



Toward a more consistent combined approach of reduction targets and climate policy regulations: The illustrative case of a meat tax in Denmark



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ABSTRACT

In this paper we discuss how targets, policy instruments and accounting frameworks for greenhouse gas (GHG) reduction need to be complemented and aligned, to achieve a more effective road to reduce the GHG emission. We focus on gaps in the policy framework presently adopted by countries that are parties to the UNFCCC, using as illustrative case study the meat tax recently proposed in Denmark. We argue that when the GHG reduction targets for individual countries are based on a territorial approach alone (such as in the UNFCCC framework), i.e. sum of emissions from production inside the country, whether or not consumed inside or outside the country, policy regulations directed at consumption, such as a meat tax, may not effectively target the national GHG reduction obligations, and thereby they may not be sufficiently attractive to governments. In particular, emissions derived from internationally traded goods are insufficiently targeted by territorially oriented policy frameworks because a country might reduce the consumption of an imported good without contributing to the national GHG emission reduction target. If consumption-based reduction targets were implemented, a reduction of GHG emissions due to a reduction of the national demand of meat would be revealed irrespective of whether the GHG emission reduction results from a decrease of domestic or foreign demand of meat. The paper also discusses the importance of the methodological approach to accounting GHG emissions at the country level. We argue that to reveal the effect of policy instruments such as a meat tax, on GHG emissions reduced, an alternative consumption-based accounting could favorably complement the traditional GHG accounting.

1. Introduction

Over the next decades, cumulative greenhouse gas (GHG) emissions will depend on how effective policies can enable the transition to and exploitation of low carbon technologies, and whether citizens will change behaviour to adopt more sustainable lifestyles, including reducing the consumption of products with high GHG footprint. There is an urgent need to understand how climate mitigation strategies can effectively contribute to a significant reduction of GHG emissions (OECD, 2008; Edenhofer et al., 2014) and presently the huge amounts of GHGs that are embodied in traded products should be addressed when designing climate policies (Davis and Caldeira, 2010). It is an important aspect to consider, especially for GHG intensive products (Torrez, 2015). As such, the increase in trade of GHG intensive products is a key argument for revisiting climate policies (Peters et al., 2011). Carbon taxes are one of the main market-based options to encourage reductions in GHG emissions, putting a monetary price on the real costs of global warming imposed by our economic system (Zhang et al., 2016; Withana et al., 2013; Pearce, 1991). Climate policy instruments such as

taxes on the consumption of goods with a high GHG footprint may represent useful instruments for combating climate change, for example due to the high GHG emissions from the production of meat, a tax on its consumption has been proposed as an efficient tool for mitigating GHG emissions (Henderson et al., 2017). Studies discussing and presenting models and evaluations of potential tax systems on certain food items have been recently developed in scientific literature. Sall and Gren (2015) found that the introduction of a tax on seven livestock related products in Sweden decreased by 12% the emissions of GHG due to the consumption of these products. Springmann et al. (2016) showed that levying GHG taxes on food commodities could, if appropriately designed, reduce GHG emissions due to the consumption of food when consumption taxes are levied and therefore covering both imported food commodities and domestically produced commodities that are not exported. Abadie et al. (2015) investigated the effect of taxes on different food items in Norway, concluding that taxes can change consumption patterns in order to reduce GHG emissions associated with the Norwegian diet. In this context, a shift toward a more sustainable diet has been proposed by several authors (Lang and Barling, 2013; Edjabou

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and Smed, 2013; Botto et al., 2011). It should be noted that these studies concerned GHG reduction targets based on a consumption-based approach at the product level in which a mitigation of GHG emissions due to consumption of products was achieved irrespective where goods are produced. However, at the country level, for countries that are party to the UNFCCC, current GHG mitigation targets are based on a territorial approach (Hood et al., 2014). Therefore, a tax on emissions from the meat sector would be difficult to implement in one country, since it would leave domestic producers at a competitive disadvantage with regards to import (Abadie et al., 2015). This paper suggests that at the country level, policy targets, policy measures and accounting frameworks for a more effective road to achieving GHG reduction targets need to be aligned. In particular, it focuses on gaps in the policy framework currently adopted by countries that are party to the UNFCCC, using the meat tax recently proposed in Denmark as illustrative case as: i) meat represents a good with high GHG footprint; ii) Denmark is a UNFCCC member country; iii) Danish economy highly depends on trade of meat.

2. Meat tax in Denmark: an illustrative case

The Danish Council of Ethics¹ has recently recommended an initial tax on beef consumption, to be expanded to all types of red meat in the future, and possibly, on all food on the basis of their environmental impact. The council stated that “it debated the issue for six months, focusing on whether it should be left to consumers to make more climate-friendly choices or if the government should push them in the right direction by taxing the food products that have the greatest negative impact”. The tax was proposed to encourage people to eat less meat and lead to a more sustainable consumption of food, thus reducing GHG emissions from agricultural sector in Denmark. Currently, cattle production substantially contributes to the GHG emissions released from the agricultural sector in Denmark. In 2014, cattle (beef and dairy cattle) production in Denmark emitted 4.2 Mt CO₂e, when emissions from methane and nitrous oxide from enteric fermentation and manure management are taken into account (AU-ENVS, 2016), corresponding to 44% of the total emissions from the agricultural sector (Nielsen et al., 2014). Therefore, a tax on beef meat consumption may potentially play an important role in supporting the Danish GHG reduction targets. In this context it should be noted that the import and export of meat is significant in Denmark. Indeed, in 2015, of the total Danish beef production approximately 45% was exported elsewhere, whereas of the total Danish beef consumption about 50% was imported from elsewhere (DAFC, 2016). Despite this paper is inspired by the recent meat tax proposed in Denmark, it aims to provide a more general argument when taxes on high GHG footprint goods are imposed in countries that are party to the UNFCCC. In particular we highlight how regulatory frameworks need to align to targets, i.e. to reduce GHGs overall, including from trade.

3. Emissions targets and climate regulation policies: the importance of the approach

Carbon taxes may be crucial for reducing GHG emissions, and they are dominantly used for various types of fuel (Sumner et al., 2009). They may be relevant for reaching the emission reduction levels stated in the (Intended) Nationally Determined Contributions that parties to the UNFCCC Paris Agreement, such as Denmark, set out to be achieved over the next decades (UNFCCC, 2016). In particular, the Effort Sharing Decision (ESD) establishes binding annual GHG emission targets for EU Member States for the period 2013–2020. These ESD targets concern emissions from most sectors not included in the EU Emissions Trading System (ETS), including the agricultural sector. Each EU Member State

has an individual ESD target determined according to its economic capacity. For example, Denmark has adopted a target to reduce GHG emissions by 20% in the non-ETS sectors from 1990 levels by 2020 (European Parliament, 2013).

The achievement of reduction targets strictly depends on the policy regime upon which they are based. For countries within the regime set up by the ESD, current mitigation targets are based on a territorial approach. It means that to reach a reduction target, a mitigation of GHG emissions has to occur within the national boundaries. For instance, in Denmark, an accountable decrease of GHG emissions from the livestock sector occurs when GHG emissions released from livestock within Danish boundaries are reduced, which may be obtained in two ways i) by reducing the production ii) by increasing the performances of production in terms of GHG emitted (i.e. reducing emissions per kilo meat produced).

Since a tax on the consumption of meat aims to mitigate GHG emissions by decreasing the consumption of goods, we argue that a meat tax may not be influential in reaching territorially-based targets and thereby is not sufficiently attractive for national governments (Bähr, 2014; Hedenus et al., 2010; Kosonen and Nicodeme, 2009). This is valid for countries where the meat sector is closely connected to the international market. In fact, according to the territorially-based targets, a country might reduce the consumption of an imported good without contributing to the national GHG emission reduction target.

Production-oriented policies (e.g. a tax on meat production) when combined with GHG emission targets based on a territorial-based approach may incentivise the delocalisation of production (and associated emissions) without effectively reducing the consumption of goods (and associated emissions) (Davis and Caldeira, 2010). For instance, in some countries, evaluations of potential territorially-based carbon taxes have been developed, however, a tax of this sort would be difficult to implement in one country, since it would leave domestic producers at a competitive disadvantage with regard to imports (Abadie et al., 2015) and it could also lead to a “carbon leakage” (Ghertner and Fripp, 2007). Actually, according to Wirsenius et al. (2011), to avoid emission leakage, the output tax should be levied at the consumption level rather than at the production level.

If reduction targets were based on a consumption-based approach, they would be achieved when GHG emissions due to consumption of goods (e.g. meat, milk, eggs) were reduced irrespective of where they were produced (Peter et al., 2012). In this paper we argue that climate regulation policies based on consumption in UNFCCC member countries, such as the meat tax proposed by the Ethical Council in Denmark could be accompanied by consumption-based reduction targets achieved through a reduction in the per capita consumption of meat. The consumption-based reduction targets would reveal the effect of a transformation into a more climate-friendly sustainable lifestyle of the citizens and the push effect of a consumer tax. Supplementing territorial-based with consumption-based reduction targets may allow for measuring the effects of implementation of low carbon technologies as well as changes in consumption patterns, thereby incentivizing the use of policy instruments directed at production as well as consumption (Bastianoni et al., 2014a).

4. Methodological issues

The methodological issues concerning the way of accounting for GHG emissions is also relevant in making effective policy instruments aimed at consumption because it determines the results of the GHG inventories and the policy measures adopted to reach the defined GHG emission targets. Presently, the IPCC inventories represent the official reference point upon which national GHG reduction targets for countries within the regime set up by the UNFCCC (UNFCCC, 2017). In order to take into account GHG emissions released from each territorial/national system, the IPCC provides standardised guidelines aimed to develop annual inventories assessing the amount of GHG emissions

¹ <http://www.etiskraad.dk/english>.

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