

## Extended Abstract

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<b>Paper/Poster Title</b>	<b>Voluntary Carbon Markets: Exploring Feasibility and Acceptability</b>
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<b>Abstract</b>	<b>200 words max</b>
<p>In this study, we assess the acceptability and feasibility of dairy system carbon markets to accelerate the uptake of carbon mitigation measures by farmers. To this end, we employ different methods including expert interviews, a stakeholder co-design workshop, living labs and experimental auctions with farmers and consumers. This combination of methods will provide detailed insight into how voluntary carbon markets can be made operational in the agri-food sector based on real-life experience from the living labs and empirical evidence from the experimental auctions. Initial results revealed lack of knowledge, uncertainty about measurement and double-counting of credits are main barriers. The focus of this discussion paper is on presenting initial results and discussing how voluntary carbon markets can be implementing and tested in experimental auctions.</p>	
<b>Keywords</b>	Carbon markets, climate change, dairy, food system.
<b>JEL Code</b>	Q12; Q16; Q13 see: <a href="http://www.aeaweb.org/jel/guide/jel.php?class=Q">www.aeaweb.org/jel/guide/jel.php?class=Q</a> )
<b>Introduction</b>	<b>100 – 250 words</b>
<p>Food systems are responsible for one third of global greenhouse gas (GHG) emissions, with dairy production being a significant contributor to those emissions. Given projected increases in global dairy demand, there is an urgent need to reduce emissions from this sector. Therefore a clearer understanding of the functioning and acceptability of climate-smart innovations along the dairy supply chain will contribute to achieving a climate-neutral EU continent by 2050.</p> <p>One key measure to reduce food system GHG emissions is the adoption of GHG mitigation measures by farmers. However, often farmers are slow to adopt sustainable technologies, which is aggravated by the fact that many farmers believe that the adoption of mitigation measures will lower their profits.</p> <p>Therefore, in this study, we explore the acceptability and feasibility of voluntary carbon markets among dairy farmers and food system actors, as a way to provide a market incentive to support the uptake of GHG mitigation measures by farmers.</p> <p>This discussion paper outlines results from expert interviews and a stakeholder co-design workshop. It then presents how carbon markets could be made operational and how this can be tested with living labs and experimental auctions, with the aim to generate discussion to influence the research design.</p>	

<b>Methodology</b>	<i>100 – 250 words</i>
<p>The methodology involves includes expert interviews, a stakeholder co-design workshop, living labs, and experimental auctions.</p> <p>In the first step, expert interviews elicit main drivers and barriers of implementing carbon markets in the Irish dairy sector. Next, a stakeholder co-design workshop is conducted to discuss how carbon markets can be implemented. Based on these findings, living labs with 10 dairy farmers will be created to get real-life experience with voluntary carbon trading. This includes semi-structured interviews with all living lab participants to evaluate the economic, environmental and social sustainability of voluntary carbon trading.</p> <p>As a last step, we will conduct experimental auctions with farmers and consumers. The experimental auctions will follow standard procedures where participants bid for carbon credits to be exchanged. We will run two auctions:</p> <p>First, consumers and farmers will be asked to state a price for that they are willing to buy carbon credits. A random price is then presented and if the participant’s bid exceeds the price, the participant will buy the carbon credit. Otherwise, the participant will keep the money and no carbon credit is bought.</p> <p>The second auction includes dairy farmers only. Here, farmers will be asked to state a price to sell carbon credits in exchange for implementing climate-smart technologies on their farm. This price will reflect each farmer’s cost of implementing the measure. A random price is then presented and if the farmer’s bid is below the price, carbon credits are sold. Otherwise, the farmer will keep the carbon credits.</p>	
<b>Results</b>	<i>100 – 250 words</i>
<p>Key themes that arose from the expert interviews are summarised in figure 1. Lack of information, uncertainty about measurement and regulation, social pressure and socio-demographic characteristics of the Irish farmers emerged as main barriers. Involvement of credible institutions in the organisation of carbon markets was also perceived as important.</p>	

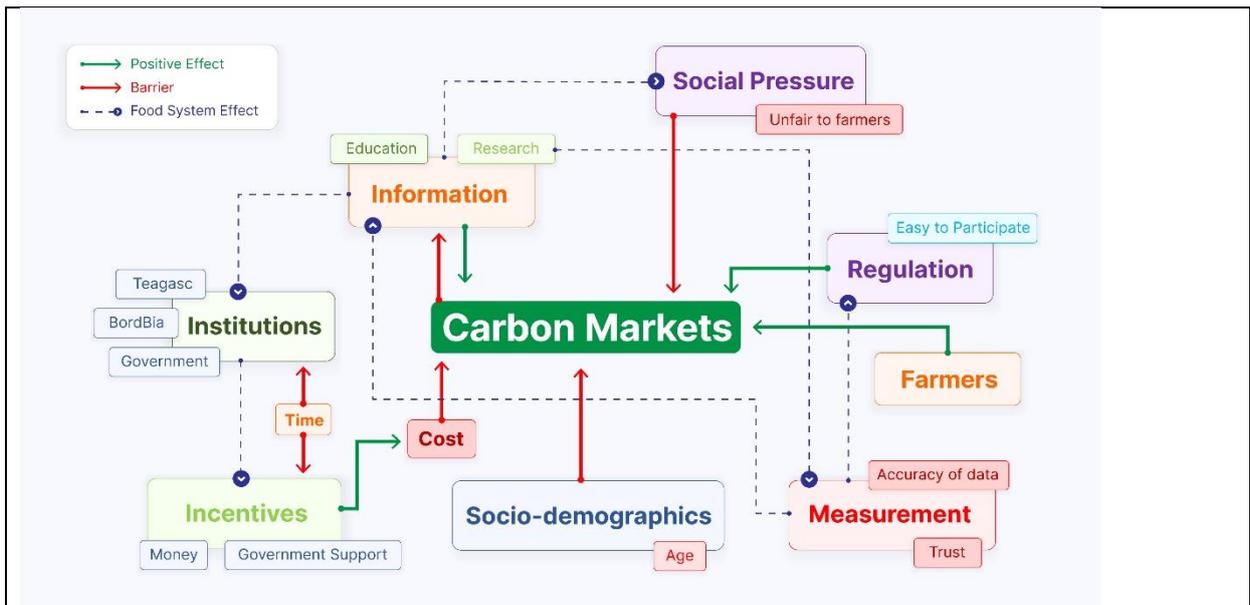


Figure 1: Drivers and barriers of voluntary carbon markets

The stakeholder co-design workshop revealed, in line with the expert interviews, that there is little knowledge on carbon trading among food system actors. In addition, age profile and mind-set of all food system actors may also be a potential barrier. Establishing a baseline for eligible farm practicing and deciding on eligible practices also emerged as important. In relation to eligible farm practices, it was seen as essential to distinguish between carbon removal and avoidance, where carbon removal was regarded as more valuable. In relation to monitoring, reporting and verifying, there was agreement that it is important that the scheme is supported by a credible organisation and double counting avoided.

The proposed paper will present findings from the expert interviews and stakeholder co-design, provide a concept on how to implement carbon markets and discuss experimental auction design to test farmers' and consumers' acceptability and willingness to pay for carbon credits.

**Discussion and Conclusion**

100 – 250 words

In this study, we assess the feasibility and acceptability of voluntary carbon markets in the dairy supply chain. At present, significant uncertainty prevails on how to implement these markets, and the aim of this study is to provide empirical and real-life evidence on the acceptability and functioning of carbon markets.

For farmers, carbon markets are an opportunity to receive monetary compensation for mitigation of GHG emissions. For supply chain companies, this is an opportunity to contribute to climate change, mitigation, increase stakeholder appeal, and achieve sustainability or net-zero targets.

Overall, the aim is to support and accelerate the uptake of climate change mitigation measures, and contribute to mitigating climate change.