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Imaginaries of Soy and the Costs of Commodity-led Development: Reflections from Argentina

Maria Eugenia Giraudo  and Jean Grugel 

ABSTRACT

Many developing countries continue to rely on export-oriented growth strategies based on primary commodities, despite the many limitations of such policies. The persistence of this model is inherently related to the dominance of ‘commodity imaginaries’. This article focuses on Argentina, an emblematic case of commodity dependency, where the soybean imaginary has dominated for the past 30 years. This imaginary has framed mainstream understandings of Argentina’s path to growth and progress, shaped political contestation and ensured that a particular understanding of science and technology sits at the centre of the meaning of national development. In the process, it has transformed the country’s geography in ways that normalize soy’s dominance and invisibilize people and places located at the margins of the imaginary. The soybean imaginary renders a deeply political project of economic growth as ‘common sense’. This article concludes that closer attention to the way national development projects are shaped, consciously and unconsciously, by commodity imaginaries could help explain the puzzle of how national governments can become locked into development choices that are environmentally unsustainable and that reproduce inequalities.

INTRODUCTION

Blessed is Argentina, as it is not only privileged by nature, which has generously poured wide ranging and abundant climates, soils and water capable of entirely satisfying [the country’s] food necessities and exporting them to the world, but also because it is a place chosen by men and women of many nationalities, who have brought to the country their experiences, their work ethics and desires of self-improvement, their customs and eating habits.

Scheinkerman de Obschatko (2013: 76)

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The quasi-biblical comments quoted above, penned by a researcher at the Inter-American Institute of Agricultural Cooperation (IICA), capture the strength and endurance of the commodity imaginary in Argentina. Agricultural economist Scheinkerman de Obschatko (2013) presents Argentina's contemporary agricultural export model in static and unchanging terms; it is less of a political-economic choice and more a preordained destiny. Argentina's agricultural capacity is a blessing that the country should not, and cannot afford to, ignore. Its countryside is the source of economic growth and the key to national progress and well-being. A more critical reading of these comments, however, suggests what Bridge (2001: 2149) calls 'resource triumphalism', that is, a belief in the inexhaustibility of the natural resources of a country — and the Earth — and in the pervasive practices of production, consumption and waste associated with post-industrialism.

The fields of development studies, environmental studies and international political economy (IPE) have, from different perspectives, pointed to the limitations of natural resource exploitation and primary commodity production, ranging from environmental damage (Pengue, 2005) to the deepening of social inequalities (Bebbington, 1999; Giarracca and Teubal, 2005; Otero and Lapegna, 2016), and to the genocide of ethnic groups (Dunlap, 2021; Riofrancos, 2019). However, resource dependency in the local spaces of resource production — or the 'provisioning spaces' (Bridge, 2001: 2153) in the so-called developing world — has nevertheless persisted over time. This raises the question: why are developing countries continuing to actively pursue resource-dependent models of development, despite the multidimensional costs and limited prospects for stable, long-term, inclusive and job-creating growth?

This article argues that part of the answer lies in the endurance of embedded ideas generated over time about what produces economic growth and what the national economy *should* look like. If these ideas become dominant, they can render invisible the adverse impacts of an expansive, natural resource-intensive model. Taking the emblematic case of Argentina, we show how a historically stable *imaginary* of commodity production naturalized the idea of an economy built around soy production and centred it within mainstream concepts of national identity. In turn, this has legitimized the marginalization of swathes of the population, minimized environmental damage, shaped policy and politics and determined what type of socio-technical knowledge is valued. Despite all the costs associated with it, soy has come to be synonymous with national economic development.

There is a rich literature that has explored the transformations and impacts of soybean production in Argentina (and in Latin America), from a variety of disciplines and perspectives. A burgeoning scholarship, from anthropology, political ecology, political economy and sociology, provides insights into the power dynamics that underpin the expansion of soybean production in Latin America (see, for example, Gordillo, 2019; Gras and Hernández, 2013;

Hetherington, 2020; Lapegna, 2016b; Leguizamón, 2020; Oliveira and Hecht, 2016). Giarracca (2017) explores the historical dynamics that transformed Argentine agriculture into an agribusiness and how soybean emerged at the core of these changes. This article complements and contributes to this exciting and growing literature by addressing the ways in which ideas about progress, development and commodity production have endured despite the marginalization and destruction that have resulted from Argentina's dependence on soybean.

Developmental choices which are made by political and socio-economic elites but normalized more widely in society, can be understood as *imaginaries*. This framing, rather than the more established lens of market or productivist logics, invites a focus on the persistence of resource dependency as a consequence of a wide-ranging mix of ideas that foreground commodity production not only as inevitable but also as an integral part of the nation itself. Imaginaries thus influence national economic decisions and practices through a matrix of historical, geographical, social and cultural symbols and practices. In the case of Argentina, the soybean imaginary promotes the idea that 'successful' national development means the production of food and other raw goods for export, supported by the availability of 'cheap labour' and 'cheap nature'; at the same time, it excludes any discussion of other development options (Patel and Moore, 2018). The multidimensional costs of this imaginary, which we explore in this article, become relegated to secondary considerations within national politics and are removed from the agenda of mainstream policy making.

This article commences with the justification of the case study and methodology and explains the significance of the 'imaginary' in terms of understanding the multidimensional and comprehensive development consequences of commodity production. The analysis builds on the scholarly literature on social imaginaries and political economy to provide a more complete explanation of commodity dependence. It provides a brief historical overview of commodity imaginaries in Argentina and then delineates the contemporary soybean imaginary. It concludes with an analysis of the environmental, epistemological, political and social costs of the soybean imaginary.

CASE STUDY AND METHODOLOGY

Identifying the significance of commodity imaginaries necessitates drawing together concepts from cultural studies and the political economy of development. Informed by these perspectives, which are discussed in detail below, this article deploys a qualitative analysis to identify the ideational, symbolic and discursive elements that together constitute the commodity imaginary in Argentina and explores how these complex matrices shape development. This approach allows us to examine the processes and consequences that

result from social interactions and to identify the role of ideas in policies, institutions and everyday practices (Flick et al., 2004).

This research is based on a single country case study analysis, which is particularly useful for developing theoretical concepts that bring together material and ideational aspects (George and Bennet, 2005: 9). A national case study permits an in-depth analysis of the economic, historical, political and social factors that are at play in the creation and reproduction of imaginaries of development, and of the complex web of actors that are engaged in its consolidation. We have selected Argentina as our case study because of its emblematic role as a producer of commodities from the early 20th century onwards; as such, Argentina has been an important reference point in debates around commodity production and export-oriented development (Féliz, 2012; Richardson, 2009). A key puzzle in Argentine development is why, despite attempts to diversify the economy, the country remains dependent on agricultural production (Rock, 2002). A further justification for selecting this case is that it contributes to addressing an imbalance in recent debates on extractivism in Latin America which have tended to focus on the Andean region and to explore mining extraction or the production of gas and other forms of energy (Arsel et al., 2019; Bebbington and Humphreys Bebbington, 2018). An in-depth case study of Argentina and the soybean industry complements and extends that literature.

In addition to conceptual work, this analysis relies on semi-structured interviews conducted in Buenos Aires and Rosario, Argentina, from September to December 2014, and between March and April 2019. The interviewees come from four different sectors: academic and research institutions, agro-industry lobby groups, government departments and NGOs dedicated to environmental issues (see Figure 1 and Table 1). Research was complemented by observational and statistical data, the latter drawn from national and international organizations and newspaper articles. Before embarking on the second period of fieldwork, we presented the research, preliminary findings and plans at a workshop with Argentine researchers¹ in March 2019 at the Universidad Torcuato di Tella in Buenos Aires.

UNDERSTANDING THE EMBEDDEDNESS OF EXPORT-LED DEVELOPMENT: COMMODITY IMAGINARIES

Scholars have studied extensively the limitations of commodity production for development. In the late 1940s, Raúl Prebisch (1949) as well as economists at the Economic Commission for Latin America and the Caribbean (ECLAC) pointed to the asymmetric structure of the international

1. In July 2019, preliminary results were also presented to an interdisciplinary group of scholars from a wide range of institutions at the University of York, UK. See: www.york.ac.uk/igdc/events/natural-resources-workshop-2019/

Figure 1. Interviewees by Sector

<p>National Government</p> <ul style="list-style-type: none"> - Ministry of Agriculture, Livestock, Fishing and Food (2009–15) - Secretariat of Agribusiness (2018–19) <p>NGOs</p> <ul style="list-style-type: none"> - The Nature Conservancy - Wetlands International, Argentina <p>Research and Higher Education Institutions</p> <ul style="list-style-type: none"> - University of Buenos Aires (UBA) - National University of Rosario (UNR) <p>Agribusiness, Lobby Groups and Industry Unions</p> <ul style="list-style-type: none"> - ACSOJA – Association of the Argentine Soybean Chain - CIARA – Chamber of Oil Industry of Argentina - Nidera Seeds – Transnational company producing, trading and marketing agricultural products. Acquired by COFCO in 2017 and later by Syngenta in 2018. - Grupo Los Grobo – Agribusiness and investment company.
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Note: The government agency responsible for agricultural issues has changed several times. Between 1981 and 2019, the following agencies addressed agricultural issues: Secretariat of Agriculture and Livestock, under the Ministry of Economy (1981–2008) and Ministry of Production (2008–09); Ministry of Agriculture, Livestock, Fishing and Food (2009–15); Ministry of Agribusiness (2015–18); and Secretariat of Agribusiness under the Ministry of Production (2018–19).

trade system, and the deterioration of terms of trade associated with commodity exports. Several decades later, dependency school scholars, most notably Cardoso and Faletto (1979), argued that Latin America's role as a commodity supplier not only prevented equitable development, but actively ensured its continued *underdevelopment*, as other economies expanded because their industrialization benefited from the relatively low value of raw materials produced in the region. Other approaches, such as the resource curse or those of the institutionalist IPE, have looked in more depth at the institutional conditions and material interests that perpetuate commodity dependence and its negative impacts on development (see, for example, Johnson, 1999; Rosser, 2006).

However, although IPE has produced rich studies of resource dependency and theorized its development limitations (Nem Singh, 2010, 2014; Saad-Filho and Weeks, 2013), the persistence and *stickiness* of commodity

Table 1. Interviews

Organization	Type of Organization	Date of the interview	Place
Grupo Los Grobo	Agribusiness	22/09/2014	Buenos Aires
Nidera Seeds	Agribusiness	03/10/2014	Buenos Aires
Ministry of Agriculture, Livestock, Fishing and Food	Government	07/10/2014	Buenos Aires
Chamber of Oil Industry of Argentina (CIARA)	Producer's Association	20/03/2019	Buenos Aires
Association of the Argentine Soybean Chain (ACSOJA)	Producer's Association	27/03/2019	Rosario
Institute of Socio-environmental Health, National University of Rosario (UNR)	NGO / Academic	28/03/2019	Rosario
The Nature Conservancy	NGO / Academic	01/04/2019	Buenos Aires
Faculty of Agronomy, University of Buenos Aires (UBA)	NGO / Academic	03/04/2019	Buenos Aires
Secretariat of Agribusiness	Government	04/04/2019	Buenos Aires
Wetlands International – Representatives A and B	NGO / Academic	05/04/2019	Buenos Aires

Source: Authors' own compilation.

production demands a deeper explanation than these studies have provided. We know historical pathways create institutional patterns that 'lock in' societies (Liebowitz and Margolis, 1995; Mahoney, 2000); we also know that private firms and investors in the resource sectors can play a key role in maintaining political economies of extraction (Veltmeyer and Petras, 2014). However, the role of ideas and, specifically, ideas that give rise to a sense of what the nation state or national 'identity' is, and how this blends with ideas of what 'development' consists of, remains insufficiently explored.

The view that we can understand the complexities of modernity by researching social imaginaries first emerged in philosophy and cultural studies as a way of rejecting materialist explanations of change and the 'ontology of determinacy' (Gaonkar, 2002: 6), and emphasizing instead the plurality of understandings of the social world, created by 'imaginative praxis' (ibid.), symbols and forms of meaning (Jessop, 2004, 2010). Social and political imaginaries thus embody and inform people's understandings about identity, function and actions. They constitute a common understanding that is both factual and normative, act as a framework within which people imagine their social existence, and act as collective agents in shaping economic relations. These imaginaries constitute implicit backgrounds to collective practices, institutions and representations, while also providing legitimacy to those actions (Gaonkar, 2002; Steger, 2009; Taylor, 2002). They provide explanations of why a collective 'we' acts the way 'we' do, shapes 'our' expectations, and defines what is considered a shared common sense (Steger, 2009).

Not only are actions and expectations shaped by imaginaries, but collective imaginative processes — are 'we' modern? what is 'our' national

story of modernity? — shape how ‘we’ imagine the world (Dupuits, 2021; Mignolo, 2012). These national imaginaries come to embody and legitimize political, economic and social norms and practices, and determine what kind of society and knowledge ‘we’ value. They are, in that sense, hegemonic projects. Following Gramsci’s (1971) understanding of hegemony, development imaginaries constitute the processes through which ‘dominant economic forces of capitalism form an intellectual and cultural hegemony which secures acquiescence in the capitalist order among the bulk of the population’ (Cox, 1999: 7). However, for Gramsci (1971) hegemony was not static; rather it was the subject of constant volatility and challenge from counter-hegemonic movements. Imaginaries too are not intrinsically immobile sets of ideas; they are the result of processes of contestation and negotiation at the global, regional, national and local levels (Cox, 1999; Pflaeger, 2013).

Looking at the Past and Thinking about the Future: Identity and Knowledge in Commodity Imaginaries

Narratives of the past are crucial in the construction of social imaginaries: As Patomäki and Steger (2010: 1060) state, ‘identity can only be established in and through the narratives that the actors are telling’. ‘Historical stories’, or interpretations of the past, shape the way historical events are collectively remembered (Barreiro et al., 2017). These imaginaries of the past can fashion collective national desires and explain future expectations. For example, Pellegrini (2018) unpacks how ideas expressed in a 1956 mural in Bolivia continue to be present and dominate contemporary development discourse in the country, shaping public policies around the imperative for natural resource exploitation.

Historically, Latin America has played a crucial role in the global economy as a supplier of natural resources (Turzi, 2017: 10). As such, the region is rich with imaginaries of commodity production (Pellegrini, 2018). Looking at the material and symbolic elements of resource struggle, Perreault and Valdivia (2010) highlight both how the production of hydrocarbons is central to representations and imaginaries of the nation in Ecuador and Bolivia and how differences in the meaning of hydrocarbons in development, citizenship and nation serve as a fault line of social conflicts. Dupuits (2021: 25) explores how community movements, public agencies, private business and international actors may all be involved in the co-production of imaginaries and, in that process, may have to negotiate the meaning of development itself, as well as how to achieve it. New resource imaginaries also emerge, as Barandiarán (2019) points out, as new resources are exploited. Nonetheless, even when the resource at the centre of national imaginaries shifts in Latin America, development imaginaries re-create an ‘imperative of extractivism’ (Arsel et al., 2016: 880). Past narratives, identities and notions of progress

are then compounded and woven together into a commodity imaginary that places primary production at its centre.

Imaginaries also legitimize certain forms of knowledge (and delegitimize others). Hegemonic forms of knowledge shape possible futures, give rise to questions about the future direction of society and the economy and set out paths to achieve those futures. During the 1990s, for example, the politics and development trajectories of Latin America were transformed by an abandonment of the contentious idea of state-sponsored industrialization and the categorical adoption of the ‘There Is No Alternative’ (TINA)² neoliberal technocratic imaginary, which enabled and privileged market liberalization. As Sheila Jasanoff and Sang-Hyun Kim (2009: 120) show, technological knowledge reflects ‘collectively imagined forms of social life and social order’ — they depend on how science and technology are intimately enmeshed within society (Jasanoff, 2015).

Socio-technical imaginaries reflect scientific and/or technological endeavours that support a particular development project — in other words, what a society should achieve and how it ought to be achieved (Barandiarán, 2019; Jasanoff, 2015). They also reflect, and at the same time construct, identities and relationships, while they build on symbols, shared history and stories, determining the possibilities of what is desirable and achievable (Barandiarán, 2019: 383). As Barandiarán (*ibid.*: 384) notes, ‘sociotechnical imaginaries reflect a particular kind of knowledge and discourse about development — one that puts science and development at the centre of progress’. The dominance of this type of knowledge in turn shapes the relationships between the state and markets, communities and the population in general, and reflects the values and principles that underpin development policies. For example, Barandiarán (2019) explores the ways in which the ‘lithium-focused sociotechnical imaginary’ in Argentina, Bolivia and Chile proposes a view of development based on ‘value added’ from industrialization of the lithium sector, encouraged by active investment from the state in science and technology which intends to redefine the role of Latin America in the global economy.

In addition to shaping policies and relationships, imaginaries, and the knowledge they privilege, sustain and reproduce social orders associated with them and marginalize alternative projects that might require social and economic change. As such, successful imaginaries demand the active avoidance of consideration of different identities, political economies, knowledge and futures, and triumph by rendering them impractical, impossible, impoverishing or utopian (Goulet, 2020).

Identifying a development path as an imaginary and recognizing the features and components of that imaginary thus allows us to better understand the politics of contemporary ideas of national development and progress

2. A frequent expression used by former British Prime Minister Margaret Thatcher to dismiss any alternatives to her brand of hard-nosed neoliberalism.

and how they are shaped by past trajectories. In the case of development imaginaries based on natural resource extraction, they reveal how choices to sustain this imaginary engender their own ‘tragedy of development’ (Berman, 1982: 45). Imaginaries that connect modernization to natural resource extraction internalize, invisibilize and normalize the costs and consequences sustained by commodity production, even though this may mean what Berman refers to as ‘the self’s destruction [as] an integral part of its development’ (ibid.: 40).

The soybean imaginary is the result mainly of a historical national identity built around the countryside and the pampas, and a modernizing socio-technical imaginary that links technological change, mechanization and even biotechnology with development and progress. It is an imaginary that, by its very nature, excludes alternatives to development like agroecology, marginalizes peasant and indigenous populations, and invisibilizes impacts on the environment and on communities.

THE SOY IMAGINARY: THE ‘SOYBEAN REPUBLIC’³

In Argentina, the dominance of ideas associating economic expansion with commodity production and the opening up of new geographical ‘frontiers’ for agricultural production ‘steered’ national development in the direction of soybean (Gaonkar, 2002). Soy’s consolidation occurred in conjunction with the modernization of the countryside (*el campo*) and restated its historically established centrality to the development imaginary. At the same time, it has strengthened the political leverage of large producers over peasants and subsistence farmers, confirming the importance of agrarian elites and global markets in shaping domestic class structures.

Argentine Commodity Imaginaries in History: The ‘Breadbasket of the World’

Before soy’s emergence as the cornerstone of development strategy, the economic, geographic and cultural identity of modern Argentina was tied to a

3. In 2003, the agrochemical company Syngenta published an advertisement in an Argentine newspaper which referred to the ‘United Republic of Soybean’ (‘La República Unida de la Soja’) on a map that covered areas of Argentina, Bolivia, Brazil and Paraguay (Grain, 2013). Similar terms have been used in both academia and activism. For example, the 2007 publication entitled ‘Repúblicas Unidas de la Soja’ (‘United Soybean Republics’) by Argentine ecologist Javiera Rulli (2007), the leader of a group of activists and scholars called ‘Grupo de Reflexión Rural’ (Group of Rural Reflection), examines the expansion of soy in Latin America. Turzi (2011: 61) refers to the ‘Soybean Republic’ — the area planted with soybean that covers Argentina, Bolivia, Brazil, Paraguay and Uruguay — as ‘a single geoeconomic entity’. There are also references in the media (*La Nación*, 2008) and from activists that discuss the prevalence of soybean monoculture in Argentina, and in some cases in Paraguay, by talking of these countries individually as a ‘República Sojera’ (or ‘Soybean Republic’) (e.g. Gallego-Díaz, 2010; Santucho, 2015; Teubal, 2006; Zaiat, 2008).

national imaginary shaped by, and in the interests of, the country's agrarian elites whose authority shaped post-independence politics and political economy, based on the production of wheat and beef in the pampas.⁴ The politics and economics of post-independence Argentina provided the material and symbolic conditions for imagining a nation state with the 'campo', as a vast, conflict-free space of economic productivity based on the production of food at the centre of a country envisaged as an agricultural and cattle industry powerhouse. For Argentina's governing elites, fulfilling this national identity meant the expulsion of indigenous communities and 'gauchos' who made the pampas a place of 'barbarism' and inefficiency (Leguizamón, 2020: 35–36). In the very act of erasing these communities, the national imaginary also sought to erase the memories of the violence indigenous people were subjected to, instead legitimizing a belief in the pre-ordained destiny that Scheinkerman de Obschatko alludes to (see the Introduction, above).

In the early years of independence, Argentina's economy was based on wool production and export, with sheep farms and the *estancia* — 'a social and economic institution based on cattle raising' (Nouzeilles et al., 2002: 66) — creating new frontiers of capital accumulation. Over time, as their economic power grew, estancias became synonymous with the idea of the Argentine nation state itself, as government policies and economic and political interests protected the emerging export agricultural economy (Ferns, 1953: 74; Lynch, 1998: 38). This amalgamation of interests was key in the spread of the estancia economy through the pampas in a series of military campaigns in the 1870s, known as the 'Conquest of the Desert'⁵ (see Lynch, 1998; Nouzeilles et al., 2002; Scobie, 1964). Effectively, these operations constituted a mechanism of 're-mapping' of the country in favour of beef production, and fundamentally restructured the principles of land ownership, use, control and rights (Hayter and Barnes, 2012), through a process that violently excluded indigenous communities, their cultures and their languages (Nouzeilles et al., 2002: 103). A group of liberal intellectuals, known as the 'Generation of 1837', emphasized progress, industrialization and free trade as the pillars of modernization — the ultimate goal (Leguizamón, 2020: 35). In effect, whereas in the early 19th century Argentine political elites had considered the countryside to be uncivilized, the success of agricultural and pastoral activities as an export sector towards the end of the century transformed this viewpoint (Hora, 2018: 48). The estancia and its owners — the *estancieros* — now became the modernizing force of the country (ibid.: 49) and the pampas were placed at the core of Argentina's

4. The pampas constitute an eco-region that extends throughout Argentina, southern Brazil and Uruguay. In Argentina, this lowland area covers around 1,200 km², and it is known for its excellent suitability for agricultural and pastoral production.

5. This was an Argentine military campaign led by General Julio Argentino Roca with the intention of establishing dominance over the indigenous peoples of the Patagonian Desert.

Table 2. Pastoral and Agricultural Production and Exports in Thousands of Metric Tonnes (Annual Average)

	1860–69	1875–79	1885–89	1890–99	1900–04	1910–14	1925–29
<i>Production</i>							
Wool	-	-	-	-	187	151	147
Wheat	-	-	-	1621	2538	4003	6770
Flax	-	-	-	226	526	790	1839
Maize	-	-	-	1970	2858	4869	7076
<i>Exports</i>							
Leather	-	70	100	100	100	125	181
Wool	45	90	211	211	178	135	130
Wheat	0	6	801	801	1591	2277	4448
Flax	0	0	51	209	475	679	1618
Maize	0	13	277	910	1518	3194	5521
Meat	-	34	45	95	161	437	805

Source: Gerchunoff and Llach (2018).

modernization and its identity as an agro-exporting nation (Leguizamón, 2020: 35).

As such, the rural economy became the cornerstone of 19th and 20th century growth, driven by beef, and later wheat, exports. Between 1900 and 1929, the country exported an average of approximately 62 per cent of its wheat, 65 per cent of its maize and 87 per cent of its flax production (Gerchunoff and Llach, 2018; see also Table 2). In fact, agricultural expansion meant that, during this period, Argentina's growth rates surpassed those of Europe, positioning the country alongside the largest economies in the world (Beattie, 2009; Rock, 2002; Taylor, 1992). This period of extraordinary agricultural expansion lies at the core of the contemporary imaginary, as this 'golden era' became the successful ideal to which less fortunate periods have consistently been compared to (Rock, 2002: 58). Of course, the agricultural export imaginary did not, even then, go unchallenged internally or externally. One of these external challenges came in the 1930s with the Great Depression, in which Argentina came close to losing its largest trade partner, the United Kingdom. Moreover, domestically, the sudden vulnerability of the economy opened the doors to a new political and economic project: the promotion of industrialization and the well-being of the urban working class via Peronism in the 1940s, at the expense of landowning elites and rural sectors more broadly (Halperin Donghi, 1969/2017). But Peronism, perhaps ironically, also protected the idea of Argentina as a bountiful agrarian paradise. As part of his efforts to improve the lives of workers, Perón encouraged domestic consumption of beef, a product that until then was considered a luxury primarily produced for foreign markets (Milanesio, 2010). But in doing so, rather than challenging the ideational authority of beef producers, Perón effectively embedded beef consumption in the everyday lives of Argentinians from all socio-economic backgrounds.

Export-oriented commodity production and the image of the country as a powerhouse of agricultural production — one that is able to satisfy external markets and feed its own people — became the ideational core of the state-building process of Argentina. The cultural, political, social and economic practice of large-scale agriculture came to encapsulate the meaning of national development, even at a moment when Argentina consciously sought to develop beyond an exclusive reliance on commodities. The legacy of this period is the diffusion of the idea that successful development in Argentina — the ‘breadbasket of the world’ — must come from the countryside, strengthening the hegemony of the view that the key to national economic success in the future, as in the past, lies in *el campo* (Beattie, 2009; *The Economist*, 1997; Rock, 2002).

Modernization, Agribusiness and the Socio-technical Imaginary of Soybean

As Argentina accepted that, even with industrialization, export agriculture was the key to national economic growth, global agricultural practices were in a state of transformation. This process of agricultural modernization created a growing role for transnational capital and profoundly impacted social agricultural structures in the global South (Clapp, 2012: 6; Giarracca, 2017: 110; Otero, 2008). The onset of South America’s own Green Revolution thus became intimately associated with soybean’s entry into the region’s agricultural landscape and economic structure (Teubal, 2008).

Although soybean was first cultivated in Argentina in the 1970s, it was not until the 1990s that it became a significant export, with the consolidation of industrial farming and the use of genetically modified (GM) varieties being approved in 1996, tied to international demand (Turzi, 2017: 33; USDA, 2017). Initially planted in a rotation system as a mechanism to add nitrogen to the soil — a nutrient deficient in the soil of the pampas — a series of events conspired to turn soybean into a monocrop. The 2001 socio-economic and political crisis in Argentina resulted in the abandonment of the US dollar parity system, which allowed Argentine agricultural producers to liquidate their debts — held in US dollars — thus making them more financially sound. Parallel to this, agribusiness had experienced a ‘technological modernization’ in its production methods, mainly due to the emergence of the figure of the ‘contractor’, a person offering their services for harvest or fumigation (the spread of pesticides or other agrochemicals to prevent insects harming crops) (Piñeiro and Villareal, 2005).

Between 1990 and 2014, there was a threefold increase in the global production of soybean (FAOSTAT, 2019), a large proportion of which was produced in the Americas. Argentina rapidly became one of the top producers and exporters of soybean, boasting 15 per cent of world production and 6.6 per cent of all soybean exports in 2016 (*ibid.*), and the oilseed soon replaced existing crops and created a new agricultural frontier (Giancola

et al., 2009: 32). Between 2000 and 2010, the area planted with soybean increased by over 40 per cent, while between 2000 and 2005, soybean displaced more than 4.5 million hectares of land previously dedicated to other crops (Pengue, 2005: 315). This was the ‘soy-ization’ of rural Argentina, the transformation of the country’s landscape, in and beyond the pampas, into a sea of soy production (Delvenne et al., 2013) and it depended crucially on the prior existence of ideas about the role of *el campo* in national development.

The soybean imaginary thus emerged from the twin processes of an established and dominant developmental model that put the countryside at the centre of growth, and the material conditions that made the rapid expansion of soybean production possible. Economically, the material and geographical circumstances that make Argentina fertile ground for the massive monocropping of soy emerged alongside a growing international market in different value chains, such as animal feed, animal protein, biofuels, food and vegetable oil (Borras et al., 2016). From 1961 to 1990, soy production increased by around 75 per cent, and by an additional 70 per cent between 1990 and 2017 (FAOSTAT, 2019; OECD, 2013), with China the main source of demand (see Girauo, 2020). Politically, the explosion of soybean production and industrial agriculture was enabled by the advancement of the neoliberal state in Argentina, and indeed globally. The ‘soy-ization’ of Argentina was facilitated through deregulation, as the Argentine state became an agent of privatization, flexibilization of the labour market, and the opening up of the economy towards global markets in the 1990s. Deregulation of the agricultural sector extended into areas such as transport and handling, and rural land tenancy (Booth and Zuidwijk, 2013: 174; Lombardo and Garcia, 2015; Teubal, 2009). The government’s decision to eliminate all agricultural regulatory bodies — such as the National Board of Grains and the National Board of Meat — in the 1990s made the Argentine agricultural sector one of the most deregulated in the world, subject to the free movements of domestic and global capital (Teubal and Palmisano, 2010: 205).

Thus, on the one hand, the soybean imaginary emerges from the material transformations that the Argentine countryside experienced from the 1990s onwards coupled with global trends of high soybean prices fuelled by increasing demand from China. On the other hand, the soy imaginary represents a continuation and evolution of Argentina’s historical identity as an agro-export country, where modernity and progress are linked with hierarchical rural class structures and capitalist, technological exploitation of land. Both elements came together in the 1990s to make soybean the accepted successor of the wheat/beef imaginary and the key export commodity of the country. In the process, soybean came to embody progress and modernization through technological advancement and crowded out other development pathways. After the devastating economic crisis of 2001, governments relied on the agricultural sector to play a key role in the recovery of the economy, thereby consolidating still further the image of the

countryside as a dynamic, modern sector of the economy, the success of which was critical for the success of society as a whole (Hora, 2018: 187). ‘Soybean is, fundamentally, a great national success’, declared *Clarín*, one of the most popular newspapers in the country (cited in Giarracca and Teubal, 2005: 309).

Imaginary and Identity: Shaping the Cleavages of Domestic Politics

Just as the estancia or landed estate shaped social hierarchies and political struggles (Hora, 2018), the success of soy in Argentina prompted a new spatiality of power in the countryside, bringing domestic producers — small, medium and large — closer to transnational and domestic corporations, in terms of access both to farming inputs and to processing and commercialization. However, the emergence of a soybean imaginary has not been uncontested. Questions have been asked about who benefits from soybean production. Specifically, the issue of whether the benefits of soybean should be distributed through society or should be used to consolidate soybean production and the authority of the producers themselves has proved hugely contentious. The governments of Néstor Kirchner (2003–07) and Cristina Fernández de Kirchner (2007–15), both of whom incentivized soy production, nonetheless sought to increase export taxes across the sector (Barlow and Peña, forthcoming; Grugel and Riggiozzi, 2007).

In 2008 these tensions escalated when President Fernández de Kirchner embarked on an ultimately unsuccessful attempt to leverage the resources generated by soybean exports for the state by challenging the narrative that linked soybean’s success with the entrepreneurship of producers. She famously called soybean ‘a weed that grows on the side of the road’ (*La Nación*, 2008), dissociating soybean from consciously engineered modernity and reviving the ‘barbarism and civilization’ distinction of the early 19th century (Leguizamón, 2020: 58). But this discursive battle did not challenge the centrality of soybean and the countryside in national imaginaries of development. Rather, the debate was over the ‘ownership’ of soybean and how to spend the profits it delivered. Fernández de Kirchner called the farmers who protested the rising rates of taxation ‘the pickets of abundance’ (*Clarín*, 2008) and sought to position them not as producers of wealth but as obstacles in the way of the nation benefiting from the country’s ‘natural’ wealth. The agricultural sector, meanwhile, viewed the government as stripping them of the profits that they had earned — ‘they think we are handling a wealth that is not ours’.⁶ As soybean producer Gustavo Grobocopatel noted, ‘primary production [in 2014] has been stagnant for the last six years at around 6 million tonnes. Without [government] intervention, production

6. Interview, representative of Nidera Seeds, Buenos Aires, 3 October 2014.

today would be closer to 140 million'.⁷ Underlying these statements is resentment over supposed gains earned through hard work that are now being expropriated by the government for public use, and also the idea that the government was hindering the path to national development of the country by intervening in agricultural markets and constraining the most efficient national producers.

Ultimately, the country's reliance on soy meant that the government was forced to concede following widespread protests in which producers paralysed roads and transport and mobilized their political sympathizers who also took to the streets (see Giarracca and Teubal, 2010). While debates and political struggles over the ownership and destination of soybean profits revealed different developmental approaches, the imaginary that placed soybean at the core of economic growth and development underpinned both visions. Thus, the conflict lay not in Fernández de Kirchner's wholesale rejection of the centrality and role of the soybean sector, but in her view that its expansion was not, in itself, development, but rather that it constituted an engine for development — one that was located in the cities, not the countryside. As she said, 'I would like to live in a country where industry subsidizes the agriculture, but I didn't invent history' (Verbitsky, 2007), referring to the pervasiveness of the idea that agricultural expansion is synonymous with growth and development. Both projects, whether emphasizing private entrepreneurship and efficiency of the countryside, or demanding state intervention for redistribution, attached their futures to the modernizing force of soybean.

As a result, soybean has remained at the centre of Argentine politics. Throughout its history, both agricultural and political actors have played a key role in shaping and sustaining a development imaginary based on agricultural exports, and more recently on soybean. A member of the influential Association of the Argentine Soybean Chain (ACSOJA) explained the different approaches previous governments have taken to the sector, from the government of Cristina Fernández de Kirchner, who sought to increase taxes, to that of the right-wing government of Mauricio Macri (2015–19):

[Macri's] government says, 'the priority, the engine of the Argentine economy is the agro-industrial sector'. What changed from the previous [Kirchner's] government to this one, is that clearly any government knows that the agro-industrial sector is one of the most dynamic ones, one that generates more foreign currency. The previous government would say, 'I am charging a tax on this sector so I can give it to industries or other sectors that cannot survive by themselves and these are the rules'.⁸

However, even if Fernández de Kirchner seemed to discursively challenge the hegemony of the soybean imaginary, the government depended

7. Interview, Gustavo Grobocopatel, Grupo Los Grobo, Buenos Aires, 22 September 2014.

8. Interview, representative and Council Member of ACSOJA, Rosario, 27 March 2019.

on the material resources soybean provided and, as such, production was not only tolerated but promoted (Giarracca, 2010: 670). In short, since Argentina's emergence as a 'modern' nation, export agriculture has directly shaped relations of power in the country and landowning elites have been at the forefront of political life. The soybean imaginary, with its matrix of corporate interests, large farms and state dependence on agricultural export income, continues to reinforce the idea that Argentina's success as a nation depends exclusively on these actors and their capacity to strike the 'right' deal.

Imaginary and Knowledge: Defining Development Futures

The soybean imaginary builds on the historically embedded belief that the hierarchical social relations of production in the countryside are an essential part of Argentina's national identity and growth; yet it adds a new dimension around the value and place of socio-technical knowledge. That is, it proffers a vision of development that identifies specific scientific knowledge and certain technologies as solutions to development (Barandiarán, 2019). In effect, it updates the 20th century idea of Argentina as the 'breadbasket of the world' in line with the Green Revolution technological paradigm, and recent advancements in biotechnology and bioengineering. Alongside vast swathes of agricultural land, soy production requires a 'technological package' comprising a GM variety of soy resistant to the herbicide glyphosate — developed by the US-based agricultural biotechnology corporation Monsanto — as well as agrochemicals, machinery and no-till farming or direct sowing (Lapegna, 2016a; Phélinas and Choumert, 2017; Turzi, 2011).⁹ It fitted well with the neoliberal political and economic regime in Argentina in the 1990s, encouraging a technocratization of development, the centre of which still lay in the countryside and not in the cities, and favoured agricultural elites alongside international capital.

Not only has the technical package of soybean been adopted as the core technological identity — and material foundation — of the imaginary, but it is also key in determining the course of what development will look like in the future based on a belief in the country's comparative advantage in agricultural technology. This fuels a belief that biotechnology and mechanization can push the boundaries of what is possible in agricultural production. Technological research and development will somehow enable the country to overcome the historical hierarchy in the international division of labour in

9. No-till farming is a method of agricultural production with minimal or no tilling — in other words, without disturbing the soil. It involves covering the soil with stubble (stalks or other remainders of previous crops) and its continuous implementation improves soil conditions, reducing erosion and improving the water management capacities of the soil (Regúnaga, 2013: 87)

which economies based on primary production and extractive industries are subordinated to industrialized economies. Argentina is capable of not only exporting the products its agricultural sector produces, but also the knowledge it has developed, as illustrated by the decade-long Argentine presence in South Africa (*SuperCampo*, 2019). An example of this belief is how the success of Argentine seed developers such as Don Mario and Bioceres (now regional leaders in biotechnology and the development of transgenic seeds, most notably soybean) have been received. According to a former Secretary of Agriculture:

What was key [in the success of soybean] and what many people did not recognize, was the role played by Argentine seed breeders, like Don Mario and Nidera [Seeds], in the development of a soybean variety adaptable to different eco-regions. Soybean had a forward cascade effect: biodiesel, flour and oil crushers. The market reacted; it was not a state policy. Today, Argentina has the most efficient value chain worldwide. Gran Rosario has the world's largest crushing plants.¹⁰

The success of these biotechnology companies is thus considered to be key in the modernization and development of Argentina. As a recent editorial noted: 'If we had 10 Bioceres we would be another country. Or the other way around, if we were another country, we would have 10 Bioceres' (Ordoñez, 2021). In celebrating these projects, technological knowledge becomes pre-eminent for development and progress for the whole country (Barandiarán, 2019; Leguizamón, 2020: 32).

This socio-technical imaginary is enabled by the prevailing view that technological innovation is part of the idiosyncrasy of Argentine farming. This idea of the 'innovative self' is firmly embedded in the narrative around agriculture and constitutes part of the identity of Argentine farming. Soy farmers see themselves — and other national actors see them — as a uniquely dynamic force for national progress. As noted by representatives of the Secretariat of Agribusiness, 'it is that characteristic of Argentine farming, that exists nowhere else, of researching and developing initiatives from the countryside itself and not waiting until they drop from above. The [farmers] started working with a series of techniques and technologies that do battle with that unwanted evil [weeds], and from there moved forward to new advancements'.¹¹ Indeed, as one member of ACSOJA commented, 'in general, it is a sector that has learned a lot, that has grown, that has adopted technologies very quickly: no tilling, genetically modified organisms, mechanization'.¹²

Argentina has led globally in adopting bioengineered seeds, achieving an almost 100 per cent take-up (ISAAA, 2018), making agricultural biotechnology one of the key sectors of the economy. Governmental

10. Interview, former Secretary of Agriculture, Livestock, Fishing and Food, Buenos Aires, 7 October 2014.

11. Interview, representatives of the Secretariat of Agribusiness, Buenos Aires, 4 April 2019.

12. Interview, representative and Council Member ACSOJA, Rosario, 27 March 2019.

bodies, such as the National Institute for Agricultural Technology (INTA), work in private–public partnerships with domestic and transnational companies to develop new seed varieties. Whether right-wing or Peronist, governments since the 1990s have invested and incentivized technological advances. In 2004, President Kirchner established the Office of Biotechnology, which developed a 10-year strategic plan for agricultural technology (Newell, 2009). More recently, in January 2018, Mauricio Macri’s government passed a decree amending the law for Development and Production of Modern Biotechnology (approved in 2007), which establishes funding and fiscal benefits for domestic biotechnology enterprises (Bustamante, 2018). As Barandiarán (2019) argued in relation to lithium in Argentina, commodity imaginaries put science and technology at the forefront of development and of how progress in the country is *imagined* — that is, as ‘technologically modern and sovereign over the sources of national wealth — including natural resources as well as human talent and skill’ (ibid.: 388). This creates what he calls a ‘false binary’ between raw material and ‘value added’ and promotes an image of development based on sophisticated science and technological advancements, which, in turn, reinforces the production of primary resources and an export-oriented growth strategy.

This dependence on socio-technical knowledge, alongside the belief that technology is somehow politically neutral, masks the social, political and environmental consequences of intensive soy production under a veil of ‘progress’ and technological sophistication. It does so by excluding and rejecting the experiences of local communities and alternative knowledges or projects (Goulet, 2020: 88). The following sections unpack how soybean’s technological package excludes those who cannot access it, reinforces existing power structures, invisibilizes groups who are impacted by the health prejudices of the intensive use of agrochemicals and minimizes the environmental costs of production.

MARGINALIZING THE COSTS: THE DEVELOPMENTAL IMPACTS OF THE SOYBEAN IMAGINARY

The dramatic environmental and social consequences of the consolidation of the soybean complex have been widely explored by agroecologists, anthropologists and sociologists (see, for example, Altieri and Penuel, 2006; Gras and Hernández, 2016; Lapegna, 2016b; Leguizamón, 2020; Penuel, 2005; Svampa, 2015, 2019). This article contributes to this rich scholarship — and activism — by linking these impacts and their persistence with the hegemonic narrative of the soybean imaginary. In particular, the dominance of the socio-technical imaginary, and the consensus around the superiority of science and technology, have resulted in a repeated dismissal of any challenges or alternatives to the soybean model.

Invisible Populations, Disposable Bodies and Livelihoods Lost

The fact that Argentina's development has been associated with export commodity production, most recently soybean, directs attention away from the fact that the expanding agricultural frontier has meant the expulsion, indeed the extermination, of indigenous people who have had to make way for cultivation. Their removal is seen as the price of modernity (Gordillo, 2019), even when the costs are the elimination of communities. The Wichi people, for example, who lived traditionally on the edge of the Chaco Forest in Salta, have been stripped entirely of their livelihoods as a result of deforestation (for soy); this has forced them into slums and informal settlements in cities where a combination of malnutrition and unhealthy living conditions has decimated their numbers (*Página 12*, 2020; Red Universitaria de Ambiente y Salud, 2020). The planting of soybean continues to displace peasants, small producers and further indigenous groups who previously farmed in areas now incorporated into the new agricultural frontier, building, in effect, on the initial exclusion of Argentina's indigenous groups during the Conquest of the Desert in the 19th century. In the province of Salta, in northwest Argentina, it is estimated that 100,000 people from indigenous communities have been displaced in the last 10 years by deforestation for agribusiness (Rodríguez, 2020). Rural peasant communities and small farmers are also increasingly marginalized. Pablo Lapegna (2016b) shows how the GM model of soy production has delivered neither support for the rural poor nor sustainable solutions to their needs. The number of farms in Argentina was reduced by almost 50 per cent between 1988 and 2018 (INDEC, 2019). The technological package of the soybean imaginary, meanwhile, includes standardized and mechanized practices that reduce the number of workers needed for production, displacing people from the countryside into the cities. Over a period of 16 years, the number of permanent workers employed in agriculture in Argentina fell from 775,296 in 2002 to 225,143 in 2018 — a mere 21 per cent of the number employed in agricultural activities in 1988 (*ibid.*). Yet the mechanization of agriculture and increase of profit margins that come with it are celebrated unreflectively by the government — 'the agricultural machinery sector is key to the productive matrix', declared the former Minister of Production, Francisco Cabrera (Infobae, 2018), with no acknowledgement of its impact on livelihoods.

At the same time, the use of GM seeds has prompted an increasing use of agrochemicals which penetrate the soil and underground water systems, as well as involving more costs, making it inaccessible for small-scale or family farmers. Specifically, the use of glyphosate, which is the 'miracle' pesticide behind soy productivity and which occupies a particular place within socio-technical elements of the soy imaginary, has spread throughout the country. In 2008, out of a total of 168.23 million kgs of pesticides used in Argentina, 60 per cent was glyphosate (Pórfido et al., 2014). Argentina is now one of the largest consumers of glyphosate in the world, accounting

for 21.5 per cent of worldwide use since 2008 (van Bruggen et al., 2018). This high consumption of pesticide has dramatic costs for the lives of rural and peri-urban populations. Research at the National University of Rosario (UNR), in the province of Santa Fe, has identified a series of health issues directly linked to intensive agriculture in the surroundings of small rural towns, where locals complained about the presence of pesticides and air fumigation of soybean fields.¹³ These include higher rates of miscarriage and concerns about fertility, birth malformations, thyroid afflictions and diabetes (Ávila-Vázquez, 2014). The results align with several studies which connect glyphosate to human diseases (see van Bruggen et al., 2018, for a review of the existing research), and which led the World Health Organization (WHO, 2015) to reclassify glyphosate as ‘probably carcinogenic to humans’. One of the doctors leading the socio-environmental health programme in Argentina described the connection between agricultural production and ill health:

When we found ourselves in 2011 with repeated data that did not coincide with the national [figures], we asked ourselves, ‘What is going on?’. And that was our response — ‘What do all of these towns have in common?’. That is when we saw that all of these towns are surrounded by the area of production of transgenic [seeds] with agro-toxics, and that is when we linked the geographical and economic situation with the account of the population. In all fieldwork sites people say the same thing, they have the same profile, and the same geographic situation in relation to the production area. The change in epidemiological profile coincides temporally with the change in the production model.¹⁴

Government responses to the growing amount of data linking pesticides used in soy production to ill health have ranged from timid to repressive. In 2018, the Macri government began to promote ‘Agricultural Good Practices’ (‘Buenas Prácticas Agrícolas’), a series of recommendations from the Ministry of Agribusiness and other private and public entities, that maintained that the dangers of agrochemicals could be curbed if used correctly and responsibly. Launching the initiative, the Minister of Science and Technology, Lino Barañao, recognized that ‘Argentina is very dependent on agriculture for the good performance of its economy, so the development of these capacities is fundamental for the sustainability of this activity’ (Ministry of Science, Technology and Innovation, 2018), simultaneously acknowledging both the societal impacts of the dominant development imaginary and, at the same time, its inevitability. The responses of agro-industrial corporations via Corporate Social Responsibility (CSR) initiatives have been equally limited. Interestingly, the social impacts of soy have merited less attention than the environmental issues, which have been put on the agenda by advocacy groups that have mobilized transnationally. A representative of the Nature Conservancy said:

13. Interview, member of the Institute of Socio-environmental Health (UNR), Rosario, 28 March 2019.

14. *Ibid.*

The problem is that many of these companies are not very interested in these types of indicators [referring to social issues and indigenous populations]. They are looking for business and so they do not see the necessity of having this type of information. What we want [to do] is, for example, say ‘Look, you are operating in an area with a high level of unmet basic needs [which translates into] okay, how do I make this an opportunity?’¹⁵

Corporations are indifferent to the social costs of soy production as they affect the poor and indigenous communities already rendered invisible by the association of soy (almost exclusively) with growth, progress and modernity, and the inherent difficulties of challenging those narratives within Argentina. These groups have been displaced and stripped of their livelihoods; the fact that their health is now compromised for the sake of ‘economic productivity’ and growth does not command much attention.

However, these have not been the only efforts to dismiss the impacts of the socio-technical imaginary. Other mechanisms used have been far more violent in attempting to silence and exclude any challenges to the soybean complex. The same group of researchers at UNR, who have been working for years on identifying the epidemiologic anomalies in the Argentine countryside, was targeted by the University’s administration to shut down their activities. They explained how, in 2016, having discovered their office door chained and being unable to access the data and evidence stored inside, they began scanning surveys and created an electronic register: ‘We became suspicious, because the day after our offices at the University were locked with chains, the provincial Minister spoke out demanding that we show evidence of our claims. He said, “these are charlatans, and if they are not, they should show the evidence”’.¹⁶ Academic hierarchies and those in political power have thus shown a consensus over the need to dismiss and silence any attempt at shedding light on the devastating consequences of the soybean socio-technical imaginary on the lives and bodies of local communities.

Shaping Space: New Geographies and the Role of Nature

Commodities, and the belief that they hold the key to national progress and development, have directly shaped Argentina’s geography and identity. Historically, the pampas — the beef-rearing, wheat-growing agricultural heartland — have been key to the construction of national self-awareness, as well as to the spatial political economy of growth. The dominance of the commodity imaginary means that, in effect, non-agricultural or pastoral areas and the people, particularly indigenous communities, who live on the land, have become valueless.

15. Interview, representative of The Nature Conservancy, Buenos Aires, 1 April 2019.

16. Interview, member of the Institute of Socio-environmental Health (UNR), Rosario, 28 March 2019.

Soy has continued to reconfigure the geography, nature and landscape of Argentina in ways that selectively included land, and changed land use, whilst excluding the people who traditionally lived on that land. The expansion of the agricultural frontier meant that rural areas previously regarded as marginal, such as the Gran Chaco Forest in Northern Argentina, were suddenly seen as ripe for agro-industrial development. In the process, national ideas about land use and nature shifted. Ecosystems changed as cattle, which had shaped the landscapes of the pampas, were displaced. One scholar from the Faculty of Agronomy at Buenos Aires University explained how the lack of rotation and thus the continuous cultivation of soybean expels pastoral activities from the pampas and pushes animals to peripheral areas.¹⁷ In forest regions, meanwhile, which had previously been uncultivated, ‘the consequences are irreversible’.¹⁸ Fehlenberg et al. (2017) show that, between 2001 and 2012, almost 8 million hectares of the Chaco region have been cleared, primarily for soybean. In the process, *nature* itself has been transformed through the loss of soil fertility and increased soil erosion. In 2005, Walter Pengué (2005: 317) estimated that the ‘ecological debt’ — that is, the cost of restoring the land destroyed by soy exports — in the region was US\$ 300 million. The extent of soil erosion is such that a network of new rivers has appeared in central Argentina due the instability of the soil and to an underground watershed hosting agricultural production for the first time (Goñi, 2018).

The wetland regions, which cover around 600,000 km² and include La Plata Basin, an area that connects riverways in Bolivia, Brazil, Paraguay and Uruguay, and the Chaco region, are some of the most environmentally important areas of the country, yet these areas have experienced significant loss and degradation of flora and fauna biodiversity (Andelman, 2014; Wetlands International, 2016). The Director of Wetlands International, an NGO seeking to protect the wetlands of Argentina, explained:

[Our aim now is] management and conservation because it is state policy. The process of soyization is an invasive one, replacing other local products and invading native environments through deforestation. [It] is a factor, a driver of change in the environment, particularly for the wetlands. The impact on wetlands is twofold — the first is habitat change, that is the draining of soil to plant soybean, which gives you loss of wetlands. The second is the pollution associated with use of agrochemicals.¹⁹

This process of wholesale landscape change has been referred to as the ‘pampanization’ of the forest and other areas.²⁰ In other words, despite the dramatic changes that soybean cultivation has brought about, the landscape has, ironically, become recognizable — it looks like other parts of the

17. Interview, member of Faculty of Agronomy, University of Buenos Aires, Buenos Aires, 3 April 2019.

18. Ibid.

19. Interview, representative A of Wetlands International, Buenos Aires, 5 April 2019.

20. Interview, representative B of Wetlands International, Buenos Aires, 5 April 2019.

country that were transformed in the past for commodity production. In the process, the scale of contemporary ecological loss that Argentina is experiencing, day to day, is normalized as the price of development.

Not only are the losses normalized, but the impacts of soybean expansion on deforestation and ecological degradation have been largely dismissed and minimized by the agricultural sector. According to a representative from ACSOJA, when this issue is discussed internationally, ‘Argentina’s response is: “We do not have a sustainability issue”, because, in reality, what is grown on deforested land is limited’.²¹ According to a representative of the Chamber of Oil Industry of Argentina (CIARA), ‘50 per cent of soybean that is processed in Rosario comes from the 400 to 500 kms that surround it, which is not a mountainous area susceptible [to deforestation]. It is the plains, the pampas [where soybean is produced]’.²² Consequently, soy producers tend to try and to shift the attention of conservationists to Brazil, where deforestation and soybean production are connected. The representative from ACSOJA noted that ‘the sustainability problem in South America is Brazil, because in Brazil there was a problem. Growth is taking place in areas that were not agricultural areas before’.²³ The implication here is that the expansion of soy onto non-forested land that was previously used for farming is without environmental challenges. This is usually coupled with a reinforcement of the socio-technical imaginary that emphasizes the care and technological advancement of soybean producers; this, it is suggested, should ease everyone’s mind in terms of the environmental impacts that the activity might carry: ‘The productive sector is very careful and works a lot in the technical aspect of how to protect the soil, how to rotate crops, what products to use to look after them’.²⁴ Once again, the socio-technical imaginary is deployed to reinforce the legitimacy of science and technology as an objective truth, dismissing and minimizing any questioning of this model as misinterpretation of the data and, quite simply, wrong.

CONCLUSION

This article has argued that development paths are shaped by nationally embedded, elite-led ideas about what the national economy should look like. Development studies and IPE scholars have highlighted the many shortcomings of primary commodity and export-led growth, including in Argentina. This article brings concepts from cultural studies that focus on the social and

21. Interview, representative and Council Member ACSOJA, Rosario, 27 March 2019.

22. Interview, representative of the Chamber of Oil Industry of Argentina, Buenos Aires, 20 March 2019.

23. Interview, representative and Council Member ACSOJA, Rosario, 27 March 2019.

24. *Ibid.*

cultural persistence and *stickiness* of commodities as a development model to this well-established scholarship. Put simply, it addresses the development puzzle of history repeating itself in Argentina. The explanation we offer for the persistence of the idea that the expansion of primary goods exports constitutes the spine of the national economy — despite evidence that economic booms end, prices cannot be controlled, and landscapes and communities are destroyed — is that powerful domestic producers, agribusinesses and state actors have been able to frame this approach as the only path to development. The commodity imaginary thus enforces and legitimizes growth through exports and, in the process, condemns the country to repeat the mistakes of the past.

Of course, this imaginary is not necessarily shared by all; neither does it produce benefits, even short-lived ones, for everyone. It is, and has always been, moulded and promoted by agricultural elite interests. Nonetheless, its durability, despite moments of considerable political upheaval, has been remarkable. From the time of the Conquest of the Desert to the Peronist era of the promotion of domestic industry, from inward models of development to the neoliberal opening of the economy to finance and foreign investment in the 1990s, large-scale agriculture for export has remained at the core of Argentina's economy, shaping political debate and fashioning political and social institutions. As former President Fernández de Kirchner argued, the history of Argentina has been 'invented' to support an imaginary of the country as the 'breadbasket of the world' (Verbitsky, 2007).

The social and ecological costs of commodity dependence have been enormous; yet they have been consistently minimized and even justified by government and producers alike. The voices of those who challenge the marginalization — and sometimes the eradication — of indigenous people and peasants and draw attention to ecological crisis wrought by deforestation and wetlands transformation are simply lost under the weight of technological knowledge, growth dependence and profit linked to soy itself.

The speed and ease with which soybean has reshaped the countryside and replaced beef and wheat in national ideas of development tells us much about the way commodity production was embedded and reproduced. Soy replaced 'older' commodities; but the geographical location of development remained unchanged. The existence of a prior agricultural imaginary enabled the rapid domination of soy, and, as with beef in the middle of the 20th century, the soy imaginary quickly came to permeate the country's economy, geography, politics and society, linking export production to national identity and even national pride. Equally, as with beef and wheat, it did so in ways that emphasized the perceived benefits — economic growth and a potential tax bonanza — whilst minimizing the costs. Soybean became the 'salvation' of the country. But 'salvation' brings costs. It threatens the livelihoods and health of communities in physical proximity to soybean production, promotes a limited and particular understanding of knowledge for development linked to technical fixes rather

than sustainability and inclusion, and heightens national dependence on the price of exports whilst granting soy producers leverage over the detail of key economic and social politics. These costs are rendered inevitable and even invisible, in some cases consciously, by this vision of progress, which throws a veil of inevitability over the human and ecological costs associated with it.

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