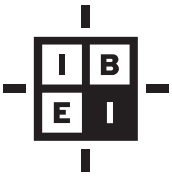
# BRAVING THE STORM: HOW ARE GLOBAL BIOFUEL POLICIES SUSTAINED DESPITE BEING CONTESTED?

## An Analysis of the Biofuel Discourses of the EU, Brazil and Mozambique

Saskia Widenhorn

2013/37

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# BRAVING THE STORM: HOW ARE GLOBAL BIOFUEL POLICIES SUSTAINED DESPITE BEING CONTESTED? AN ANALYSIS OF THE BIOFUEL DISCOURSES OF THE EU, BRAZIL AND MOZAMBIQUE

Saskia Widenhorn

**Abstract**: Considered as a remedy to multiple problems that our world is facing, biofuels are nowadays promoted on a global scale. Despite this globalised approach, however, biofuels are heavily contested. Not only the social implications of biofuels are disputed and uncertain, particularly in countries of the global South, but also their environmental and economic rationales. Given these huge controversies, policies promoting biofuels would seem difficult to maintain. Yet, support for them has been surprisingly well established on the political agendas. With the aim of understanding this puzzle, this study asks how the dominant approach to biofuels has been sustained on a global level. In order to answer this question, the meanings and assumptions in biofuel discourses are explored through the lens of Maarten Hajer's "argumentative" discourse analysis. Based on the existence of a "partnership for sustainable bioenergy" between the EU, Brazil and Mozambique, the study takes these three locations as case studies. The analysis reveals that various discursive strategies, including a particular problem construction and the use of two main story-lines, have played an important role in ensuring the permanence of the global approach to biofuels. Moreover, while the discourse of critics against biofuels demonstrates that there is room for contestation, the analysis finds that the opponents' discourse largely fails to target the most salient justification for biofuels. A more effective strategy for critics would therefore be to also question the problem constructions underpinning this main justification in the global discourse.

**Key words**: Biofuels, Energy Security, Food Security, Story-lines, Discourse Coalitions

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# 1. THE PUZZLING PERMANENCE OF A GLOBALISED APPROACH TO BIOFUELS

Biofuels[1] are nowadays widely perceived as a magic bullet in the fight against multiple threats that our world is facing. Made from biomass, biofuels can substitute fossil fuels in transport and are therefore considered as helping to address, for instance, climate change or the problem of energy insecurity due to shrinking oil supplies. In recent years, biofuels have been promoted on a previously unseen scale by a variety of different actors. In particular, energy-hungry countries increasingly outsource biofuel production to the global South (Borras et al. 2011: 215). The cooperation of actors from different consumer and producer countries demonstrates the global character of current biofuel dynamics. This is reflected, for example, in the triangular "partnership for sustainable bioenergy" between the European Union (EU), Brazil and Mozambique, which was agreed upon at the EU-Brazil summit in 2010 with the aim of developing biofuel projects in the African country (Reuters 2010). Jointly with the EU, the emerging economy of Brazil is assuming a new role as investor mainly in African countries, in addition to its position as biofuel producer. Southern developing countries such as Mozambique, for their part, are discovering biofuel production as an opportunity to benefit from rising global demand.

Despite this globalised approach, the potentials of biofuels are both uncertain and highly contested. In particular since the hike in food commodity prices in 2007/2008 (Leopold 2010), critics have accused biofuels for taking away land that had been used for cultivating food crops in countries of the global South and for contributing to the rise in food prices, which threatens the food security of the poor (Oxfam 2008: 19-21). Yet, it is not only the social implications of biofuels that are disputed; several investigations have called into question their very environmental and economic rationales. On the environmental side, the conversion of land into agricultural use for biofuel production is said to entail deforestation, loss of biodiversity as well as an increase in greenhouse gas (GHG) emissions by mobilising carbon stocks (UNEP 2009: 22). It is argued that, when considering emissions throughout the entire lifecycle – from production to use – in the environmental assessment, most first-generation biofuels deliver only marginal emissions reductions or even have negative GHG balances (Mandil and Shihab-Eldin 2010: 33-39).[2] From an economic point of view, net production costs of most biofuels are very high; in fact, Brazilian sugarcane ethanol is said to be the only first-generation biofuel able to compete with fossil fuels (ibid.: 28-30). Since costly subsidies are needed in order for most biofuels to be economically viable, some argue that improving energy efficiency in the transport sector would be a far more cost effective way to reduce emissions (Oxfam 2008: 2, 12). In light of these multiple controversies, policies promoting biofuels would seem difficult to maintain. However, support for these fuels has been remarkably well established on the inter-

1. "First-generation" biofuels include bioethanol (gained from sugarcane, sugar beet and grain) and biodiesel (based on oil crops). "Second-generation" biofuels describe fuels made from cellulosic feedstock; they are still being developed and are not yet widely used (BMZ 2011: 8). Unless otherwise indicated, the term "biofuels" in this paper refers to first-generation fuels.
2. Differences depend, among others, on the type of feedstock, agricultural practices, technology and location.

national political agendas[3]. This is surprising; it is not at all obvious or natural that such pro-biofuel policies exist, given that the rationale and impacts of biofuels are not clear and often contested. With the aim of understanding this puzzle, this study asks how the dominant approach to biofuels has been sustained on a global level. I argue that the persistence of biofuel policies cannot be sufficiently explained with a "capture of policymaking by well-organised special interests" (Wolf 2007). Instead, the social construction and framing of problems have played an important role in ensuring the permanence of these policies.

The analysis is done by using the discourse approach to critical policy analysis of Maarten Hajer, and by taking as case studies the discourses of the EU, Brazil and Mozambique. The triangular cooperation between the three is still recent, which is why concrete outcomes remain to be seen. This does not limit the study, however, since it is concerned with analysing assumptions on biofuels, rather than with assessing outcomes of the partnership. Starting from the need to question the very fact that the main approach to biofuels has been dominant despite unclear implications, the study aims to take a step back to critically investigate the meanings behind biofuel discourses. It thereby contributes to de-naturalising prevailing assumptions in the biofuel debate. In the following section, the methodology of the paper will be presented, including the theoretical approach, case studies as well as research methods and sources. The third part pictures the dominant biofuel discourse shaped by the EU and Brazil, by analysing its main story-lines. Part four explores whether this global discourse also resonates in the new producer country Mozambique, which is done by identifying and analysing existing discourse coalitions on biofuels in this country. The fifth part contrasts the nature of the global discourse with the discourse of critics in Mozambique and reflects upon gaps in the opponents' strategy. The last part concludes by summarising the findings and implications of the study.

# 2. METHODOLOGY

## 2.1 Theoretical Perspectives on New "Energy Frontiers"

The research question of this paper can be situated within the broader literature focusing on the rising interest in unconventional energy, that is, alternatives to common energy sources. The transition towards new "energy frontiers" resulting from the search for alternative sources has been approached from different theoretical perspectives. From a realist point of view, the pathways of energy policy are determined by solutions that are instrumental to address given problems and in serving the stable interests of powerful actors, particularly states (Holdren 2006; Rosillo-Calle and Walter 2006). From such a view, which often emphasises the inertia of energy policies

3. In contrast to national politics, international political agendas are here understood as being formed and maintained by actors from different countries or regions, and having impacts beyond the domestic sphere.

(Holdren 2006: 6), it is difficult to answer the question why new forms of energy for large-scale usage are being promoted and sustained even if their viability and implications are uncertain – this would seem "irrational". This question has not yet received sufficient attention in the literature. An exception is the account of Aaron Leopold (2010), who asks why biofuels continue to enjoy strong political support in spite of mounting criticism by civil society groups and scientific scepticism. From a neo-Gramscian perspective, the author argues that biofuel promotion is above all economically motivated, since biofuel discourses and politics have been co-opted by hegemonic agro-industrial players. Although not neglecting discursive dimensions, a greater focus on materiality is evident in his argument that biofuel policies have remained in place *despite* discursive shifts. In contrast, the approach of this paper treats discursive framings as powerful mechanisms able to shape interests and policies. The continuation of policies can then be explained also *because of* the role of discourse. Such a focus on the power of discourse can be found in Delf Rothe's (2010) research on how the large-scale solar energy project Desertec, originally a business initiative, was transformed into a political project. From a post-structuralist discourse analysis perspective, he argues that particular framings and narratives helped the project to become accepted in the political context of the EU. This discursive side is still underexplored in the literature on biofuels. While noteworthy exceptions exist (Franco et al. 2010; Scrase and Ockwell 2010), these analyses of biofuel discourses largely remain limited to the case of the EU or its member states. The literature has so far not satisfactorily addressed the discursive underpinnings of biofuel policies *across space*. This paper aims to contribute to filling this gap by analysing discourses both of countries and regions promoting biofuels in the global South (here, Brazil and the EU), and within Southern countries developing biofuel production (Mozambique). Finally, while biofuels tend to be either demonised or praised from the start, the discourse analytical lens used in this paper does not adopt an a priori normative standpoint, but begins by exploring discursive structures, on the basis of which a judgement is made.

## 2.2 A Discourse Approach to Critical Policy Analysis

The analysis is done by employing the analytical framework of Maarten Hajer, who has approached the field of critical policy studies with an "argumentative" discourse analysis. One objective of this approach is to shed light on the mechanisms that give continuity to certain understandings or trigger change (Hajer 1995: 46). From a post-positivist perspective, Hajer assumes that explanations of permanence or change cannot be reduced to material factors. By paying attention to meaning, discourse analysis is concerned with another layer of analysis that transcends realist explanations based on (fixed) interests and power (Hajer 2005: 298). In accordance with Hajer's social constructivist approach, interests are seen as continuously constructed and re-constructed through discursive practices (Hajer 1995: 51). While inspired by Foucault's focus on the role of discourse as constraining the subject, Hajer at the same time puts greater emphasis on subjects as also actively (re-)shaping discourse (see ibid.: 49, 55).

Other authors have also paid considerable attention to the role of ideas – Peter Hall's (1993) work on policy paradigms is an example worth mentioning here. Like Hajer, Hall looks beyond material interests by strongly arguing that ideas play a central role in policy change (Baumgartner 2013: 250; Hall 1993). Hall's (1993: 289-290) assumption that "the terms of political discourse privilege some lines of policy over others" is consistent with Hajer's emphasis on the power of discourse. Yet, while Hall mainly focuses on explaining change with the help of ideas, the contribution of Hajer's constructivist approach lies in an equal emphasis on stability as a state that needs to be explained. Thus, with his discursive approach, Hajer provides a useful framework to grasp how ideas, and specifically discourse, have a role to play not only for explaining policy *change*, but precisely also the *permanence* of policies. In particular, the task is "to explain how a given actor (…) secures the reproduction of his discursive position (or manages to alter this) in the context of a controversy" (Hajer 1995: 51). In Hajer's view, defenders of the status quo can prevent a policy from being challenged through strategic discursive action. Permanence is therefore not just a result of "the sticky nature of ideas within policy communities" (Baumgartner 2013: 251), but often involves an *active* and *strategic* (discursive) defence of a policy. Hajer thereby offers an important contribution to the understudied question of "what makes the status quo powerful" (ibid.: 255) and in this way helps to understand why alternatives sometimes fail to challenge an established policy.

Hajer (2006: 67) defines discourse as "an ensemble of ideas, concepts, and categories through which meaning is given to social and physical phenomena, and which is produced and reproduced through an identifiable set of practices". In contrast to positivist views, the definition of a problem is not taken for granted, but gains centre stage in the analysis in order to uncover assumptions in discourses. The ways in which problems are defined and articulated by certain actors impact on policy-making, as these "[d]iscourses shape what can and cannot be thought, delimit the range of policy options and thereby serve as precursors to policy outcomes" (Hajer and Versteeg 2005: 178). Hajer conceives of politics as an "argumentative" struggle "in which actors try to secure support for their definition of reality" (Hajer 1995: 59). A central goal is to achieve "discursive closure", that is, the definition of a problem that forecloses the consideration of alternatives (ibid.: 22). Hajer provides several useful tools for identifying argumentative structures and discursive strategies that influence the prevalence and permanence of discourses.

A particular narrative through which a problem is discussed and constructed is usually conveyed in a condensed form of a *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). As a short form of a narrative, story-lines reduce the complexity of discourses and thereby facilitate communication between actors that may have different interpretations of a certain phenomenon (Hajer 2005: 301-2). Moreover, shared story-lines can help achieve discursive closure by concealing the fragmentation and contradictions in discourses (Hajer 1995: 62). According to Hajer (2005: 302-3), the groups of actors sharing a set of story-lines over a certain period of time are called *discourse coalitions*. This concept

allows for the possibility of actors forming coalitions that do not necessarily have the same backgrounds, interests, values or goals. What unites them is the utterance of particular story-lines in the context of specific political engagements (Hajer 1995: 13, 65). By forming a discourse coalition, different actors contribute to reproducing or challenging the interpretation of a phenomenon – without necessarily coordinating among each other. In order to "try to make others see the problems according to their views" (Hajer 1995: 53) and achieve discursive closure, actors can strategically include or exclude certain aspects of social reality from the problem definition (ibid.: 23). A coalition and its discourse can be considered *dominant* when two conditions are met. First, a large number of actors in a certain domain use the discourse to conceptualise the world; they are required to do so in order to be credible (*discourse structuration*). Second, the discourse and its ideas are solidified in institutional practices, and thereby direct the policy process (*discourse institutionalisation*) (see Hajer 2005: 303-305).

## 2.3 Case Studies

Starting from the fact that the EU, Brazil and Mozambique have agreed on a partnership on sustainable bioenergy, this paper takes these three locations as case studies. The decision to explore these cases rests on the expectation that all of them have an influence in sustaining the global approach to biofuels (see Franco et al. 2010: 687), and therefore need to be considered when answering the research question of this study.

The EU and Brazil are two of the most vociferous promoters of biofuels and have contributed considerably to the rising global interest in these fuels (Borras et al. 2011: 215).[4] For this reason, the two cases are assumed to represent the global, dominant biofuel discourse. In the case of the EU, biofuel promotion takes the form of mandatory fuel blending. According to the EU's Renewable Energy Directive passed in 2009, 10% of energy for transport in each member state must stem from renewable sources by 2020. In order to meet these targets, the EU will need to rely on imports of biofuels produced in the global South (Hildyard et al. 2012: 33-34). Brazil, in turn, not only has the world's biggest industry of sugarcane ethanol (Borras et al. 2011: 215), but also assumes a still under-researched role as biofuel promoter in Africa alongside the EU.[5] While the United States is another big promoter of biofuels, the choice of studying the Brazilian discourse allows capturing more recent dynamics and avoids simplifying existing relations in the politics of biofuels to an issue of "North versus South".

Mozambique is the third party in the "bioenergy pact". Touted as a model case

4. While it is usually private companies that invest in biofuels, the EU and Brazil can be seen as indirect drivers of biofuel production by increasing demand with their policies, and via cooperation on biofuel projects, as in the case of the "biofuel pact" with Mozambique.
5. Most pieces dealing with Brazil look at its internal situation as biofuel producer (e.g. Sauer and Leite 2012). Some have explored new South-South dynamics (Dauvergne and Neville 2009; Seibert 2009), yet without directly addressing the discursive dimension of Brazil's biofuel policies.

for biofuel production, the country has become a main target of biofuel investments in Africa. By exploring discourse coalitions within Mozambique, this study aims at a more differentiated understanding of perspectives that may reproduce, contest or renegotiate the dominant biofuel discourse. It also seeks to avoid the tendency of treating countries and people of the global South as passive actors, as is often the case in analyses that consider the effects of "Northern" biofuel policies on the poor in the South.

It is important to note that the internal biofuel debates in Brazil and the EU are not part of the study, because the focus of this paper lies on Mozambique as developing country producer, and the EU and Brazil as promoters of a global biofuel agenda. Identifying a global, dominant discourse is not to suggest that perspectives on them are static or homogeneous, but rather has the purpose of taking official policies in their present form and analyse their underpinnings, in order to contrast them with discourses in Mozambique. Consistent with a discourse analysis approach, the study focuses on the way in which policies are presented to the world. Thus, rather than comparing polities, certain *instances of discourse* in the global sphere are analysed.

## 2.4 Research Methods and Sources

In line with Maarten Hajer's discourse analysis approach, this paper mainly uses qualitative research methods to explore discursive structures and strategies, story-lines and discourse coalitions. Additionally, a quantitative content analysis is included to examine dominant lines of argumentation and their relative weight. This content analysis was conducted by manually coding ten selected speeches with pre-established codes. Further details are provided in the analysis below and in Appendices I and II.

In order to build a picture of the global biofuel discourse, three official documents of the EU and of Brazil were used, covering the period between 2006 and 2009. For the EU, documents encompass a Communication and a Working Paper from the European Commission, as well as a study prepared for the European Parliament. The analysis of the Brazilian discourse is based on documents from the Brazilian Ministry of Agriculture, the Ministry of Mines and Energy and the Brazilian Service of Support for Micro and Small Enterprises (SEBRAE). These documents are complemented by further materials (BMZ 2011; Mathews 2007) representing the dominant discourse. Moreover, five speeches by representatives of the EU and Brazil, respectively, were analysed. All selected speeches are directed at an international audience, mainly in the context of two international biofuel conferences in Brussels (2007) and São Paulo (2008). The speeches of 2008 also account for the sharpening food crisis in that year. Including this event is important, as it has influenced the way in which biofuels are justified (Franco et al. 2010: 665). Other selection criteria were the centrality of the topic of biofuels and the representativeness of the speakers.

For the case of Mozambique, which is analysed through the lens of discourse coalitions, publications and statements by government officials, corporations active in the Mozambican biofuel business, international and domestic non-governmental organisations (which draw on field research, interviews and primary material from Mozambique), and the National Union of Peasants (UNAC) were studied. Finally, an analysis of secondary sources was done, including books and journal articles on international energy and environmental politics, political economy and rural development, from different theoretical perspectives.

# 3. THE GLOBAL DISCOURSE: TWO STORIES OF BIOFUELS

This section aims to picture the global discourse on biofuels, as represented in official documents and speeches of the EU and Brazil. The assumption is that this discourse is dominant following Hajer's definition, as it fulfils the two criteria of discourse structuration and institutionalisation: it is both widely used by diverse actors (notably by government and business representatives) and has been integrated into public policies of the EU and Brazil. An analysis of the documents reveals that the dominant discourse presents its view of reality with the help of two main story-lines. I call them the "TINA" (There Is No Alternative) and the "Win-win" story-line. The TINA story-line is based on the idea that biofuels are necessary or inevitable to tackle various problems that the world is facing. In contrast to these negative images, the Win-win story-line conveys a positive scenario by arguing that biofuels offer benefits for all parties involved. This is not to suggest that a single global biofuel discourse with coherent arguments exists (see Hajer 2006: 69). In fact, discourses are naturally fragmented, and the intensity with which an argument is put forward varies. Nevertheless, certain claims that have become dominant can be identified in the instances of official discourse of Brazil and the EU, which will be explored in the following.

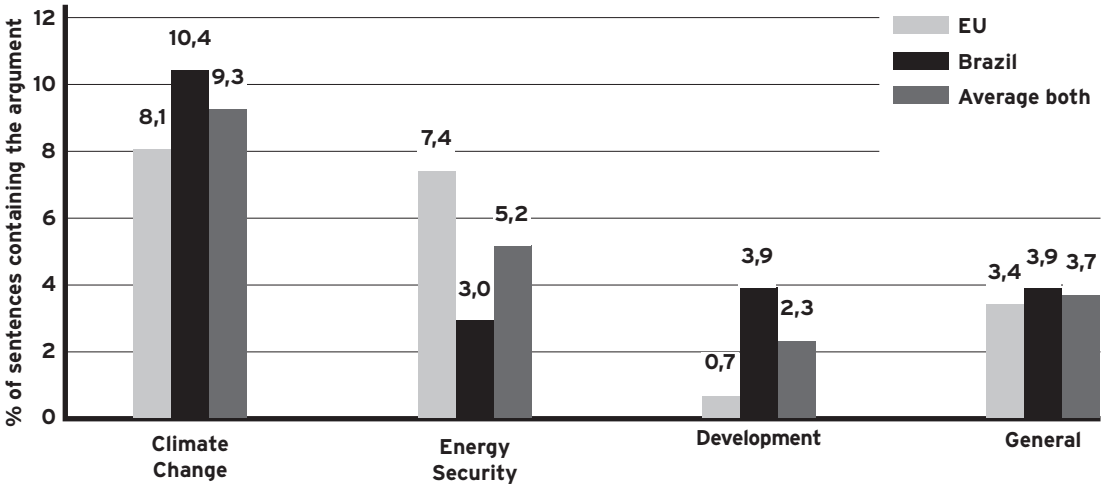
## 3.1. The TINA Story-Line

Three main arguments are used to justify why biofuels are necessary, and are therefore categorised as part of the TINA story-line. The first argument is that *climate change* is threatening the planet. In the EU, the transport sector accounts for almost one third of $CO_2$ emissions, and this share is increasing fast (Barroso 2007: 2). Therefore, it is argued that a "green alternative" (Piebalgs 2007: 1) is needed to reduce GHG emissions arising from transport (Embrapa 2006: 8). Secondly, the problem of *energy security* is used to emphasise the need for biofuels. The concern with energy security – referring to secure energy supplies – arises from the assumption of increasing energy demands

caused by population growth and higher levels of development (Mandelson 2007: 1). At the same time, Hubbert's theory of "peak oil" (see Campbell 2003) warns that supplies are shrinking. Moreover, especially the EU is highly dependent on oil imports – particularly for the transport sector (EC 2006: 3) – which stem from very few and politically instable countries. On top of the worry of rising oil prices, this dependence makes countries vulnerable to supply cuts (Fischer Boel 2008: 3; SEBRAE 2007: 10). All these factors call for a diversification of energy sources in transport (Embrapa 2006: 34). Biofuels are seen as "the only large-scale option available" (Piebalgs 2007: 2) to achieve this, and are therefore considered "pivotal" to address the problems of climate change and energy security (BMZ 2011: 4). A third argument relates to *development*. From this perspective, biofuels are needed in order to ensure one's country's continued economic growth and meet people's aspirations in terms of well-being (Embrapa 2006: 12). As a solution to the various crises mentioned in the TINA discourse, biofuels are seen as "just one piece of the jigsaw. Nevertheless, they are an important piece. They are a necessary piece" (Fischer Boel 2008: 2). Similarly, EU Commissioner Mandelson (2007: 1) posits that biofuels are "an inevitable part of our future energy mix in Europe".

A content analysis of five speeches of the EU and Brazil, respectively, gives a clearer picture of the relative importance of these three arguments. Figure 1 shows the percentage of sentences in which arguments pertaining to the TINA story-line appeared. It is assumed that the greater the relative number of occurrences of an argument, the more salient it is to the speaker (see Hermann 2008: 155). The category "General" on the horizontal axis shows the percentage of sentences in which biofuels are presented as an important solution to problems or necessary in general, without giving specifications.

**Figure 1. TINA arguments in speeches on biofuels of the EU and Brazil (in % of sentences containing the argument)**




Source: Own elaboration from speeches on biofuels by representatives of the EU (Barroso 2007; Dimas 2007; Fischer Boel 2008; Mandelson 2007; Piebalgs 2007) and Brazil (Amorim 2008; Lula da Silva 2007a, 2007b, 2008; Silva 2008). Speeches were manually coded by using the four pre-established codes listed on the horizontal axis, and by taking the sentence as unit of analysis. Arguments belonging to the TINA story-line include not only statements that directly mention that "there is no alternative" to biofuels, but also those in which the TINA claim is more implicit – for instance by emphasising the crucial importance of or need for biofuels to address certain problems. The results of the coding can be found in Appendix I.

The data show that for the EU and Brazil jointly, climate change is the most frequently used argument of the TINA story-line, which is contained in 9,3% of the sentences on average. The second most important argument is energy security (5,2%), followed by non-specified references to the necessity of biofuels (3,7%). Development arguments have the lowest occurrence in the speeches (mentioned in 2,3% of the sentences on average). Yet, notable differences between Brazil and the EU are manifest. In particular, EU speeches show a far greater focus on energy security as argument in favour of biofuels than the speeches of Brazil (7,4% and 3% of the sentences, respectively). This is not surprising given that Brazil's dependence on fossil fuels is low compared to that of the EU (see Barroso 2007: 2; Lula da Silva 2007b: 1; MME n.d.: 2). On the other hand, appearing in 3,9% of the sentences, the argument of ensuring continued levels of development has greater salience for the emerging economy of Brazil than energy security. The EU speeches, in contrast, show a very little concern with economic development (0,7%). While the different emphases may be a sign of divergent interests of the EU and Brazil, the shared TINA story-line creates unity by masking differences. Moreover, the shorthand of biofuels as "necessary solution" facilitates discursive closure by obscuring existing scientific uncertainty regarding both the nature of the problems and the proposed solution of biofuels (see Hajer 1995: 62).

As Hajer (1995: 64-65) notes, "[s]tory-lines are devices through which actors are positioned, and through which specific ideas of 'blame' and 'responsibility', and of 'urgency' and 'responsible behaviour' are attributed". The positioning of TINA is achieved by employing such discursive strategies. The most pervasive strategy is indeed to create a sense of urgency, for instance by presenting the environmental and energy situations as constituting "a crisis of unprecedented magnitude" (Mathews 2007: 3551) or "one of the greatest challenges of our time" (Mandelson 2007: 1) that is posing a "threat" (Lula da Silva 2008: 3). In the words of Mathews (2007: 3552; emphases added), "the North *desperately* needs biofuels as a way of dealing with GHG emissions and with the *imminent* peaking of oil supplies". Based on such framing, a need for quick action is created. According to former President of Brazil, Lula da Silva (2007b: 3), "[w]hat we don't have is time to lose, faced as we are with a threat that grows bigger with every passing day". Others list dramatic effects that could result from inaction (see Fischer Boel 2008: 3). Building on these constructions, biofuels are presented as (part of) the solution to existing problems – as "a *weapon* in the *fight* against climate change and an *insurance policy* against fuel supply problems" (Fischer Boel 2008: 6; emphases added). These framings are signs of a securitised discourse, which has the effect of giving the issue "heightened priority, but it also bestows a particular legitimacy on those handling the policies in question" (Hansen 2006: 35). Occasional normative arguments stressing a responsibility for protecting the planet (Lula da Silva 2008: 4) and for ensuring the wellbeing of future generations (Lula da Silva 2007b: 3) reinforce this effect. Additionally, credibility is enhanced by repeatedly referring to statistics and "facts" about the environmental and energy crises (Barroso 2007: 2) and about biofuels as "a solution that demonstrably works" (Mathews 2007: 3567).

## 3.2. The Win-Win Story-Line

It is generally assumed in the global biofuel discourse that developing countries have a comparative advantage in biofuel production due to favourable land and climate conditions (EC 2008: 6) and low production costs (EC 2006: 6). On this basis, a second important story-line to justify the promotion of biofuels has been constructed around the idea that biofuels are a "win-win" opportunity from which "we can all benefit" (Dimas 2007: 4) – consumer and producer countries, industrialised and developing economies, the rich and the poor.

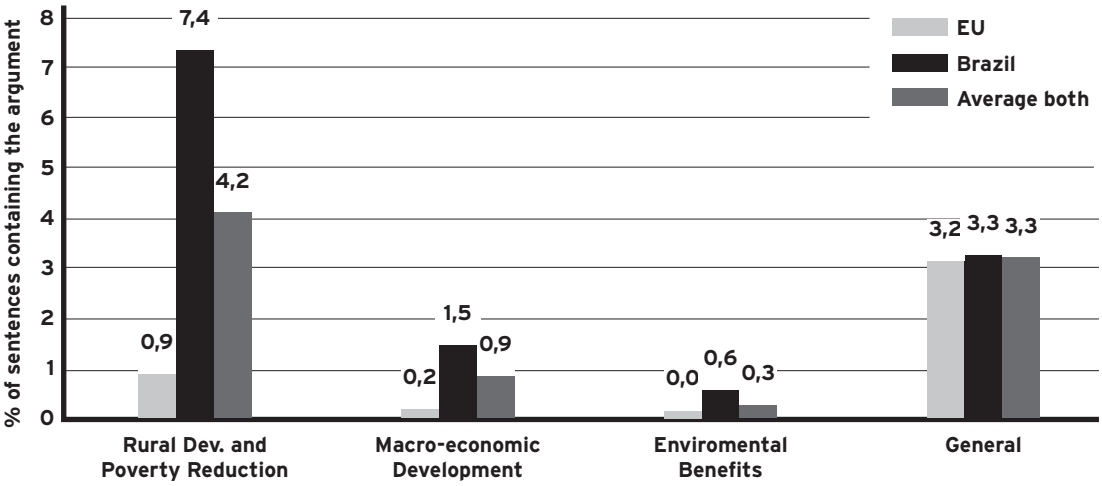
There are three main ways of conveying this story-line. The first claim is that biofuel production contributes to *rural development and poverty alleviation* in the global South, through value-adding industries and increased agricultural productivity (EC 2008: 9), and by raising incomes and creating jobs (EC 2006: 3-4; SEBRAE 2007: 13). Moreover, biofuels can improve local access to energy, thereby reducing energy poverty (BMZ 2011: 13; EC 2008: 9) and increasing energy supply for local transport (EP 2009: 15). Rural development and poverty alleviation, in turn, can trigger additional positive effects, such as a reduction of domestic and international migration (EC 2008: 9; Lula da Silva 2008: 2, 5) as well as of social unrest (Lula da Silva 2007a: 2). The second argument is that the world's greater biofuel demand offers *macro-economic benefits* for biofuel-producing countries of the global South. Biofuels in this way offer a "fresh start in industrialisation" (Mathews 2007: 3551) and the prospect of stable economic growth (Lula da Silva 2007a: 2, 2008: 3). In addition to foreign exchange earnings from biofuel exports (EC 2008: 9), domestic biofuel production is deemed beneficial for the economy and for energy security by reducing countries' dependence on, and costs of, energy imports (BMZ 2011: 13). Finally, the third line of argumentation concerns *environmental benefits* for countries of the global South resulting from biofuel production, for instance by helping to recover degraded lands and putting them to productive use (Lula da Silva 2007a: 1; Mathews 2007: 3556). Bringing land back under vegetation cover is also said to curb the erosion of soils and increase their water and carbon storage capacity (BMZ 2011: 12).

It is against this background that EU Energy Commissioner Andris Piebalgs (2007: 5; emphases added) maintains:

*We all gain* from the consequent reduction in greenhouse gas emissions. *We all gain* as biofuels become an increasingly credible alternative to oil-based fuels in the transport market. *We all gain* from the emergence of new opportunities for economic development in rural areas. And *we all gain* because each country's experience offers lessons that others can draw on.

Figure 2 presents the results of the content analysis of the speeches of the EU and Brazil. The graph includes a forth category "General" that depicts statements referring to benefits for the global South in a general way.

**Figure 2. Win-win arguments in speeches on biofuels of the EU and Brazil (in % of sentences containing the argument)**




Source: Own elaboration from speeches on biofuels by representatives of the EU (Barroso 2007; Dimas 2007; Fischer Boel 2008; Mandelson 2007; Piebalgs 2007) and Brazil (Amorim 2008; Lula da Silva 2007a, 2007b, 2008; Silva 2008). Speeches were manually coded by using the four pre-established codes listed on the horizontal axis, and by taking the sentence as unit of analysis. Note that only those sentences were coded for the Win-win story-line in which claims of benefits for developing countries or their populations appeared. The benefits for countries advancing the dominant discourse were not coded, because they are assumed to be already inherent in the construction of the global discourse. The focus here lies on the claimed benefits for the global South. Appendix I shows the detailed coding results.

When considering the averaged results of the content analysis for the EU and Brazil combined, the argument of rural development and poverty alleviation, with an appearance in 4,2% of the sentences, is clearly the most salient one in favour of biofuels as a "win-win" opportunity. The arguments of macro-economic development and environmental benefits follow with low average occurrences of 0,9% and 0,3% of the sentences respectively. The individual results for Brazil and the EU reveal that the high share of sentences containing the argument of rural development and poverty reduction can almost completely be ascribed to the speeches of Brazil. The gap between the high occurrence of these claims in the case of Brazil (in 7,4% of the sentences) and the low number of 0,9% for the EU is remarkable. While the argument of macro-economic development is low for both, Brazil gives again greater importance to this argument, which appears in 1,5% of the sentences, compared to 0,2% for the EU. Environmental benefits are not mentioned in the speeches of the EU, and are rarely cited in Brazil's speeches (0,6%) as well. Lastly, a relatively high number of unspecified win-win claims is apparent, which can be found in an average of 3,3% of sentences for the EU and Brazil jointly. This is notable particularly in the case of the EU, for whom these general claims are the most frequently used (in 3,2% of the sentences) among its arguments for the Win-win story-line.

Whereas the TINA story-line is mainly supported with arguments of urgency and threat, the win-win situation is discursively strengthened with normative references. This is observable in Lula da Silva's (2007b: 4) statement that "[i]t's not compatible with our Christian soul, still less with our soul of solidarity, for the rich to become ever richer and the poor to carry on getting poorer".

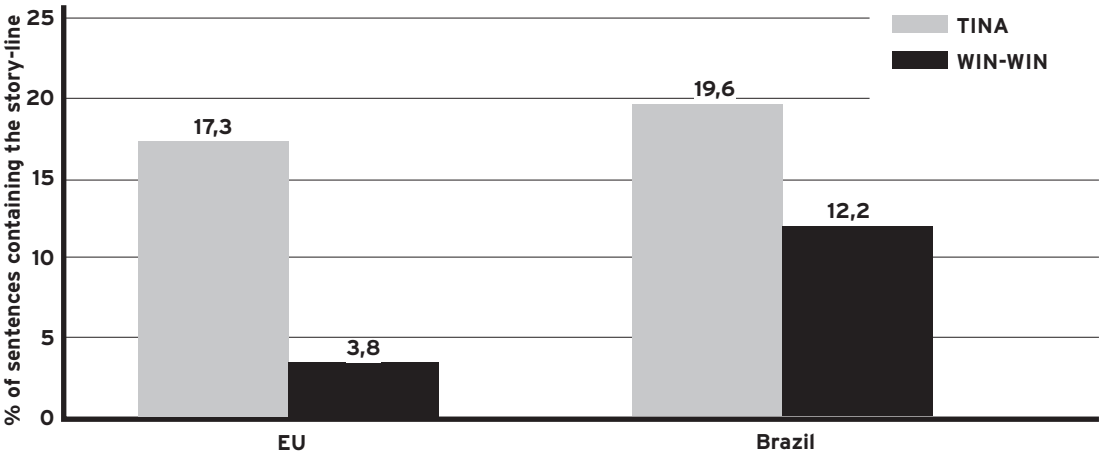
It is important to mention that for the EU, biofuels are not considered as beneficial *per se*; win-win outcomes are claimed possible *only if* biofuels are "properly managed" (Barroso 2007: 2). According to Franco et al. (2010: 665), the mounting criticisms as a result of the "food versus fuel" crisis in 2007/2008 prompted a discursive shift in the EU biofuel discourse towards greater emphasis on potential risks of biofuels, while at the same time proposing means to address them. The most important "safeguard" (Fischer Boel 2008: 3) to avoid detrimental effects of biofuel production and use is the exclusive promotion of biofuels that meet certain environmental sustainability criteria, such as minimum levels of GHG savings (ibid.). Moreover, current first-generation biofuels are presented as merely a *transitional* solution, until second-generation biofuels – which are said not to compete with food production and to have better environmental outcomes (Dimas 2007: 3; Fischer Boel 2008: 6) – become commercially viable (Mathews 2007: 3557). These criteria are a form of conveying that the EU takes seriously the adverse effects of biofuels and manages problems in a responsible way. In contrast, speakers of Brazil do not openly acknowledge possible negative consequences of biofuels, but instead adduce the Brazilian experience as a proof that biofuels are beneficial. It is said, for example, that biofuels do not compete with food production, because biofuel production in Brazil has been accompanied by rising grain production and a reduction of hunger (Amorim 2008: 2; Lula 2007b: 2).

Both the strategies of the EU and of Brazil increase the credibility of the Win-win story-line and confidence in these two authors. A particular discursive positioning of opponents reinforces this result. While the dominant approach to biofuels is presented as based on "facts", as rigorous and credible, the critics' argumentation is constructed as *not* credible – founded on "populist myths" (Barroso 2007: 3) and characterised by disinformation (Amorim 2008: 2; Lula da Silva 2008: 2). It is suggested that opponents make biofuels a scapegoat without proposing solutions: "The problem with a scapegoat is that it's only a symbolic solution. You send the goat into the wilderness, but the real problems remain" (Fischer Boel 2008: 7).

### 3.3 Differences and Synergies

As the above analysis has shown, Brazil and the EU share both story-lines on biofuels in their particular ways. When analysing the overall occurrence of the two story-lines, it becomes clear that the TINA story-line, appearing in 17,3% of the sentences in the speeches of the EU, and in 19,6% of the sentences in the case of Brazil, has far greater salience in the global biofuel discourse than the Win-win story-line (see Figure 3).

**Figure 3. Story-lines on biofuels in speeches of the EU and Brazil (in % of sentences containing the story-line)**




Source: Own elaboration based on manual coding from speeches on biofuels by representatives of the EU (Barroso 2007; Dimas 2007; Fischer Boel 2008; Mandelson 2007; Piebalgs 2007) and Brazil (Amorim 2008; Lula da Silva 2007a, 2007b, 2008; Silva 2008). Unit of analysis is the sentence. Note that the result of this coding is not equal to the sum of arguments for each story-line in the above content analyses. In the above analyses, a sentence with different arguments of the same story-line can have several codes, whereas this measurement of the general occurrence of each story-line eliminates double counting within the story-lines. See Appendix II for the detailed coding results.

Although claiming a much greater share in Brazil's speeches (12,2% of the sentences) than in those of the EU (3,8%), the generally much lower importance of the Win-win story-line is confirmed by the presentation of benefits for the global South as "welcome side-effect" (Mandelson 2007: 3), rather than as fundamental cause for supporting biofuels (see also Barroso 2007: 3-4). The Win-win story-line is nevertheless important, as it shapes and justifies the TINA story-line by turning the arguments of a crisis and urgency to act into a (positively connoted) opportunity. Instead of presenting biofuels as the "best of the bad solutions" that is needed no matter the consequences, these fuels are constructed as *both* necessary *and* at the same time beneficial.

Having explored the story-lines that underpin dominant biofuel policies, the following section examines whether and how different discourse coalitions in Mozambique reproduce or contest this global discourse.

# 4. DISCOURSE COALITIONS IN MOZAMBIQUE

Mozambique has been promoted by its government "as a southern african [sic] agrofuels hub" (Ribeiro et al. 2010: 9). Currently, 4,8 million hectares of land are destined for biofuel production from sugarcane and the plant Jatropha, intended for

export to Europe and South Africa (Leopold and Dietz 2012: 12). Moreover, the Mozambican government has recently established own biofuel blending targets aiming at a share of 10% ethanol or 3% biodiesel in transport fuel by 2012 (ibid.). A look at different groups of actors within the country reveals, however, that perspectives are less homogeneous than official policies suggest. Three main discourse coalitions are visible, each with its particular positioning vis-à-vis the dominant global discourse. Although not all arguments are used by each single actor pertaining to a discourse coalition, it is possible to group arguments that are representative of the three coalitions (see Appendix III for an overview).

The first group, which I call *corporate developmentalists*, strongly favours foreign investments in large biofuel projects as a means to promote economic development and achieve "progress". Large-scale plantations are seen as necessary to boost agricultural productivity while also creating jobs and reducing poverty (Norfolk and Hanlon 2012: 8). This discourse is advanced by private foreign investors as well as parts of the Mozambican government, especially central and provincial authorities. Among government actors, it is particularly predominant in statements from earlier years (2007/2008). This coalition essentially shares the win-win arguments and vocabulary of the global discourse. The advantages of biofuels that are considered most important are macro-economic and energy security benefits, as well as the promotion of rural development (Namburete 2007; Principle Energy 2009). This is not surprising in light of the country's dependence on the international market, lack of capital and high levels of poverty (Matavel et al. 2011: 8-9). Concerns with the climate figure less prominently in the discourse of the corporate developmentalists, and only rare reference (see Namburete 2007: 2; SEKAB n.d.) is made to the need or urgency of producing biofuels. In contrast to the EU discourse, adverse impacts of biofuel production are neither openly acknowledged nor addressed by the corporate developmentalists. What is more, the government of Mozambique (together with other African countries) in 2008 opposed the environmental and social sustainability standards that were being negotiated in the EU, arguing that they were too stringent and would present an obstacle to production (see Biofuelwatch 2008)., Against the background of the start of a large biofuel project called *ProCana*, President Guebuza (in FIAN 2010: 32) affirmed in 2007 that "bio-fuel development will not dislodge Mozambican farmers from their lands". In general, it is assumed that the country has enough land and water, so that food production is not jeopardised (Energy Minister Namburete in Sapp 2007). Additionally, production on "marginal" land, which are seen as "almost non-inhabited" (see FIAN 2010: 32) and degraded, is presented as "an opportunity to generate income out of a land that did not produce anything at all, without threatening food production and food security" (Namburete 2007: 8).

Interestingly, a recent trend towards a more cautious official discourse of Mozambique can be observed, influenced among others by the actions of individual actors like the new Mozambican agricultural minister José Pacheco (see Norfolk and Hanlon 2012: 13) and the failure of previous biofuel projects like *ProCana* (see Borras et al. 2011). Coexisting with corporate developmentalists, this second coali-

tion of *cautious developmentalists* maintains the arguments in support for biofuels and industrialisation, but also emphasises the need to balance biofuel promotion with ensuring food security and the rights of the Mozambican population. In addition to large-scale foreign investments, domestic smaller-scale farms are considered worth supporting (Norfolk and Hanlon 2012: 13). Similar to the justification of the EU, this coalition shares the arguments of the win-win discourse, but at the same time acknowledges potential problems – at least implicitly. This is visible in the Mozambican National Policy and Strategy for Biofuels of 2009 (GoM 2009b), which affirms that negative impacts need to be managed, for instance through national sustainability standards. Other measures include limiting the land for biofuels through agricultural zoning (Locke 2009), cultivation on marginal land (see Ribeiro et al. 2010: 7) and the exclusive use of non-food crops for fuel production (GoM 2009a). The fact that a study funded by the World Bank and the Embassy of Italy served as a direct basis for the Mozambican biofuel policy and strategy (Borras et al. 2011: 217) hints at a strong influence of the dominant global discourse on the Mozambican government.

Many arguments of the global discourse resonate in both of these two Mozambican discourse coalitions, such as production on "marginal land" to justify biofuels against criticism. Both the corporate and the cautious developmentalists reproduce the dominant discourse by maintaining the Win-win story-line on biofuels, although the latter try to gain legitimacy by additionally adopting some of the opponents' concerns in their discourse – a discursive development comparable to that of the EU. It is in this context that Franco et al. (2010: 688) speak of a "convergence of North-South and South-South elite alliances" in the promotion of biofuels.

As Hajer explains, an argumentative discourse analysis also requires researching the opposing positions "against which a justification is being mounted" (Billig in Hajer 1995: 53). The third, *people-centred discourse coalition* in Mozambique, comprised mainly of organised civil society and peasant communities, advances such a contesting discourse. This discourse commands particular attention to answer the question of why the global discourse has been maintained *despite criticism*. An important question here is how opponents criticise the global approach to biofuels.

A large part of the criticism refers to the gap between the official discourse of a "win-win" situation and real-world evidence showing detrimental effects for the poor. It is argued, for instance, that the claims of rural development as well as income and job creation often do not materialise (Borras et al. 2011: 224-225). Food production is said to be compromised in practice, among others because instead of growing biofuels on marginal land, they tend to be cultivated on arable land otherwise used for food crop cultivation (Ribeiro et al. 2010: 16). The list of these refuted win-win claims is long; important is the fact that this discourse raises several issues that are largely excluded in the dominant discourse, such as social consequences like poor working conditions, or the amount of water needed for large-scale biofuel production, which can exacerbate water scarcity among the rural population (Matavel et al. 2011: 55, 57).

Yet, not only outcomes but also assumptions of the dominant discourse are criticised by using alternative discourses, which marks a difference to the cautious developmentalists' discourse of "win-win under conditions". The people-centred coalition rejects large-scale agro-industrial biofuel production as being inherently destructive (FIAN 2010: 38) – a position that is reinforced by replacing the notion of *bio*fuels with the less positively connoted term *agro*fuels (see Franco et al. 2010: 665; Ribeiro et al. 2010: 28). Relatedly, the people-centred coalition argues for the more holistic concept of food *sovereignty*, instead of food security. As UNAC's executive coordinator Diamantino Nhampossa (2009: 33) emphasises, the concept of food sovereignty involves, among others, attention to peasant and family-driven production, as well as the right and autonomy to manage one's own food production (see also Hildyard et al. 2012: 66). These positions testify a preference for a different approach to development focused on livelihoods, peasant production and local eco-systems instead of rapid modernisation and accumulation.

Another important criticism the dominant discourse refers to concept of "marginal land". While assumed to be "underutilised" and/or "empty" in the official discourse, the people-centred coalition shows that this land is usually inhabited and indeed extensively used in a traditional way, for example for subsistence farming (FIAN 2010: 33). This recognition allows unpacking the normative bias concealed through the metaphor of marginal land: "Perhaps for outsiders a large parcel of land dedicated to livestock raising may be considered marginal, but certainly this is not how the cattle herders would view such lands" (Borras et al. 2011: 222). Land that is deemed irrelevant for global markets is seen as "marginal" (Franco et al. 2010: 674) – from a capitalist viewpoint centred on productivity, efficiency and commercial use. The people-centred coalition considers land not as a commodity, but as a source of livelihood with cultural and spiritual value (Burley and Bebb 2010: 8). As one rural community (in Matavel et al. 2011: 6) puts it, "[w]hoever takes away land, takes everything away: our life, our future and that of our children".

Although this strategy effectively challenges the concept of marginal land as a means to justify biofuel promotion, the disciplinary power of the dominant biofuel discourse can nevertheless be detected in the opponents' discourse. According to Hajer (1995: 57), "[e]ven if they [the subsequent speakers] do try to challenge the dominant story-line, people are expected to position their contribution in terms of known categories". This is exactly what happens when critics use the concept of "marginal land" in its dominant meaning in order to effectively voice their concerns – the arguments that "jatropha is unlikely to produce a high yield on marginal lands" (Ribeiro et al. 2010: 24) implicitly accepts that "marginal" land exists. Hajer's theory remains unclear on whether the opponents' use of the dominant forms of expression necessarily implies reproducing the dominant discourse, or whether it may also be strategic to increase their influence on policy-making. What is clear is that pro-biofuel policies have so far been resistant to contestation. A contrast with the dominant discourse can help answer the question of why critics have not been more successful in their endeavours.

# 5. OPPONENTS ON THE WRONG TRACK?

From the analysis it becomes evident that critics heavily call into question dominant win-win claims, including affirmations that risks can be avoided with proper regulation (such as production on marginal lands). Both the practical outcomes and underlying assumptions of the Win-win story-line are scrutinised, thereby making visible aspects that the dominant discourse omits and debunking the positive connotation of "biofuels as an opportunity". However, contrasting this discourse with the nature of the dominant discourse reveals two kinds of problems with the opponents' strategy. First, those aspects are criticised that have already been discursively addressed in the dominant approach. For instance, environmental hazards are said to be tackled with sustainability principles; social risks are mitigated or avoided by requiring adherence to labour and human rights standards; and food insecurity is addressed by producing on marginal land. It is certainly very important to show that the dominant way of resolving tensions is a far cry from avoiding risks in practice. Yet, this form of contestation may easily evolve into an endless circular debate: while critics insist, based on real-world evidence, that benefits do not materialise, advocates of the dominant discourse respond by arguing for better regulation, and so forth. The fact that the global discourse has accommodated this kind of criticism while maintaining its biofuel policies suggests that this strategy to challenge the dominant approach has not been very successful. More promising, from a strategic point of view, are the instances of discourse that challenge the very assumptions of the Win-win story-line, such as the notions of land and development, as shown above. This allows breaking the discursive closure and challenging the foundations on which the argumentation is constructed. It also shows that there is room for challenging the global discourse, which is dominant but not hegemonic.

The second difficulty with the "resisting" discourse is that important avenues for contestation have not been fully exploited. As mentioned before, the people-centred coalition specifically opposes large-scale biofuel production for export – the type of investments that are fuelled by EU targets and other pro-biofuel policies (Hildyard et al. 2012: 33). This means that opponents should focus their criticism on the elements that drive this global approach. As the above analysis suggests, the TINA story-line has far greater salience in the dominant discourse than the Win-win story-line. The arguments used under the TINA story-line constitute the basic justification for why biofuels are *needed*, and can thus be said to be main drivers of the global approach. Given that the corporate and cautious developmentalists in Mozambique primarily justify biofuels with the Win-win story-line, it is understandable that the discursive battle revolves around these arguments. Nonetheless, an effective critique requires problematising the TINA story-line as key justification, which, surprisingly, is not being sufficiently challenged. While there is disagreement on whether biofuels are an answer (FOE Europe 2010), it is not questioned what the dominant discourse presents as "real problems" (Fischer Boel 2008: 7). Thus, the very problem constructions that shape the search for solutions appear to be taken as given. These constructions, however, rest on certain (implicit) assumptions. A case in point is the concept of "energy security", which remains

almost not scrutinised. The search for energy security (narrowly defined as security of *supply*) is based on a notion of scarcity. In the dominant biofuel discourse, energy is a scarce resource because it is assumed that the transport sector will further expand, which requires more, and ideally diversified, fuel. The assumption of scarcity, in turn, rests on the mainstream economic idea that people are driven by unlimited needs and wants while having limited means (see Hildyard et al. 2012: 22). This explains the constant search for greater economic growth and energy supply. In the context of an environmental and energy crisis, then, biofuels become a solution to satisfy these ever-increasing needs. From a constructivist perspective, in contrast, the naturalised concept of scarcity that gives meaning to the pursuit of energy security must be questioned as a social construction that is not independent of human action. Scarcity is manufactured by producing ever more consumer desires and demands, which then become perceived as "needs" (see ibid.: 22-23). At the same time, hardly any mention is made of "what and whose needs, wishes and demands *can not* be satisfied" (ibid.: 30; emphasis in original), such as many people's basic energy needs for cooking and heating.

Another way of questioning the TINA story-line is the construction of energy as a security issue. Although the concept of security is thereby applied beyond the traditional military sphere, it has nevertheless maintained its classical meaning as *national* security – linked to the historically specific notion of the sovereign state (see Hansen 2006: 34-35). This state-centric discourse of security conceals inequalities among actors within states, by leaving untouched the questions of what is secured and whose security is at stake. The dominant concept of energy security does not refer to the protection of people's right to survival and subsistence, but instead has the meaning of securing access to energy as a commodity, used for profit purposes (Hildyard et al. 2012: 63, 65, 69).

Energy security is also closely interlinked with the other arguments of the TINA story-line, climate change and development. The dominant discourse presents both energy insecurity and climate change as technical problems that can be "fixed", based on the assumption that these crises are external to human activity – instead of being seen as socially induced. This managerial perspective obscures normative commitments underlying these constructions (Hajer 1995: 55). Accordingly, biofuels are justified as a form of "sustainable" consumption that allows addressing climate change and energy insecurity while maintaining existing models of society and development, including energy-intensive lifestyles. This implicit assumption that economic growth and environmental protection can be harmonised distracts from the environmentally destructive nature of neoliberal capitalist development (Hildyard et al. 2012: 28). A problem-solving perspective that focuses on how to overcome energy scarcity diverts the attention from a needed slowing down of the increasing energy consumption, and may thereby reproduce existing climate and energy problems.

While further academic attention to the constructions underlying the TINA story-line is desirable, these examples give an idea of the importance of questioning such assumptions for putting forward and justifying alternative proposals.

# 6. CONCLUSION

Starting from the puzzle of a surprising permanence of the global approach to biofuels in the context of heavy criticism, this paper has aimed to explore the question of how dominant biofuel policies have been sustained globally. The study found that the continuity of biofuel policies can be explained both with the "internal" strength of the dominant discourse and with the failure of opponents to effectively challenge it.

First of all, the analysis has shown that the EU and Brazil, as representatives of the dominant global discourse, advance two main story-lines that construct biofuels as necessary because "there is no alternative" (TINA story-line) and as beneficial for all (Win-win story-line). These story-lines can be said to have a synergy effect, as they together create an image of biofuels as "necessary but also beneficial". They secure the permanence of the dominant discourse by discursively sealing the problem definitions and preventing them from being questioned. Furthermore, several discursive strategies help justify the global approach to biofuels, such as the evocation of a securitised sense of urgency and threat or the appeal to normative commitments of solidarity and responsibility. Moreover, a positioning of the own approach as rigorous, combined with a discursive construction of critics as "not credible", bestows legitimacy to pro-biofuel policies.

Generally speaking, the TINA story-line containing the arguments of climate change, energy security and economic development was found to have the greatest salience in the global biofuel discourse. While less frequent, the Win-win story-line is supported more strongly by Brazil than by the EU. Brazil's preoccupation mainly with rural development and poverty alleviation in developing countries suggests that it positions itself closer to the interests of countries of the global South than the EU is able or willing to do. The discourse of the EU, for its part, more explicitly acknowledges potential drawbacks of biofuels and the possibility of addressing them. The global discourse to which the EU and Brazil contribute thus speaks to the interests of countries of the global South while also claiming to take potential problems seriously. This combination enhances the social accommodation of the global approach and shields it against contestations. This is possible because the utterance of common story-lines helps to conceal differences and contradictions between the interests and discourses of the EU and Brazil. The success of these discursive strategies is confirmed by the convergence of two important discourse coalitions of government and business actors in Mozambique with the dominant discourse.[6] This discursive similarity illuminates the power of the well-institutionalised global discourse, which makes actors adopt its forms of expression to be credible in the international arena and shapes their perceived interests. Additionally, the Mozambican coalitions actively sustain the dominant discourse. By emphasising the benefits of biofuel production for Mozambique and its people, they reinforce those arguments that are generally less pronounced in the dominant discourse.

6.. This does not mean that discourses are identical. Yet, the Mozambican coalitions do share the main story-lines of the global discourse, albeit to a different extent. The different emphases among the discourse coalitions can here be neglected, because they are obscured through the use of shared story-lines.

The second part of the answer to the question of how the dominant discourse has been sustained despite contestation can be found in the discourse of the Mozambican opponents. The very existence of heavy contention is a sign that the powerful dominant discourse is not hegemonic and can be contested. However, the most common criticisms by the opponents have not only already been addressed in the dominant discourse, but have also failed to effectively target the TINA story-line as main justification for biofuels. Focusing their arguments almost entirely on the Win-win story-line, opponents have not made full use of the possibilities for challenging the dominant discourse. The lack of scrutiny of the important TINA story-line also corroborates the power of the global biofuel discourse and its mechanism of discursive closure.

Two practical implications can be derived from these findings. First, a criticism of practical outcomes of biofuel policies can always be invalidated by including new mechanisms for managing risks in the global approach. A more convenient strategy is therefore to scrutinise assumptions and dominant problem constructions, as they condition the nature of solutions proposed. Secondly, refuting win-win claims of biofuels does not change the fact that the dominant discourse makes biofuels be perceived as necessary. For this reason, a two-pronged questioning of the assumptions of both the Win-win and TINA arguments appears to be a more effective strategy for contesting the dominant approach to biofuels. Challenging the latter would imply, for instance, problematising the construction of energy as a scarce resource and security issue, as well as questioning the presentation of climate change and energy insecurity as non-human, technical problems.

# APPENDIX I: OCCURRENCE OF ARGUMENTS PERTAINING TO TINA AND WIN-WIN STORY-LINES IN SPEECHES OF THE EU AND BRAZIL

| | | TINA | | | | Win-win | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | Climate Change | Energy Security | Development | General | Rural dev/ poverty reduction | Macro-econom. development | Environmental benefits | General |
| EU | Barroso 2007 (76 sentences) | 8 | 11 | 1 | 2 | 1 | 1 | 0 | 4 |
| | Dimas 2007 (70 sentences) | 4 | 2 | 0 | 2 | 0 | 0 | 0 | 1 |
| | Fischer Boel 2008 (154 sentences) | 10 | 7 | 0 | 3 | 0 | 0 | 0 | 0 |
| | Mandelson 2007 (51 sentences) | 6 | 2 | 1 | 2 | 1 | 0 | 0 | 4 |
| | Piebalgs 2007 (94 sentences) | 8 | 11 | 1 | 6 | 2 | 0 | 0 | 5 |
| **TOTAL (445 sentences)** | | **36 (8,1%)** | **33 (7,4%)** | **3 (0,7%)** | **15 (3,4%)** | **4 (0,9%)** | **1 (0,2%)** | **0 (0%)** | **14 (3,2%)** |
| Brazil | Amorim 2008 (35 sentences) | 2 | 2 | 1 | 3 | 6 | 2 | 0 | 0 |
| | Lula 2007a (48 sentences) | 8 | 1 | 2 | 5 | 6 | 1 | 1 | 2 |
| | Lula 2007b (80 sentences) | 9 | 4 | 3 | 3 | 5 | 1 | 0 | 6 |
| | Lula 2008 (150 sentences) | 14 | 2 | 5 | 0 | 8 | 1 | 1 | 3 |
| | Silva 2008 (23 sentences) | 2 | 1 | 2 | 2 | 0 | 0 | 0 | 0 |
| **TOTAL (336 sentences)** | | **35 (10,4%)** | **10 (3%)** | **13 (3,9%)** | **13 (3,9%)** | **25 (7,4%)** | **5 (1,5%)** | **2 (0,6%)** | **11 (3,3%)** |

*Numbers show the absolute number of sentences containing an argument in a speech.

# APPENDIX II: OVERALL OCCURRENCE OF TINA AND WIN-WIN STORY-LINES IN SPEECHES OF THE EU AND BRAZIL

| | | TINA | Win-win |
|---|---|---|---|
| EU | Barroso 2007 (76 sentences) | 19 | 6 |
| | Dimas 2007 (70 sentences) | 4 | 1 |
| | Fischer Boel 2008 (154 sentences) | 21 | 0 |
| | Mandelson 2007 (51 sentences) | 13 | 4 |
| | Piebalgs 2007 (94 sentences) | 20 | 6 |
| **TOTAL (445 sentences)** | | 77 (17,3%) | 17 (3,8%) |
| Brazil | Amorim 2008 (35 sentences) | 5 | 6 |
| | Lula 2007a (48 sentences) | 14 | 9 |
| | Lula 2007b (80 sentences) | 18 | 13 |
| | Lula 2008 (150 sentences) | 24 | 13 |
| | Silva 2008 (23 sentences) | 5 | 0 |
| **TOTAL (336 sentences)** | | 66 (19,6%) | 41 (12,2%) |

*Numbers show the absolute number of sentences containing an argument in a speech. Each sentence can only have one code per story-line.

# APPENDIX III: DISCOURSE COALITIONS IN MOZAMBIQUE

| | Corporate developmentalists | Cautious developmentalists |
|---|---|---|
| **Main proponents** | Private investors, political and economic elites (provincial and central government authorities especially before 2009) | Central government authorities (especially since 2009/2010) |
| **Central argument** | Large-scale biofuel production is beneficial for the country and its population. | Large-scale biofuel development is beneficial *if certain conditions are met.* |
| **Priorities** | Priority to large-scale biofuel production for fast modernisation (Norfolk and Hanlon 2012: 8). | Priority to food production and biofuel production (Hanlon and Mousseau 2011: 3). |
| **Policy implications** | Large-scale foreign investment is necessary for agricultural development (Norfolk and Hanlon 2012: 13). | Promotion of *selected* large-scale foreign investments *as well as* promotion of medium- and small-scale farms and domestic investment (see Hanlon and Mousseau 2011: 47). |
| | Biofuels for domestic consumption and export (Namburete 2007). | Biofuels for domestic consumption and export (GoM 2009b). |
| **Domestic effects of large-scale biofuel production** | Biofuels are climate-friendly and reduce GHG emissions (GoM 2009b; Sapp 2007; Sekab n.d.). | |
| | Reduction of dependence on fossil fuel imports from a volatile international market; diversification of energy sources to secure future energy supplies; balance of payment improvement; development of infrastructure; foreign exchange generation (GoM 2009a, 2009b; Namburete 2007). | |
| | Meet energy needs of rural population; employment and income generation see FIAN 2010: 31; GoM 2009b; Namburete 2007; Principle Energy 2009). | |
| **View on managing problems with biofuels** | EU environmental and social sustainability standards are obstacles to production (see Biofuelwatch 2008). | Adverse social and environmental impacts are managed to ensure beneficial outcomes (see Ribeiro et al. 2010: 14), e.g. by making sustainability standards a criterion for selecting investment projects (see Locke 09). |
| **Social risks, food security, land and water** | Abundant water and arable land allow production "without threatening food production" (Namburete in Sapp 2007; also Namburete 2007: 7-8, 16).<br>The use of underused, "empty" lands is an "opportunity to generate income out of a land that did not produce anything at all, without threatening food production and food security" (Namburete 2007: 8; also President Guebuza in FIAN 2010: 32). | Management of environmental impacts; rational use of water (Hanlon and Mousseau 2011: 36).<br>Avoid impacts on food security by only using non-food crops for biofuel production (GoM 2009a), by producing on marginal land (see Ribeiro et al. 2010: 7) and by limiting the land used for biofuel production through agricultural zoning (Locke 2009). |

Source: Own elaboration.

| People-centred approach |
| --- |
| Organised civil society (incl. UNAC, Friends of the Earth Mozambique), local peasant communities |
| Large-scale agrofuel production benefits private profit interests to the detriment of the people (FIAN 2010: 38; Ribeiro et al. 2010: 8, 29). |
| Priority to food production and food sovereignty (Ribeiro et al. 2010: 8, 29), livelihood security and peasant autonomy (Nhampossa 2009: 33). |
| Promote small and medium-size domestic peasant production (Nhampossa 2009: 33), based in local eco-systems (Ribeiro et al. 2010: 28). |
| Biofuels to meet domestic energy needs (FIAN 2010: 36). |
| GHG balance of agrofuels varies depending on crop type and practices, and is often negative (esp. considering indirect land use changes); soil degradation, loss of biodiversity (FIAN 2010: 38). |
| Agrofuels do not increase domestic energy security, because most production is used for export (FIAN 2010: 36). |
| Rural development and poverty reduction are not improved or even obstructed (Ribeiro et al. 2010: 9, 26). |
| Even when "managed", the promised benefits for the people are not fulfilled in practice (Norfolk and Hanlon 2012: 4, 7); existing law and human rights are not respected (Ribeiro et al. 2010: 29, 40-41).<br>Agro-industrial production is by nature unsustainable (FIAN 2010: 38). |
| Agrofuel production competes with food production (Ribeiro et al. 2010: 16) and undermines communities' autonomy and capacity to produce food (FIAN 2010: 36).<br>Agrofuels do not grow well on marginal land (Ribeiro et al. 2010: 8); compete with peasant production for high quality soil and water (Matavel et al. 2011: 7).<br>Marginal land is a myth; land is extensively used in a traditional way (FIAN 2010: 33; Matavel et al. 2011: 19).<br>Land is not a commodity, but a source of livelihood (Matavel et al. 2011: 6). |

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