Possibilities of using result-based sustainability indicators for bioeconomy in the CAP context

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Outline

1. Background and objectives
2. Result-based
3. What is special of the bioeconomy
4. CAP
5. Discussion

Background

Projects CLAIM (fp7) and PROVIDE (H2020)
Forthcoming CONSOLE (H2020)

Literature on AES esp. under asymmetric information
and result-based

Reflection on the Bioeconomy including sustainability and policy measures-> Viaggi D. (2018). The bioeconomy. Delivering sustainable green growth, CABI

Claim Supporting the role of the **C**ommon agricultural policy in **LA**ndscape valorisation: **I**mproving the knowledge base of the contribution of landscape **M**anagement to the rural economy

PROVIDE
PROVIding smart DElivery of public goods by EU agriculture and forestry

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The Bioeconomy
Delivering Sustainable Green Growth
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Objective

To provide some bacground on result-based payments

… and discuss applicability to Bioeconomy-specific topics

Result-based: main issues

Definition

Payments targeted to results (or state/changes in state) rather than input/practices/actions

N.B. Choice in a continuum from actions to final impacts

Different options:

- Overall budget

- Group payments

- Individual payments

- Real measures or proxies/calculation based results

Some issues

- Different drivers of result/impact
- Variability of results
- Heterogenity of farmers/initial state of the environment
- Correlation with individual actions
- Costs of measurement
- Asymmetric information
- Risk aversion (farmer, public administration, others)
- …

What makes the bioeconomy different?

- Target overall biomass management
- Innovation
- Intersectoral connections
- Connection with locality

Bioconomy indicators:

- New sectors (e.g. biobased products): business and market size
- Reuse: amount and %
- Overall performance from bio-based sectors: e.g. emission/euro of valued added
- Overall degree of circularity: % or…

Examples of indicators

Table 10.1. Selected indicators for a systemic monitoring of the bioeconomy.

Policy objectives	Indicators and targets
Environment and resources	
General	Resource efficiency
Land resources	Land use
	Land footprint of the bioeconomy
	Global land use related to the safe operating space
	Land use intensity of crops and product groups
	'Hot spots' across the life cycle of specific crops or products/product groups
	Soil quality
Water resources	Water footprint of the bioeconomy
	Whether imported crops originate from water scarce regions
	Water emissions
Mitigating climate change	Primary energy demand
	GHG savings
	GHG footprint (including upstream and downstream effects)
	Carbon footprint (especially for timber-based energy sources)
Biodiversity	Biodiversity protection
Air	Air emissions
Economy	
Raising competitiveness	Production costs
	Turnover of bioeconomy sectors
	Turnover of new and innovative bioeconomy markets
	Trade balance
Strengthening innovation	Input-related indicators (e.g. R&D expenditure and investments)
	Innovation activity indicators (e.g. patents)
	Indicators for monitoring new and emerging key bioeconomy innovations
Contributing to GDP	GDP of 'traditional' bioeconomy sectors (e.g. primary production, paper and pulp, food processing, etc.)
	GDP of innovative bioeconomy sectors and lead markets (e.g. bio-plastics)
	Share of other sectors that use biomass as their feedstock (e.g. chemical industry, construction sector, etc.)
	GDP share of bio-based and fossil
	GDP of recycling-based production and consumption
Social	
Creating jobs	Employment in bio-based sectors
	Shifts of employment between bio-based and fossil
	Share of employment in recycling-based production and consumption
Labour conditions	Labour health conditions
Food security	Food price
	Food price volatility
	Trends in household and retail food waste
Quality of life	Life quality indicators such as life satisfaction
	Healthy livelihoods
	Local community conflicts

GDP, gross domestic product; GHG, greenhouse gas; R&D, research and development.
Source: Modified from Fritsche and Iriarte (2014); Jungmeier et al. (2016); O'Brien et al. (2017).

Source: Viaggi, 2018

What is moste easily usable for result/based?

In general:
- Depending on chain effects and multiple sectors
- Trends and uncertainty linked to innovation

Potential mixed strategy:
- Monitor the whole bioeconomy
- Check critical points in the system where change is expected
- Payments?

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CAP

In the past:

- Mostly reliance on practice-based payments
- Monitoring largely relying on area-based information
- Counterfactual concept

Now:

- Multiactor and participatory approach
- New instruments: collective & result-based
- Multiple measures
- Green architecture to take into account
- Coordination with Bioeconomy initiatives

Some discussion

Payments by results:

- Legitimate request by citizens
- Legitimate reluctance by those in charge of implementation

Advantages/disadvantages

Even more difficult for bioeconomy issues

Pragmatic approach:

- Mix of result-based and practice-based payments
- ….based on a balance of costs and benefits

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