

Governance approaches: Results from STAR-ProBio project

Background

STAR-ProBio supports the European Commission in the implementation of European policy initiatives, including the Lead Market Initiative in bio-based products, the industrial policy and the European Bio-economy Strategy. The overall goal of the project is to formulate guidelines for a common framework promoting the development of regulations and standards that **support the adoption of business innovation models and market uptake in the bio-based products sector**. STAR-ProBio does so by **developing a blueprint for sustainability schemes and tools** applicable to a large spectrum of bio-based products, and by making recommendations for a more efficient and harmonized **governance and policy regulation framework** for the market-pull of such products. STAR-ProBio integrates scientific and engineering approaches (end-of-life analysis) with social sciences and humanities (stakeholder analysis, surveys, field experiments). Its results are applied to selected case studies to illustrate benefits and impacts for bio-based products.

The results of STAR-ProBio will be two-fold: new and revised sustainability assessment methodologies, criteria and indicators for bio-based products; and, recommendations for an overall co-regulation framework that puts forward sustainability schemes as preferred verification method. By the end of the project, STAR-ProBio will have developed two tools that will contribute, from a very practical perspective, to the market-pull of bio-based products and to a more efficient and harmonised policy regulation framework. These are SAT-ProBio and SyD-ProBio.

- **SAT-ProBio** includes a sustainability scheme blueprint and a sustainability assessment tool. The Blueprint is an overarching umbrella which encompasses the requirements for conducting the sustainability assessment of bio-based products, and the rules for managing such a scheme. The Blueprint can provide information on the most relevant sustainability aspects concerning biobased products and related value chains, which can be further used by policy makers, industries associations, and civil society. It is consistent with the sustainability principles and criteria proposed in the European Standard EN16751:2016 (sustainability criteria for bio-based products).
- **SyD-ProBio** is a complex system dynamic model designed for comparing alternative policy scenarios, assessing the impact of various policy measures and providing policy recommendations aimed at promoting the market uptake of bio-based products and creating a level playing field among innovative and conventional products. SyD-ProBio builds on a multi-stakeholder perspective and is addressed to EU and MS policy makers working in the improvement of the policy framework guiding the promotion of sustainable bio-based products.

Analysis

The high number of Bioeconomy (BE) policies and strategies indicates the multinational interest in its further development. However, the development of the BE holds opportunities but also risks for sustainability. Strong links have been found between private governance approaches and BE policies. An inventory of BE policies and strategies relevant for sustainability has been generated. These policies and strategies have been further analysed using a standardized review procedure. Major sustainability risks in the BE sectors have been identified harmonizing expert estimations derived from a survey.

Our analysis shows that despite the strong link between policies and private governance approaches, the influence of current policy framework on the industry is rather low:

- **Specific targets and goals are not precise and lack quantification.** 72 % of the analysed policies included some sort of goals and targets, but those are not sufficiently precise. This has an impact on monitoring results quantification. 50 % of analysed policies included some quantification criteria, though minimum for proper monitoring.
- **Sustainability requirements/criteria were found in only 56 % of the policy documents.** However, they mostly focus on major environmental risks and at the biomass production stage. Sustainability risks in other value chain stages are under discussed, in particular issues related to end-of-life and circularity. Socio-economic sustainability is mostly absent. Overall, it is concluded that the significance of the sustainability discussion to the Bioeconomy development is not sufficient.

Discussion and preliminary recommendations

Coherence in sustainability criteria and requirements put forward in the current framework should be improved. More quantifiable and clearer targets should be included to make policies more effective. Mandatory sustainability criteria for biomass cultivation valid for the entire BE are recommended. SAT-ProBio aims to fill in these gaps.

Three co-regulation formats applicable to BE policies were defined:

- **Type 1. Mandatory sustainability criteria and verification:** EU/MS policies establish minimum mandatory sustainability criteria for bio-based products, verification methods (certification/labelling) to demonstrate compliance and a mechanism to recognise those methods as such.
- **Type 2. Mandatory sustainability criteria & non-mandatory verification:** EU/MS policies establish minimum sustainability criteria for bio-based products. Market surveillance techniques are used to verify compliance. Economic operators are free to decide if verification methods (certification/labelling) are needed, and which ones.
- **Type 3. Non-mandatory sustainability criteria and verification:** EU/MS policies promotes observance of a sustainability framework for bio-based product. Public procurers may have authority to give preference in their purchase to sustainable bio-based products. Economic operators are free to decide if verification methods (certification/labelling) are applied to their products, and which ones.

Policies selected for further analysis to investigate possible improvements through co-regulation: European Timber Regulation, EU Ecolabel criteria for floor coverings, EU Ecolabel criteria for textile products, German Renewable Energy Sources Act (2017), German Public procurement of wood products, French National Action Plan for Green Public Procurement

Current work

- Definition of the scope for a broader EU Co-regulation framework: Suitable policy instrument (EU Directive, EU Regulation, or kept as Strategy/guideline level); sectors and products covered; Extent SAT-ProBio will be included (discussion on the level of inclusion of socio-economic criteria); type(s) of co-regulation recommended
- Definition of mechanisms for the recognition and monitoring of verification methods.
- Discussion on the roles for specific stakeholders, such as procurers.