Shifting the debate about 'responsible soy' production in Paraguay

A critical analysis of five claims about environmental, economic, and social sustainability

Laureen Elgert

LDPI Working Paper 23

Shifting the debate about 'responsible soy' production in Paraguay: A critical analysis of five claims about environmental, economic, and social sustainability

By Laureen Elgert

Published by:
The Land Deal Politics Initiative
www.iss.nl/ldpi
landpolitics@gmail.com

in collaboration with:
Institute for Development Studies (IDS)
University of Sussex
Library Road
Brighton, BN1 9RE
United Kingdom
Tel: +44 1273 606261 Fax: +44 1273 621202 E-mail: ids@ids.ac.ukWebsite: www.ids.ac.uk

Initiatives in Critical Agrarian Studies (ICAS)
International Institute of Social Studies (ISS)
P.O. Box 29776
2502 LT The Hague
The Netherlands
Tel: +31 70 426 0664 Fax: +31 70 426 0799 E-mail: iss.icas@gmail.com Website: www.iss.nl/icas

The Institute for Poverty, Land and Agrarian Studies (PLAAS)
School of Government, Faculty of Economic and Management Sciences
University of the Western Cape, Private Bag X17
Bellville 7535, Cape Town
South Africa
Tel: +27 21 959 3733 Fax: +27 21 959 3732 E-mail: plaas@uwc.ac.za Website: www.plaas.org.za

The Polson Institute for Global Development
Department of Development Sociology
Cornell University
133 Warren Hall
Ithaca NY 14853
United States of America
Tel: +1 607 255-3163 Fax: +1 607 254-2896 E-mail: ta12@cornell.edu Website: polson.cals.cornell.edu

Published with support from the UK Department for International Development (DfID), Atlantic Philanthropies, Inter-Church Organization for Development Cooperation (ICCO), Ford Foundation and Miserior.

Abstract

Certification initiatives are an increasingly prominent means of quelling public concern about the wider socio-political, economic and environmental consequences of commodity production (timber, palm oil, soy) on increasingly concentrated land holdings in countries characterized by large, poor, rural populations. This paper examines the ways in which the discourse of sustainable soy production – created and mobilized through the Roundtable on Responsible Soy (RTRS) certification initiative – enables the coalescence of diverse justifications for land-grabbing in South American producer countries with particular attention to Paraguay. Using data and information from fieldwork, academic literature, online media, the 2008 Paraguayan agricultural census, and the UNDP development report, five such justifications are presented here and critically assessed. They are: reduced deforestation; improved agricultural practices; national economic growth; food security; and standards development processes that feature inclusive politics. The paper concludes that such claims leave out important dimensions of the growth of the soy industry and the concomitant concentration of land holdings in Paraguay. Any hope for equity and justice will depend on a radical shift in sustainable development policy; one that highlights the distribution of land and resources.

Keywords: responsible soy production; policy debate Paraguay; land concentration.

About the Author

Laureen Elgert is an Assistant Professor in Social Science and Policy Studies and Environmental and Sustainability Studies at Worcester Polytechnic Institute in Massachusetts. She completed her PhD in the Department of International Development Studies at the London School of Economics in the UK. She has published on the politics of sustainable development and soy certification. Her research interests include expertise and deliberation, sustainability discourse, agriculture, certification, modeling indicators and commodity chains.

Table of Contents

1 The rush for land in Paraguay: A wise investment?

In 2008, the Guardian reported that Jenna Bush, daughter of then US president George W. had come to Paraguay for a visit. A few things were on her agenda including a visit to various UNICEF projects, and a trip out to the 100,000-acre stretch of land in the country's western Chaco region, recently purchased by her father. Speculation raged in the media over why the Bush's would want so much land in Paraguay. Was George Bush arranging a 'refuge' in anxious anticipation over a threatened war crimes tribunal?[1]Was the land an access point to the Guarani Aquifer – one of the world's largest fresh water sources?[2] Were the Bush's planning to expand their investment portfolio with cattle and soybean?

Perhaps George Bush had simply received some good investment advice. An Argentina-based real estate company had the following to say about investing in land in Paraguay:

> *Let's not forget Paraguay, where during the last three years land prices in the Chaco Paraguayo grew 400% and where it is still possible to buy productive land in Paraguay for less than 1,000 US dollars per hectare… land in Paraguay is (still) cheap; the land is very fertile… Paraguay is proof that land investors have an appetite for risk when the profits from 100,000 hectares of soy land out way (sic) the possible medium terms risks…* [3]

Often attributed to the steep hike in food prices over the past 5 years (soy prices have risen more or less steadily since the 1980's), Paraguayan farmland has received significant attention from both foreign and domestic investors. In Paraguay's Chaco region – the expansive westerly region of the country –land with rich soil can be had for bargain prices. Sweetening the investment prospects, prices have increased exponentially in the past 15 years. In a BBC interview, one farmer in the Chaco said: "Four years ago I paid $70 (£45) per hectare for my new plot. Fifteen years ago, I would have paid $20… Now, the price is $200 – even as high as $500 – a hectare".[4] These dramatic increases effectively priced most rural Paraguayans out of the land market long ago, leaving land purchases largely to rich Paraguayans and foreigners.

But it is not only the physical and financial characteristics of Paraguayan soil that make this a 'good investment', but the institutional characteristics of Paraguay that create a sympathetic environment for investmentin farmland, particularly in the context of soy production. For example, in Paraguay there are few regulations to conform to, and the taxes on soy exports are extremely low. The real estatecompany boasts that such an environment assures investors 'freedom from bureaucracy':

> *Maybe other key points of interest for land investors in Paraguay is (sic) the freedom of bureaucracy that affects its neighbouring countries, good support from the government for larger agricultural ventures, low taxes on exports and fiscal incentives for foreign investors. If you want to know more, ask our land experts…*[5]

It appears that this may be an effective 'competitive advantage' for Paraguay in terms of attracting foreign investment, vis-à-vis its neighbors:

[1] http://thepowerhour.com/news2/bush_paraguay.htm (accessed July 22, 2012)
[2] http://www.guardian.co.uk/world/2006/oct/23/mainsection.tomphillips (accessed July 22, 2012)
[3] http://www.bastay.com/buenos-aires-real-estate/land-price-appreciation-in-argentina-paraguay-and-uruguay (accessed July 28, 2012)
[4] http://www.bbc.co.uk/news/world-latin-america-14032060 (accessed July 25, 2012)
[5] http://www.bastay.com/buenos-aires-real-estate/land-price-appreciation-in-argentina-paraguay-and-uruguay (accessed July 28, 2012)

There are those who believe that foreign land ownership is outdated in Paraguay, but that does not stop foreign buyers with an appetite for risk. Recently foreign buyers acquired more than 100.000 hectares of land in Paraguay…[6]

2 The rush for 'soy reserves'

Soy has become dominant in the Paraguayan agricultural landscape – so much so, that forested land, and *cerrado*, not yet converted to soy production are sold as kind of 'soy reserves'(Steward, 2007). Indeed, the amount of land dedicated to soy production in Paraguay grows every year; increasing in 2011 to more than 400% over 1991 levels (see Tables 1 and 2). Soy, furthermore, is increasingly a large-scale crop (Table 2). While the total land area in Paraguay dedicated to soy production grew by nearly 350% between 1991 and 2008, the amount of land dedicated to soy production on farms smaller than 20 hectares contracted by 10%. The larger the farm size, the faster the growth in size of soy cropland: from just under 6% growth in cropland on farms between 20 and <50 hectares, to a staggering near-1700% rate of growth in cropland on large farms over 1000 hectares.

Table 1: Land surface dedicated to soy production in Paraguay (Hectares), 2008-2011

	2008/9	2009/10	2010/11
Land surface dedicated to soy production (in Hectares)	2.570.000	2.671.059	2.805.467

Source: Ministerio de Agricultura y Ganaderia (MAG), Paraguay, 2012

Paraguay's 'soy boom', as it has been widely referred to, is taking place in the context of increasingly concentrated land holdings in a country already widely recognized as having among the most unequal land distributions in the world. The dramatic increases in soy production are almost exclusively controlled by large industrial agricultural operations. The land rush in Paraguay cannot be analyzed without attention to the dynamics of the soy industry in the country.

Table 2: Land area dedicated to soy cultivation- by farm size (Hectares), 1991-2008

	Total land area	*Farm size (Hectares)*				
		<20	*20-<50*	*50-<100*	*100-<1000*	*1000+*
Total 2008	2,463,510.4	98,442.2	97,014.5	133,906.7	1,408,693.4	1,085,453.7
Total 1991	552,656.9	110 740.0	91,597.6	86,904.6	203 050.2	60,364.4
Change 1991-2008(%)	345.8	-11.1	5.9	54.1	416.5	1,698.2

Source: (Direccion de Censo y Estadística Agropecuaria, 2009)

In the early 2000s, a threat was presented to the South American soy industry, thus to the large-scale investments in farmland for soy production. Increasingly, soy production in South America was becoming linked to deforestation in the Amazon and the Interior Atlantic Forests (both named 'biodiversity hotspots' by Conservation International), the appropriation of indigenous lands, and even slavery. Horrific stories turned up in the European and North American media, of animals and people being poisoned by pesticides used in conjunction with GM Soy, images of brutal and violent land evictions, and bulldozers and fires bringing down massive areas of forest to make room for soy expansion. Soy producers in South America – some dubbed 'agro-bandits' (Rocha, 2005)– became a collective pariah for protesters in Europe, a significant destination for Paraguayan soy exports. The South American soy industry was facing boycotts from their most important markets.

[6] http://www.bastay.com/buenos-aires-real-estate/land-price-appreciation-in-argentina-paraguay-and-uruguay (accessed July 28, 2012)

This threat to Paraguay's land-based investment opportunity led to an opportunity of a different kind –to repair the reputation of large-scale soy production. The World Wildlife Fund (WWF) invited soy producers to consider developing a certification scheme for soy –a mode of non-state, private, voluntary governance over the industry that would provide assurance to buyers that the crop is produced sustainably. Such an alternative to conventional production would address the impacts of soy production and alleviate international concern about grievances against the soy industry. The process that ultimately led to standards for 'responsible' soy production, originated in 2006 under the name the Roundtable on Sustainable Soy (RTSS). Later, at the behest of several NGOs concerned about the vagueness and ubiquity of the term 'sustainable', the initiative was re-named the Roundtable on Responsible Soy (RTRS).

In 2010, RTRS standards for 'responsible' soy production, Version 1.0 was released, after four years of discussion and debate both within the RTRS and outside. Proponents said that the standards would improve the environmental and social performance of the soy industry in countries where it was problematic, in particular Brazil, Bolivia and Paraguay. Opponents said that the creation of such standards would only 'greenwash' the industry and distract attention away from the fundamental ways in which the soy industry confounds environmental, social and developmental goals(Elgert, 2011).

Despite that to date, only one soy producer in Paraguay has actually become an RTRS-certified grower, the process and outcomes of the roundtable have opened up debate about soy, and the potential for the industry to contribute to national social, environmental and economic goals. Broadly speaking, the RTRS has enabled the emergence of a discourse of responsible soy that is deployed both inside and outside the formal roundtable proceedings and certification processes. For example, despite not being RTRS certified, companies such as Paraguay's Grupo Desarrollo Agricola Paraguay(Grupo DAP) are members of the RTRS, and invoke the responsible soy in their own 'responsible soy programme', through which they address the 'triple bottom line' of soy production.[7]More broadly yet, dimensions of this debate question whether stronger governance and regulation are responses to the most serious questions and problems posed by the dynamics of large scale land grabbing and commodity production (De Schutter, 2011), such as soy production in Paraguay. Such questions open the possibility that a 'different model of development' –as put by many critics of the soy model in Paraguay(for example, Holland et al., 2008)– will lead to better environmental, social and economic outcomes, and not voluntary regulation and certification within the existing model.

The remainder of this paper is committed to critically examining several of the claims about how a new kind of soy production – responsible soy production – can contribute to national environmental and socio-economic developmental goals. Some of these claims are taken directly from the RTRS criteria and development process; others are identified as part of the broader discourse of responsible soy given rise to by the RTRS. The point here is not to disprove the claims, but to engage them in critical debate that will further illuminate the potential of the soy industry (even under adherence to the RTRS standards) to contribute to environmental, social and economic sustainability in the context of South American countries, and in particular, Paraguay. While much of the critical work on responsible soy focuses on one subject area (ie: environment or income, for example), this paper brings together different research areas to treat the issues of soy production more generally. It uses a wide array of existing research, new data analysis and online news reports to argue that the notion of 'responsible soy' on large farms does not contribute to sustainable development, in any sense let alone every sense.

[7] http://www.dap.com.py/ (accessed March 10, 2012)

3 Five claims about environmental, economic, and social sustainability of Soy

3.1 Less deforestation

Some of the earliest concerns with soy production highlighted issues of deforestation. In the early 2000's, much blame was placed squarely on the soy industry for shrinking forests(Altieri & Pengue, 2005; Fearnside, 2001)and pitted international environmental non-governmental organizations (IENGOs) against the soy industry. Some of these IENGOs have been protagonists in the establishment and the propagation of the RTRS. It is not surprising, then, that the environmental dimension of 'responsibility' has from the beginning been a key concern within the RTRS. Numerous studies discuss the large extent to which soy expansion is linked, both directly and indirectly to deforestation as the agricultural frontier extends into forested area(Barona, Ramankutty, Hyman, & Coomes, 2010). A considerable shift, however, has recently occurred in this research, 'decoupling' soy production from deforestation.

The RTRS response to charges of soy-induced deforestation includes support for three broad policy measures: first, zoning for agricultural expansion that is sensitive to areas of 'high conservation value' (HCV); second, support for the 'soy moratorium' – the brainchild of the soy industry to deflect criticism about deforestation; and thirdly, adherence to the Paraguayan law that requires that 25% of agricultural land remain forested.

Closing the yield gap and Indirect links and 'Leakage' occur whereby deforestation is not reduced, but simply displaced

Once the soy moratorium was put in place, many researchers illustrated its positive influence of reducing Amazonian deforestation(Rudorff et al., 2011), even alongside increasing soy production. Others, however, point out several reasons to be cautious about this impact over the short and long term. First, The Union of Concerned Scientists points out that at least part of the continued growth in soy production after the moratorium was due to increased productivity rather than expansion (Boucher, 2011). Brazilian and Paraguayan yields per hectare were improved to levels comparable to the US – where the highest productivity levels are found (Table 3). As this 'yield gap' is closed, "the potential gain from 'catching up' is reduced" (Boucher, 2011:8; Licker et al., 2010), suggesting that the benefits of intensification are likely to have a time limited effect.

Table 3: Average soy production (tons/hectare)

	1991	2008
USA	2.3	2.7
Paraguay	1.9	2.7

Data Source: Soystats (http://www.soystats.com/2012/page_08.htm);
Calculations the author is using are of soy cropland and production data (MAG, 2010).

Secondly, many authors raised alarm bells that the continued growth of the soy industry combined with decreasing deforestation, implied leakage of deforestation to other regions and ecosystems or via other sectors. Leakage may occur into countries or regions with more relaxed environmental legislation and enforcement, or to ecosystems not protected by existing enforcement. For example, the displacement of soy expansion from tropical forests to savannahs has been highlighted(Merry Baker & Small, 2005).

Finally, there are concerns that as the direct causal relationship between soy production and deforestation declines in importance, the indirect influences bear greater attention. Other sectors or industries, for example, can mediate effects of leakage. Cattle production, for instance, has been assigned much of the blame for deforestation rates that were once reserved for soy. This however,

neglects the expansion of soy onto former pasture, pushing cattle production – not subject to the soy moratorium –into newly deforested regions(Barona et al., 2010). Soy production is distanced from deforestation, but is still part of the broad causal relationship.

Land sparing/land sharing debate

At the heart of each of the reasons for compatibility between soy production and environmental outcomes (particularly forests and related biodiversity) – HCV-sensitive zoning, the soy moratorium, and the 25% law – is the notion of 'land sparing'. The notion of 'land sparing' suggests that increasing productivity on existing agricultural land through intensification can help farmers to avoid extending production by clearing forested lands. This approach to agriculture and conservation suggests that agricultural intensification can spare land for conservation; human driven production needs to be separated apart from preserved and protected 'nature'. Efficient and intensive industrial agriculture, for example, can promote less deforestation and more biodiversity. Research, however, has furnished little evidence that intensification can 'spare' substantial quantities of land for conservation over the longer term (Ewers, Scharlemann, Balmford, & Green, 2009). Such increases in agricultural yields, rather, are likely to attract attention and investment as profitability increases (Angelsen, 2010; Angelsen & Kaimowitz, 1999; Ewers et al., 2009).

In contrast to land sparing, proponents of 'land sharing' suggest that combining small scale agriculture with efforts to maintain biodiversity, may be more realistic and effective both in terms of environmental outcomes *and* social justice(Perfecto & Vandermeer, 2010). The paradigm of 'land sharing' suggests that food production and nature conservation can converge on small scale farms and that productivity does not have to be compromised(Perfecto & Vandermeer, 2010).

Most of the discussion about the environmental impact of soy production in Paraguay has centered around the regulation of large holder practices and securing land for 'fences and guns'-style conservation, leaving little discursive space for the potential of a land sharing approach. As a country with a majority rural population, and where rural poverty is estimated at over 50%, and where a high dependence on subsistence crops makes small-scale agriculture a significant food security issue, such approaches that examine the potential for integrating environmental and production concerns would be more suitable than a sole focus on regulating large-scale agriculture.

3.2 Good agricultural practices

The RTRS and the general discourse on responsible soy promote 'good agricultural practices' that protect resources (water, riparian zones, and soil quality), promote integrated pest management, control and manage agro-chemical use and enable the continued existence of multiple production systems. Practices that protect soil quality are of paramount importance because they ensure that land can be cultivated indefinitely, eliminating the need for land abandonment (due to degraded soils and diminishing returns) and resultant expansion into forested areas. Research has suggested that improved soil management practices may even increase agricultural output per hectare of land. Under regimes of soil maintenance, then, expansion occurs only when additional fields are dedicated to soy production – not replacement fields.

One such practice, used widely in Paraguay, is no-till cultivation. No-till cultivation is a practice by which tillage or plowing, which releases soil nutrients, is reduced or eliminated entirely. A 'green cover' crop is planted, cut down and the soybean seed is planted directly in this cover, with little or no soil disturbance. The increased uptake of no-till cultivation in North and South America has been called a 'revolution' by proponents(Huggins & Reganold, 2008), and has been shown to maintain, and even enhance, soil quality(Derpsch, 1999; Huggins & Reganold, 2008).

Good practices can have bad effects

The promotion of no-till cultivation is not without controversy, particularly in South America, and specifically in Paraguay(Elgert, Forthcoming). This is because tillage serves to control pests; once tillage is eliminated from the agricultural cycle, increased pesticide use is required. Additionally, most soy grown in Paraguay (as elsewhere in South America) is 'round-up ready' –genetically modified to resist the application of glyphosate (Round-up is the commercial name in English; in Spanish it is called 'Mata-to do', or 'Kill All'), which controls weeds by killing 'everything green' that is not genetically conditioned to resist.

The combination of round-up ready soy and no-till agriculture means that pesticides, often applied using an agricultural aircraft, increase in importance and quantity for soy producers. Consequently, the impacts of pesticideson surrounding farms also increase. Leakage of pesticide from soy farms to surrounding small-scale farms has resulted in tragedies ranging from loss of subsistence crops, livestock illness and death, and human illness and death. I have spoken personally to several small-scale producers, living and farming on the perimeters of soy fields, who have awoken one day to the devastation of their entire crop. Perhaps the most important and publicized case of pesticide poisoning, was that of 11-year old Silvino Talavera. In January, 2004 the child died from exposure to agrochemicals used in the cultivation of soy, which were routinely applied to the soy crops around the periphery of where Silvino lived with his family. With the support of NGOs and alliances, the 2004 acquittal of the two agribusiness owners responsible was appealed. In November of 2006 they were found guilty of 'creating public risks' and committing homicide, each receiving a sentence of 2 years in prison.

This raises questions of whose environment is meant by the RTRS standards of 'environmental responsibility', and what the environmental parameters for measuring 'good agricultural practices' should be. Indeed, the certification standards for responsible soy include safe handling and disposal of, and precautions for applying, pesticides. But when the stakes are literally life and death, the question remains whether or not regulations around such substances will be sufficient to protect surrounding populations from potential impacts.

3.3 The engine of national economic growth

The soy industry is widely understood to bear great importance for the Paraguayan economy. In its most general sense, responsible soy production – both the implementation and publication of this implementation – protects markets for South American soy, and ensures the continued contribution of the soy industry to Paraguayan growth and development. Indeed, protecting soy markets in Europe has national importance to Paraguay, as soy has been high among the nation's most important exports over the past few decades, and alone has accounted for more than three quarters of Paraguay's impressive 15%GDP growth in 2010.

Although problems with the soy industry are also recognized, they are commonly understood to be technical issues that can be addressed through particular alternatives to production practices that maintain the basic structure of large landholdings. For example, Alberto Yanosky, Director of Paraguayan environmental NGO, Guyra Paraguay and supporter of the RTRS, comments in the newsletter of WWF, an organization that spearheaded the RTRS:

> *Soy production is a leading activity in Paraguay's economy and contributes to national development. The RTRS and its members could make us all very proud of producing soy and remaining a soybean producing country with clear principles and criteria to make this production happen in a responsible way.*
>
> WWF, 2006:1

Economic growth without distribution = growing inequality

A common critique of economic growth and GDP, is that such indicators say little about distribution. This is particularly significant in Paraguay, with one of the most inequitable distributions of wealth of South American countries. In 1999, "the wealthiest 20% of the population accounts for 62.4% of incomes, and the 10% poorest just 0.7%" (Benegas, 1999:278-279). Despite economic growth in Paraguay, and some improvements in distribution, income inequality continues to be pronounced. In 2008, the top 10% of the population earned 42.3% of Paraguay's total income, compared to the bottom 10% that earned 1.1%(UNDP, 2009). The richest 10% earned 38.8 times more than the poorest (UNDP, 2009). Compare this with Sweden (the world's most equal country) where the same proportion earned 6.2 times more, and neighboring Brazil where the difference was 11 times. The gini coefficient for income inequality in Paraguay, where 0 represents perfect equality and 1 represents perfect inequality, was .52 compared to Sweden's .25(UNDP, 2009).

Paraguay's population is highly rural and dependent on agriculture for subsistence and income. Thus, land distribution and control over land and other productive resources is an important dimension of inequality. Indeed, research has shown that "poverty among farm households in Paraguay is closely related to lack of access to land by many farmers" (Ramón López & Thomas, 2000:257; see also, Ramón López & Valdés, 2000). Data suggest that land is becoming more concentrated in Paraguay. For example, between 1991 and 2008, the total number of farms decreased, yet the number of large farms increased substantially by nearly 57% (Table 4). Similarly, the total land area accounted for by farms under 100 hectares shrunk, while area covered by farms over 100 hectares increased by over 43% (Table 5). While the increases in the numbers and land area of large farms are likely in part due to new lands being turned to production (ie: previously forested or grasslands), it is also likely due in part to smaller farms being subsumed by larger farms.

Table 4: Quantity of farms by size (Paraguay)

	Total number of farms	Farm size (Hectares)						
		<5	5-<10	10-<20	20-<50	50-<100	100-<500	500+
Total 2008	289,666	118,003	66,218	57,735	22,866	6,879	10,487	7,478
Total 1991	307,221	122,750	66,605	66,223	31,519	7,577	7,782	4,765
Change 1991-2008(%)	-5.7	-3.9	-0.6	-12.8	-27.5	-9.2	34.8	56.9

Source: Censo Agropecuaria Nacional, 2008. Direccion de Censo y Estadística Agropecuaria, 2009.

Table 5 : Land area of farms by size (Paraguay)(Hectares)

	Total land area of farms	Farm size						
		<5	5-<10	10-<20	20-<50	50-<100	100-<500	500+
Total 2008	32,527,075	238,013	416,702	685,381	620,016	459,555	2,300,193	27,807,215
Total 1991	23,817,737	231,305	430,658	806,802	857,909	502,648	1,619,203	19,369,213
Change 1991-2008(%)	36.6	2.9	-3.2	-15.0	-27.7	-8.6	42.1	43.6

Source: Censo Agropecuaria Nacional, 2008. Direccion de Censo y Estadística Agropecuaria, 2009.

Inadequate employment creation

Many observers agree that the agricultural sector in Paraguay provides the greatest promise for job creation because of the high rural population, the importance of agriculture for the Paraguayan economy, and the high levels of rural poverty(Berry, 2010). Large-scale enterprises such as soy production, however, are not the answer. The creation of employment opportunities is very limited in the context of soy production in Paraguay. Most soy production, and indeed all large-scale soy production, occurs on highly mechanized farms that offer little employment except to a handful of

skilled farm managers and equipment operators. Prominent Paraguayan economists agree that growing soy is a capital- and land-intensive endeavor that generates very few jobs. Growth in the soy industry, therefore, "is likely to have a net negative impact on labor demand… the larger these sectors… the worse are labor market indicators likely to be" (Masi & Ruiz Diaz, 2010:219).

A case in point is a company called Desarrollo Agricola del Paraguay (DAP). Under the auspices of DAP, over 13,700 hectares of soy are cultivated on 4 separate properties. They state that "over 50 people work in the administrative offices and agricultural units of production". This amounts to about one job per 275 hectares of land. Compare this with the 'family farm' that averages between 10 and 20 hectares (in Canindeyu, for example) and can employ more than 4 or 5 people.

The soy industry is insufficiently taxed

A second means by which soy production could contribute to national development goals and some level of income redistribution is through export taxes. Export taxes comprise the simplest way for a government to raise general revenue, but in Paraguay, taxes on agricultural exports have remained extremely low. This is apparent when Paraguay's soy taxes are compared to tax revenue from other sources, and the agricultural taxes levied by neighboring countries. While agricultural exports account for 36% of The Paraguayan GDP, they only account for 2.5% of the government's tax-take. Tax on soy exports remains at a paltry 2.5%. Compare this with the 35% export tax levied on soy exports in neighboring Argentina, where a proposed hike to 44% was contemplated by President Kirchner, but scrapped after industry-wide strikes and protests.

In 2012, then-President Lugo's attempts to increase the export tax marginally to 6% were 'balked at' by soy producers, and met not with debate, but with flat out refusal. One industry representative called the proposal to increase export taxes on soy, "an absurd form of intervention", saying that "Paraguay has great potential and could be a big food producer for the world, but this could slow the sector's development".[8]

Could small-scale productivity also support national economic growth?

In 2008, when he travelled to Paraguay to participate in Fernando Lugo's presidential inauguration, Joseph Stiglitz made a speech to an uneasy crowd including cattle ranchers and soy growers, advocating land reform. Drawing on the east Asian economic successes, in part credited to aggressive land reform and national programs for improved productivity(Kay, 2002), Stiglitz said that improving access to land and other resources of the poor, would lay the foundation for increased growth and equity.[9]Others agree that small-scale agriculture must play a prominent role in any plan for growth and poverty reduction in Paraguay(Berry, 2010; Galeano, 2010).

Stiglitz's bold statement invokes one of the most powerful economic arguments for equitable landholdings – that farm size is inversely related to farm productivity. Large agricultural enterprises have been defended in terms of their higher levels of productivity owing to capital investments, mechanization, rational farm management and access to economies of scale. But critics point out that low productivity on small farms is more a product of a particular policy environment (one that privileges large landholders with little monitoring of compliance with environmental regulation, low taxes and cheap land) than of any inherent productive capacity. Galeano indicates, for example, "it is important to emphasize that the relative success of each group depends not only on its own

[8] http://uk.reuters.com/article/2011/08/25/paraguay-soy-tax-idUKN1E77O0HS20110825 (accessed Aug 1, 2012)

[9] http://upsidedownworld.org/main/paraguay-archives-44/1439-stiglitz-goes-to-paraguay-move-over-chicago-a-cambridge-boys-in-town (accessed July 5, 2009)

characteristics but also on factors partially or totally beyond its control, like access to land, the level and quality of support provided by external agents, the way markets function, etc." (Galeano, 2010:109). Significant contributions to the productivity and competitiveness of the small farm can be made by "supportive social, economic and political contexts" (Galeano, 2010:105).

The efficiency of soy production, in Paraguay and globally, has increased since the early 1990's. The 1991 Agricultural Census showed that the average level of soy production for Paraguay was around 1.9 tons per hectare. This increased to around 2.7 tons per hectare in 2008 (Table 6). Under the assumption that large farms are more efficient, there is a temptation to attribute some of this increased yield to the increased domination of large producers in Paraguayan soy production. Based on the desegregated data from the 1991 and 2008 censuses, however, small farms appear to have similar levels of soy production per hectare as large farms in both periods. This suggests that small farms benefitted equally from technological advances that enabled producers to boost yields. Indeed, other studies of agricultural production in Paraguay show similar results. Toledo analyzed data from the 2000-01 National Household Survey, and found that they confirmed the inverse relationship between farm size and productivity (2010). He concludes: "Agricultural policies that maximize the utilization of labor accompanied by the provision of technological support and access to capital *and, of course, land* improve the likelihood of growth with equity in the sector" (Toledo, 2010:93, emphasis added).

The ways in which policy environments facilitate growth in different agricultural sectors is not an accident but a deliberate political choice. Despite the feasibility of small-scale agriculture as an engine of productivity and growth in Paraguay, there has been a stubbornly low level of public support for the small farmer. According to an analysis undertaken by Oxfam researchers, support to family-based agriculture has accounted for a declining percentage of public expenditure since 2005, when it accounted for around 12%. In 2009 such support accounted for around 5% of public expenditure (Itriago, 2012).Attempts at agrarian reform have, furthermore, been remarkably ineffective with a history of being stalled or made impotent by the powerful and land-owning elite. For example, in the 1950's and 60's,high population densities and the 'shortage' of land in the east prompted the movement of people towards the uncultivated, forested and 'available' areas westward. In charge of this movement was the Rural Welfare Institute (Instituto de Bienestar – IBR), the government department created and mandated to orchestrate mass migrations, and serve the needs of the rural people. Data from the 1956 Agricultural Census, however, show that this 'land shortage', blamed for the tensions and conflict in the area during the 1960's, appears to be much less a case of 'lack of land' itself, and more a case of dramatically inequitable land distribution (Arnold, 1971, found in Nickson, 1981). Inequality and its political-historical roots were key issues addressed by the Ligas Agrarias, church-led grassroots organizations dedicated to the social organization and political mobilization of *campesinos* in the Eastern and Central Zones (Nickson, 1981).

Table 6: Soy production (tons) per hectare of cultivation by size of soy crop, 1991-2008

	<1-<20	20-<50	50-<100	100-<1000	1000-<10000	10000+
2008	2.6	2.7	2.7	2.7	2.8	2.7
1991	1.9	1.9	1.8	1.9	1.9	1.8

Source: Calculated by author using area of soy cropland and production data from (MAG, 2010).

Populist policies of land redistribution were poised to improve equity in landholdings and serve the purposes of justice and social welfare (Nagel, 1999). But researchers argue that the IBR was established at the demand of large landholders in the eastern parts of the country, who were

looking to mitigate the threat posed by an increasingly dissatisfied and organized (via the Ligas Agrarias) peasant population. Processes for implementing the land reform policies were incongruent with these aims, being largely ineffective, cumbersome or corrupted. Much of the land slated for reform was gifted to associates and supporters of the government(Hetherington, 2011). For example, Blas Riquelme, one of the richest men in Paraguay and political ally to Dictator Stroessner in the 60's and 70's, is reported by the Paraguayan media to have illegally acquired 50,000 hectares of land in 1969 – land that was destined for distribution to peasants as part of land reform.[10] Consistent with this and other accounts of 'tierra malhabida' ('wrongly occupied land')(Hetherington, 2011), Nagel argues that the reform policies were largely a façade; rhetorical political tools with few economic and redistributive effects.

Never far from the attentions of Paraguayans, the issue of land reform was again made paramount in 2008. Fernando Lugo won the election on a platform of pro-poor policies and land reform, raising peasants' expectations that historic inequalities and injustices in land distribution would be redressed. But once again, promises of reform fell far short of expectations. Lugo faced a number of challenges in implementing land reform. The notion of land reform was opposed, predictably, by the landowning elite. Opposition also emanated from the Paraguayan congress, where the opposition party maintained a majority, and effectively managed to shut down any move towards redistribution. The Brazilian government issued strong warnings and threatened sanctions against any appropriation of Brazilian-owned land in Paraguay. Lugo's attempts to raise government revenues, to fund land acquisitions were also thwarted. The institutionalization of the country's first ever income tax was delayed until 2013, and efforts to renegotiate the terms of Brazil's purchase of energy from Paraguay's share of the Itaipu dam, jointly owned but highly favorable towards Brazil, were also unsuccessful.

3.4 Food security among a growing global population

> *"We should keep moving forward and we should not rest until the complete elimination of hunger is achieved in the entire world!!!!"*
>
> Peiretti, 2005, participant in the first RTRS meeting

The above is a quotation from a presentation given at the first meeting of the RTRS, and continues to reflect the way in which soy farming in Paraguay, and elsewhere, is habitually linked with satisfying the basic needs of a growing global population. This link is based on the sheer production of food, as Roger Beachy (Director of the US National Institute for Food and Agriculture) says: "Agriculture faces a serious challenge as it strives to produce food for a global population expected to reach 9 billion by 2050". But soy occupies a privileged place in this link, Beachy adds: "Today soybeans are the largest source of protein and the second largest source of vegetable oil in the world, so improving soybean production has important implications for food security".[11]

Food production does not necessarily translate into access

The 'food availability thesis' – the notion that food security is dependent on food production – has been discredited both theoretically and empirically. It is widely recognized that great variation exists in the degrees to which food security – and insecurity – is experienced across populations, outdating policy discussions of food security that mainly revolve around increased production and productivity (Jenkins & Scanlan, 2001; Sen, 1981). Today, for example, food insecurity exists despite production levels that are more than sufficient to meet global needs (FAO, 2011). Food security, rather, is determined by a host of contextually specific social, economic and political factors that

[10] http://ea.com.py/blas-n-riquelme-y-las-tierras-malhabidas-de-curuguaty/ (accessed June25, 2012)
[11] http://www.csrees.usda.gov/newsroom/news/2011news/03281_vt_soybean.html (accessed August 8, 2012)

determine both demand for food (Cohen, 1995), and access to food (Sen, 1981). Such various factors include employment opportunities, education and skills, income, income support programs, food subsidies, access to land and agricultural inputs, and access to markets. Hunger, in short, "is not so much linked to the quantity of food that is globally produced but to poverty" (Tscharntke et al., 2012).

Small and decreasing share in the 'soy boom'

As is the case with much industrial agriculture, the soy industry in Paraguay is concentrated nearly exclusively on the export market, with negligible production for domestic consumption. Some research has been used to argue that such dominant focus on export crops can undermine local food security by replacing subsistence and food crops for domestic consumption:

> *90% of the value of exports in 1995 relate to the agricultural and ranching sector. The agri-export model has favoured monocultures, principally of cotton on reduced holdings of small producers and of soy on farms at the industrial level. However, this agro-export model has been responsible for reducing agricultural diversification and reduction of subsistence crops of small producers*
>
> (FAO, 2001).[12]

Other research, however, has been used to argue that export crops do not necessarily have negative impacts on food security. Indeed, greater engagement with cash crops for export is associated with greater food security for poor farmers through income generation, when marketing support and infrastructure allow access to food markets for both buying and selling. In Paraguay, however, we see that small producers are being increasingly excluded from soy production. In 1991 producers planting fewer than 20 hectares of soy accounted for 20% of all soy production; in 2008 they accounted for less than 4% (MAG, 2010). This is consistent with a picture of Paraguay as increasingly a producer of soy on fewer, larger land holdings, with decreasing agricultural support for the rural poor.

The immediate impact of the land grab on food security in Paraguay, and its connection with soy expansion, is somewhat difficult to characterize, and the potential relationships require further research. Indeed, the most recent clamor for soy farmland is occurring in Paraguay's Chaco region – the western 'frontier land'. This region has historically been sparsely populated – and, as recognized elsewhere(Borras Jr., Franco, Kay, & Spoor, 2011), this new wave of land grabbing has probably not impacted significantly on food security among rural Paraguayans. It is feasible, however, that the earlier and continued expansion of soy in the eastern regions of Paraguay, has impacted on food security by concentrating landholdings and directing attention and support away from smallholder production.

3.5 Inclusive politics

Non-state governance initiatives such as certification standards development and the accompanying discourse of corporate social responsibility have increasingly emphasized the role of stakeholders (as opposed to shareholders) in industry decision-making. Participatory local engagement is seen as a means of ensuring that, beyond corporate rhetoric, certification standards do embody dimensions of development at the local level. In addition to outcomes, thus, the processes of stakeholder engagement and participation that are pursued in the context of non-state governance initiatives

[12]El 90% del valor de las exportaciones de 1995 corresponden al sector agrícola y ganadero. El modelo agro exportador ha favorecido el monocultivo, principalmente de algodón en parcelas reducidas de pequeños agricultores, y de soja, en fincas de nivel empresarial. Sin embargo, este modelo agro exportador ha sido el responsable del desaliento de la diversificación agrícola y de la disminución de la producción de cultivos para autoconsumo de los pequeños agricultores (FAO, 2001).

are an important part of the overall assessments of such initiatives. This emphasis is aimed at increasing the democratic legitimacy of and public support for such initiatives in the absence of state regulation.

The RTRS was based on what was claimed to be a participatory process(Elgert, 2011; Garcia-Lopez & Arizpe, 2010). Discussions and debates on how the certification standards should take shape, were open to not only those directly involved in the soy industry, but diverse stakeholders, including those representing 'local' interests. Indeed, RTRS support for stakeholder participation in standards development took many forms. Funds were set aside for developing country NGOs to attend the initial RTRS meetings. Participation has been built into the codes and norms for diverse representation in the institutional structures of the RTRS. Finally, throughout the standards development process, mechanisms were implemented to facilitate feedback from not only RTRS members, but the public at large.

Ultimately, the RTRS did not manage to achieve broad based participation in the standards development process, and closer examination of the RTRS case brings the potential for authentic stakeholder engagement and participation into question(Elgert, 2011).Rather than joining in the RTRS debate, groups that opposed the RTRS formulated a coherent campaign against it. They held demonstrations outside the RTRS meetings, and various groups within this opposition have published reports featuring a flat-out refusal of even the conceptual possibility of producing soy 'sustainably' or 'responsibly' in the current socio-political environment that characterizes Paraguay and Brazil(ASEED, 2006).

Power, interests and privileged knowledge

Inclusive politics did not become a defining feature of the RTRS proceedings, despite the strong interests of diverse stakeholders in how the responsible soy certification standards emerged. Vast power differences between stakeholders, however, irreconcilably challenged equal access to deliberation and decision-making in the standards development process. For example, relationships between the various stakeholders in the soy industry are characterized by extreme socio-economic and power differentials. At one extreme, participants include representatives from some of the world's largest international corporations that direct and control soy production in South America. These include Archer Daniels Midland Company, one of the largest agricultural processors in the world; Andre Maggi Group, the world's largest private producer of soybeans; and Cargill, an international food producer and marketer with over $116 billion in sales in 2009. In February, 2009 the biotechnology giants Monsanto and Syngenta were admitted as members to the RTRS. At the other extreme, the typical Paraguayan peasant has around 10 hectares of land (to which there may or may not be formal title) and earns less than US$3,000 per year. It is not difficult to see how such disparities, even if all stakeholders had been 'around the table', likely would have led to situations of intimidation and thus impacted on the quality of 'inclusive' debate.

The dominance of soy producers and large environmental organizations in decision-making processes was particularly evident in discussions around what knowledge was regarded as 'relevant' to standards development. Indeed, within the RTRS, problems associated with soy were framed as largely technical concerns, to be addressed through sustainable agriculture, environmental stewardship and compliance with labor laws. These technical criteria appear to be apolitical, pragmatic and uncontroversial. This emphasis distinctly marginalized more political concerns such as land distribution and inequality. As with debates about 'sustainable' commodity production

elsewhere, protest that invoked a more political problematic was considered "not merely irrelevant but disruptive" (Brosius, 1999:49).[13]

The wider political ramifications of concentrated wealth and power

Recent events in the formal political sphere have cast an even a greater shadow on the relationship between Paraguayan soy interests and democratic politics more generally. On June 22, 2012, President Fernando Lugo was impeached on the grounds of 'poor performance of his duties', after the opposition party in congress issued a vague and troubling challenge to Lugo's ability to exercise or lead 'effective' governance. Jeremy Hobbs of Oxfam was not alone when he associated the impeachment with the soy boom, claiming Lugo to be "the latest victim of Paraguay's 'soy war'".[14]

Lugo's democratic victory in 2008 "was hailed as a crucial step forward for democracy (in Paraguay)" (The Economist, 2012). The victory ended the 60-year rule of the Colorado party, a period plagued by oppressive dictatorship, corruption, censorship and violence; a period which led to the continent's second highest rates of inequality, despite economic growth. He won the election on a platform of agrarian reform and pro-poor policies – not universal political sympathies in Paraguay. Tensions between agro-industry, large farmers (particularly soy producers) and left-leaning Lugo have not been secret. One outspoken critic has been Blas N. Riquelme, one of the richest landowners in Paraguay, and an ex-Senator in the Colorado government during the Stroessner dictatorship. Allegedly, Riquelme illegally accrued at least 50,000 hectares, destined for distribution in a 1969 land reform, from Stroessner. Many Paraguayans, closely associate Riquelme with the 'old political order'.

It was on land to which Riquelme claimed ownership that 17 people were massacred on June 15, 2012. The 2,000 hectare property, known as "Marina Cue" is located in the northeastern department of Canindeyú, near the town of Curuguaty. The deaths resulted from gunfire in a clash between civilians and police after Riquelme called in police to evict the peasant group, accused of 'invading' the land. Such occupations are not an uncommon form of protest for the landless poor in Paraguay and Brazil. Though not the first clash of its kind in Paraguay or in this region, this tragic end was the most fatal in decades.

The Curuguaty massacre catalyzed the Presidential impeachment, as the largely Colorado opposition in congress claimed that it was proof that Lugo was unable to maintain order in the country. Instantly, the government of Argentina and Brazil invoked provisions contained in the treaties of Mercosur, the South American trade bloc, that suspend any member assessed to have broken the rules of democratic governance. The impeachment was labeled a 'coup' by much of the news media. The Organization of the American States (OAS) – acting in accordance with its mandate to promote and consolidate representative democracy – sent a delegation to Paraguay on a fact-finding mission, and concluded that the impeachment bore formal legality, through provisions of the Paraguayan constitution. Observers, however, remained uncomfortable with the basis for, and speed with which the impeachment took place. The whole process lasted a mere 31 hours from beginning to end, scarcely offering Lugo to muster a defense. In the weeks following the ousting of Lugo, Wikileaks released cables suggesting that even the US embassy knew about the opposition's plans for Lugo's fall, as early as 2009.

The extent to which Lugo's impeachment has embodied a 'rupture' of democracy in Paraguay is a matter of debate and perspective. The extent to which it is directly linked with the soy industry is

[13] Brosius found a similar suppression of the 'political' with the 'technical' in sustainable forestry debates in Malaysia.

[14] http://www.nytimes.com/2012/07/03/opinion/paraguays-destructive-soy-boom.html (accessed July 18, 2012)

unclear, and it is apparent that whatever the extent, there are other interests and power relations involved. The soy industry, however, certainly represents power in Paraguay and its intimate link – both contemporary and historical – with land ownership. Thisbrings into question the extent to which a Paraguayan democracy, without some redress of land inequality, can be taken seriously.

4 Summary and Conclusions

The production of soy, Paraguay's largest export, is increasingly produced on fewer and larger farms. Still considered a bargain, Paraguayan land sales are hot, many of these properties considered 'soy reserves', intended for future agricultural development. Such a land market is harshly felt by most rural Paraguayans who are poor and unskilled, and for whom opportunities outside of small-scale subsistence and cash crop farming are extremely limited. But the soy boom of the past two decades, linked closely with the boom in the land market, became threatened as international buyers threatened sanctions against South American soy.

The discourse of sustainable soy production was, to a large extent, produced and mobilized through the Roundtable on Responsible Soy – a multi-stakeholder response to the growing body of environmental, social and economic grievances against the soy industry. This discourse features several claims about how the soy sector, which implicates the concentration of landholdings in Paraguay, contributes to environmental, economic and social goals – the much lauded 'triple bottom line' of sustainable development. Environmentally, responsible soy reduces deforestation and fosters the adoption of 'good' agricultural practices. Economically, soy contributes to GDP growth. Socially, responsible soy production supports global food security, and political inclusion in decision-making around the standards that define this new era of governance over the soy industry. This paper has argued that support for such claims is thin, and subject to formidable challenge by wider inquiry. Subjected to richer interrogation, these claims simply do not hold up.

In recent years, soy production has become understood as more environmentally benign, as it is decoupled from effects such as deforestation and soil degradation. The decoupling of growth in the soy industry and deforestation may be time-limited, or that a more broadly defined purview, illustrates leakage to other ecosystems, other countries, or other sectors. Furthermore, the soy industry is credited with intensifying agricultural production on Paraguay's land base. Such intensification is often understood as a means of 'sparing' land for nature. But recent research challenges this understanding by showing how environmental and economic (production) goals can be achieved on the same land. The promotion of 'good agricultural practices' is also seen as an industry trend that makes soy production more compatible with sustainable development. Such practices, however, can contribute to some goals while detracting from others. Pesticide use, for example, is an integral part of no-till farming, which promotes soil conservation at the expense of neighboring areas where water, soil, crops, livestock and people can become contaminated.

Economically, the soy industry has made among the most important contributions to Paraguay's GDP growth in recent years, and has thus been defended as a key feature of Paraguay's economic viability. This creation of wealth, however, has been poorly distributed, remaining in the hands of an elite few. There are several reasons for this. The soy industry is highly mechanized and has not generated nearly enough employment. For a highly rural society as Paraguay, the pitifully few jobs created per hectare of land have not been supplemented by secondary industry jobs. Soy producers have been particularly resistant to changes in taxation that would see Paraguayan society, more generally, benefit from soy profits. Finally, given adequate institutional attention and resources, there is no reason why small-scale production could not make comparable contributions to

economic growth. Evidence suggests similar levels of productivity on small and large farms, given adequate support.

Finally, soy production is understood to address social concerns in different ways, including contributing to global food security and, more specific to the RTRS process, promoting inclusion in decision-making about appropriate standards of responsible soy production. Like concerns about economic growth, however, food security is more about distribution than production. Access to food is determined by much more than food availability, and can be facilitated by addressing poverty more generally. By its link with increasingly concentrated land holdings, the soy industry has been complicit in reducing smallholder participation in both cash and subsistence crop production, and therefore is not likely to have influenced food security positively. Strategies to enhance political inclusion in the decision-making processes around responsible soy standards have had only limited success. *Campesino* groups have remained outside of the RTRS discussions, rejecting even the possibility of 'responsible soy'. Such groups have questioned the possibility for participation of the poor and powerless when sitting alongside some of the world's most powerful corporate stakeholders. Likewise, when technical arguments about sustainable practices are privileged over political-historical discourses of inequality, there may be little chance for meaningful inclusion.

The land grab in Paraguay, with a strong link to the powerful global soy lobby, has been increasingly exonerated from responsibility for environmental, economic and social problems in Paraguay. Furthermore, the discourse of responsible soy production is an attempt to actually redefine the role of soy production and the concentration of landholdings as a contributor to sustainable development. Ultimately, however, any hope for sustainability in Paraguay will depend on a radical shift which highlights the distribution of land and resources as a key feature of environmental, economic and social goals.

References

1. Altieri, M., & Pengue, M. (2005). Roundup ready soybean in Latin America: A machine of hunger, deforestation and socio-ecological devastation Retrieved November 1, 2010, 2010, from http://www.biosafety-info.net/article.php?aid=284.
2. Angelsen, A. (2010). Policies for reduced deforestation and their impact on agricultural production. *Proceedings of the National Academy of Science, 107*, 19639-19644.
3. Angelsen, A., & Kaimowitz, D. (1999). Rethinking the causes of deforestation: lessons from economic models. *World Bank Research Obs., 14*, 73-98.
4. Arnold, A. F. (1971). *Foundations of an Agricultural Policy in Paraguay*. London: Praeger Publishers Ltd.
5. ASEED. (2006). Declaration: the development model for soy in Paraguay: irresponsible, unsustainable and anti-democratic Retrieved September 6, 2007, from http://www.aseed.net/index.php?option=com_content&task=view&id=285&Itemid=107.
6. Barona, E., Ramankutty, N., Hyman, G., & Coomes, O. T. (2010). The role of pasture and soybean in deforestation of the Brazilian Amazon. *Environmental Research Letters, 5*(1), 1-9.
7. Berry, A. (2010). The Role of Agriculture. In A. Berry (Ed.), *Losing ground in the employment challenge: The case of Paraguay* (pp. 61-84). New Brunswick and London: Transaction.
8. Borras Jr., S. M., Franco, J. C., Kay, C., & Spoor, M. (2011). Land grabbing in Latin America and the Caribbean viewed from broader international perspectives. *Paper presented at the Latin America and Caribbean seminar: 'Dinamicas en el mercado de la tierra en America Latina y el Caribe' 14-15 November. Santiago: FAO Regional Office.*
9. Boucher, D. (2011). Soybeans *The Root of the Problem: What's Driving Tropical Deforestation Today?* Cambridge, Washington, Berkeley and Chicago: Union of Concerned Scientists.
10. Brosius, J. P. (1999). Green Dot, Pink Hearts: Displacing Politics from the Malaysian Rain Forest. *American Anthropologist, 101*(1), 36-57.
11. Cohen, J. (1995). Population Growth and Earth's Human Carrying Capacity. *Science, 269*(5222), 341-346.
12. De Schutter, O. (2011). How not to think of land-grabbing: three critiques of large-scale investments in farmland. *The Journal of Peasant Studies, 38*(2), 249-279.
13. Derpsch, R. (1999). *Frontiers in Conservation Tillage and Advances in Conservation Practice.* Paper presented at the 10th ISCO Conference, West Lafayette In.
14. Direccion de Censo y Estadística Agropecuaria. (2009). *Censo Agropecuaria Nacional 2008*. San Lorenzo, Paraguay: Direccion de Censo y Estadística Agropecuaria.
15. Elgert, L. (2011). Certified Community Development? Local Participation in Corporate Governance. In J. P. R. Rothe, L. J. C. Carroll & D. Ozegovic (Eds.), *Deliberations in Community Development: Balancing on the Edge* (pp. 277-288). Hauppauge: Nova Science Publishers.
16. Elgert, L. (2011). Certified discourse? The politics of developing soy certification standards. *Geoforum (2011), doi:10.1016/j.geoforum.2011.08.008*.
17. Elgert, L. (Forthcoming). Hard facts and software: The coproduction of indicators in a land-use planning model. *Environmental Values*.
18. Ewers, R. M., Scharlemann, J. P. W., Balmford, A., & Green, R. E. (2009). Do increases in agricultural yield spare land for nature? . *Global change 15*, 1716-1726.
19. FAO. (2001). *Perfiles nutricionales por paises: Paraguay*. Rome: FAO.
20. FAO. (2011). *The State of Food Insecurity of the World: How does International Price Volatility Affect Domestic Economies and Food Security?* Rome: FAO.
21. Fearnside, P. M. (2001). Soybean cultivation as a threat to the environment in Brazil. *Environmental Conservation, 28*(1), 23-38.

22. Galeano, L. A. (2010). Potential and future of Paraguayan family farming. In A. Berry (Ed.), *Losing ground in the employment challenge: The case of Paraguay* (pp. 101-122). New Brunswick and London: Transaction.
23. Garcia-Lopez, G. A., & Arizpe, N. (2010). Participatory processes in the soy conflicts in Paraguay and Argentina. *Ecological Economics, 70*(2), 196-206.
24. Hetherington, K. (2011). *Guerrilla Auditors: The politics of transparency in neoliberal Paraguay*: Duke University Press.
25. Holland, N., Joensen, L., Maeyens, A., Samulon, A., Semino, S., Sonderegger, R., & Rulli, J. (2008). The round table on ir-responsible soy: certifying soy expansion, GM soy and agrofuels: ASEED Europe, Base Investigaciones Sociales (BASEIS), Corporate Europe Observatory, Grupo de Reflexion Rural (GRR), Rain Forest Action Network.
26. Huggins, D. R., & Reganold, J. P. (2008). No Till: the Quiet Revolution. *Scientific American, 299*(1), 70-77.
27. Jenkins, J. C., & Scanlan, S. J. (2001). Food secruity in less developed countries, 1970 to 1990. *American Sociological Review, 66*(5), 718-744.
28. Kay, C. (2002). Why East Asia overtook Latin America: agrarian reform, industrialisation and development. *Third World Quarterly, 23*(6), 1073-1102.
29. Licker, R., Johnston, M., Foley, J. A., Barford, C. J., Kucharik, C., Monfreda, C., & Ramankutty, N. (2010). Mind the gap: How do climate and agricultural management explain the 'yield gap' of croplands around the world? *Global ecology and Biogeography, 9*, 769-782.
30. López, R., & Thomas, T. (2000). Rural poverty in Paraguay: the determinants of farm household income. In R. López & A. Valdés (Eds.), *Rural Poverty in Latin America* (pp. 244-257). Houndmills, Basingstoke, Hampshire and London: Macmillan Press Ltd.
31. López, R., & Valdés, A. (2000). Fighting rural poverty in Latin America: New evidence of the effects of education, demographics, and access to land. *Economic development and cultural change, 49*(1), 197-211.
32. MAG. (2010). *Produccion de soja en el Paraguay: Zafra 2008-2010*. Asuncion: Ministerio de Agricultura y Ganaderia.
33. Masi, F., & Ruiz Diaz, F. (2010). The role of international trade in growth and employment generation in Paraguay. In A. Berry (Ed.), *Losing ground in the employment challenge: The case of Paraguay* (pp. 215-239). New Brunswick and London: Transaction.
34. Merry Baker, M., & Small, D. (2005). Brazil's Agricultural 'Sucess' in the Cerrado is a Disaster. *Executive Intelligence Review, 32*(8), 20-23.
35. Nagel, B. Y. (1999). "Unleashing the Fury": The Cultural Discourse of Rural Violence and Land Rights in Paraguay. *Comparative Studies in Society and History, 41*(1), 148-181.
36. Nickson, R. A. (1981). Brazilian Colonization of the Eastern Border Region of Paraguay. *Journal of Latin American Studies, 13*(1), 111-131.
37. Peiretti, R. A. (2005). *The Necessity of a Sustainable Agriculture: The Global focus and the Mercosur-La Confederación de Asociaciones Americanas para la Producción de la Agricultura Sustentable (CAAPAS) view.* Paper presented at the First Roundtable on Sustainable Soy Conference, Foz de Iguacu.
38. Perfecto, I., & Vandermeer, J. (2010). The agricultural matrix as an alternative to the land-sparing/agricultural intensification model: facing the food and biodiversity crises. *Proceedings of the National Academy of Science, 107*(March), 5786-5791.
39. Rocha, J. (2005, February 19). Brazil declares forest havens after nun's killing, *The Guardian*. Retrieved from http://www.guardian.co.uk/environment/2005/feb/19/endangeredhabitats.activists.
40. Rudorff, B. F. T., Adami, M., Aguiar, D. A., Moreira, M. A., Mello, M. P., Fabiani, L., . . . Pires, B. M. (2011). The soy moratorium in the Amazon Biome Monitored by Remote Sensing Images. *Remote Sensing, 3*, 185-202.

41. Sen, A. (1981). *Poverty and Famines: An Essay on Entitlement and Deprivation*. Oxford: Oxford University Press.
42. Steward, C. (2007). From colonization to "environmental soy": A case study of environmental and socio-economic valuation in the Amazon soy frontier. *Agriculture and Human Values, 24*(1), 107-122.
43. The Economist. (2012). Out Lugo. *The Economist, June 25, 2012*.
44. Toledo, R. (2010). Farm size-productivity relationship in Paraguay's agricultural sector. In A. Berry (Ed.), *Losing ground in the employment challenge: The case of Paraguay* (pp. 85-100). New Brunswick and London: Transaction.
45. Tscharntke, T., Clough, Y., Wanger, T. C., Jackson, L., Motzke, I., Perfecto, I., . . . Whitbread, A. (2012). Global food security, biodiversityconservation and the future of agricultural intensification. *Biological conservation, 151*(1), 53-59.
46. UNDP. (2009). *Human Development Report 2009. Overcoming barriers: Human mobility and development*. New York: United Nations Development Program.
47. WWF. (2006). Consensus reached on impacts of soy production at workshop. *Forest Conversion News, 11*(June).

LDPI Working Paper Series

A convergence of factors has been driving a revaluation of land by powerful economic and political actors. This is occurring across the world, but especially in the global South. As a result, we see unfolding worldwide a dramatic rise in the extent of cross-border, transnational corporation-driven and, in some cases, foreign government-driven, large-scale land deals. The phrase 'global land grab' has become a catch-all phrase to describe this explosion of (trans)national commercial land transactions revolving around the production and sale of food and biofuels, conservation and mining activities.

The Land Deal Politics Initiative launched in 2010 as an 'engaged research' initiative, taking the side of the rural poor, but based on solid evidence and detailed, field-based research. The LDPI promotes in-depth and systematic enquiry to inform deeper, meaningful and productive debates about the global trends and local manifestations. The LDPI aims for a broad framework encompassing the political economy, political ecology and political sociology of land deals centred on food, biofuels, minerals and conservation. Working within the broad analytical lenses of these three fields, the LDPI uses as a general framework the four key questions in agrarian political economy: (i) who owns what? (ii) who does what? (iii) who gets what? and (iv) what do they do with the surplus wealth created? Two additional key questions highlight political dynamics between groups and social classes: 'what do they do to each other?', and 'how do changes in politics get shaped by dynamic ecologies, and vice versa?' The LDPI network explores a range of big picture questions through detailed in-depth case studies in several sites globally, focusing on the politics of land deals.

Shifting the debate about 'responsible soy' production in Paraguay: A critical analysis of five claims about environmental, economic, and social sustainability

Certification initiatives are an increasingly prominent means of quelling public concern about the wider socio-political, economic and environmental consequences of commodity production (timber, palm oil, soy) on increasingly concentrated land holdings in countries characterized by large, poor, rural populations. This paper examines the ways in which the discourse of sustainable soy production – created and mobilized through the Roundtable on Responsible Soy (RTRS) certification initiative – enables the coalescence of diverse justifications for land-grabbing in South American producer countries with particular attention to Paraguay. Using data and information from fieldwork, academic literature, online media, the 2008 Paraguayan agricultural census, and the UNDP development report, five such justifications are presented here and critically assessed. They are: reduced deforestation; improved agricultural practices; national economic growth; food security; and standards development processes that feature inclusive politics. The paper concludes that such claims leave out important dimensions of the growth of the soy industry and the concomitant concentration of land holdings in Paraguay. Any hope for equity and justice will depend on a radical shift in sustainable development policy; one that highlights the distribution of land and resources.

Land Deal Politics Initiative LDPI

landpolitics@gmail.com

www.iss.nl/ldpi

Future Agricultures PLAAS Institute for Poverty, Land and Agrarian Studies ISS International Institute of Social Studies Erafung ICAS