Transnational Private Regulation and System Innovations: the impact of Bonsucro Standards on the sugar cane supply chain

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***Abstract*: This paper aims to determine how the compliance with a Transnational Private Regulation (TPR) could foster system innovations. In order to answer this question, it purports to analyse whether and how the commitment to Bonsucro Standards could affect the Brazilian sugar cane supply chain by creating windows of opportunity for system innovations.**

Over the last century, the rising *integration* of the world markets and *disintegration* of the production process modified not only the dimension of the production chains – from national to multinational – but also the regulatory regimes – from a domestic to global sphere. New forms of governance emerged to regulate the global supply chain, with regards to the lack of regulatory capacity based on states' legislation.

The Transnational Private Regulation (TPR) constitutes a new body of rules, practices, and process created primarily by private actors such as firms, NGOs, and civil society. This new form of governance often encompasses multiple standards that are strict and voluntary, instead of minimum and mandatory as public standards [1]. However, firms have market incentives to comply with these private standards, e.g., the opportunity to access a new consumer market [2].

Empirical evidences show that the compliance with some private standards could require the export market to generate managerial innovation on company level [3]. As a consequence, this innovation could further foster the transition from one sociotechnical system to another, what is conceptualized as system innovations [4]. For example, a safety standard could enforce the farm producer to change the planting process affecting societal functions such as labor cultural, supply networks, infrastructure and other aligned elements.

Understanding the dynamic mechanism inside these schemes is far very limited and specialized on some specific value chains, this paper purports to analyze the relation between TPR and system innovation by develop a case study in the sugar cane sector.

During the past decade, there has been a significant increase in interest and investment in the sugar cane market. Countries listed as the biggest producers and exporters – including Brazil, India, Thailand, Guatemala, Mexico – are receiving massive investment in order to satisfy increasing market demand of sugar and bio-ethanol made from sugar cane [5].

In parallel to these changes in the sugar cane market, TPRs are emerging to regulate the sugar cane supply chain focused on social and environmental standards. Given the constraints of a multiplicity of codes of conduct and the subsequent pressures placed on companies, the most recent market-driven industry sustainability initiative is the Bonsucro - Better Sugarcane Initiative, established in 2009.

Bonsucro is a multi-stakeholder action that aims to reduce the environmental and social impact of sugarcane through the development of principles and criteria leading to certification to be adopted by the market actors. The standard covers operations from field to market, incorporating all links in the value chain. Some of the world's largest sugar buyers have signed up to the initiative and are increasingly demanding that their suppliers demonstrate sustainability and responsibility in their business functions, in accordance with the Bonsucro standards. In Brazil, the biggest producer of sugar cane, 14 millers are already certified in accordance with the Bonsucro Standards and 6 buyers have signed up to the Chain of Custody (CoC) Certification ensuring compliance with the sustainable standards along their supply chains.

Considering the recent sustainable standard-setting in the sugar cane market, *the paper aims to determine whether and how the compliance with the Bonsucro Standards could affect the sugar cane supply chain by creating system-level innovation*. The hypothesis is that a new socio-technical landscape – as that of Bonsucro – puts pressure on the existing regime thereby creating windows of opportunity for innovation in the sugar cane industry. We aim to identify where such scope arises and the manner in which innovation affects market development, and in particular, sustainable development.

In order to answer the research question and test the hypothesis, the paper is divided into two parts. In the first part, (i) it provides a theoretical approach, introducing briefly the concept of TPR and system innovations. In the second part, (ii) it focuses on the case study firstly descripting the Bonsucro Standards based on their principles and criteria that lead to certification. Secondly, it purports to analyze the impact of compliance with these standards in the sugar cane supply chain on the Brazilian market. The idea is to identify the system-level innovation created on the sugar supply chain using in-depth interviews with the Bonsucro-certified market actors in Brazil.

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