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Rising policy conflicts in Europe over bioenergy and forestry ☆

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ABSTRACT

Growing concerns over emissions of green-house gases causing climate change as well as energy security concerns have spurred the interest in bioenergy production pushed by EU targets to fulfil the goal of 20 per cent renewable energy in 2020, as well as the goal of 10 per cent renewable fuels in transport by 2020. Increased bioenergy production is also seen to have political and economic benefits for rural areas and farming regions in Europe and in the developing world. There are, however, conflicting views on the potential benefits of large scale bioenergy production, and recent debates have also drawn attention to a range of environmental and socio-economic issues that may arise in this respect. One of these challenges will be that of accommodating forest uses – including wood for energy, and resulting intensification of forest management – with biodiversity protection in order to meet EU policy goals. We note that the use of biomass and biofuels spans over several economic sector policy areas, which calls for assessing and integrating environmental concerns across forest, agriculture, energy and transport sectors.
In this paper, we employ frame analysis to identify the arguments for promoting bioenergy and assess the potential policy conflicts in the relevant sectors, through the analytical lens of environmental policy integration. We conclude that while there is considerable leverage of environmental arguments in favour of bioenergy in the studied economic sectors, and potential synergies with other policy goals, environmental interest groups remain sceptical to just how bioenergy is currently being promoted. There is a highly polarised debate particularly relating to biofuel production. Based on our analysis, we discuss the potential for how those issues could be reconciled drawing on the frame conflict theory, distinguishing between policy disagreements and policy controversies.

1. Introduction

> *The global biomass resource base will undergo a fundamental transformation in the coming decades as a result of the convergence of many driving forces. Agricultural and forest production systems must feed and shelter a growing world population and at the same time meet the demands for fuel, fibre, fertilizer and the many other types of goods and services that are derived from bio-based sources and conversion systems* (Johnson and Virgin, 2010, p. 164).

In the coming 40 years or so, until 2050, the world's population is estimated to grow 51% from today's 7 to 10.6 billion (UN, 2011). At the same time, the demand for transportation fuel is estimated to grow by a staggering 91% (IEA, 2009). These prospects, together with growing concern over emissions of green-house gases causing climate change have spurred the interest in bioenergy production globally, as well as within the EU. Indeed, bioenergy has emerged as the saviour of climate change, pushed by EU targets. Additionally, there are rising energy security concerns with the dependency on fossil fuels in particular, where bioenergy sources are considered to provide less risk. The use of renewable energy sources has increased within the EU and currently provides around 9% of the gross final energy consumption. Bioenergy is the leading renewable energy source in the EU as it provides almost 70% of the renewable energy consumption (ENER-EMOS, 2010). Bioenergy refers to all types (electric and transport fuels) of energy generated from *biofuels*, which are derived from *biomass*. Biofuels can be produced from three main biomass sources: 1) by-products from forestry and agriculture; 2) municipal and industrial waste streams; 3) field fuels/energy crop cultivation (Söderberg, 2011). The rationale for increased emphasis on bioenergy in the EU, to fulfil the goal of 20 per cent renewable energy in 2020 as well as the goal of 10 per cent renewables in the transport sector in 2020 (COM 2006/848; the RES Directive 2009/28/EC), is driven both by the abovementioned climate and energy security concerns and by a view that increased bioenergy production has political and economic benefits for rural

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areas and farming regions in Europe and in the developing world (Söderberg, 2011).

Nevertheless, there are conflicting views on the potential benefits of large scale bioenergy production. Such debates concern the competition for forest biomass, where pulp-and-paper industries want to protect their interests against producers of biomass-based heat and energy (including the potential production of second generation liquid biofuels from wood cellulose). They also concern to what extent the potential environmental and socio-economic benefits outweigh the risks or unintended consequences. Another challenge is that of accommodating forest uses – including wood for energy, and resulting intensification of forest management – with biodiversity protection in order to meet different EU policy goals. Furthermore, bioenergy policy is a multi-sector issue as the use of biomass and biofuels span over several sector policy areas including forestry, agriculture, energy and transport.

The involvement of multiple sectors as well as different assessments regarding the environmental friendliness of bioenergy, calls for further exploration of what bioenergy policy conflicts presently exist, to what extent they are driven by different (environmental and sustainability) objectives and how bioenergy policy conflicts could affect the forest sector. These issues are addressed in this paper.

2. Framework for analysis

The analysis is made in three steps. First, we employ frame analysis (see below for details) in order to map out the arguments for promoting bioenergy in the *forest* sector as expressed in documents outlining forest strategies in Europe (i.e. forest reports, UN/EU-strategies and previous research). The forest sector is an economic sector mainly controlled by national policies and highly market-dependent (Andersson, 2007), which makes it different from the other three sectors (intersecting the forest sector in the bioenergy area) analysed here.

Second, we use frame analysis to detect bioenergy frames in three other economic sectors where a common EU policy is in place: *agriculture*, *energy* and *transport*. We examine those arguments in view of the prevailing EU policies as expressed in final policy documents where the *current* EU-policy is outlined (thus, the historical developments of bioenergy policy and potential actor conflicts taking place in the policy making process are outside the scope of this study). In our analysis we also assess whether environmental issues are integrated into the different policy sectors' view on bioenergy and, if so, based on which values. This is because, in the strife towards (ecological, economic and social) sustainable development, environmental policy integration (EPI) is a core goal within the EU (Lisbon Treaty, article 6.1), and thus environmental aspects such as CO_2 emissions and biodiversity protection (COM 2010/4) are to be integrated into all economic (non-environmental) policy areas (Jordan and Lenschow, 2010). We discuss if EPI is *strong*; that is environmental arguments are prioritised over other types of arguments (e.g. economy/security), or if EPI is *weak*; that is existing strategies are merely "greened" or ecologically modernised (e.g. Baker, 2007). The strength of EPI can be expected to have an effect on the weight of environmental or sustainability arguments when goal conflicts arise (Söderberg, 2011).

Third, we revisit previous reviews on bioenergy policy debates in order to further assess the potential conflicts in policy with a special focus on how bioenergy policy conflicts could affect the forest sector. We deliberately choose not to specifically investigate bioenergy policy as discussed within the environmental sector as such, but examine this through the lens of environmental policy integration in the selected economic sectors. We also refrain from discussing the potential of energy efficiency although we are of course aware that energy savings constitute an important part of targeting the level of energy consumption. Such a discussion would, however, involve a whole other analytical approach as it concerns the demand side rather than our main focus on the supply side of bioenergy. Based on the cross-sectoral analysis, we discuss the prospective of how those issues could be reconciled drawing on the frame conflict theory.

Frame analysis stems from many different research disciplines, which have in common the objective to "represent an ambition to explore, and make sense of, people's multiple understandings of different situations and phenomena" (Beland Lindahl, 2008, p. 68). According to Schön and Rein (1994, p. 33) a *frame* is what "an institutional actor uses to construct the problem of a specific policy situation". Frame analysis has been used in previous studies of EPI, analysing whether and when actors tend to reframe their policies towards incorporating environmental terms (Lenschow and Zito, 1998; Nilsson, 2005; Nilsson and Eckerberg, 2007; Söderberg, 2011). Frame theory has also been used in studies regarding natural resource management as well as climate change and environmental policy (e.g. Dewulf et al., 2005; Fischer and Bliss, 2009; Gray, 2003, 2004; Valve, 1999; for a comprehensive literature overview see Beland Lindahl and Westholm, 2012). In this study, the concept of frames (Rein and Schön, 1993; Schön and Rein, 1994) is employed in order to both map out different views on bioenergy expressed in policy: what different frames are there within bioenergy policy?; and elucidate the potential conflicts between different policy goals. Regarding different frames, the intent here is thus not to map out specific actor frames. Rather, focus lies on mapping out the overarching bioenergy policy frames as expressed in key policy documents on bioenergy in different sectors. Frames are therefore distinguished in this study by analysing different views on the role of bioenergy in forest policy and EU energy, agricultural and transport policy through qualitative thematic idea analysis of the sector relevant policy documents as specified above. Qualitative idea analysis may employ ideal types, dimensions with dichotomous categories or themes and questions to guide the analysis (Bergström and Boreus, 2005). Since the purpose here is to map out the framing of bioenergy in EU policy, rather than classifying the material into predetermined ideal-types or dichotomous dimensions, themes and questions are preferable. The questions analysed in sector policies are adapted from Jachtenfuchs (1996) and Nilsson (2005): what underlying problems are to be solved; what policy goals are to be achieved within different sectors with the help of bioenergy; and how–what strategies are promoted? Our analysis of policy frames draws heavily on Söderberg (2011), where three competing bioenergy frames were found to be prevalent in current EU energy and agricultural policy: 'bioenergy for energy security', 'bioenergy for rural development' and 'bioenergy for climate'. For this paper, we apply Söderberg's bioenergy frames in our analysis of the energy and agricultural sector,[1] and also examine their plausibility in the transport and forest sectors. In our analysis of bioenergy policy in the transport and forest sectors, we have also identified a fourth frame present in the bioenergy debate, namely 'bioenergy for green growth'. The underlying arguments of the four frames found in this study are summarised in Table 1. They will be further explained in the empirical analysis.

Regarding potential policy conflicts, the analysis is made in two steps. First, we compare the frames in the different policy sectors in order to detect frame conflicts. Frame conflict is thus defined here as major divisions between different perceptions on bioenergy, i.e. between different bioenergy policy frames. Second, we also review previous research on the bioenergy debate, in order to identify goal conflicts — that is, EU policy goals which are colliding with the goal to increase biomass utilisation, and which also may have different implications and collide in different ways with different bioenergy policy frames. We then employ the frame conflict theory in order to analyse the nature of the detected conflicts and how they can be reconciled. While traditional conflict resolution presupposes that opposing parties view different things differently

[1] The frames have been slightly modified for this study, but nevertheless built on Söderberg's (2011) findings.