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The New Developmental State and the Challenges of the Socio-Ecological Transition — Lessons from Argentina and Brazil

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Working Paper, No. 189/2022

Editors:

Sigrid Betzelt, Eckhard Hein (lead editor), Martina Metzger, Martina Sproll, Christina Teipen, Markus Wissen, Jennifer Pédussel Wu, Reingard Zimmer

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Lucia Alfano

The climate crisis is inevitably looming over the horizon. Some countries are much more vulnerable than others to its harshest consequences due to their existing issues of poverty and underdevelopment. At the same time, developmental policies pursue economic growth at the cost of environmental degradation and overexploitation. This contribution focuses on the actor that is called to find a balance between the necessity to address climate change and to reach economic prosperity, namely the state, in the specific configuration of the New Developmental State. The paper explores its role and capacity to set in motion a fundamental socio-ecological transformation with the goal of harmonising the conflicting spheres of sustainable development. From a theoretical point of view, the examination is conclusive in demonstrating that the new developmental state possesses the characteristic to be a driver of socio-ecological change. In practice, the trade-off between developmental and socio-ecological priorities is yet to be resolved.

Key Words: Sustainable Development, New Developmental State, Socio-ecological transformation, Argentina, Brazil.

JEL Codes: F63, F64, O11, O13, Q01, Q54, Q56.

Acknowledgements: This paper is a revised and shortened version of my Master thesis submitted to the Berlin School of Economics and Law in 2021. I would like to thank Professors Ümit Akcay, Eckhard Hein and Ricardo Summa for their contribution, recommendations and constant support. All errors are mine.

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1. Introduction

Climate change and underdevelopment are the greatest challenges for the 21st century developmental state. On the one hand, according to the Global Footprint Network humanity uses the equivalent of 1.6 earths in terms of resources used and waste produced to sustain life on the planet (Ecological Footprint, 2021). On the other hand, 10% of the world population lives in conditions of absolute poverty, surviving with less than \$2 a day (World Bank, 2015), 8.5% of the youth between 15 and 24 years of age are still illiterate (UNESCO, 2019) and 6.2 million children under 15 die for preventable causes every year (UN, 2018). So far, these issues have been approached from separate angles, both in academia and policy-making. In particular, development has been intended as a catching up process with developed Western countries, and simplistically associated with economic growth, in a quantitative perspective (Thorbecke, 2019). Meanwhile, environmental degradation and climate change harm the most vulnerable in the Global South to a disproportionate extent, trapping them in poverty, food insecurity and adverse climate events. Simultaneously, reckless policies aiming at industrial development and economic growth contribute irreparably to the precipitation of the climate crisis. In this scenario, the failure to understand the interconnectedness and the cause-effect relationship between the pursuit of economic development and the climate and environmental crises has weakened the capacity to respond to these challenges.

This paper makes the effort to fill this gap, starting from the consideration that developing countries struggling to develop are bound to undergo a process of profound transformation of their social and economic structures. Therefore, on the one hand, they have the opportunity to shape their future, forging a path towards sustainable development, on the other, they face the danger of following the path that developed countries traced for them and that conducted the planet on the verge of ecological collapse. Hence the need for a new developmental state capable of merging the economic, social and environmental concerns for the implementation of a fundamental socio-ecological transformation of the social and economic system. Socio-ecological transformation is “an umbrella term which describes political, socioeconomic, and cultural shifts resulting from attempts to address the socioecological crisis” (Brand & Wissen, 2017, p. 1) and it is also these countries’ chance to succeed in developing in a sustainable manner.

To pursue this target, this paper investigates the potential of a new developmental state to take the lead of the socio-ecological transformation in developing countries. The hypothesis to be investigated is that a new developmental state, in virtue of its solid macroeconomic and social pillars, should be

the most suitable agent of the socio-ecological transformation once it manages to integrate the environmental pillar among its priorities. The methodology applied in this paper will include a comprehensive literature review and a qualitative policy analysis of the case studies.

The examination will be conducted as follows. Section two introduces the theory of New Developmentalism. Thereafter, section three examines the architecture of the socio-ecological transformation and discusses the state's capacity as agent of change. Finally, section four is devoted to the review of two case studies, Argentina and Brazil, chosen as the first two attempts at the implementation of New Developmentalism policy prescriptions. The evaluation of advancements and setbacks in the environmental and climate policy domains of these two countries under new developmental governments provide valuable insights regarding the importance attributed to environmental priorities and the capacity and willingness to act upon them. In conclusion, the main results of the examination are summarized and discussed.

2. New Developmental State Decoded

New Developmentalism was born in the early 2000s from the contributions of development and post-Keynesian economists such as Luiz Carlos Bresser-Pereira, José Luís Oreiro, Nelson Marconi, Roberto Frenkel and Martin Rapetti. In forming the Brazilian New Developmentalist School, their aim was the codification of an alternative theory of development economics for developing and emerging countries, a third way between the dominant neoclassical paradigm imposed from above by rich countries and international institutions, and the outdated Classical Developmentalism, that might isolate the fundamental determinants of economic development, reflect national interests and provide solutions to contemporary developmental challenges (Bresser-Pereira, 2009, Oreiro & Da Silva, 2019). It is relevant to notice that these theoretical strands all share the same goals, namely national development and the improvement of living standards for the population, despite proposing different analysis of the economic impediments to development and different solutions to overcome them (Aguar de Medeiros, 2020).

Bresser-Pereira (2010, p. 90) defines New Developmentalism as a national development strategy rather than an economic theory: "New Developmentalism is a set of ideas, institutions, and economic policies through which medium-income countries attempt, in the early twenty-first century, to catch up with developed countries." It contains "a method, a political economy, a microeconomics, a macroeconomics, a distributive policy, and an applied economics" (Bresser-Pereira, 2016, p. 332), that will be discussed in the following sections.

The method applied by New Developmentalism is the historical-deductive method of observation of historical reality. Economic models are built upon the examination of recurring tendencies and facts, confirmed by empirical proofs. In this sense, it rejects the hypothetic-deductive method employed by neoclassical economists, which rests on general assumptions and axioms to build its models, but that is inconsistent with a social science aimed at understanding specific economic systems and developments (Bresser-Pereira, 2010, 2020a; 2020b).

As far as political economy is concerned, New Developmentalism envisions a developmental form of organization of capitalism as opposed to a liberal one. It can be conceptualized as “a form of capitalism state and market-led, where the state takes precedence over the market because it regulates the market, but the two institutions operate together” (Bresser-Pereira, 2015, p. 5). In other words, capitalism “is developmental whether the state moderately intervenes in the market through an active macroeconomic policy and a strategic industrial policy and adopts a reasonable economic nationalism in competing economically with other nation-states” (Bresser-Pereira, 2020b p. 117).

Consequently, the developmental nation-state is the fundamental agent for the realization of an effective development strategy. However, this does not mean that the market is disregarded or relegated to a minor role. On the contrary, New Developmentalism endeavours towards the formation of a strong, efficient market, coordinated by a strong state. It simply acknowledges the limitations of the market, whose leadership is not sufficient to stimulate investments, manage non-competitive sectors, adjust macroeconomic prices, oversee an equal distribution of income, and more generally perform the necessary tasks to implement a comprehensive development strategy (Bresser-Pereira, 2010; 2020b). Therefore, it is the state’s duty to intervene and neutralize the failures, to enable markets to perform their functions most efficiently in the economic system.

Moreover, the support of a developmental class coalition is an essential pillar for the state’s realization of the developmental strategy. New Developmentalism’s political economy distinguishes between two kinds of *bourgeoisie*: the rentiers, who are owners of capital and reap its benefits in the form of interests and rents, and productive capitalists, who invest, innovate and expand capital for profits. The latter form the developmental class coalition together with middle class workers and the state’s apparatus or bureaucracy, while, on the other hand, rentiers and financiers side with the representatives of rich countries and multinational corporations to form a neoliberal opposition to the national development strategy (Bresser-Pereira, 2016; 2020b).

In terms of microeconomic policies, New Developmentalism distinguishes between competitive and non-competitive sectors. The competitive sector does not present flaws or failures and thus, it can be

left to the coordination of the market, while non-competitive sectors are flawed by conditions of monopoly or oligopoly, therefore the only viable solution to manage them properly is the state's economic planning (Bresser-Pereira, 2015; 2016; 2020b).

Turning to macroeconomic policy, it is important to specify that New Developmentalism's macroeconomic theory rests on the Post-Keynesian assumptions that investment does not depend on existing saving, but rather on the availability of credit, the opportunity cost of capital and on expectations or animal spirit, and that long-term growth is determined by aggregate demand. More specifically growth depends on the autonomous components of aggregate demands, namely "those components that are autonomous in relation to the level and/or the change of output and income" (Bresser-Pereira, Oreiro & Marconi, 2014, p. 56). The components of aggregate demand are consumption, investment, government spending and net exports. Since consumption and investment can both be considered endogenous elements, as they both depend on the level of output, the autonomous variables are government spending and net exports. Considering that government spending needs to be treated carefully to avoid fiscal imbalances, exports stand out as the most important driver of aggregate demand (Oreiro & Da Silva, 2019). In light of this, New Developmentalism proposes an export-led growth strategy for developing countries. However, this strategy requires a careful and precise government intervention into the economy to correct the market imbalances and the structural conditions that developing countries chronically suffer from. The following paragraphs expose the structural impediments to growth in developing countries and New Developmentalism's prescriptions to correct them.

As a starting point, New Developmentalism is concerned with the management of five macroeconomic prices, and the fiscal and the current account balance. The five macroeconomic prices are: the wage rate, the profit rate, the interest rate, the inflation rate, and the exchange rate. Since the market is not able to keep these prices "right" and the fiscal and current accounts balanced to ensure growth and stability, the state ought to intervene. First, in developing countries, the wage rate grows at a slower pace than productivity due to the abundant supply of labour and the high level of unemployment. Second, the profit rate is insufficient to stimulate investment, since it is lower than the cost of capital. Third the interest rate, which determines the cost of capital, in developing countries tends to be higher than the country's risk level would justify, making the opportunity cost of investing much higher than necessary. This tendency derives from the attempt to attract foreign capital, following the growth-with-foreign-savings strategy recommended by the conventional orthodoxy. Fourth, the inflation rate is victim of fiscal carelessness and recurring financial crises and it is often anchored to the nominal exchange rate. Finally, the real exchange rate is trapped on a track of

structural cyclical overvaluation, namely it tends to be constantly overvalued, in between financial crisis that occur in a cyclical manner (Bresser-Pereira, 2020a; 2020b).

The real exchange rate is considered the most important variable of New Developmentalism macroeconomic theory. This can be explained starting from the simple open growth model that Bresser-Pereira (2020b) derived from the Harrod-Domar model, where g is per capita growth rate, a is capital productivity, I/Y is the investment share and n is the growth rate of population, assumed to be constant:

$$g = aI/Y - n$$

Therefore, the growth rate per capita depends on the investment rate and the productivity of capital. Since investment expectations are dominated by the fluctuations of effective demand and, as it was discussed in the previous paragraph, effective demand's autonomous component is constituted by exports, it is clear that the exchange rate is the most crucial variable to guarantee or deny access to this foreign part of the effective demand that ultimately generates growth (Bresser-Pereira, 2020a; 2020b). As a consequence, an overvalued real exchange rate damages domestic firms' competitiveness and denies the access to the foreign part of aggregate demand that would sustain the export-led growth strategy.

The tendency to the cyclical overvaluation of the exchange rate and the tendency of wages to grow less than productivity are the two structural conditions, which concur to trap developing countries in a situation of underdevelopment. The latter, as it was anticipated in the previous paragraph, can be explained by the unlimited supply of labour migrating from the primary to the secondary sector that drives down the wage rate growth in the manufacturing sector and increases income concentration, causing a depression of internal demand, as it is assumed that the additional consumption of the rentiers is usually directed towards luxury imported goods (Bresser-Pereira, 2009; 2012). For these reasons, government intervention into the labour market, setting minimum wages and protecting labour rights, is recommended to keep the growth rate of wages in line with the growth rate of productivity. The former, the cyclical overvaluation of the exchange rate, constitutes the bulk of innovation in New Developmentalism's macroeconomics; therefore, it needs to be elucidated carefully.

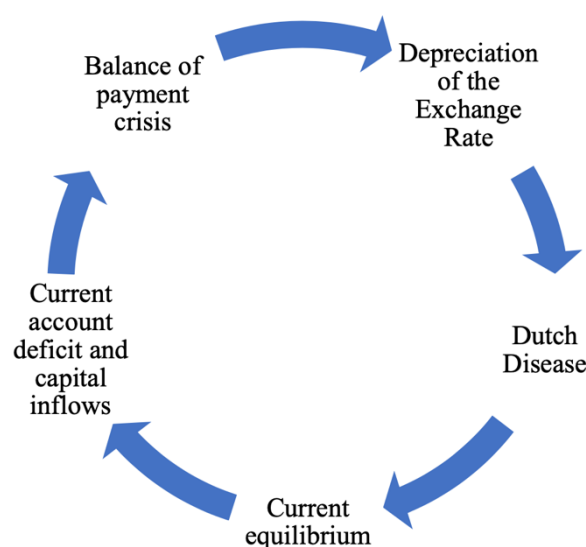
The exchange rate is considered "a short term monetary variable" (Bresser-Pereira, 2020a, p. 633) in classical economic theory. New Developmentalism rejects this thesis and emphasizes its role in affecting aggregate demand and contributing to long term growth and development, proposing a

macroeconomic policy framework aiming at keeping it at a competitive level for the benefit of national industries and the success of the growth strategy.

Two factors concur to the chronic and cyclical overvaluation of the exchange rate: Dutch disease and the excessive influx of foreign capital (Bresser-Pereira, 2010). Firstly, Dutch disease¹ is a condition faced by virtually all developing countries that derives from the exploitation of cheap, abundant natural resources. Exporting these primary products can be a blessing, insofar as it initiates growth, and a curse, when it causes an overvaluation of the exchange rate that hinders competitiveness of all other exporting industries, preventing industrialization and diversification (Bresser-Pereira, 2010). New Developmentalism expands this conception to include the abundance of cheap labour among the possible determinants of the Dutch disease (Bresser-Pereira, 2008). Secondly, developing countries keep very high interest rates in order to attract foreign capital and as an anchor to keep inflation under control (Bresser-Pereira, 2020b). This is part of the growth-with-foreign-savings strategy advised by the orthodox consensus. These high interest rates attract foreign capital, increase the international demand for the local currency, appreciate the exchange rate and consequently create a current account deficit. The problem with this growth strategy is the tendency of foreign savings to substitute domestic savings, instead of adding to them. Notably, appreciated exchange rates, in the long run, benefit real wages and rentiers' profits, increasing consumption and curbing out investments (Bresser-Pereira, 2020a). Following this effect, an overvalued exchange rate is used by politicians as a form of foreign exchange populism, that pleases both workers and rentiers, who benefit from higher wages and profits. These policies reinforce the tendency to the overvaluation of the exchange rate. Lastly, monetary policy recommendations from conventional orthodoxy include the use of the exchange rate as an anchor to control inflation; in this framework, high interest rates that appreciate the exchange rate are justified to keep inflation low (Bresser-Pereira, 2012).

¹ For a complete review of the Dutch disease model please refer to Bresser-Pereira (2008).

Figure 1: Cyclical overvaluation of the exchange rate.



Source: Own illustration based on Bresser-Pereira (2012).

The two effects of Dutch disease and the capital influx create a cycle of overvaluation that leads to financial crisis, as depicted in Figure 1. The cycle operates as follows: New Developmentalism assumes that, when left to the market's coordination, the exchange rate floats around a current equilibrium resulting from the current account. Since this equilibrium is given by the market, the assumption is that it is going to be the perfect competitive equilibrium. This thesis is rejected, as New Developmentalism maintains the existence of a second equilibrium, called industrial equilibrium, which allows national industries equipped with the latest technological innovations to compete in the international market on a level playing field. In developing countries, the two equilibria are not equal due to the effect of Dutch disease that boosts the exchange rate away from the industrial equilibrium to reach the current equilibrium, reducing international competitiveness.

Moreover, the interference of capital flows worsens the situation by appreciating the exchange rate and driving it even further from the competitive equilibrium. The current account deficit deteriorated by capital inflows will lead to balance of payment crises. After that, the exchange rate will be forcefully and abruptly depreciated and the cycle will start again if the appreciating tendencies are not neutralized (Bresser-Pereira, 2010; 2012). Therefore, state intervention is necessary to keep the exchange rate at the competitive industrial equilibrium. In light of the above, the neutralization of Dutch disease and the careful management of the exchange rate are recommended to restore exports' competitiveness and enable a successful export-led growth strategy.

In order to neutralize Dutch disease, New Developmentalism prescribes the introduction of a tax on the exports of commodities equal to the difference between the industrial equilibrium exchange rate and the current, overvalued one. Tax revenues should be kept in an international fund created ad-hoc. This measure is intended to avoid an excessive inflow of currency, which would cause the appreciation of the exchange rate. In order to avoid that their inflows in the countries appreciates once again the exchange rate (Bresser-Pereira, 2010). Moreover, the high interest rate policy and the growth-with-foreign-savings strategy should be abandoned, and in extreme cases, the introduction of capital controls can be taken into consideration (Bresser-Pereira, 2016). In addition to that, the current account should be balanced, in order to keep the exchange rate competitive and break the cycle of balance of payment crises. Finally, New Developmentalism endorses a sound and responsible fiscal policy, that keeps domestic public indebtedness under control and responds countercyclically to booms and recessions (Bresser-Pereira, 2020b).

As it was carefully examined, New Developmentalism provides a comprehensive macroeconomic strategy for developing countries. Nevertheless, the role of the developmental state is not exhausted with the management of macroeconomic prices. On the contrary, New Developmentalism maintains that “economic development is the main element of progress or human development, which also involves the increase in security, the increase of individual liberties, the reduction of inequalities, and the protection of the environment” (Bresser-Pereira, 2016, p. 341) and thus, New Developmentalism “is by design and by necessity a ‘social’ developmentalism, which looks to combine growth with a reduction of inequality. It is by design social, because its followers know well that, if capitalism is left free, it will be essentially unfair to the poor; it is by necessity social, because in democratic countries the poor are strong enough to demand and obtain the provision by the state of large and universal social services” (Bresser-Pereira, 2016, p. 350).

Indeed, New Developmentalism extends its concern to social aspects. First, it strongly advocates for the implementation of a welfare state that is comprehensive and efficient, financed by a system of progressive taxation. Second, it is concerned with fighting inequalities and building a fairer society through active interventions in the labour market, such as the introduction of minimum wage levels, and the protection of labour rights. Third, the theory leaves the door open to the subject of environmental protection.

In conclusion, Table 1 helps to compare and summarize the characteristics of New Developmentalism in comparison with the Classical developmentalist approach and the Orthodox Consensus². New

² For an extensive comparison of the three approaches, see Bresser-Pereira (2010).

Developmentalism is often critical of conventional orthodoxy and provides a refreshing point of view compared with Classical Developmentalism. It recognizes that developing countries suffer from fundamental, structural afflictions, whose complexity is only deepened and intensified by the challenges of the 21st century, such as the climate crisis, and brings the state back at the centre of the development discourse in order to address them. Especially, the new developmental state approach recognizes that the development of a country encompasses more than the simple economic aspect, in fact it already contains provisions of social redistribution and equality; it is now the time to incorporate ecological priorities into the picture. The next section will explore the role of the New Developmental State in the socio-ecological transformation.

Table 1: Classical Developmentalism, Conventional Orthodoxy and New Developmentalism compared.

	Classical Developmentalism	Conventional Orthodoxy	New Developmentalism
Approach	State-led development coordination to correct market failures	Market coordination to avoid state failures	Strong state that enables a strong market
Role of the state	Strong centralized authoritarian state	As little state as possible	A cohesive nation - state that leads the developmental strategy
Economic policy	Industrial policy, protectionism, import substitution industrialization	Growth with foreign savings, privatization, openness to the global market	Export-led growth, equilibrium exchange rate, neutralization of Dutch disease
Social cohesion	Shared and equitable growth	Marketization and privatization of social services	Social developmentalism and reduction of inequalities
Main Actors	Central bureaucracy and national business groups	Market actors, businesses, multinational enterprises	Developmental coalition and reformed, well-functioning institutions
Financial Markets	Limited and regulated	Open and globalized	Regulated if necessary, to get the prices right
Basic unit of analysis	Community and nation state	Individual	Community and nation state

3. The State and the Socio-Ecological Transformation

The concept of a sustainable transition or transformation is gaining increasing attention amongst scholars (Brand, 2016; Newell, 2020). Following this scholarship, it is argued here that the bulk of structural changes needed to achieve sustainable development can be enclosed under the umbrella of a socio-ecological transformation, a metamorphosis towards a more sustainable economic and social system that rests within the limits of a finite planet (Brand & Wissen, 2017). In particular, this framework should be tailored not only to the needs of advanced economies, but especially to developing and emerging countries, in order to inform their process of development, steering it in the direction of sustainable development.

3.1 The Socio-Ecological Transformation

The socio-ecological transformation embodies both the urgency of a fundamental systemic change and the direction towards which this shift should be directed (Schmitz, 2015), and involves economic, social and ecological aspects. According to Brand (2016, p. 3), “the debate about transformation can also be read as an attempt to better understand the positive examples and possibilities as well as unintended results of processes that lead to a more sustainable world, as well as the problems and obstacles along this path” and this sums up what will be discussed in this section. The transformation diverges from the proposal of a green economy, in so far as it rejects the growth imperative and the pre-eminence of the economic sphere that tend to obscure the values of social and environmental justice, equality, biodiversity, ecosystem protection and such, contained in the social and environmental pillars of sustainable development (Lederer, Bauer & Wallbott, 2018).

However, many questions arise such as what are the priorities, what are the features, who are the actors of a socio-ecological transformation? The theoretical configuration of the socio-ecological transformation presented here is composed of an ideational framework, a strategy and an agent.

First, from a theoretical point of view, the ideational framework of the socio-ecological transformation conceives abandoning the current economic development model, obsessed with endless growth, capital accumulation and profit maximization in favour of an ecological and sustainable economic model that puts the prosperity of the people and the planet at its centre (Jackson, 2009). More deeply at the social-behavioural level, transformation can be understood as change of mindset at a personal and collective level (Smith & Ely, 2015), a rejection of the consumeristic logics and dynamics that inform the Western culture of consumption. As long as capitalist society remains dependent on economic growth and consumption, greening growth using green technologies, energy

and means of production will remain a second-best solution to the environmental crisis (Eckersley, 2020b).

Second, one fundamental priority for the enactment of a socio-ecological transformation at the operational level is a coherent strategy to manage the change codified by the ideational framework. The first step to formulate a strategy is the establishment of planetary boundaries. Planetary boundaries are the limits of Earth's capacity to sustain human activities, both in terms of reproducing resources and absorb waste emissions (Daly, 1990). A very decisive contribution for the establishment of environmental limits was provided by Rockström, et al. (2009) who identified and measured nine planetary boundaries as the threshold of a safe operating space for humanity. On the same subject, the British economist Kate Raworth (2012) paired the limits of the nine planetary boundaries with twelve social needs to fulfil and proposed the model of the Doughnut Economy. Once the natural limits are clearly identified, measures can be implemented to keep human activities within those limits.

Third, although it may be argued that such an ambitious and unprecedented project of structural change, comparable to the First Industrial Revolution, was never planned or managed by one actor, but on the contrary, was the result of multiple concerted influences coming from a variety of different sources (Newell, 2015), it is attested that, in addition to an ideational framework and a strategy, a socio-ecological transformation requires an agent (Bahadur & Tanner, 2012; Lederer, Bauer & Wallbott, 2018). However, an agent is not intended to crowd out initiatives coming from below or exclude individual actions and civil society activities from the picture. The role of the agent is to coordinate all the inputs coming from different sources, which, if left unchecked, risk to create an unmanageable chaos and conflicting results. Thus, an effort of coordination is the only solution to harness the fundamental energies of society and redirect them towards the realization of the sustainable development's objectives.

Therefore, the next section will explore the role of the state and its potential as the agent of the socio-ecological transformation, using the lenses of critical international political economy and political ecology (Satgar, 2014; Eckersley, 2004).

3.2 The State as Agent of Transformation

The role of the state as an agent of change (Lederer, Bauer & Wallbott, 2018) and as a planner and promoter of development as it was for Kalecki (Berr, 2015) has been declining due to the surge of globalization, transnational forces and alternative forms of governance (Aronowitz & Bratsis, 2002).

However, section two extensively discussed the new developmental state theory and recent contributions proposed the advent of a green state, although largely applied to developed countries (Eckersley, 2004; Christoff, 2005; Duit, Feindt & Meadowcroft 2016).

The scope of this section is to establish that a new developmental state, already equipped to pursue economic and developmental objectives and embodying concerns for social issues is capable of incorporating and prioritizing a third environmental dimension and become the central agent of the socio-ecological transformation.

Despite the scepticism of political ecologists and environmental activists towards the often-detrimental role played by nation-states in environmental degradation and destruction (Eckersley, 2020a), it is almost impossible to imagine the realization of such a broad systemic change outside the state's sphere of influence and without its intervention; as Eckersley (2004, p. 5) recognized, "any green transformations of the present political order will, short of revolution, necessarily be state-dependent." Nevertheless, the fact that the state is presented as the leader of the socio-ecological transformation is not simply the result of a capitulation to its ineluctability. On the contrary, there are many factors that build up its potential to lead in the journey to sustainable development (Eckersley, 2004; Christoff, 2005; Meadowcroft, 2012; Williams, 2014; Harris-White, 2014; Johnstone & Newell, 2018).

First, capacity: the state is the single most powerful and far-reaching institution in the modern structure of society. State capacity lies not only in the legitimate use of force, but also in the power to issue regulations, redistribute resources, channel investments, and incentivize, influence and control other actors. In other words, the state is capable of changing the institutional and regulatory framework of the political economy that is currently reinforcing unsustainable production and consumption patterns and is able to enforce environmental regulations both on economic actors and private citizens. Moreover, the state is in possession of powerful economic weapons such as tax revenues. Taxation is an important instrument for redistribution of wealth and a disincentive for harmful and detrimental practices. Finally, states have the potential to become pioneers of innovation, channelling investments towards the most sustainable alternatives, thus leading by example the private sector (Mazzucato, 2015).

Second, responsibility: the climate crisis is an existential threat to humanity and the state is responsible for the protection and well-being of its citizens, therefore managing the socio-ecological transformation to achieve sustainable development falls within its core functions. According to Eckersley (2004, p. 12), "the state is (potentially) the most legitimate, and not just the most powerful,

social institution to assume the role of ‘public ecological trustee,’ protecting genuinely public goods such as life-support services, public amenity, public transport, and biodiversity.”

Third, organizational structure: the state apparatus and its bureaucracy are necessary to implement the strategy for the socio-ecological transformation at all levels and degrees. Moreover, the state is in the position to oversee the general picture and coordinate the single efforts of different actors that contribute to the realization of the strategy.

Fourth, speed and scope: the state is the only actor that can steer and manage such a wide and fundamental systemic change at the pace necessary to avoid the tipping point of the climate crisis and its worst irreversible consequences.

Finally, environmental issues are intrinsically transnational: the state as a national and international actor has an important role to play in the international community to foster environmental preservation and environmental justice not only within its borders but at the global level. Multilateral coalitions and binding treaties such as the Kyoto protocol or the Paris agreement, despite their limitations, have produced substantial positive results in raising the pressing issue of climate change and putting sustainable development at the centre of the international political landscape.

3.3 Potential Trade-offs

So far, the picture that has been presented seems to be flawless. However, it would be simplistic to consider the state as an almighty and benevolent entity that will easily solve all problems and make the socio-ecological transformation happen smoothly and effortlessly. On the contrary, many obstacles and setbacks are expected to arise in the process. The array of impediments may be clustered within two spheres, namely state capacity and commitment (Routley, 2014), or, using Vu’s classification (2007), developmental structures and developmental roles, to indicate respectively state’s capacity and political will. In other words, states might be willing, but not able to pursue the goal of transformation because it goes beyond their sphere of influence (Evans et al, 1985), or they might be able but not willing to take the lead of the transformation process because it does not serve their interests or the interests of parts of society.

We have implicitly assumed that “states conceived as organizations claiming control over territories and people may formulate and pursue goals that are not simply reflective of the demands or interests of social groups, classes, or society” (Evans et al., 1985, p. 9). However, states’ autonomy is constrained by the demands of social actors, such as social classes, interest groups, political parties, civil society organizations, and so on (Eckersley, 2004). The power of the state is to be examined in

relationship to the socioeconomic structure in which it is embedded (Evans et al., 1985). In other words, the state's involvement in the socio-ecological transformation and its success depends on the support of social agreement. Despite the urgency of the climate crisis, public opinion may be unresponsive to the call for sustainability and manifest other preferences and priorities. In addition to general agreement towards environmental objectives, the state is dependent upon the collaboration of a class coalition favourable to the proposed change. Otherwise, the transformation will be hindered by the opposition of a status quo coalition made of social forces—"agents of resistance"—who oppose changes that may be detrimental to their interests (Schmitz, 2015). In short, according to Koch, "the state is an object of agency of the 'relationship of forces' or socio-political coalition that creates and recreates it, and, at the same time, a powerful actor, whose policies shape a range of societal fields. To borrow from Bourdieu (2020, p. 118-119), it is 'structured' and 'structuring' at once." Consequently, the success of the socio-ecological transformation depends upon "an alliance of change agents" forming a wide coalition around the ideological element of the transformation to support the state in its endeavour (Winkler, 2020 p. 5).

Moving on in the analysis, obstacles to the socio-ecological transformation may arise from within the state's apparatus, as the state's bureaucracy may find it more convenient in the short run to postpone and downplay the ecological crisis rather than embarking in the complex and multifaceted structural change necessary to solve it (Eckersley, 2004). Moreover, conflicting interests may emerge among different fragments of the state's bureaucracy (Koch, 2020). The focus on short-term gains and political returns constitutes a great limitation to the state's ability to plan for the future and address long-run global challenges such as climate change (Görg et al., 2017).

Understanding the state as a complex web of intricate interactions of conflicting societal forces and power relations is a fundamental point of the Neo-Gramscian approach to international political economy (Brand, 2016). Following the Gramscian analysis, the state and its bureaucracy are part of the historical block that exercise hegemony, namely "power by persuasion" (Winkler, 2020, p. 3), projecting a set of ideas, values and interests. On the one hand, this hegemonic structure may oppose the transformation if it were to endanger its interests. On the other, a broad coalition that exercise hegemony in line with the principles of sustainability would be a powerful driver of change (Levy & Newell, 2002).

Among the limits to the state's ability to lead the socio-ecological transformation, the growth-oriented imperative that states pursue is identified as a structural impediment to the transformation (Koch, 2020). States are dependent on the growth-oriented logic of capital accumulation since it represents

the source of their revenues (Bailey, 2020). Growth is the oil that spins the wheels of the state apparatus. As a consequence, committing to the transformation might endanger their fiscal viability, in turn curtailing their capacity to channel the necessary investments to implement the strategy, and reach the point of threatening their very existence (Koch, 2020; Eckersley, 2020b). Following this argument deeper in the Marxist political economy critique, states are too embedded in the capitalistic structures of exploitation and capital accumulation and too prone to the interests of the capitalist class to be able to lead a structural reform of the capitalist society (Death, 2016). Namely, market forces have a disciplining power over state's actions and priorities. These interdependencies between state and capital conflicts with the objectives of the socio-ecological transformation that could only be enacted by social movements that rise to redefine state and capital (Eckersley, 2004).

Finally, a fundamental systemic change such as the socio-ecological transformation, is doomed to produce winners and losers and trade-offs will arise when it risks to worsen existing inequalities or reduce opportunities for some groups of people. Particular attention to social justice and equality is necessary, but might not be enough to deliver a smooth and painless transformation.

Abandoning economic growth and shifting to a sustainable economic system within the limits of the planet is bound to be a tremendously difficult endeavour. Resistance to transformative change, opposing coalitions, failures and setbacks must be contemplated. Controversial trade-offs will have to be confronted by the state and its supporters but, given the pressing exacerbation of the climate emergency and the urgency to deliver sustainable development, we do not have the luxury to adopt a hesitant approach.

The following section will focus the attention on developmental states' attempts to design and implement strategies for the socio-ecological transformation.

4. Lessons from Selected Developmental States

On the basis of the foregoing considerations on new developmental state theory and the pillars of the socio-ecological transformation, this section will explore the practice of the new developmental state and its potential to bring about the socio-ecological transformation of societies and economic systems. In particular, this section will draw lessons from two countries that can be considered the most accomplished examples of the application of the new developmental state theory.

After two decades of neoliberal policies and financial instability, at the onset of the 2000s both Argentina and Brazil elected two left-wing governments, the former guided by the social democrat

Néstor Kirchner, while the latter by the socialist Luiz Ignacio Lula da Silva. The political turn to the left meant the resurrection of the developmental state, revived and cleared from the misguided associations with populism. However, the developmental state designed by the so called “New Nationalist Left” governments was different from the classic developmental state of the Golden Age of Capitalism in a number of aspects that relate to the changing internal and international economic and political conditions that were explored in section two. Notably, these democratic governments attempted to follow the New Developmentalist prescription to establish a new developmental and social state, expanding the original sphere of influence of the classic developmental state to include concerns for poverty, inequality and redistribution (Bresser-Pereira & Theuer, 2012).

At the turn of the Millennium both Argentina and Brazil experienced a social democratic political spell that put them on the path of New Developmentalism. Assuming their political commitment to the social and economic spheres of development, it is time to turn to the third sphere and explore the environmental policies for sustainability that they envisioned for the respective countries and to what extent they succeeded in implementing them.

4.1 Brazil

The example of President Lula in Brazil is exceptionally powerful, as he built a wide coalition in support of his development strategy. He started from a strong base of workers and trade unions, which later expanded to include industrial actors, social leaders and the state’s bureaucracy. This coalition supported his policies and those of his successor Dilma Rousseff for over a decade (Bresser-Pereira & Theuer, 2012).

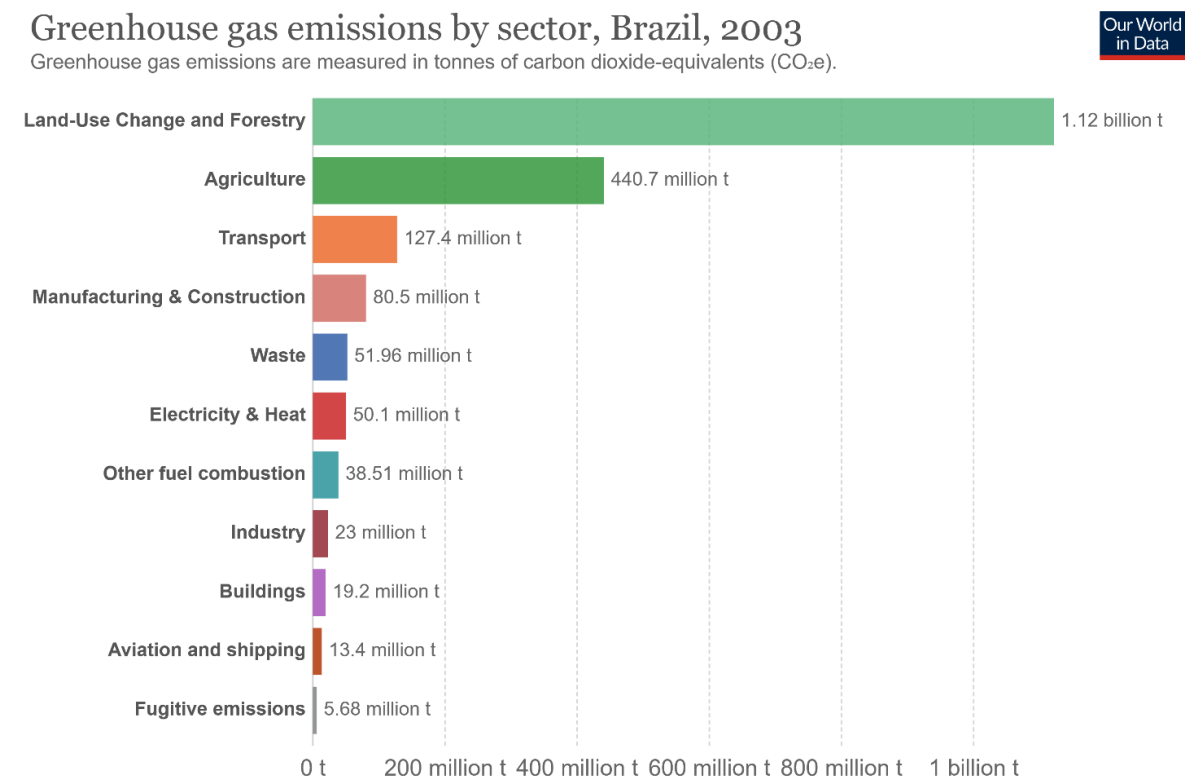
Lula’s presidency started off facing an inevitable trade-off between on the one hand, its developmental objectives and social policies rooted in economic growth fuelled by commodity exports, infrastructure projects and extraction of natural resources, while on the other, the protection of the country’s vast biodiversity endowment, the reduction of greenhouse gas emissions and the necessity to tackle the escalating problem of deforestation. However, the premises of Lula’s administration were promising. The President signalled his attention to sustainability issues by appointing senator Marina Silva, a well renowned socio-environmentalist, as Minister of the Environment (De Castro, 2014).

She reformed the bureaucratic apparatus of the ministry, establishing collaborative ties with environmental activists and rural leaders (De Castro, 2014), and immediately began to tackle deforestation, which was reaching skyrocketing rates at the time (Hochstetler, 2017). Without wasting any time, in 2004 the Plan of Action for the Prevention and Control of Deforestation in Legal Amazon

was approved, while in 2006 the Public Forest Management Law for the sustainable management and conservation of public forests came into force, showing the government's commitment to control and reduce deforestation, whose rates started to decrease at the lowest historical levels in the following years (Held et al., 2012; Hochstetler, 2017; Pereira et al., 2019). Moreover, the National System of Protected Areas was expanded and a great number of indigenous lands and ethnic territories were granted the status of sustainable conservation units, favouring the recognition and social inclusion of indigenous communities and at the same time advancing the environmental protection agenda (De Castro, 2014).

At this point, it is important to spend a few words on the impact of deforestation. The Amazon can be considered Brazil's greatest treasure, but also its most fragile. In the early 2000s, the greatest ecological threat for Brazil and possibly for the rest of the world was the escalating rate of deforestation, which could be attributed at the policy level to the poor management of the Amazon forest and the prioritization of economic objectives over environmental protection, while market forces pushed for the expansion of agricultural and pasture lands, the implementation of construction projects and the extraction of natural resources. As Figure 2 shows, deforestation was the primary cause of greenhouse gas emissions in 2003 accounting for more than 1 billion tons. Brazil's sectoral emissions' composition is quite unusual compared to other large emitters like China, India and South Africa, whose emissions derive mainly from the energy sector (Held et al., 2012).

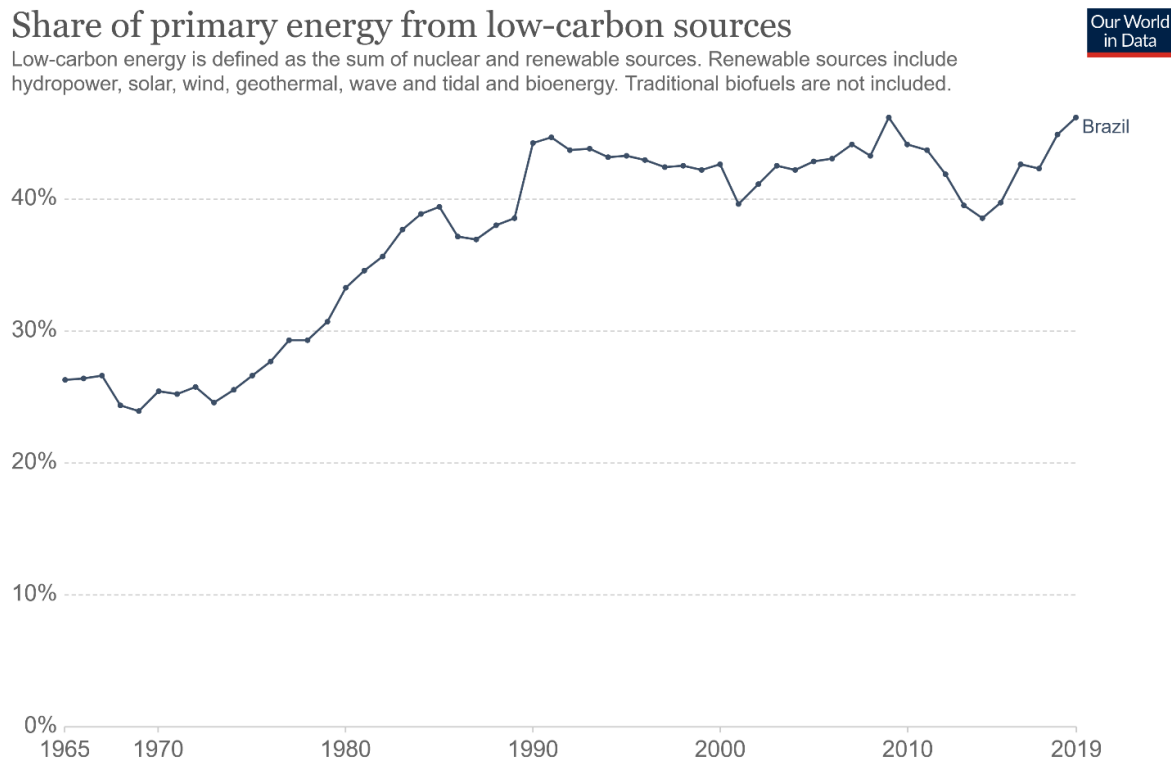
Figure 2: Greenhouse gas emissions by sector – Brazil.



Source: CAIT Climate Data Explorer via. Climate Watch, OurWorldInData.org/co2-and-other-greenhouse-gas-emissions

On the contrary, as it can be seen in Figure 3 in Brazil energy derived from nuclear and renewable sources accounted for more than 40% in 2003. This explains the relatively low contribution of greenhouse gas emissions issued from the energy sector. Given the characteristic low-carbon intensity of the energy sector in Brazil, one might think that the country was already well advanced in the production of renewable energy and once the escalating deforestation had been brought under control, Lula's environmental policy could be deemed successful. However, the picture becomes slightly more complex looking closely at the sources of renewable energy. In fact, around 35% of Brazil's energy derives from hydroelectric powerplants, and the country has a longstanding tradition in this sector that dates back to end of the 19th century (Held et al., 2012). Moreover, the country has been a leading pioneer in the use of biofuels, in particular ethanol derived from sugar cane, since the 1930s (Held et al., 2012). Therefore, given the increasing demand for electricity following the energy crisis in 2001-2002, Lula pledged to expand renewable energy production focusing on hydroelectric and biofuels (De Castro, 2014). In order to do so, he sponsored large scale infrastructure projects to build hydroelectric powerplants in the Amazon Basin and promoted the increase in ethanol production both for internal use and for exports, leading Brazil to become the second largest producer and the world single largest exporter of renewable fuels (De Castro, 2014).

Figure 3: Share of primary energy from renewable energy sources – Brazil.



Source: Our World in Data, <https://ourworldindata.org/grapher/renewable-share-energy>

Needless to say, both policies were deemed to pose an existential threat for the Amazon forest. The former presented socio-ecological externalities deriving from the building of large dams that were going to disrupt the functioning of millenary ecosystems, cost thousands of hectares in terms of deforestation and impact the lives and livelihoods of indigenous communities. Undoubtedly, the unsustainability of these large-scale projects created tensions between the Presidency and the Ministry of the Environment that was in charge of the Environmental Impact Assessment for the planning, construction and operation stages of the project (Hochstetler, 2017). The latter, the expansion of biofuels, may seem rather harmless, however, it must be taken into consideration that the large amounts of biomasses required to produce ethanol derived mainly from monocultures of sugarcane and soybeans. The rapid expansion of these monocultures produced a growing demand for arable land that led to a surge in deforestation. Moreover, monocultures, with the intense use of pesticides present a considerable threat for biodiversity, reduce soil fertility and consume massive amounts of water to be produced. In addition to that they require large plantations and expensive machineries to be profitable, therefore their expansion favours wealth concentration and the exploitation of seasonal workers (Sawyer, 2008).

These developments, combined with the exploitation of oil reserves discovered off the southern coast of the country exacerbated the tensions between the President and his Minister of the Environment during his second term in office, leading to the final resignation of Marina Silva in 2008. She was replaced by Carlos Minc who had a past as environmental activism, but was much more malleable than his predecessor and turned a blind eye, condoning the environmental licence for the construction of hydroelectric dams in the Amazon (Hochstetler, 2017).

Nevertheless, during Lula's time in office, Brazil showed an unprecedented proactivity in its first courageous attempt to address the challenge of climate change at the national and international level. In 2008, the Inter-ministerial Commission on Climate Change adopted the Brazilian National Plan for Climate Change, which was translated into the National Policy for Climate Change in 2009 (De Castro, 2014).

Despite declining responsibility for historical emissions and refraining from international commitment under the UNFCCC, the Plan contains seven main areas of intervention with targets that the country was set to achieve (Interministerial Committee on Climate Change, 2008):

1. Increase efficiency in the use of resources;
2. Keep Brazil's high share of renewable energies in the electric matrix;
3. Encourage the sustainable increase in the share of biofuels for national transportation and promote an international market of sustainable biofuels;
4. Reduce deforestation rates and eliminate illegal deforestation;
5. Eliminate the net loss of forest coverage by 2015;
6. Strengthen intersectoral actions to address the vulnerability of populations;
7. Assessment of environmental impacts and strategies for adaptation.

The first target concerning efficiency in the use of resources is quite timid with regards to specifics and offers vague encouragements and promises of improvements, such as a 20% increase in recycling and incentives for sustainable agriculture. Targets 2 and 3 focus on renewable energies and biofuels. The former contains a mere recollection of existing policies and targets for the expansion of hydropower plants and the use of biomasses such as sugarcane, while the latter encourages the use of ethanol and biodiesel. However, they both fail to address the elephant in the room, namely the impending conflict of interest between the expansion of these renewable energy sources and the threats they present for deforestation. Despite this, deforestation gains the spotlight in targets 4 and 5. In fact the Plan ambitiously aims to reduce by 40% the average deforestation in relation to the average rate of the years 1996-2005 and stimulate reforestation in degraded areas. Finally, target 6 addresses socio-environmental impacts of climate change on public health and education and

vulnerabilities to climate-related events, while target 7 refers to enhancing research for mitigation and adaptation to climate change. In conclusion, the National Plan for Climate Change is far from revolutionary and fails to establish ambitious unambiguous targets and innovative solutions for the many conflicting issues contributing to climate change. Nevertheless, it must be recognized as a first attempt in the history of Brazil to acknowledge the relevance of climate change and the necessity to address the subject at the highest political level and with a multidisciplinary approach.

In addition to that, Lula's government at the Conference of the Parties of the UNFCCC held in Copenhagen in 2009 pledged Brazil's first voluntary commitment to a 36-39% reduction of national Greenhouse gas emissions by 2020 compared to a projected baseline that was established by the 2009 National Policy for Climate Change (Gebara & Thuault, 2013). In addition to specific targets, the legislation identified specific actors to coordinate and carry out actions towards the realization of the objectives. For instance, the Brazilian Chief of Staff Office and the Interministerial Committee on Climate Change were identified as coordinators, the National Fund on Climate Change and the Amazon Fund were responsible for the financing, and several ministries were tasked with specific actions related to their competencies, including the Ministry of Science Technology and Innovation, the Ministry of Environment, the Ministry of Agriculture, the Ministry of Agrarian Development and the Ministry of International Relations (Gebara & Thuault, 2013). The internal and international commitments against climate change that characterized Lula's second term were consequences of the increasing awareness towards this issue. A coalition formed by the industries, the media and the general public had started to pressure the governments in favour of climate action. On the one hand, the media were pointing the attention towards global climate matters, fuelling the existing concerns of the general public (Hochstetler & Viola, 2012) for the frequency of severe weather events. Public awareness resulted in an unexpected turn at the 2010 Presidential Election, when candidate of the Green Party and former ministry of the Environment Marina Silva obtained a stunning 19% of votes in the first round against Lula's heir Dilma Rousseff and her opponent Jose Serra. Despite Rousseff's final victory, at that point it had been made crystal clear that environmental issues occupied a central place in Brazilian electors' preferences and thus they had earned their rightful place in the political agenda. On the other hand, business groups were already mobilizing in coalitions during Lula's presidency to support Brazil's climate action, pushing for a clear commitment to reduce emissions and deforestation. These industries in the exporting sectors thought that the development of a low-carbon economy in Brazil may increase their competitiveness vis-à-vis other emerging markets (Hochstetler & Viola, 2012). Indeed, the business community lent their support to Silva's candidacy (Held et al., 2012).

Unfortunately, Dilma Rousseff's Presidency did not reflect this widespread support of her country for an ecological agenda. On the contrary, her term in office was characterized by fundamental setbacks on environmental issues and the prioritization of economic objectives. Her choice of Minister of the Environment fell on a loyal and expert civil servant with previous experiences at the Ministry of the Environment and a PhD in Energy Planning, Isabella Texeira, who was aligned with Rousseff's political line (Hochstetler, 2017). The first point on the environmental agenda when Rousseff took office was the long overdue revision of the Forest Act, which was hijacked in Congress by a conservative coalition that pushed for a more relaxed control of deforestation, weakened provisions for sustainable forest management and the reduction of protected areas (Hochstetler & Viola, 2012; De Castro, 2014). Despite the presidential veto, the revision was approved and the downward trend of deforestation rates came to a halt (Hochstetler, 2017). Moreover, Rousseff pushed forward the project started under Lula's presidency for the construction of the Belo Monte Dam in the Amazon. That decision entailed a very high environmental and social cost, in terms of destruction of protected areas, violations of human and indigenous rights and social conflicts (De Castro, 2014). Finally, Dilma Rousseff's presidency was defined by the prioritization of a developmental model that ignores the environmental costs of its success.

In conclusion, despite Lula's efforts in environmental protection and his proactive and progressive agenda the core development model of the country remained a traditional resource-intensive model of accumulation, whose objectives frequently crashed with ecological concerns. Despite the public support for climate action, the inability to recognize and address the fundamental trade-offs arising among developmental projects and environmental priorities is the result of a systematic failure to design and integrate a comprehensive socio-ecological strategy for transformation in the framework of the developmental state at the earliest stages of planning and at the highest political level. Therefore, the new developmental state in Brazil cannot be considered a successful agent for the socio-ecological transformation.

4.2 Argentina

The presidential couple of Néstor and Cristina Kirchner took over an economically-depressed Argentina after the financial crisis and attempted to resurrect it during their two mandates (Néstor Kirchner was President from 2003 to 2007, while his wife served as President of Argentina from 2007 to 2015). Their strategy included forging a new social contract at the benefit of the poor, the working and the middle-class and welcoming trade unions into their coalition without alienating business groups, which benefited from an industrial policy of subsidies, tax breaks and sponsored credit (Wylde, 2018).

The analysis of Argentina's new developmental state in the domain of environmental and sustainability policy during the Kirchners' presidencies started on a note that does not point towards the centrality of environmental policy in the presidential agenda. In fact, in 2003, the government of Argentina did not even have a stand-alone Ministry of Environment, while environmental policies were managed by a secretariat attached to the Ministry of Health. Furthermore, the backbone of environmental regulation was just being formed, with the ratification in 2002 of the General Environmental Law, that set the principles of national environmental policy and defined the minimum budget to ensure the protection of the environment (Gutiérrez & Isuani, 2013). In this scenario, the weakness of the secretariat, its lack of bureaucratic apparatus, budget, sanctioning power and autonomy were representative of the low priority that environmental concerns occupied in President Kirchner's agenda. Only in 2006 did the President place the secretariat under the direct authority of the Office of the Head of the Cabinet of Ministries, following a controversial case of socio-environmental conflict over the construction of cellulose pulp-mills along the Uruguay river that made the national headlines and attracted huge attention on environmental issues (Erbiti, 2016).

The conflict originated by the decision of Uruguay to permit the construction of two plants for the production of cellulose along the Uruguay river, just across the border with the Argentine city of Gualaguaychu, with the implicit blessing of Kirchner's government. As a consequence, local environmental groups started raising their concerns for the negative environmental externalities, the pollution of the river and the dangers for biodiversity. As the issue gained attention, environmental protesters started to block the international bridge across the Uruguay River causing disruptions for the transportation and tourism industries. Pressure from civil society, environmental activists and national media forced President Kirchner, who had previously been acquiescent about the potentially negative environmental externalities that the pulp-mill could generate, to take the matter in his own hands, dragging Uruguay in front of the International Court of Justice, who recognized Uruguay's responsibility for any environmental damage caused by the pulp mill (Gutiérrez & Almeida, 2011).

More broadly, the environmental challenges faced by Argentina under the presidencies of Néstor and Cristina Kirchner ranged from deforestation to water contamination and soil erosion often linked to the negative externalities produced by the mining industry (Reboratti, 2012).

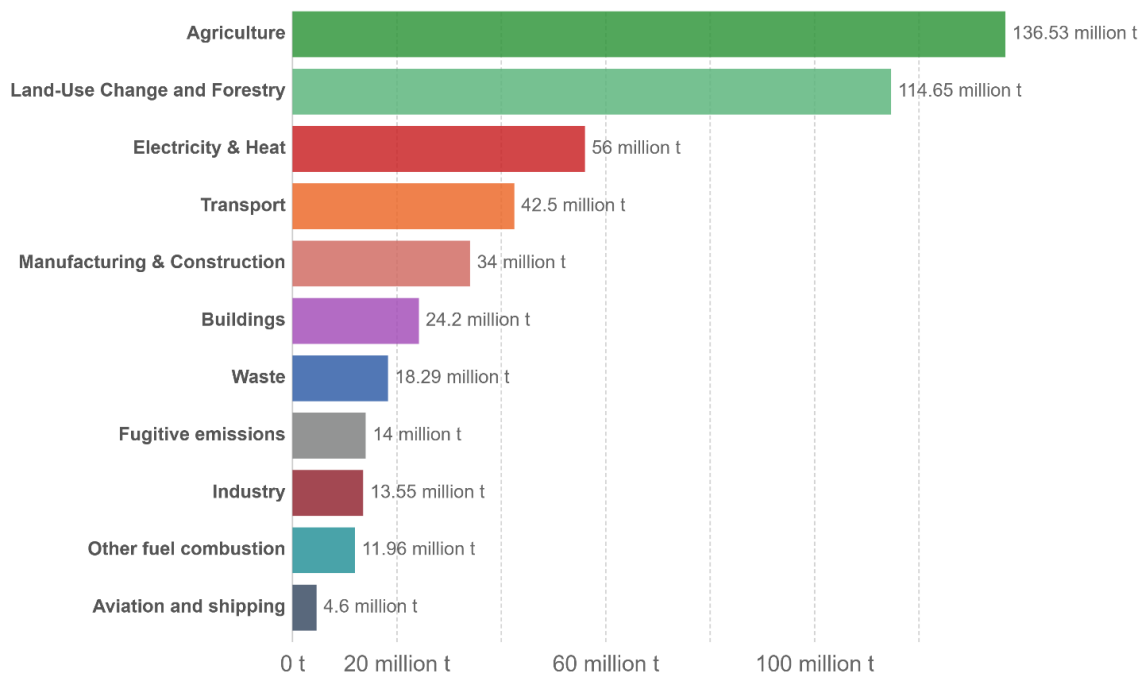
Some of the most controversial issues in environmental policy and also some of the greatest environmental threats revolved around the issue of mining policy. The country is rich in copper, gold, silver, lead and aluminium and the extraction of these materials is regulated at the national level. President Kirchner, at the beginning of his mandate guaranteed the support of his government to the mining industry and dispensed additional incentives to attract foreign investments despite the

opposition of environmental groups to large scale-mining (Cisneros, 2020). However, Argentine provinces were granted ownership rights over their natural resources by the Constitutional reform in 1994 (Reboratti, 2012) and thus they are entitled to issue permits and bans for the extraction of minerals. Therefore, the environmental organizations started campaigning for the banning of mining permits at the provincial level, succeeding to ban mining in eight provinces out of twenty-three (Cisneros, 2020). At the national level, attempts to introduce reforms of the mining code to prevent large-scale mining and protect glacier and peri-glacier ecosystems were halted, first in 2006 in Congress by the presidential party, and later on, in 2008, by the presidential veto of Cristina Kirchner (Cisneros, 2020). Despite these setbacks, continued pressure from environmental organizations both at the provincial and national level led to the approval of the Glaciers Protection Act in 2010, aiming at forbidding extraction activities in the proximity of glacial and periglacial areas, to maintain freshwater reserves and protect biodiversity, given the importance of glaciers in the Argentine ecosystem (Khadim, 2016; Broad & Fischer-Mackey, 2017). Although the Glacier Protection Act faced issues of implementation and resistance from the provinces, it can be considered a step forward in the restriction of large-scale mining in the face of environmental risks. However, it cannot be attributed to the government's initiative, since it is the result of a strong grassroots pressure on the national and provincial governments. President Christina Kirchner's position can be defined as reluctant at best regarding the necessity to prevent the environmental externalities of the mining industry, in light of her use of the veto power in 2008 justified with concerns for economic development.

Figure 4: Greenhouse gas emissions by sector – Argentina.

Greenhouse gas emissions by sector, Argentina, 2007

Greenhouse gas emissions are measured in tonnes of carbon dioxide-equivalents (CO₂e).

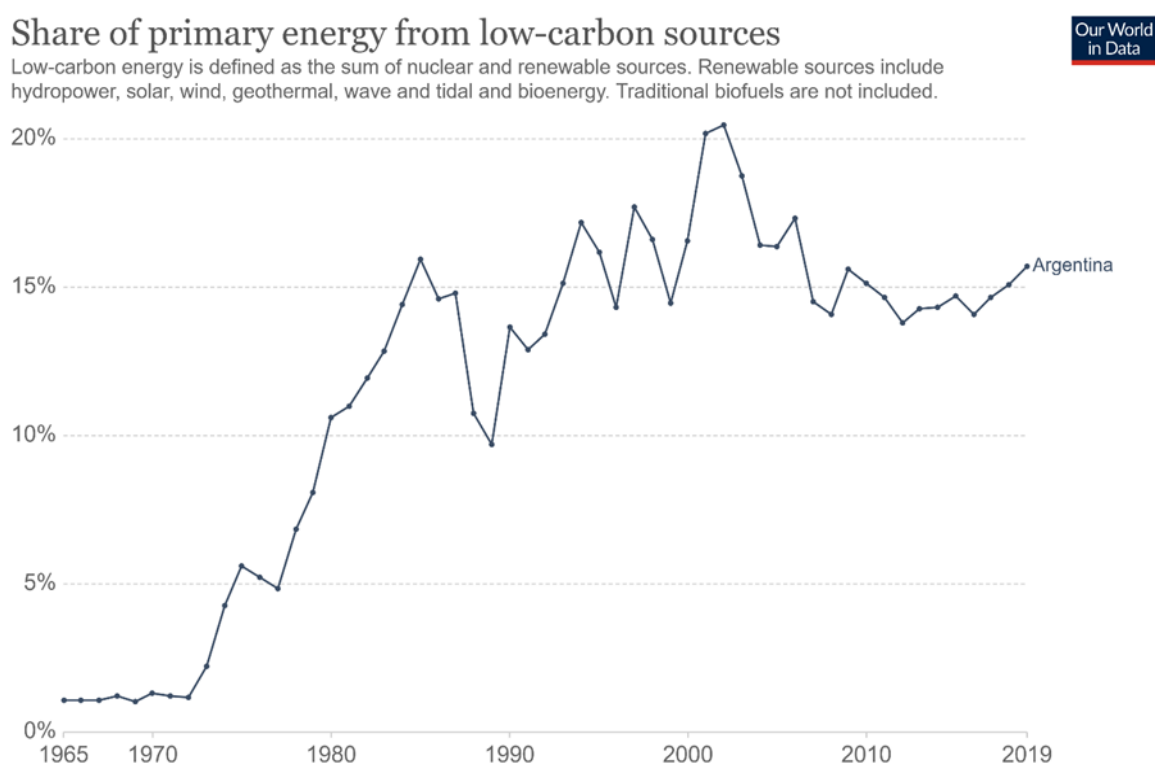


Source: CAIT Climate Data Explorer via. Climate Watch, OurWorldInData.org/co2-and-other-greenhouse-gas-emissions

Another concerning ecological threat that the country is facing is the issue of deforestation. Similar to the analysis conducted for Brazil, it can be seen in Figure 4 that in 2007 deforestation was the second largest source of greenhouse gas emissions, just behind the agricultural sector, whose expansion can be considered one of the hidden drivers of forests destruction. In order to address this issue, in 2007, a National Forest Law was introduced to regulate the uncontrolled expansion of agriculture and protect native forests. According to the law, provinces were tasked with the realization of Land Use Planning measures that classified native forests in three categories according to their conservational value (Volante & Seghezzo, 2018). Provinces were also responsible for the creation of enforcement agencies (Milmanda & Garay, 2020). Notably, the project for the law was not presented in Congress as a governmental initiative. Representatives from the Chaco province, which is the richest in native forest area, managed to weaken its enforcement and sanctioning mechanisms (Milmanda & Garay, 2020). Given the array of aspects left to the provinces for the implementation of the National Forest Law, it proved to be only as effective in reducing deforestation as provincial governments allowed it to be. In general, the law proved highly ineffective in reversing both legal and illegal deforestation trends and agricultural interests were prioritized by provinces when applying the national regulation.

Moving on from forest management, another pitfall in Argentine environmental and climate policy relates to the issue of energy sources. In fact, according to Figure 4 electricity and heat are the country's third factor of contribution to greenhouse gas emissions, accounting for more than 50 billion tons in 2007, while the share of energy coming from nuclear and renewable sources dropped from more than 20% in 2002 to less than 15% in 2007, as it is visible in Figure 5 In the energy mix of the country, natural gas and petroleum account for more than 85% and show an upward trend, due to the national endowment of natural gas reserves (Guzowski & Recalde, 2008). In light of the increasing demand for electricity, President Néstor Kirchner addressed the matter of renewable energy stating by law, in 2007, the relevance of low-carbon electricity production as an issue of national interest and introducing economic incentives to stimulate wind and solar energy production and biofuels (Pischke et al. 2019). In 2009, a National Decree implemented a law dating back to 2006 that put in place a feed-in tariffs system of long-term contracts offering premium payments to renewable energy producers.

Figure 5: Share of primary energy from renewable energy sources – Argentina.



Source: Our World in Data, <https://ourworldindata.org/grapher/renewable-share-energy>

The system was designed to stimulate investments in wind, solar, geothermal hydropower, biomasses and biogas energy generators, reducing the initial investment risks for producers. Regrettably, the evidence shows that the project did not result in a spike of renewable energy production, possibly due to the low prices offered by the contracts that failed to cover the costs of production, while the premium price was granted on top of the electricity price instead of a fixed payment (Jacobs et al. 2013).

In short, Argentina possesses a huge capacity for the development of renewable energy production and indisputably the government is responsible for stimulating the realization of this untapped potential. It can be concluded that the Kirchners' administrations were timid in their policy initiatives to accelerate investments in renewable energies, especially in light of the country's increasing demand.

More broadly, the government of Argentina under President Néstor Kirchner and President Cristina Kirchner showed little evidence of prioritizing ecological concerns in their agenda for development. In reaction to the government's disregard for ecological concerns, civil society initiatives and environmental groups have flourished in Argentina and have been fighting for environmental rights (Reboratti, 2012). A lesson to be learned in this case is that the Argentine government missed the opportunity to take advantage of civil society's support to pass innovative and courageous ecological policies against the pressures of business groups and the more conservative governors of the provinces.

For a final comparison, it can be noted that neither Argentina's nor Brazil's new developmental state produced a comprehensive strategy for ecological transformation, although in the case of Brazil it can be recognized that ecological issues and climate change policy enjoyed a certain dynamism, especially during Lula's presidency. As far as Argentina is concerned, developmental objectives constantly prevailed over environmental concerns and the institutional arrangements between the national government and the provinces reduced the state's capacity to enforce environmental regulations at the national level.

These insights from the new developmental experience in Argentina and Brazil reveal that, despite political goodwill, the policy trade-offs between environmental protection and developmental objectives make it difficult to foster an ecological agenda. Further barriers include the existence of social forces opposed to the agenda, the weakness of the coalition's support or other obstacles in the implementation. For this reason, the most effective course of action is to prioritize the dimension of sustainability from the earliest stages of planning and to address the trade-offs between developmental and environmental objectives, giving the priority to the precautionary principle of environmental

protection over economic considerations. Moreover, a very important lesson to be learned for the resolution of these trade-offs would be to recognize the ecological capacity of the national territory and set strict national thresholds that signal the maximum limit to the exploitation of resources for economic objectives. Once the natural boundaries are established, the design of a comprehensive strategy for the socio-ecological transformation at the national level works both as a guideline and as a political pledge for the implementation of the necessary policies to put the country on the direction of sustainable development.

5. Conclusion

The contributions offered in this paper can be divided into two main spheres. On the one hand, the results of the theoretical analysis contributed to shed light on the features of the 21st century new developmental state, determining its solid macroeconomic basis, its attention for inequality and redistribution, and its openness to the integration of ecological concerns, which complement its existing vision of development as a mix of macroeconomic stability, shared prosperity and wellbeing. As it was discussed in section three, the call to accomplish sustainable development can only be answered by the realization of a comprehensive socio-ecological transformation of the economic and social systems, whose management, short of a revolution, will be the responsibility of the state and its institutions. On the other hand, the qualitative analysis of the countries case studies provided an overview of the most pressing ecological challenges and the frequent trade-offs arising among the clashing goals of development and environmental protection. More often than not, developmental and economic objectives tend to prevail. In most cases, the failure can be attributed to the lack of strict boundaries for economic activity and to the inadequacy of strategic planning.

In summary, the answer to the question guiding this examination is conclusive from a theoretical point of view, since it has been discussed that the new developmental state possesses both the capacity and the basic social and economic principles to act as a driver of change. Nonetheless, the case studies showed that the socio-ecological transformation does not feature among the priorities of the new developmental state, thus, its potential to bridge the gap between development and ecological concerns both in theory and policy-making remains unfulfilled.

Ultimately, this paper was limited to the exploration of the potential of the developmental state, and it did not take into consideration the form of government or other political features that might affect the implementation of the socio-ecological transformation. For instance, a comparison between a democratic and an authoritarian developmental state might be the subject of future investigations.

In conclusion, the new developmental state theory is considered a very promising alternative theory of development that could fill the gap in the literature between development planning and sustainability. Finally, the socio-ecological transformation is far from being integrated in the political agenda of new developmental states despite the severity of the climate crisis, but the positive signs of political willingness and societal mobilization can constitute a promising starting point for future improvements.

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Imprint

Editors:

Sigrid Betzelt, Eckhard Hein (lead editor), Martina Metzger, Martina Sproll, Christina Teipen, Markus Wissen, Jennifer Pédussel Wu, Reingard Zimmer

ISSN 1869-6406

Printed by
HWR Berlin

Berlin September 2022