



Between redeemer and work of the devil: The transnational Brazilian biofuel discourse

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ABSTRACT

Biofuels have been the subject of heated political discussions, but also of a growing literature on discourses and environmental policies. Previous studies on the issue have, however, neglected the fact that the different discourses about on biofuels are increasingly crossing national boundaries, i.e., that there is a tendency toward transnationalization. In the light of this development the present article analyzes the transnational Brazilian biofuel discourse in the period 2005–2011 with a special emphasis on actors from Brazil, the EU and the USA. By conducting a discourse analysis along the lines of Hajer, five discourse coalitions can be distinguished, each providing a different view on the opportunities, problems and perspectives of biofuel production in Brazil. It is observed that the long-established hegemony of the discourse coalition of biofuel supporters was successfully challenged by a more critical position during the food crisis of 2007/2008. As a result, the discourse coalition of critical supporters—which was committed to sustainable biofuel production via political regulation—prevailed in the transnational Brazilian biofuel discourse and its position was translated into policy measures.

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Introduction

Biofuels, once considered to be the ‘green’ hope for the future, have been transformed into a highly controversial topic. Recently, they gained attention when the US military announced its intention to use an increasing amount of biofuels for running drones, aircrafts and battleships or when biofuels were considered to be a crucial motivation for land grabbing (Carrington, 2012; Anseeuw et al., 2012: 24–26).

All these discussions are embedded in a more comprehensive and global debate on biofuels that is conducted not only in individual countries and specific sectors but in international forums and the broader public as well. In this context Brazil is one of the most important protagonists, both as subject and promoter of these debates (Kojima and Johnson, 2006). The country’s role can be explained by its importance as the world’s largest exporter and second largest producer of ethanol¹ for use as fuel in automobile engines (WBGU, 2009: 39, 206). Brazil already started to produce biofuels on a larger scale when the government initiated a comprehensive ethanol program (*Programa Nacional do Alcool*—PROÁLCOOL) in the face of falling sugar prices and the oil

crisis 1973. After having a tough time in the 1980s and 1990s, the production of biofuels increased dramatically after the introduction of flex-fuel vehicles running on an arbitrary mix of gasoline and hydrogenated ethanol in 2003 and the rise of petroleum and gasoline prices in the earlier 2000s (Giersdorf, 2009: 220–221; Giersdorf and Nitsch, 2006: 6–7; Martines-Filho et al., 2006; Novaes, 2007). In 2002, the Brazilian government initiated a biodiesel program, which aimed inter alia at integrating smallholder agriculture into biofuel production (Pousa et al., 2007).

In line with recent scholarship that established the importance of discourses for global environmental politics, this article takes a discourse-analytical and policy-oriented approach in order to analyze Brazilian biofuels (e.g., Bäckstrand and Lövbrand, 2006; Hajer, 1995). It assumes that the relevant political actors—governments and oppositions representatives, lobbyists, social activists and even consumers—act according to how they perceive and evaluate the world, while these very perceptions and evaluations are in turn influenced by (dominant) discourses (Hajer and Versteeg, 2005). This is shown for instance by Pülzl (2003), who discusses how discursive changes influenced international forest policy within the United Nations and how this led to an institutional response. Fischer (2003) convincingly claims that the use of discursive techniques reveals the social construction of policies. Schmidt et al. (2005) emphasize the importance of public discourses for social democratic reform projects (see Schmidt, 2008 and Hajer, 2008 for other examples). Thus, also biofuel policies and its acceptance are dependent on predominant discursive structures. It is precisely these aspects that are analyzed in this article focusing on biofuel production in Brazil

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¹ This is predominantly produced from sugar cane. With regard to the worldwide production of bioethanol, the USA (26.5 billion liters in 2007) still takes first place before Brazil (19.0 billion liters in 2007) (WBGU, 2009: 39). In the USA biofuels are almost entirely produced from corn.

as a pioneering country in the promotion and production of biofuels. But instead of focusing on the narrowly national biofuel discourse in Brazil, we acknowledge the various relations between the discourses on Brazilian biofuels in Brazil, the EU and partly in the US (e.g., [Bastos Lima and Gupta, 2013](#)).

We thus analyze the transnational Brazilian biofuel discourse which is (re)produced by Brazilian, European, and US-American actors. It comprises

- a) all statements on biofuels made by Brazilian actors that either directly refer to the EU and/or the USA or explicitly address relevant actors in the USA and/or the EU by their form (e.g., internet and media reports, presentations in the respective countries), language (mainly English), and contents (e.g., the promotion of or critical warnings against Brazilian biofuels); and
- b) all statements on biofuels made by US-American or European actors that directly or indirectly refer to Brazil.

The main questions to be posed in this article are: Which discourse coalitions can be identified in the transnational Brazilian biofuel discourse between 2005 and 2011? Which discourse coalitions dominated the discourse at which point of time? To underscore the strength of our approach, we will also partially show how policy changes can be explained by changes in discursive structures. Since the US discourse is mainly concerned with US biofuels and makes only minor references to Brazilian ones, the article mainly, but not exclusively focuses on the Brazilian and the European parts of the discourse. Within the EU, the focus is on Germany due to its pioneering role in the promotion and production of biofuels and because of the manageability of the data, but other EU member states are considered as well (e.g., [Kaup and Selbmann, 2010](#)).

The present article is divided into five sections: The introduction is followed by a short overview of the key discourse-analytical terms. In part three, at first the existing literature on the topic is discussed and the research question developed, after which the study's research procedure is described. Afterwards, the results of the discourse analysis are discussed. Finally, a conclusion is drawn.

Basic concepts of discourse analysis

In order to analyze the transnational Brazilian biofuel discourse, we particularly applied the argumentative discourse analysis as developed by [Hajer \(1995\)](#). The discourse theory underlying this method basically takes an anti-realist or anti-essentialist stand. It assumes that there is a true (physical) reality, but that humans can never access this reality directly and objectively. Instead, human perceptions and interpretations of physical reality are always shaped by mutually accepted rules, norms, worldviews, definitions etc. which precede the perception/interpretation itself. Language is not, as often supposed, a neutral mirror of reality, but rather constitutive for human understandings of what is real (or good, or wise, or promising etc.). However, the meanings that guide perceptions and interpretations of the world are never solely individual, but are always at least in part structured by discourses. Hajer defines a discourse as “a specific ensemble of ideas, concepts, and categorizations that are produced, reproduced, and transformed in a particular set of practices and through which meaning is given to physical and social realities” (1995: 44).

This definition highlights four important features of discourses: First, they represent sedimentations of meaning which are reproduced in social interactions again and again. Second, although there are sedimented meanings, discourses are always in flow because they are (re-)produced through (and can thus only exist because of) social (inter-)actions such as utterances or practices.² Third, social actors are more or less strongly

influenced by discourses, but are able to strategically reproduce and transform the very discourses they face. And fourth, since discourses structure (but not determine) human perceptions and interpretations of reality, they execute considerable, although decentralized, power effects. Discourses consist out of statements, defined as the subset of utterances which is structured by and simultaneously (re-)produces certain discourses. However, it is important to recognize the difference between discourses and debates, which is pointedly summarized by [Hajer \(2006: 67\)](#): “a discourse refers to a set of concepts that structure the contributions of participants to a discussion”.

Usually, there are several discourse coalitions competing for superiority in a certain discursive arena or several sub-discourses competing for dominating a certain discourse. According to [Hajer \(1995: 65\)](#), a discourse coalitions forms when “previously independent practices are actively being related to one another, if a common discourse is created in which several practices get a meaning in a common political project”. Discourse coalitions need no formal platforms or organizations encompassing all actors belonging to the coalition, nor is there a need for the members of a discourse coalition to engage in common statements or practices. Instead, members of a discourse coalition share a common story line. A story line is “a generative sort of narrative that allows actors to draw upon various discursive categories to give meaning to specific physical or social phenomena” ([Hajer, 1995: 56](#)). Story lines reduce the complexity of a development and problem and “bind [various actors] because they ‘sound right’ to many different audiences” ([Hajer, 2000: 140](#)).

However, the question of how can one draw borders between different discourse coalitions is still open. In other words: How do we decide whether a statements belong to discourse coalition A, discourse coalition B, or to a new discourse coalition C? The answer to this strongly depends on the scale of analysis and the research questions asked. Since the analysis of the transnational Brazilian biofuel discourse presented in this paper is focused on a short period of time and tried to shed light on the complexity and diversity of the discourse, several discourse coalitions are distinguished that could be considered as one or two coalitions in case one would conduct a broader historical analysis or focus on main conflict lines instead of the depth of the discourse. More concrete, after a first analysis of our material, several preliminary story lines structuring the transnational Brazilian biofuel discourse were developed. When examining the material more closely, we refined the story lines and decided whether some story lines had to be split up or fused into one. The main criterion for these decisions was the consistency of the respective story lines. This is to say that as soon as we found contradictive claims or demands within one discourse coalition, we split it into two. By contrast, when there were no such contradictions regarding the key claims and demands of several actors, when subsumed them under one discourse coalition.

When discourse coalitions succeed in a discursive struggle, two different results are possible. First, discourse structuration “occurs when a discourse starts to dominate the way a social unit [...] conceptualizes the world” ([Keller, 2006: 70](#)). Second, discourse institutionalization means the translation of story lines into definite policies and/or institutional arrangements ([Hajer, 1993: 48](#)). Situations in which both conditions are fulfilled are labeled by [Hajer \(1995: 57ff.\)](#) as hegemonic.

Research question and research methods

State of research and research deficits

Although no research has been conducted on the transnational Brazilian biofuel discourse thus far, several discourse analyses on the subject of biofuels in Brazil, the USA, and the EU exist.

Worldwide the WBGU differentiates between three biofuel-related discourses: (a) The *environmental policy* discourse considers bioenergy, and thus biofuels, as a contribution to climate protection, but it also increasingly serves as a platform for skeptical voices criticizing the actual

² Practices include utterances as well as non-verbal actions (e.g., demonstrations, punishment etc.).

carbon footprint of biofuels and their impact on food production and nature conservation. (b) A second discourse focuses on the argumentation figure of *energy security* and regards biofuels as an alternative to the importation of oil. (c) Finally, a discourse focusing on *rural development* is identified, which emphasizes opportunities for growth and development that biofuels can create in the agricultural sector and in rural areas more general (WBGU, 2009: 21–23). However, with regard to developing and emerging countries, including Brazil, increasing emphasis is placed on the negative impacts of the local cultivation of energy crops, for example rising food prices or deforestation. These three discourse coalitions identified by the WBGU are also identified by other studies focusing on the Brazilian, Dutch, Finnish, German, Mozambican and Swedish discourses on biofuels/bioenergy (Franco et al., 2010; Huttunen, 2009; Ulmanen et al., 2009). For the US, Wright and Reid (2011) distinguish within the biofuels discussion between an environment, a national security and an economic development frame, which largely (although not exactly) reflect these three discourses, too.

Regarding Brazil, other studies using a discourse analytic or similar framework focus on the conflict between the “agrarian question paradigm” and the “agrarian capitalist paradigm”, various conflicts between environmental protection movements or the debate about the PROÁLCOOL Program (Brilhante, 1997; Fernandes et al., 2010: 807; Laschefski, 2008; Wilkinson and Herrera, 2010). In the European context, many studies focus on the German discourse on biofuels (Mertens, 2008; Selbmann, 2012; Zschache et al., 2009), but there are also analysis’ available for other countries (e.g., Huttunen, 2009; Sengers et al., 2010; Ulmanen et al., 2009). Kirkels (2012) evaluates discursive shifts on the European Biomass Conferences. In the North American context, fewer works using a narrow discourse analytic approach are available, but at least the studies of Delshad et al. (2010), Talamini et al. (2010) and Wright and Reid (2011) on biofuels and bioenergy in the US should be mentioned, while Fast (2009) focuses on Canada and the United States at the same time.

The large majority of the studies cited above agree on the following chronology of the biofuel discourses they evaluate: The biofuel issue first appeared in the general (political) public sphere in the 1970s in the wake of the first and second oil crises and was therefore dominated by arguments of energy supply and affordability. In Brazil falling sugar prices also played an important role. While biofuels were given little attention in the following decade, the various biofuel discourses regained momentum from the mid 1990s onwards. At this time, ecological issues played a highly significant role, but rising oil prices and a structural crisis in the European (and partially also Brazilian) agricultural sectors were also of relevance. At the beginning of the new millennium, the discourses were given fresh impetus by policy initiatives of the newly elected presidents, George W. Bush and Luiz Inácio Lula da Silva, as well as of the European Commission. At the same time, critical voices which had previously played only marginal roles were likewise strengthened. In 2006 not only the ecological but also—and especially—the socioeconomic impacts of biofuels became the focus of criticism.

The different studies mentioned here vary in quality and suffer from different shortcomings. For instance, many (but not all) of them shed not much light on discourse coalitions criticizing biofuels. However, the main shortcoming of the literature on biofuel discourses can be located in another domain: As shown above, the chronology of the biofuels discourse in various countries seems to be quite similar, especially from the late 1990s onward. Furthermore, discourse coalitions very similar to those identified by the WBGU were found by many studies focusing on different countries. This indicates a serious transnationalization of biofuel discourses, i.e., story lines and the competition between discourse coalitions do not stop at the borders of nation states or international organizations, but rather transcend them. In this way national discourses influence each other and to a certain extend melt into one discourse. Indeed, the transnationality of many discourses in a globalized world has been acknowledged by the literature since at least 15 years

(e.g., Blackwood, 2008; Grundmann, 2000; Marques, 2012). Also, Hajer and Versteeg (2005: 183) claim:

“The debates about environmental problems have been increasingly enacted on the international and transnational level and discourse analysis has followed the actors. Studies into national discourse have been complemented with comparative studies; studies comparing the discourse of nation-states have been complemented with the study of global discourses and finally the focus has shifted from global discourses to transnational discourses.”

To speak in Hajer's terms: Most studies on biofuels discourses so far are either focusing on national level discourses or conduct comparative studies (e.g., Delshad et al., 2010; Ulmanen et al., 2009). Only the studies of Kirkels (2012) and the WBGU (2009) use the global level as the unit of analysis, and solely the work of Fast (2009) partially examines transnational discourses. The fact that national discourses increasingly overlap, refer to each other and thus ultimately ‘transnationalize’ in an ever more globalized world is not taken into sufficient account by the current literature. This is the point of departure for the research focus of the present article.

Thus, the importance of Brazil for global biofuel development and the lack of studies focussing on transnational biofuel discourses are the main reasons for investigating the transnational Brazilian biofuels discourse. This article mainly focuses on the description of this discourse, but also provides some examples of the developments that influenced these discursive shifts and of the policies which resulted from those shifts. An extensive analysis of the ‘causes’ and consequences of shifts in the transnational Brazilian biofuel discourse is beyond the scope of this paper and has to be addressed in future research.

Research design

This study assumes that by 2005 at the latest a transnational discursive space had developed, (re)produced by actors from Brazil, the EU, and partially the USA as well as by international actors and institutions. The following political measures paved the way for the development of a transnational discursive space:

- the extension of the Brazilian PROÁLCOOL program in 2004 and the introduction of the PROBIODIESEL program in 2002;
- the adoption of the biofuel directive by the European Parliament in 2003, which stipulated an increase in the percentage of biofuels in overall fuel distribution³ (Arnold et al., 2005); and
- the US Energy Policy Act of 2005, in which the Bush administration laid down an increase in the amount of conventional fuels admixed with biofuels⁴ (U.S. DOI, 2005: 447).

The decision to establish 2005 as the year in which the transnational Brazilian biofuel discourse began is corroborated by the examined material since a clear majority of the statements found were made in 2005 or later. In order to have a clear-cut sample, we decided to include no statements which were articulated after 2011.

The transnational Brazilian biofuel discourse was analyzed in four steps:

- a) In a first step, various internet search engines (Google, Yahoo etc.) were used to find articles, press releases and booklets on biofuels in Brazil. In order to find relevant material, the following key terms were used in combination with “Brazil”: biofuel, bioenergy, agrofuel, agroenergy, sugar cane, soy, eucalyptus, castor oil, renewable energy, deforestation. In a similar manner, “Europe”, “Germany” and “USA”

³ Biofuels were supposed to make up 2% of overall fuel sales in the EU by 2005 and 5.75% by 2010.

⁴ The overall amount of fuel sold was expected to be four billion gallons (approx. 15.1 billion liters) in 2006, rising to 7.5 billion gallons (approx. 28.4 billion liters) by 2012.

were combined with “biofuel”, “bioenergy”, “agrofuel”, “agroenergy”, “sugar cane” and “soy”. All materials which were found and provided a contribution to the transnational Brazilian biofuels discourse as defined above were saved.

- b) Afterwards, a macro analysis of the material was conducted. This process contained another reading of the complete material and the reduction of the material in order to create a corpus for the micro analysis. In order to reduce the amount of material, documents with a similar content have been grouped together according to the principles of minimal and maximal contrastation. Afterwards, the documents considered most different to the other groups of documents and most representative for their group of documents were chosen for the corpus.⁵
- c) We proceeded with reading all 94 documents of the corpus very intensive, identifying various statements in each document and coding them according to the procedure suggested by the Grounded Theory (Corbin and Strauss, 2008). After elaborating and grouping the codes and memos created, the discourse coalitions and their storylines were developed out of the codes. Since some discourse coalitions seemed to be not well-developed, we applied the idea of theoretical sampling and went back to the larger collection of documents (Corbin and Strauss, 2008: 143–157). There, we searched for documents with the potential to elaborate the descriptions of these discourse coalitions. As a consequence, 12 additional documents were added to the corpus (see Appendix I for a list of actors whose statements were included into the corpus).
- d) In the final step, the contributions of the key actors (marked with an * in Appendix I) were analyzed in greater detail. In order to do so, numerous statements of these actors expressed between 2005 and 2011 were collected and analyzed. This helped us to further elaborate the descriptions of the discourse coalitions (for which the key actors were very representative) and to detect changes in the transnational Brazilian biofuel discourse within 2005–2011 period.

Findings and discussion

The findings obtained by analyzing the actors' statements were matched with the insights gained through the analysis of the literature. With regard to the transnational Brazilian biofuel discourse, a total of five discourse coalitions could be distinguished, which are discussed in greater details below.

Supporters of biofuels

This discourse coalition is composed of a range of Brazilian actors, such as the government itself or governmental institutions like APEX,⁶ and companies and alliances of the biofuel production chain such as ABIOVE, ANEC or UNICA. It further comprises automobile companies within Brazil, Europe and the US, e.g., Dodge, Volkswagen, Renault, General Motors or Chrysler, but also some oil companies (e.g., Shell, Statoil). The US government, the European Commission and also most national governments within the EU can be counted as part of this discourse coalition (at least until 2008).

The supporters promote the production (in Brazil) and import (in Europe and the US) of Brazilian biofuels for various reasons. A first line of argumentation contends that biofuels provide economic stimuli and job opportunities in Brazil, especially in the agricultural sector and in poor rural regions. Working conditions in cultivation, harvesting

and production are described as decent, with companies paying comparatively high wages and also financing local social projects. But beyond just promoting development in rural regions, especially Brazilian members of this discourse coalition regard biofuels as a possibility of transforming Brazil into a rich and advanced nation. Biofuels represent a technologically highly advanced sector of Brazil's economy, hold out the promise of greater self-sufficiency in energy supply and can be exported profitably.

As we have shown above, concerns about energy security have been used to legitimize the promotion of Brazilian biofuels from the 1970s onward. In the face of high and especially in the 2000s sharply rising oil prices, the benefits of biofuels are still emphasized quite often by the supporters. They either frame them as a domestic energy source (Brazilian actors) or an energy carrier which can be important from a reliable and politically stable partner (actors from the US and the EU).

Particularly since the publication of the fourth assessment report of the Intergovernmental Panel on Climate Change, climate policy arguments have played a more important role within the discourse coalition of the biofuels supporters (IPCC, 2007a.). Accordingly, new actors such as the IPCC or scientists like Loarie et al. (2011) have joined the discourse coalition. One of the fundamental arguments is that the combustion of biofuels cannot release more CO₂ than that previously absorbed from the atmosphere during the growth of the plants. The differentiation between “good” (Brazilian) and “bad” (non-Brazilian) biofuels is of special relevance here:

Ethanol from sugar cane, as produced in Brazil, provides significant reductions in GHG emissions compared to gasoline and diesel fuel on a ‘well-to-wheels’ basis. These large reductions result from the relatively energy efficient nature of sugar cane production, the use of bagasse [...] as process energy and the highly advanced state of Brazilian sugar farming and processing. [...] In contrast, the GHG benefits of ethanol made from corn are minor. (IPCC, 2007b: 344)

Furthermore, it is pointed out that (climate-damaging) logging in the Amazon Rainforest cannot be attributed to the cultivation of soy or sugar cane. While sugar cane hardly grows within the wet tropic climate in the rainforest regions, the “soy moratorium”⁷ widely stopped deforestation for soy production. Responsible for the deforestation are other factors such as uncertain land titles. Like with deforestation, other negative side-effects of biofuels cultivation are most often denied. According to the biofuels supporters, the cultivation of energy crops hardly requires fertilizers, water, pesticides or fungicides and thus does not damage the environment. There is no competition between biofuels and food cultivation, too, since sufficient fertile land is available in Brazil, marginal soils can be restored and cattle feed is generated as a by-product of the biodiesel production process. While biofuel production has steadily increased since 2008, food price have declined after the peak of the crisis. Calculations about indirect land use changes (ILUCs)⁸ caused by Brazilian biofuels are rejected as unreliable and based on inadequate premises.

With regard to the political implications, there appear to be some yet unresolved tensions within the biofuels supporters discourse coalition. Some, especially Brazilian, actors share a neoliberal believe in free markets and demand the elimination of trade barriers for Brazilian ethanol. Other positions, however, justify US and EU trade barriers and state support for biofuels so that they can develop their own competitive biofuels industries. Should these contradictory positions not be replaced by a

⁵ See Keller, 2013 for more information on this procedure.

⁶ A comprehensive list explaining and translating all actor acronyms can be found in Appendix I.

⁷ The soy-moratorium was enacted by ANEC and ABIOVE on July 24, 2006 with the aim of ending the processing of soy cultivated on newly cleared (i.e., after July 24, 2006) areas in the Amazon biome. Several NGOs such as Greenpeace and World Wildlife Fund Brazil were involved in implementing and monitoring the moratorium (ABIOVE, 2010; GTS Soybean Working Group, 2007).

⁸ ILUCs occur, for example, when smallholders, cattle breeders or farm workers are displaced from their small plots of land, which are then to be used for the cultivation of energy crops, and subsequently clear other forest areas in order to obtain new farmland.

common argumentative frame in the future, a split of this discourse coalition seems possible. The same holds true for the contrasts between the (largely Brazilian) emphasis on national and rural development, (mostly US) concerns about energy security and (predominantly European) arguments about climate protection.

The story line of the discourse coalition of the biofuels supporters can be summarized as follows: *Brazilian biofuels provide a socially acceptable and environmental friendly contribution to (especially rural) development, energy security and the mitigation of climate change.* This discourse coalition placed the expansion of Brazilian biofuel production, exportation and use on the political agenda. It was dominant until approximately the turn of the year 2007. From around 2006 onwards discourse coalitions arose which took a more critical view on Brazilian biofuels. In late 2007 and particularly with the beginning of the global food crisis in the first half of 2008, these discourse coalitions began to challenge the hitherto hegemonic coalition.

Critical supporters

In comparison to the biofuels supporters, the discourse coalition of critical supporters is made up of a broader group of actors, including among others Greenpeace, UN Energy, the UK Renewable Fuels Agency, or the Brazilian Forest Service. The critical supporters agree with the biofuels supporters upon the point that Brazilian biofuels can be an ecologically sustainable and therefore promising source of energy. Although their potential contribution to world energy supply is limited, biofuels can still have a share in mitigating climate change and in developing poor rural regions. But the discourse coalition of the critical supporters also calls attention to negative impacts of Brazilian biofuel cultivation. While it agrees that direct conversion of forest areas into sugar-cane and soy plantations occurs only to a small extent, it is clearly concerned about ILUCs. Further negative impacts of the cultivation of energy crops are the excessive use of fertilizers and the loss of biodiversity. Moreover, it is pointed out that working conditions must be improved and competition between biofuels and food cultivation must be prevented.

Proponents of this discourse coalition conclude that, on the one hand, the production of biofuels must be promoted but that on the other it must be regulated by the state in order to avoid or minimize negative impacts. Among other measures, they suggest setting standards for imports, introducing certification and making it an obligation for biofuel producers to purchase a certain amount of raw material from smallholders. The demand for extensive regulation, as well as the fact that the state is identified as responsible for implementing the regulations, stands in sharp contrast to some of the neoliberal ideas which the biofuels supporters put forward. However, critical and biofuels supporters share a strong belief in technological progress which will make more efficient, socially responsible and climate-friendly biofuels available in the next years.

Particularly illustrative for the line of argumentation used by the discourse coalition of critical supporters are the positions taken by Greenpeace International, as the following statements reveal:

Biofuels could be part of a sustainable solution to climate change by reducing emissions from road transport. (Greenpeace, 2007)

Put very simply biofuel problems fall into three areas: Biofuels made from industrial food crops can produce more emissions due to large fossil fuel use in their production. Biofuels from other crops such as palm oil are often grown on land which has been cleared of tropical rainforest, generating huge amounts of carbon emissions. Increasing demand for biofuels means land used for food production is taken over, driving up the price of basic foods. (Greenpeace, 2008a)

Greenpeace is calling for the EU and Latin American Summit to adopt sustainability criteria for the growing of biofuels. (Greenpeace, 2008b)

The main arguments of the critical supporters discourse coalition can thus be summarized by this story line: *Brazilian biofuels provide great opportunities for climate protection and economic development in rural regions, but also pose serious ecological and social risks. Effective state regulation is therefore necessary.*

During the course of the year 2008 the discourse coalition of critical supporters was able to gain discursive hegemony. Since then, it fulfills the criterion for discourse structuring since numerous and influential actors refer to its story line. The European Commission and also most national governments within the EU can now be seen as members of the critical supporters, and even the Brazilian government and Brazilian companies along the biofuel production chain acknowledge that certain (potentially) negative impacts of biofuel production do exist. Similarly, several critical NGOs acknowledge the (potentially) positive impacts of Brazilian biofuels. The discourse structuration of the critical supporters has also been translated into discourse institutionalisation, for example in the form of the soy moratorium in Brazil, the retention of a compulsory blending quota in the EU, and the introduction of certification schemes such as ISCC, REDcert or Bonsucro. One has to acknowledge, however, that the influence of the biofuels supporters is still visible in the area of discourse institutionalization, since many certification schemes and the soy moratorium are still heavily influenced by private actors (and thus can partially be interpreted as part of the neoliberal agenda to avoid binding state regulations).

“Consequences for the global community” critics

The “consequences for the global community” critics represent a very broad discourse coalition which comprises scientific and intergovernmental actors such as the WBGU and OPEC, researchers such as Arima et al. (2011) and NGOs such as GFC, Rainforest Rescue or FOEE. It rejects the production of biofuels and the cultivation of the necessary crops in Brazil (as well as worldwide) categorically. This is justified by the numerous negative impacts which have implications far beyond Brazil. The main points of criticism are the poor or even negative climate balance of biofuels, highly pesticide- and fertilizer-consuming soy and especially sugarcane monocultures, the related risks for biodiversity, the acceleration of deforestation in the Amazon region, and soil degradation. One of the key issues for the “consequences for the global community” critics is the possible threat to food security. The following statement by the Global Forest Coalition is rather exemplary for this discourse coalition:

“it has become very clear over the last year that agrofuel expansion is one of the main factors triggering a world-wide boom in agricultural commodity prices [...] It is not only the livelihoods of indigenous peoples that are at stake. The production of industrial agrofuels is part of an inequitable and unsustainable system of production and consumption that threatens the very life-support systems of the planet [...] Investment, state support and governmental policy processes must shift away from the production of agrofuels.” (Global Forest Coalition, 2008: 79f.)

These problems are nearly impossible to solve since, for instance, problems of food insecurity and deforestation are hard to tackle due to ILUCs and the unchangeably negative CO₂ balance of biofuels. Hence, the story line of the “consequences for the global community” critics can be summed up as follows: *Brazilian biofuels are accompanied by globally discernible dangers and problems, particularly the threat to food security. Therefore, their expansion as well as promotion should be abandoned.*

Especially during the food crisis of 2007/2008 this discourse coalition structured the transnational Brazilian biofuel discourse to a considerable degree and competed against the critical supporters for dominance in the discursive space. However, no notable discourse institutionalization took place. With the fall of food prices and a stronger focus on the financial and economic crisis (and partly on the climate crisis around the Copenhagen summit in 2009), the influence of the discourse of the “consequences for the global community” critics declined. Given the fact that during the course of the year 2011 food prices rose equally sharp and even higher than 2008, why did this discourse not gain new strength and eventually challenged the hegemony of the critical supporters (FAO, 2012)? One explanation is that the European financial crisis was very dominant in the public perceptions so rising food prices just not gained enough attention. The current focus on food speculation and land grabbing as the causes of rising food prices makes it hard for the “consequences for the global community” critics to place their position on the agenda.

“Consequences for the local community” critics

The “consequences for the local community” critics, in contrast, emphasize the negative consequences of biofuels at the local level, i.e., in the cultivation and production areas. Accordingly, it comprises mainly Brazilian smallholder movements and NGOs like Rede Social and the Pastoral Land Commission. Further relevant members are European and international NGOs like Survival International or the World Rainforest Movement and regional competitors of Brazil like Hugo Chávez (Venezuela). A symptomatic statement for this discourse coalition was provided by La Via Campesina at the UN conference on biodiversity in Nagoya:

“Many small farmers in the Global South are facing exclusion and bankruptcy due to the expansion of agrofuel plantations. They lose their biodiversity due to monoculture plantations and they lose their land and territories. Hunger and poverty is [sic!] everywhere in the rural areas.” (La Via Campesina, 2010)

As can be seen, the arguments of the “consequences for the local community” critics against the production of biofuels in Brazil are diverse and mainly concern social aspects, such as bad working conditions on plantations and the impoverishment of the surrounding regions. The displacement of smallholders as well as indigenous populations, processes of land concentration and higher land and food prices pose a threat to traditional rural lifestyles and—a key concern of this discourse coalition—the food sovereignty of local communities. According to the “consequences for the local community” critics there is no marginal or unused land available on which new plantations might be cultivated without having negative social effects, such as the privatization of land a local community depends on. Further criticism concerns the local ecological consequences of the agro-industrial cultivation of (transgenic) energy crops in monocultures, which are the decrease in (agro-)biological diversity, as well as the pollution of the local water, soil and air. Especially Brazilian actors of this discourse coalition often combine complaints about the local consequences of biofuels cultivation with a general critique of the capitalist system without being explicit or elaborate about the last part.

The position of the “consequences for the local community” critics can be summarized in the following story line: *Brazilian biofuels have drastic social impacts in the producing regions since, among other things, they undermine food sovereignty. Therefore, it is imperative that the expansion and promotion of biofuel production in Brazil is abandoned.* So far, this discourse coalition gained some attention and support by the media and NGOs but was neither able to structure the discourse neither to institutionalize its positions.

Critical opponents

This discourse coalition is quite heterogeneous and includes Brazilian and European NGOs such as Biofuelwatch, FBOMS, MST or GRAIN, critical scientists like Bravo and Ho (2006) or McMichael (2009) and Brazilian agrarian cooperatives such as CONTAG⁹ und FAFOP¹⁰ (Fernandes et al., 2010). The critical opponents share the reservations voiced by the “consequences for the global community” and the “consequences for the local community” critics. However, these reservations are explicitly articulated within a different, more radical theoretical context. Biofuels are conceived as part of the current, exploitative and unjust capitalist systems.

According to critical opponents, biofuels represent an attempt to tackle climate change without the rich countries having to change their excessively consumerist life-style. The negative impacts of the CO₂-intensive prosperity of comparatively few people in the global North are ‘externalized’ to poorer countries, which serve as producing areas for energy crops. Brazilian biofuels are far from having even a neutral CO₂-balance, but only produce new marketable commodities and at best a certain increase in energy security for the wealthy. Even worse, biofuels deepen global inequalities since Brazil (and other nations of the global South) export valuable natural capital and become more dependent on prosperous states or transnational corporations since they need genetically modified seed, fertilizers, pesticides and fungicides for the industrial biofuels agriculture. Thus, the true beneficiaries of Brazilian biofuel production and use is the global capitalist elite and especially the large transnational companies. As GRAIN states:

Or, expressed in a different way, countries joining the agrofuel craze are exporting not just crops to keep cars running but also invaluable topsoil and irrigation water needed to keep their people fed [...]. There is simply no escape: we have to reduce energy consumption if we are to survive on this planet. And they also require a head-on confrontation with the global agro-industrial complex. (Grain, 2007: 2–4)

Not surprisingly, biofuels are considered as an expression of the current capitalist system and socially and economically unsustainable as long as this system does not radically change. The story line of the critical opponents can thus be summarized as: *Brazilian agrofuels represent an instrument for the perpetuation and intensification of the imbalance of power and prosperity in the current capitalist system. They enable the further externalization of ecological risks to peripheral areas while benefiting mainly transnational companies and a global elite.* The critical opponents played so far only a minor role in the transnational Brazilian biofuel discourse.

Conclusion

By using Hajer's discourse theoretic and analytical framework, we were able to show that the discourse about Brazilian biofuels has transnationalized yet, and that the resulting transnational discursive space was made up out of five different discourse coalitions in the period 2005–2011, namely biofuels supporters, skeptical supporters, “consequences for the global community” critics, “consequences for the local community” critics and critical opponents (see Table 1 for an overview). Under the impression of climate change and rising oil prices, the biofuels supporters structured the transnational Brazilian biofuel discourse until 2007–2008 and were able to institutionalize their position, which was expressed in a massive promotion of the expansion of biofuel production and use. Especially during the world food crisis 2008, a shift in favor of the “consequences for the global community” critics

⁹ Confederação Nacional dos Trabalhadores na Agricultura (National Confederation of Agri-cultural Workers).

¹⁰ Federação das Associações de Assentados e Agricultores Familiares do Oeste Paulista (Western São Paulo Federation of Settlement and Family Farmers Associations).

Table 1
Overview over the five discourse coalitions identified.

Discourse coalition	General attitude towards Brazilian biofuels	Economic impacts of Brazilian biofuels	Social impacts of Brazilian biofuels	Ecological impacts of Brazilian biofuels	Energy impacts of Brazilian biofuels	Demands
Biofuel supporters	Positive	+ Economic growth + Technological innovations	+ Good jobs + Rural development + Social projects by companies	+ Climate change mitigation	+ Contribute to energy security	State support and trade liberalization for Brazilian biofuels
Skeptical supporters	Positive under defined conditions	Hardly an issue	+ Rural development – Threat to food security	+ Climate change mitigation – ILUCs – Use of fertilizers – Loss of biodiversity	No relevant impacts	Comprehensive state regulation of Brazilian biofuels
“Consequences for the global community” critics	Negative	Hardly an issue	– Threat to food security (globally)	– Worsen climate change – Loss of biodiversity – Deforestation	Hardly an issue	Abandonment of large-scale biofuel production
“Consequences for the local community” critics	Negative	Hardly an issue	– Threat to food security (locally) – Impoverishment of the producing regions – Bad working conditions – Land grabbing	– Air, water and soil pollution – Industrial agriculture	Hardly an issue	Abandonment of large-scale biofuel production
Critical opponents	Negative within a capitalist system	– Increase the gains of transnational companies	– Widen inequalities between the rich and the poor	– Worsen climate change – Degrade the environment of poor countries	– Contribute to energy security for the wealthy	Abandonment of the capitalist system

and the critical supporters could be seen. The latter eventually achieved hegemony in the discourse, thus also influencing policies (e.g., certification of biofuels). This also marked a shift from more neoliberal ideas to a stronger demand for state regulation. But still, the biofuel supporters play a crucial role in shaping policy outcomes as the lack of state vis-à-vis private regulation shows. Moreover, demands to abandon or severely restrict biofuels production and biofuels subsidies have not become dominant in the transnational Brazilian biofuels discourse in the time period under investigation.

Since the beginning of 2012, the “consequences for the global community” critics gained renewed support due to, inter alia, rising food prices, the large drought in the USA and scientific studies doubting the climate benefits provided by biofuels (e.g., [Nationale Akademie der Wissenschaften Leopoldina, 2012](#)). It is not quite clear yet how strong and lasting this increase in interpretative power will be or if it could even result in some kind of discourse institutionalization. At least within the European Union and some international organizations, there are several signs for rising discourse structuration by the “consequences for the global community” critics which may also be translated into concrete policy measures (e.g., [Hornby, 2012](#)). This would possibly result in a de-transnationalization of the Brazilian biofuels discourse, which could increasingly split up into a pro-biofuel Brazilian (and maybe US-American) and a much more skeptical European discourse. But these prognoses are quite speculative yet, since the future development of the transnational discourse on Brazilian biofuels is unclear and depends on a bunch of factors, such as oil and food prices, the policies of key actors or the attention paid to biofuels vis-à-vis other topics in media and public debates.

This study was able to achieve a strong degree of saturation in the sense that the storylines presented here were regularly repeated in the material examined (while no new ones could be detected) and the descriptions of the respective discourse coalitions seemed quite elaborated. However, it is very likely that a transnational Brazilian biofuels discourse can also be detected in other regions than Brazil, Europe (mainly Germany) and the US (e.g., Eastern Europe, Latin America, southern Asia). An interesting perspective for future research could be the description of these discourses and the comparison of such studies with the results we found. Furthermore, another improvement of the research field would be to analyze in closer detail the causes for and political consequences of the discursive shifts described here.

Appendix I. List of actors whose statements were collected and summarized for more intense discourse analysis

* key actor whose position has been evaluated intensive using several statements which were issued over several years

Brazil:

- Agência Brasileira de Promoção de Exportações e Investimentos (APEX) (Brazilian Trade and Investment Promotion Agency)
- Archer Daniel's Midland Company (ADM)
- Articulação de Agroecologia do Rio de Janeiro (Articulation of Agroecology Rio de Janeiro)
- Associação Brasileira das Indústrias de Óleos Vegetais (ABIOVE; Brazilian Association of Vegetable Oil Industries)*
- Associação Nacional dos Exportadores de Cereais (ANEC; National Association of Grain Exporters)
- Brazilian Government
- Brazilian Forest Service
- Carlos Alberto Aragão, President of the National Council for Scientific and Technological Development
- Comisión Pastoral de la Tierra (Pastoral Land Commission)
- Cosan
- Fórum Brasileiro de ONGs e Movimentos Sociais para o Meio Ambiente e o Desenvolvimento (FBOMS) (Brazilian Forum of NGOs)

- and Social Movements for the Environment and Development)
- Friends of the Earth Brazil
- Fundação Getúlio Vargas (Foundation Getúlio Vargas)
- Grupo André Maggi (Group André Maggi)
- GTS Soy Working Group
- José Goldemberg (Prof. emeritus for Physics at the University of São Paulo, former State Secretary for the Environment of São Paulo state)
- La Via Campesina-Brazil
- Luiz Inácio Lula da Silva (President of Brazil from 2003 to 2011)
- Movimento dos Trabalhadores Rurais Sem Terra (MST) (Landless Workers' Movement Brazil)*
- Red Latinoamericana contra los Monocultivos de Árboles (RECOMA) (Latin American Network Against Monocultural Tree Plantations)
- Rede Social de Justiça e Direitos Humanos (Social Network for Justice and Human Rights)
- Government of the state of São Paulo
- União da Indústria de Cana-de-Açúcar (UNICA) (Brazilian Sugarcane Industry Association)*

EU:

- Biofuelwatch (Great Britain)*
- Biopact (Europe)
- Brazilian Embassy (Germany)
- Friends of the Earth Europe (FOEE; Europe)
- Friends of the Earth Germany (BUND; Germany)
- DiePresse.com (ThePress.com; Austria)
- Swiss Federal Laboratories for Material Sciences and Technology (Eidgenössische Materialprüfungsanstalt—EMPA; Switzerland)
- European Commission (Europe)
- Global Forest Coalition (Netherlands)*
- Heidmarie Wiczorek-Zeul (Federal Minister for Economic Cooperation and Development 1998–2009, Germany)
- International Tree Foundation (Great Britain)
- Nordic Africa Institute (Sweden)
- Quetzal (association and magazine for politics and culture and Latin America; Germany)
- Rainforest Rescue Germany (Germany)*
- Renault (France)
- Shell (Netherlands)
- Statoil (Norway)
- Spiegel Online (Germany)
- Swedish Government (Sweden)
- German Institute for International and Security Affairs (SWP; Germany)
- UK Renewable Fuels Agency (Great Britain)
- Volkswagen (Germany)

USA:

- 25x'25*
- Advanced Biofuels USA
- Al Gore (US Vice-President of the USA 1993–2001)
- Barak Obama (US President since 2010)
- Bill Clinton (US President 1993–2001)
- Chrysler
- Energy Future Coalition
- General Motors/Joel Velasco (Chief Representative of UNICA in North America)
- Jürgen Scheffran (University of Illinois)

International:

- Arima et al. (2011)
- Baviera and Bello (2009)
- Bravo and Ho (2006)
- Campbell et al. (2009)
- EcoNexus
- Food and Agriculture Organization of the United Nations (FAO)

- Food First
- Gaia Foundation
- Global Climate Coalition (GFC)
- Genetic Resources Action International (GRAIN)
- Greenpeace International
- Hugo R. Chávez F. (President of Venezuela since 1998)
- Intergovernmental Panel on Climate Change (IPCC)
- International Biofuels Forum
- La Via Campesina*
- Loarie et al. (2011)
- McMichael (2009)
- Olivier De Schutter (UN Special Rapporteur on the Right to Food)
- Organization of the Petroleum Exporting Countries (OPEC)
- Survival International
- UN Energy
- World Rainforest Movement
- World Watch Institute

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