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The Anatomy of Circular Economy Monitoring through the Lens of Border Crossing and Levels of Control

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Abstract

In this paper, we propose a framework for circular economy monitoring by looking at the issue of border crossing and levels of control.

Keywords

eGovernment, circular economy, control, digital infrastructures, borders

1. Introduction

Circular economy (CE) and sustainability are high on the political agenda. Research has focused on understanding the CE flows[1], however, only limited research has addressed the issues of CE monitoring and the role of digital government [1,2]. Even less is known about the role of border crossing and levels of control in the context of CE monitoring. Recent reports[2] about second-hand clothes exported to Kenya which end up being disposed of in the environment as waste show one of the many examples which urgently necessitate a better understanding of the role of government in CE monitoring when borders are crossed.

2. The Framework

In this paper, we propose a framework for circular economy monitoring, by looking at the issue of border crossing and levels of control. The framework is developed as part of the DATAPIPE[3] EU project. Our framework allows us to make a link between detailed government procedures that address one step in the CE monitoring and to reason how these form part of the broader CE monitoring, by taking the lens of border crossing and levels of control. Our framework consists of four views as follows:

(1) Focal point view: This view can help to select a focal product and CE flow (e.g. a car, a battery of a car) and monitoring actor (e.g. the government).

(2) The Global CE view: This view focuses on the complete CE flows that forms part of the bigger government monitoring picture that spans beyond the control of a specific national government.

(3) Government's level of control view: This view examines what government's level of control is achieved and looks at cross-border movements, taking a specific country (e.g., the Netherlands, NL) as a starting point. This view further distinguishes between import (I (a, b)) and export (E (a,b)) between the Netherlands and outside EU countries and between the Netherlands and other EU countries. Control of the CE flows can be covered by government authorities withing a country when the flows are limited

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[1] See e.g. the Ellen MacArthur CE diagram which is now widely accepted, https://ellenmacarthurfoundation.org/circular-economy-diagram
[2] See e.g. https://www.greenpeace.org/static/planet4-international-stateless/2022/04/9f50d3de-greenpeace-germany-poisoned-fast-fashion-briefing-factsheet-april-2022.pdf OR http://changingmarkets.org/wp-content/uploads/2023/02/Trashion-Report-Web-Final.pdf
[3] https://www.tudelft.nl/datapipe

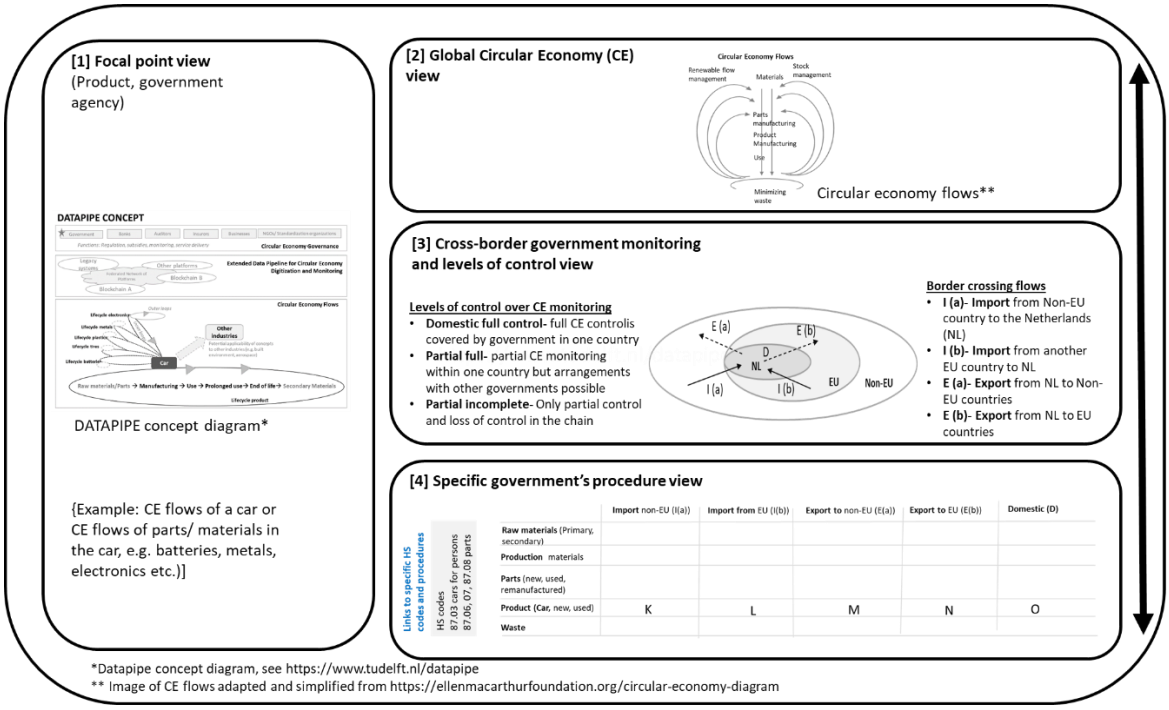

Figure 1: The framework for CE monitoring, including border crossing and levels of control

to that country. But in case borders are crossed, it is likely that more government authorities (at EU level or internationally) will need to play a role to ensure safeguarding CE monitoring, taking the Global CE monitoring perspective.

(4) The specific government procedure view: When governments perform controls, they perform very specific procedures and take a very detailed view of that procedure (e.g. see K in Figure 1, which relates to e.g. import of a car from a non-EU country to the EU). This allows for detailed monitoring of a specific step but gives a fragmented view from a CE monitoring perspective. Therefore, for CE monitoring it is key to see how this specific procedure forms part of the bigger CE monitoring picture.

3. Conclusions

Future research can focus on applying and further developing the framework.

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