras/Hernández 2014: 347), the expansion of the neoliberal food regime (Gras/Hernández 2014; McMichael 2012), based on biotechnology, as well as the increased importance of financialization (Gras/Hernández 2014) has brought and accelerated undesirable and debatable side effects as well as major societal transformations. Among the social consequences, increasing land values (Gras 2009), a growing presence of large-scale farms (Gras 2009; Gras/Hernández 2014) and decreasing incomes of small-scale farms (Gras 2009) concurring with substantial changes in the farms' labor organization as well as with the expulsion of many family farmers (Gras/Hernández 2014) have to be stated. In the Pampas area, the process of agriculturización did not mean diversification: the classic pampean cultivations like wheat, sorghum, cotton or sunflowers came to a standstill or were reduced (MAGyP 2016; Reboratti 2006), so that many critics stress the country's increasing loss of food sovereignty (Gras 2009; Pengue 2004b). Besides, in search of vast and – economically – not yet integrated areas, soybean cultivation started to expand from the Pampa region to the Northern provinces. In these areas, previously unfamiliar with any commercial exploitation, peasants and indigenous people

were largely based on subsistence farming. While by virtue of displacements and ecological over-exploitation the livelihoods of many people have been destroyed, labor was increasingly substituted by capital (Kaimowitz/Smith 2001), so that not much work has been generated (Gras 2013; Teubal 2008). In addition, while polarization was reinforced on the basis of resultant unemployment, increasing fragmentation has been notable regarding access privileges, such as access to land, water and other resources.

With respect to environmental damage, soil depletion and soil erosion, deforestation, reduction of biodiversity, environmental and human pesticide contamination, the appearance of biological resistances as well as water loss and water pollution have to be emphasized (Gras 2013; Pengue 2004a, 2005, 2013a, 2013b; Teubal 2008). Thereby, social and ecological issues cannot be contemplated separately. The eviction of many populations in the North and the concurrent destruction of their basis of existence illustrate an example for an unequal distribution of environmental costs. In that sense, the exclusion of local populations from benefits obtained from natural resources is additionally intensifying consisting inequalities.

Lithium as a new strategic resource

The heritage of the 1990s has been a business-friendly mining legislation. As a result, in 2004 Argentina was already the world's ninth most attractive destination for mining investments (Bridge 2004). That same year, the national government implemented the National Mining Plan, which promoted further development in the mining sector and proclaimed mining as fundamental for the country's future economic base (Martinez-Alier/Walter 2011).

More specifically, in this section I will address some trends regarding lithium mining in Argentina, which gains particular relevance within the scope of a debate on social-ecological transformations. In the context of technological advancements and portable electronics like smartphones, tablets and notebooks, but particularly due to emerging green economy scenarios, including electro mobility, in the Global North, lithium has ultimately attracted special interests all over the world. Although lithium has already been exploited for decades

and is used in a wide array of applications, ranging from medical products to glass and ceramics manufacturing, it is considered a strategic resource for the 21st century based on its potential significance for sustainability transitions. Naturally, this creates the expectation of prospective export incomes among Argentine politicians and national institutions. Therefore, the resource's strategic character is reproduced also at the national level.

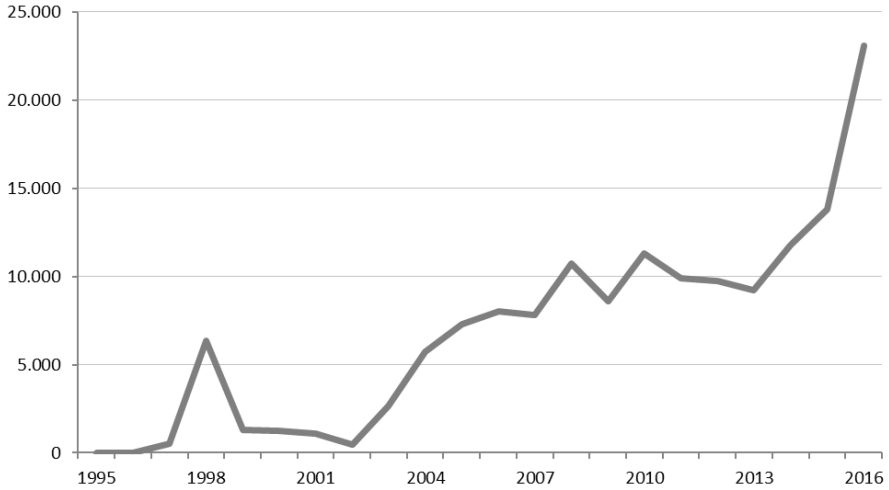

Fig. 2: Argentine lithium carbonate exports (in metric tons). Source: own elaboration, based on UN Comtrade 2017.

Argentina is part of the lithium-triangle, comprising the Salar de Uyuni (Bolivia), Salar de Atacama (Chile) and several salt flats in the Northwest of Argentina. In this area, a large proportion of the world's exploitable resources are located. Against this backdrop, Argentina is of great relevance for the global economy, as it has become a major destination for transnational capital of the mining industry. While the Fénix Project at Salar del Hombre Muerto has already entered the stage of massive production in 1998, a run towards concession agreements regarding the remaining salt flats has taken place at the latest during the last decade. Besides Salar del Hombre Muerto, the Salar de Olaroz entered its production phase in 2014. In Salar del Rincón, Salar de Cauchari and in the eastern part of Salar del Hombre Muerto, pilot plants were finished in 2012, 2014 and 2017, respectively. These plants are operated

by subsidiaries of transnational companies, coming predominantly from the United States, Australia, Canada, Japan and France. In the cases of Sales de Jujuy SA and Minera Exar SA, the province of Jujuy managed to position itself as a stakeholder – with 8.5 percent each – through the state-owned Jujuy Energía y Minería Sociedad del Estado (JEMSE).

Lithium mining is commonly sheltered with its green halo (Fornillo 2015), its importance for a green energy transition. Notwithstanding, lithium mining projects and the relating thereto infrastructure are build up in highly fragile ecosystems. Although the spacious areas of the Puna argentina, including the salt flats, are often considered as untouched and virgin nature, these regions are inhabited for a long time by preponderantly indigenous atacameños and descendants of native people (Göbel 2014). Besides their pronounced cultural ties, local populations depend upon the utilization of their natural surroundings. Their economic strategies, such as pasture farming, farming, salt production and tourism are adversely affected by lithium mining in the area (Göbel 2013). Thereby, at the center of discussion are the enormous use of water in an extraordinarily arid region, the violation of communal land rights as well as the exclusion from decision-making processes (Anlauf 2017).

Similarly to the example of soy production, private profits stand opposite to social and ecological costs, so that one may clearly identify winners and losers. There is no such thing as green mining. By definition, mining is a pollutant activity which destroys nature and the environment, so that depending on mining as an important source of foreign currency is like adopting an extractive model of accumulation that condemns the respective country (Zícari 2015). In that regard, Axel Anlauf (2017) argues, considering the idea of the imperial mode of living introduced by Brand and Wissen (2013), that "*green economy strategies are built on global and local asymmetries of power, and spatially and temporarily externalize ecological and social costs*".

A missed chance and new tendencies

Although, Néstor Kirchner ran a clearly anti-neoliberal election campaign and Cristina Fernández de Kirchner attempted a very capital-averse discourse,

the general equation of economic growth and development has not been questioned at any moment. The classical idea of development, in the course of the modernization theory, has been taken for granted (Brand 2012; Gudynas 2012, 2016).

The strong contrast between discourse and action during the Kirchner era unfolds its virtue regarding a strong dependency on retenciones in order to finance the social subsidy plans. Moreover, during the presidency of Cristina Fernández de Kirchner the greatest number of genetically modified soybean seeds was approved (see Hafner 2016). Against this background, the political conflictive discourse in opposition to agribusiness appears to be a performative perspective, beguiling Hafner (2016: 111) into judging the „*conflictive role of the national government is overestimated*". Simultaneously, the national Mining Code, relic from the neoliberal nineties, remained untouched. Instead, a National Mining Plan, promoting further development of the national mining sector, has been implemented in 2004 so that the number of mining projects in the country increased by 800 percent (Gudynas 2012). Though, the aim of extractivism has changed during the 2000s, the focus on the extraction of raw materials – including both mining and intensive agriculture – for export without any value-adding processes has been deepened and expanded so that the commodification of environmental goods has proceeded (Burchardt/Dietz 2014; Gudynas 2012).

While there have been chances regarding social transformations during the Kirchner-era, positive effects of redistribution policies have to be confronted with intensified and deepened social-ecological conflicts, resulting from an accumulation model based on over-exploitation of non-renewable resources as well as on the expansion towards previously 'unproductive' (Svampa 2012), economically not yet integrated, areas.

The end of the resource '*super-cycle*' of the 2000s also meant to be the end for a range of leftist governments in Latin America. In Argentina, the Kirchner-era ended with the election of the Conservative candidate Mauricio Macri (Propuesta Republicana), former Head of Government of the Autonomous City of Buenos Aires. In February 2016, Macri removed all valid retenciones on mining products by means of Decree 349/2016. Regarding soybeans, he pleads for a more gradual reduction, so that we could no longer talk about

neo-extractivism. This return to a modernization discourse and to a pure form of extractivism marks a far-reaching turning point for the country. With a progressive government in times of a commodity boom a historic chance relating to social-ecological transformations has opened up in a country of the Global South. Retrospectively, this has to be assessed as a wasted opportunity. While Argentina for the moment continues the path of being the world's raw material supplier, possibilities of social-ecological transformations have moved into the far distance.

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