

Contradictions of bioeconomy as a Green Development Strategy. Insights from Brazil and Argentina

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Our key argument

- Bioeconomy is presented as a **Green Development Strategy** in Brazil and Argentina.
 - The strategy builds on ideas of South American **developmentalism** and **ecological modernization**.
 - The narrative as well as public funding for research have been appropriated by **agribusiness** and by the **biotech-industry**.
- In such a constellation, bioeconomy risks to deepening an extractivist logic with regard to the agrarian sector and to knowledge production and aggravating social struggles over land, labor, and pesticides.

Developmentalism

- Development through fostering a strong and varied **internal market** and imposing **high tariffs on imported goods**.
- Based on the economic growth orientation of the modernization theory
- **Western Europe/North America as role model(s)** of economic development to be achieved via defined linear development paths.

Ecological Modernization

- Recognizes **anthropogenic** socio-ecological **crisis**
- Continuation of **modernization theory**:
 - a)* Optimism that economic growth can be decoupled from the socio-ecological crisis via technological innovations
 - b)* Eurocentrism: Political and technological leadership of Northern and European countries
- Especially in the agricultural sector: focus on **efficiency** (yield increase, less inputs, etc.)
- Main idea: from “limits to growth” to “growth of limits.” (Arturo Escobar)

Green developmentalism in Latin America

“The impulse of the bioeconomy is extremely attractive in countries of Latin America, in which the increase of added value to the agricultural primary production appears to be of crucial importance for the development of their respective economies”.

(Bolsa de Cereales and Wierny 2015)

- Strengthening of the internal market by **green** (as well as red and white) **biotechnologies**
- Special focus on **innovations** in the **agricultural sector**
- Strengthen positions within global environmental politics.
- **Green reframing** of the **agrarian sector**



Continuation of **extractivist relations** in the agricultural sector as well as **extractive knowledge production**



ARGENTINA

Third largest soy producer
(49 mmt)

Soybean on more than 50% of
agricultural lands (17 million ha)

95% GMO, 99% no-till farming

Biodiesel blending quota 10%

- inputs controlled by a few enterprises
- mainly for export
- contributes to deforestation, expulsion, degradation
- no jobs (mechanization)

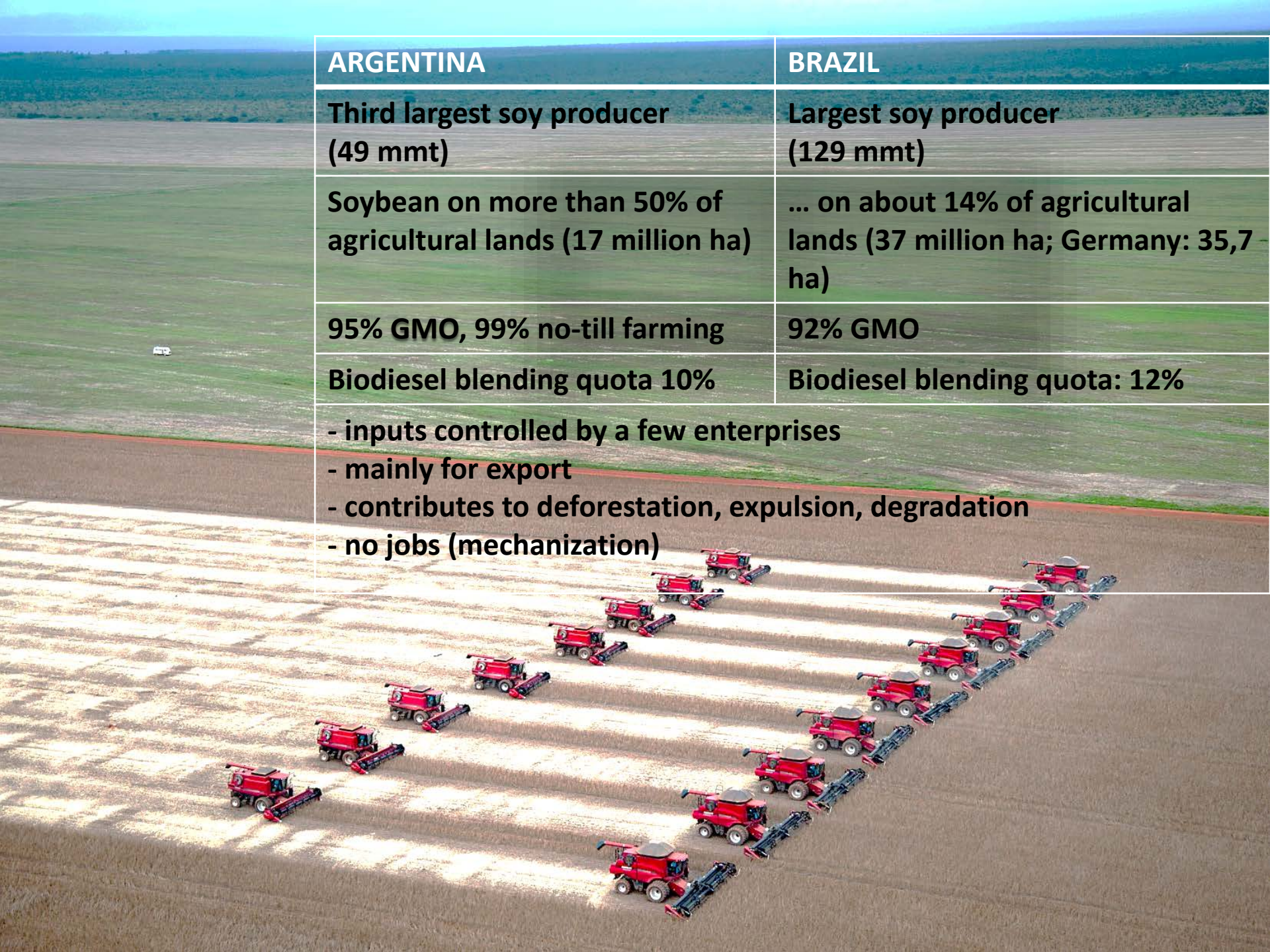
BRAZIL

Largest soy producer
(129 mmt)

... on about 14% of agricultural
lands (37 million ha; Germany: 35,7
ha)

92% GMO

Biodiesel blending quota: 12%



Some facts and figures

ARGENTINA	BRAZIL
Third largest soy producer (49 mmt)	Largest soy producer (129 mmt)
Soybean on more than 50% of agricultural lands (17 million ha)	... on 14% of agricultural lands (37 million ha Germany: 35,7 ha)
95% GMO, 99% no-till	92% GMO
Biodiesel blending quota 10%	Biodiesel blending quota: 12%
<ul style="list-style-type: none"> - inputs controlled by a few enterprises - mainly for export - contributes to deforestation, expulsion, degradation - no jobs (mechanization) 	

Advocates of bioeconomy in Argentina

- Focus on the opportunity to produce biomass
 - See great advantages for Argentina: pioneer in GMO crops, broad acceptance for biotechnology, many capacities installed (both concerning biotech research and industrial plants)
 - Helps to overcome the historic divide between old export oriented agrarian oligarchy and internal market oriented industrialization project
 - Promote “sustainable intensification” by no-till farming, digitalization, do not quest monoculture production, pesticide and herbicide use and their health effects
- Risks to deepen agrarian extractivism

Pictures: INTA: promoting training & [bioeconomía.info](http://bioeconomia.info)



Agrarian Extractivism (own definition)

- is an **accumulation strategy** based on a model of land use
- established by **agribusiness** to profit from commodities sold on an international fodder and fuel market
- **expulses peasants** and **indigenous groups**
- based on the **over-exploitation of soils** and extraction of nutrients, compensated by increasing use of (fossil) fertilizers and pesticides
- Is oriented towards **modern** and **digital technologies** and **machinery**
- contributes to an **agriculture without peasants**
- its externalities are the destruction of soils, the contamination of water sources, a loss of biodiversity, deforestation and land concentration.

Extractive knowledge production

- **Agro-technological knowledge** and **technologies** that foster the extractivist relations
- Extractive knowledge in the soy sector includes different aspects of the agro-industrial complex: GMO, no-till farming, machinery
- **No space for alternative knowledge** and practices, which are developed and promoted **by social movements** (food sovereignty)

EMBRAPA – Brazilian Agricultural Research Corporation

- Founded during the military dictatorship in the 1970s
- **Counter project to land reform:** orientation of the agricultural sector towards the US-American model of agribusiness
- Contributed with (bio-)technological innovations (GMO, no-till farming) to the **proliferation of the soy plantations** in savannah region of Cerrado and the Amazon basin.



To conclude

1. On the level of **narratives**: bioeconomy is presented as green development strategy, drawing on developmentalism and ecological modernization

2. On the level of **actors**: agri-business and biotech are setting the agenda, get state funding for their extractivist knowledge

3. On the **material** level:
 - a) Concerning sectors: soybean means losses of jobs in rural areas, hardly to be compensated (by digitalized) agroindustrial production
 - b) Material flows: extractivist relations within and between countries: agrarian extractivism & extractive knowledge production

4. On the level of **social conflict**: aggravating land concentration, expulsion of peasants, conflicts over health impacts of pesticides

Thank you for your attention!

www.bioinequalities.uni-jena.de/en

[more information about our group, 14 open access working papers and more findings available]

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The kind of knowledge funded:
Visit of a Biotechnology Center as part of the
Course: Introduction to the Bioeconomy
(2018, Resistencia, NWA, own pictures)



“The bioeconomy as a development strategy for Argentina” (2018)

“A few years ago the Club of Rome warned about the limits to growth and asked what the alternative to oil would be, but a consistent response was lacking. In recent times, thanks to technology, an alternative has been generated. The bioeconomy is at the heart of the question and for this reason the topic has become established as a viable option and, in many cases like ours, converging with the nature of our resources and capabilities.”

“The logistical difficulties involved in mobilizing large volumes of biomass make the biomass industry federal by nature. The bioeconomy is a powerful instrument to promote a resilient territorial development”

“The bioeconomy will generate a wide range of jobs, which will make it possible to combat poverty (...) solving the problem of poverty - social sustainability - is essential to environmental sustainability”

5. Conclusion: Contradictions within bioeconomy

- **What is green?** Bioeconomy seeking for sustainability, part of a green economy, fading out of fossil fuels (de facto: aiming on substitution without changes in the way of producing, consuming, disposing, storing etc.

→ But: sponsoring agribusiness and biotech, dispossessing real-existing sustainable livelihoods (e.g. peasants)

→ What is not Green?

- Which kind of **development?**

Bioeconomy so far in favor of agroindustrialization, huge projects, agrofuels, biorafineries,

5. Conclusion: Contradictions within bioeconomy

- **Alternative visions:** Strengthening bioeconomy in Georgescu-Roegens sense

Fields of action:

- Politicizing and rethinking public funding for research
- Necessity to collaborate with other actors (small-scale peasants, agro-ecology, decentralized cooperatives of renewable energy, environmental movements) and exclude or at least weaken biotech and agribusiness;

2. Actors: Agribusiness + Biotech, appropriating state funding

Brazil:

- Brazilian National Confederation of Industry (CNI)
- sugarcane sector (UNICA, Biofuture Plattform)
- No participation of civil society or social movements

Argentina:

1. Narrative: Green + Development

The promises of the bioeconomy in Brazil and Argentina:

- Strengthening biotechnological research and development
- Economic development and reputation as “green” leader

Literature

14 de septiembre de 2012.

Firma de convenio entre la Provincia del Chaco y el CONICET para desarrollar, en la E.E.A. N° 13 Jardinería "Ing. Agr. José Alberto Ruchesi", programas de investigación relacionado con el ajuste de protocolos técnicos para obtener plantas de maíz y soja resistentes al estrés hídrico, modificadas genéticamente con genes del CONICET provistos por la Universidad Nacional del Litoral y con el apoyo científico y tecnológico del CONICET.

