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A High-Level Framework for Green Customs and Research Agenda

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ABSTRACT

In this paper we propose a high-level framework for Green Customs which links the policy developments related to circular economy (CE), to customs and related stakeholder groups, customs activities, and customs innovative capabilities. The framework allows customs to better understand these links and identify capability gaps for circular economy monitoring and steer the developments in order to be better prepared for the future.

CCS CONCEPTS

• **Information systems**; • **Social and professional topics** → Computing / technology policy; Government technology policy;

KEYWORDS

Green customs, Circular economy, Sustainability, Supply chains, Monitoring

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1 INTRODUCTION

Circular economy (CE) and sustainability are high on the political agenda of governments nationally and internationally. The implementation of circular economy and sustainability measures will require that proper monitoring takes place to ensure that these measures are properly applied [4]. International trade will be affected by measures to achieve sustainability and CE goals. And when borders are crossed, customs will continue to play an important role. As indicated in the report of the Wise persons group[1], Green customs will be a topic that will deserve attention in the future. While the roles and responsibilities of customs as a result of the policy developments will still take time to take shape, customs can already anticipate on these changes and take an active role to prepare for the future.

CE and sustainability measures are likely to affect many product that cross borders. Customs administrations are already facing large volumes, including the enormous eCommerce flows. Adding more responsibility related to CE monitoring may pose further challenges to customs by adding to the complexity and increasing further the volumes of goods to be controlled. And often customs is not acting alone but in collaboration with other government agencies and this requires further coordination. There is also the time dimension that the controls need to be done fast in order not to block the trade flows. It is important to strive for the proper balance, and ensure that costs and burden for customs and trade do not outweigh the benefits brought by the CE monitoring.

Customs can anticipate on these changes and take a proactive role. It can advance its customs innovations, which are currently developed for fiscal and safety and security matters, to include also CE aspects into account. Customs can also actively engage with legislators to provide feedback when new legislations on CE and sustainability are drafted, to ensure that the execution of the legislations for CE monitoring is feasible in practice.

Customs has a long history of customs-trade collaboration to develop innovative solutions, aimed at enhancing customs control while at the same time reducing the administrative burden and facilitating reliable trade flows. Many of these innovations are relevant in the context of CE and sustainability monitoring as well. Examples include scanning and detection technologies, linked data and data analytics, development of business digital trade infrastructures (data pipelines) and voluntary sharing of business information with customs [1–3]. Advancing these innovations towards the operational environment for addressing current challenges of customs requires large investments in IT systems, procedures and organizational transformation. Customs can build upon these developments

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[1] https://ec.europa.eu/taxation_customs/document/download/e5326383-2e8d-4d0e-9025-ddf262e9df6e_en?filename=TAX-20-002-Future%20customs-REPORT_BIS_v5%20%28WEB%29.pdf

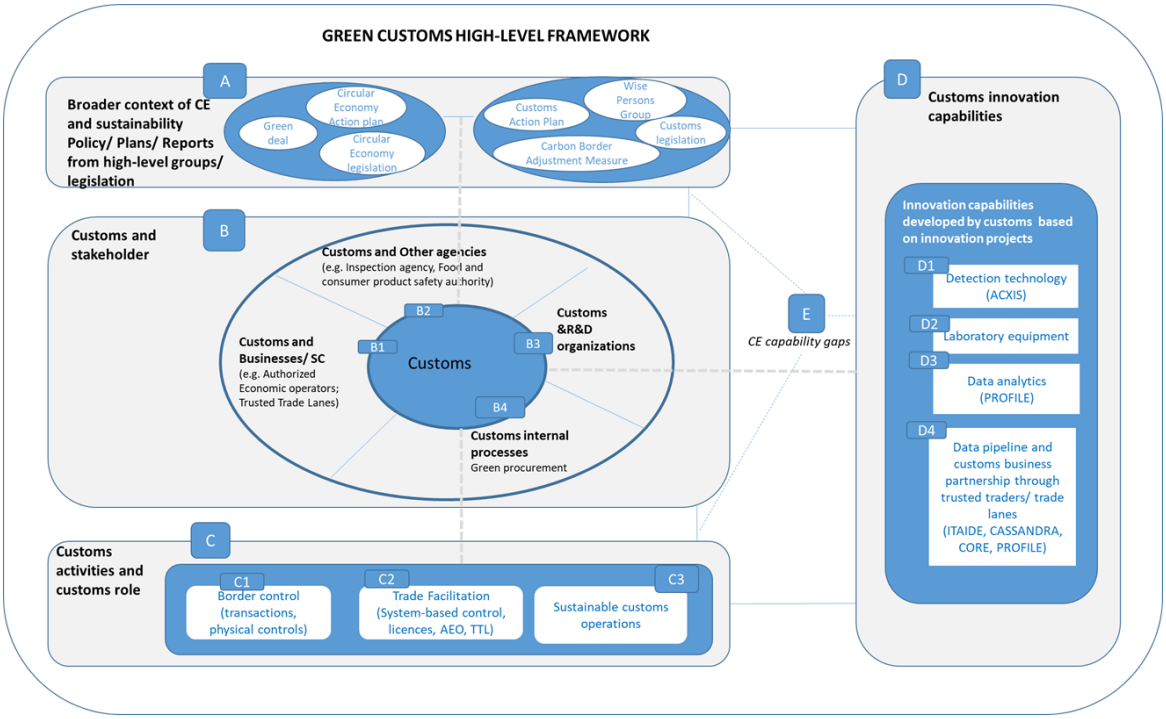

Figure 1: High-Level Framework for Green Customs

and investment and anticipate on the needs for CE monitoring and adapt the innovations to accommodate for the new CE perspective.

2 A HIGH LEVEL FRAMEWORK AND A RESEARCH AGENDA ON GREEN CUSTOMS

In this paper we propose a high-level framework for Green customs (see Figure 1). It can help customs to better anticipate on the future developments related to CE and sustainability monitoring and prepare for the future. It can serve as a basis for deriving a research agenda on the role of customs in CE and sustainability monitoring.

The framework captures:

- The **broader context** of CE/Green policies, legislation, as well as customs reports of high-level groups (Part A of the Framework). In the framework these are represented with different circles as they often cover different practices and procedures that would need to be aligned for CE monitoring.
- The **customs stakeholder** context (Part B) and relationship of customs with these stakeholders. These include: (B1) businesses/ supply chains (e.g. as Authorized Economic Operators (AEO) and Trusted Trade Lanes (TTL); (B2) other agencies (e.g. inspection agencies); (B3) the R&D organizations that collaborate and help customs to innovate, and (B4) internal customs stakeholders for CE aspects.
- **Activities** of customs (Part C) with respect to these stakeholders that can become subject to Green customs. These include (C1) greening border control activities; (C2) system-based control, which allows for trade facilitation of reliable and greener companies; and (C3) customs greening its own operations.

The explicit relationships between the broader policy/ legislative context (A) and stakeholders (B) in the framework indicates that CE policy and legislation can affect customs. These CE policies and legislations need to be aligned with customs procedures. The CE policies and legislations, however also affect other stakeholders as well. Customs can jointly work on solutions with these other stakeholders and provide feedback to the policymakers and legislators.

The right hand-side of the framework (D) is aimed at identifying innovation capabilities of customs. Many of these capabilities such as use of advanced scanning and detection technologies (D1), laboratory equipment (D2), data analytics (D3), use of digital infrastructures such as data pipelines (D4) for fiscal, safety and security purposes and eCommerce offer a lot of possibilities for CE monitoring as well. Analyzing the potential of these innovations and identifying potential CE capability gaps (E) will allow customs to define new innovation pathways, so that it can continue innovating for the immediate priorities of today, while preparing for the CE monitoring challenges of tomorrow and providing feedback to CE legislation that is being shaped.

3 CONCLUSIONS

International trade will be affected by measures to achieve sustainability and CE goals and when borders are crossed, customs will continue to play an important role. Customs has developed a lot of innovations during the last decades but these need to be extended

to allow for CE monitoring. In this paper we provide a high-level framework for Green customs. It sets the basis for a research agenda for Green customs, where topics can zoom in on specific blocks of the framework or their inter-relationships.

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REFERENCES

[1] Heijmann, F., Tan, Y.H., Rukanova, B., Veenstra, A. (2020). The changing role of Customs: Customs aligning with supply chain and information man-agement. World Customs Journal, 14 (2), September 2020.

[2] Rukanova, B., Tan, Y.H., Slegt, M., Molenhuis, M., van Rijnsoever, B., Mi-geotte, J., Labare, M.L.M., Plecko, K., Caglayan, B., Shorten, G., van der Meij, O., Post, S. (2021). Identifying the value of data analytics in the context of government supervision: Insights from the customs domain, Gov-ernment Information Quarterly, https://doi.org/10.1016/j.giq.2020.101496.

[3] Klievink, B., Van Stijn, E., Hesketh, D., Aldewereld, H., Overbeek, S., Heijmann, F., & Tan, Y.-H. (2012). Enhancing visibility in international supply chains: the data pipeline concept. International Journal of Electronic Government Research , 8(4), 14–33.

[4] Rukanova, B., Tan, Y.H. Hamerlinck, R., Heijmann, F., Ubacht, J. (2021). Extended Data Pipeline for Circular Economy Monitoring. In proceedings of DG.O2021, https://doi.org/10.1145/3463677.3463752

[2] https://www.pen-cp.net/