

**Quality as value added of bioeconomy
- analysis of the EU policies and empirical
evidences from Polish agriculture**

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Problem, Objectives, Methods

Is there a drift from quantity to quality in the EU bioeconomy policy?



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1. how the problem of quality is addressed in the concept of bioeconomy?
2. how quality issues are embedded into EU's bioeconomy and agricultural policies?
3. is coexistence important for bioeconomy?



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2. how quality issues are embedded into EU's bioeconomy and agricultural policies?
3. is coexistence important for bioeconomy?
 - Literature and policy review,
 - Field research in Polish organic farms.



Bioeconomy understandings

- sector of the economy encompassing different industries or products
- policy concept
- heterodox trend in economics



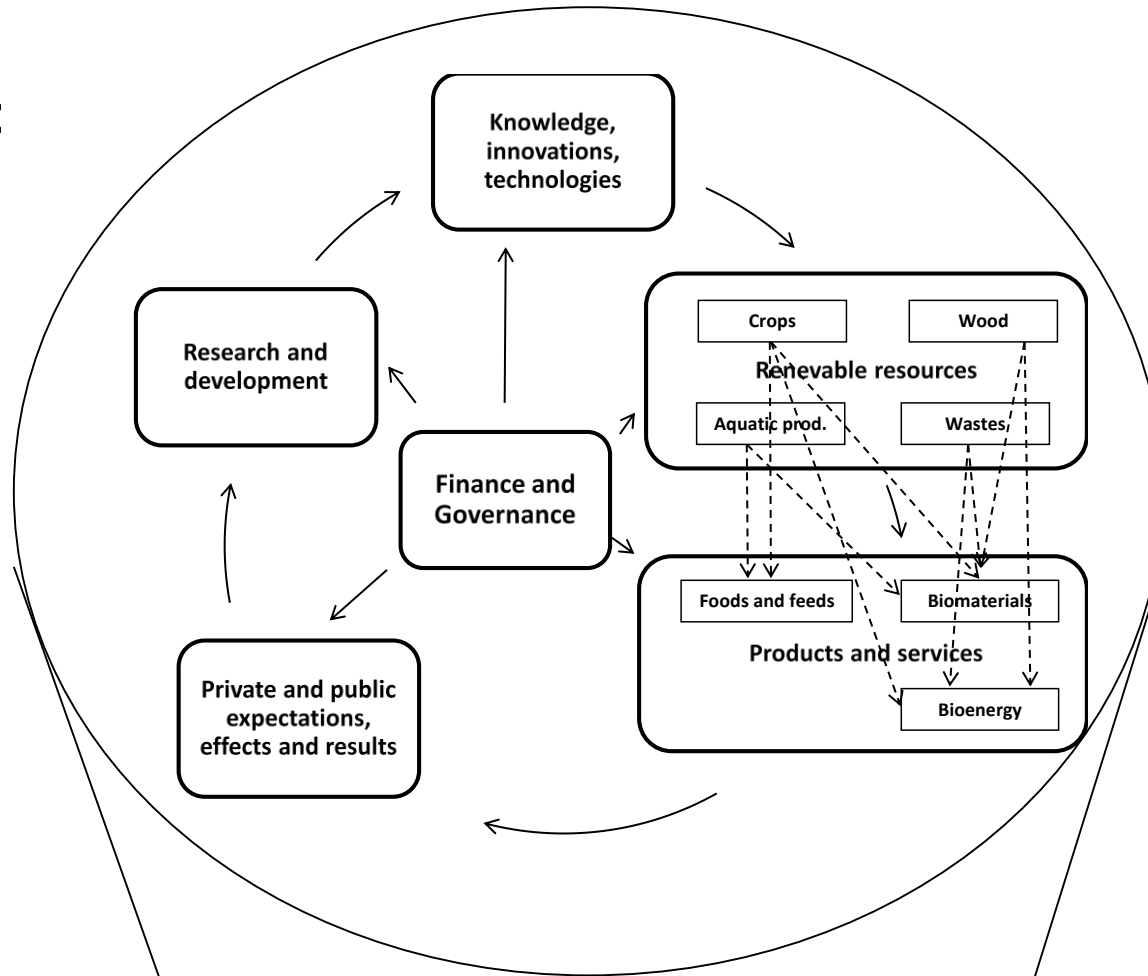
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Bioeconomy perspectives

holistic



industrial

Input > Process > Output

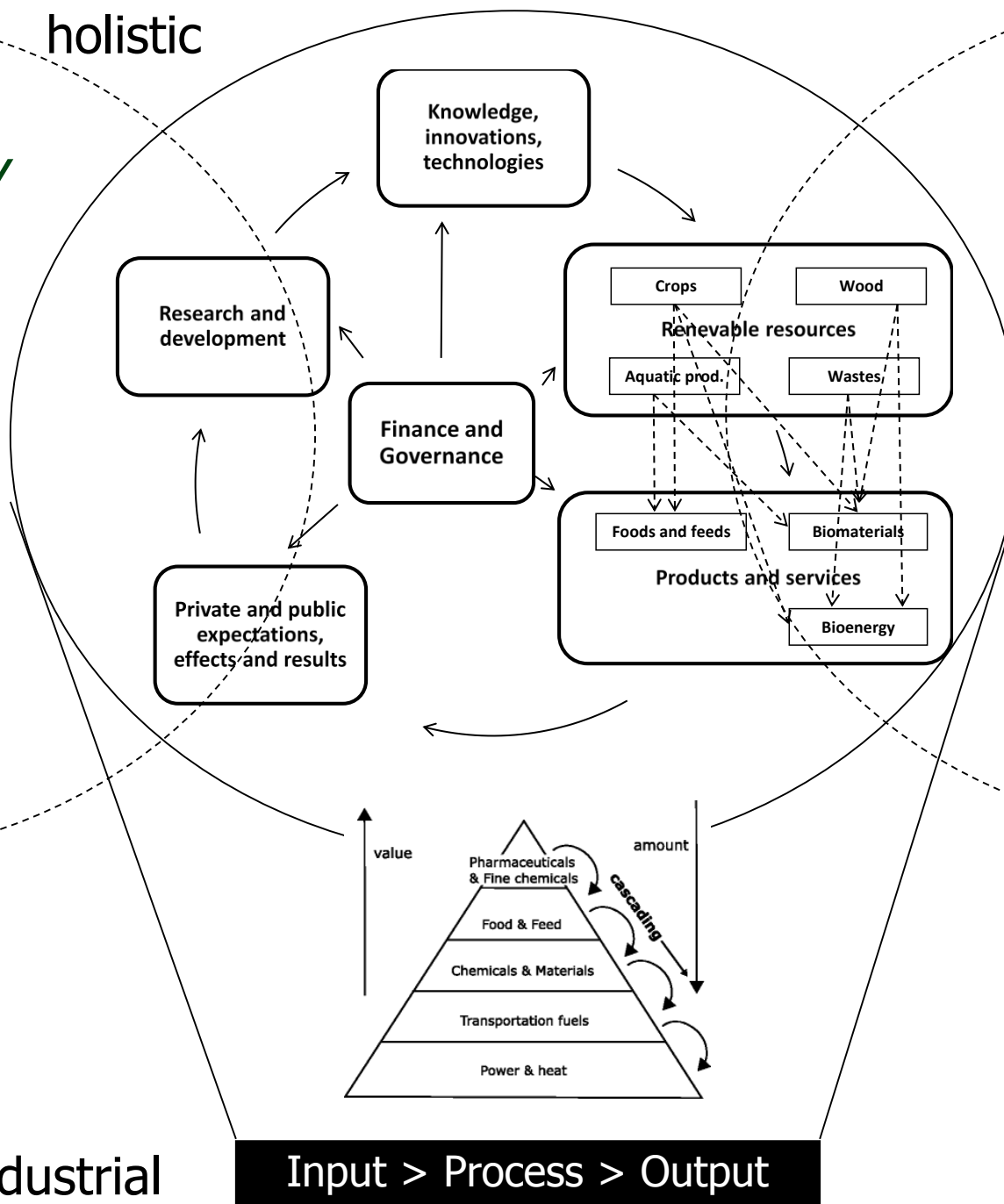


Bioeconomy perspectives

holistic

GREEN ECONOMY

CIRCULAR ECONOMY



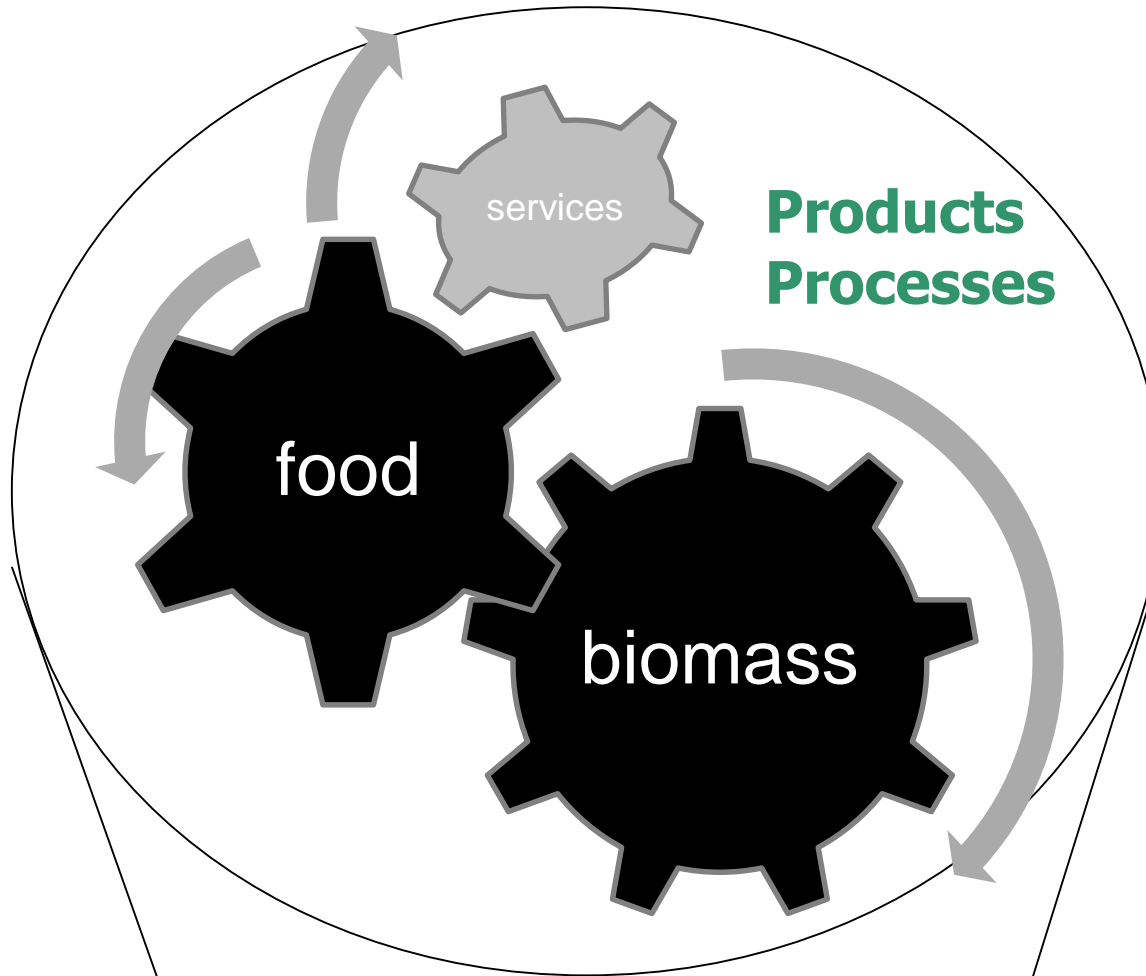
industrial

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Products

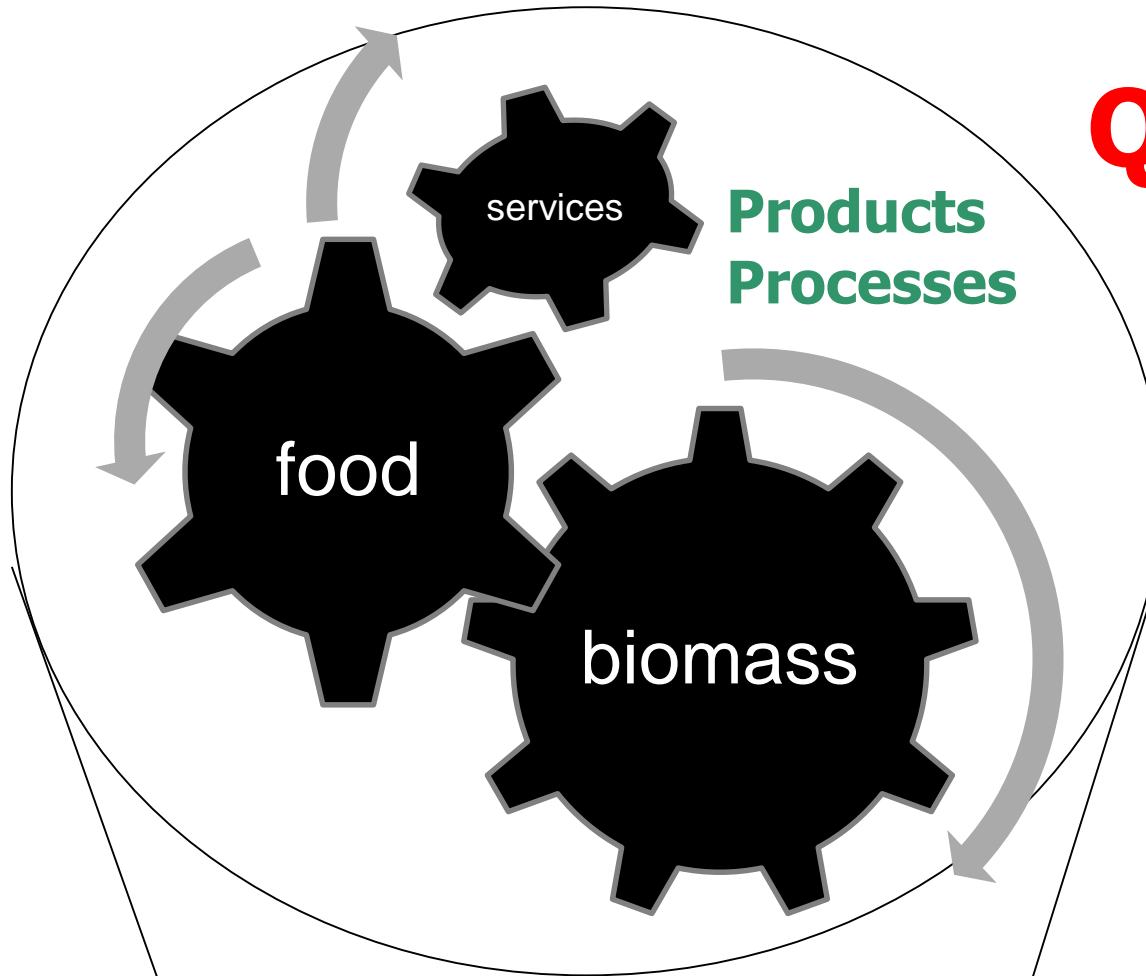
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Bioeconomy perspectives

holistic



QUALITY
QUANTITY

industrial

Products
Input > Process > Output

QUANTITY

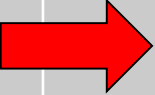
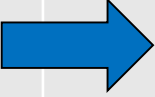
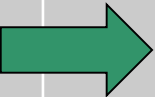


Quality concept in bioeconomy

Concept	Focus	in Bioeconomy
immanent feature of the product or process		
fulfillment of set of standards		
fulfillment of particular expectations		



Quality concept in bioeconomy

Concept	Focus	in Bioeconomy
immanent feature of the product or process	 product process	
fulfillment of set of standards	 product process	
fulfillment of particular expectations	 product service process	



Quality concept in bioeconomy

Concept	Focus	in Bioeconomy
immanent feature of the product or process	product process	Economic quality (technical characteristic)
fulfillment of set of standards	product process	Social quality (social expectations, externalities)
fulfillment of particular expectations	product service process	Enviro. quality (agroecosystems, externalities)






EU's bioeconomy policy

- to pave the way to a more innovative, resource efficient and competitive society that reconciles food security with the sustainable use of renewable resources for industrial purposes, while ensuring environmental protection ...
- sustainable production and exploitation of biological resources will allow the production of more from less, including from waste, while limiting negative impacts on the environment and reducing the heavy dependency on fossil resources, mitigating climate change and moving Europe towards a post-petroleum society ...
- *seek synergies and respect complementarities with other policy areas, instruments and funding sources, which share and address the same objectives, such as the Common Agricultural Policy*



Quality in the EU's bioeconomy policy

Quality in Bioeconomy	Focus	in EU's policy
Economic quality (technical characteristic)	product process	
Social quality (social expectations, externalities)	product, process	
Enviro. quality (agroecosystems, externalities)	product service process	



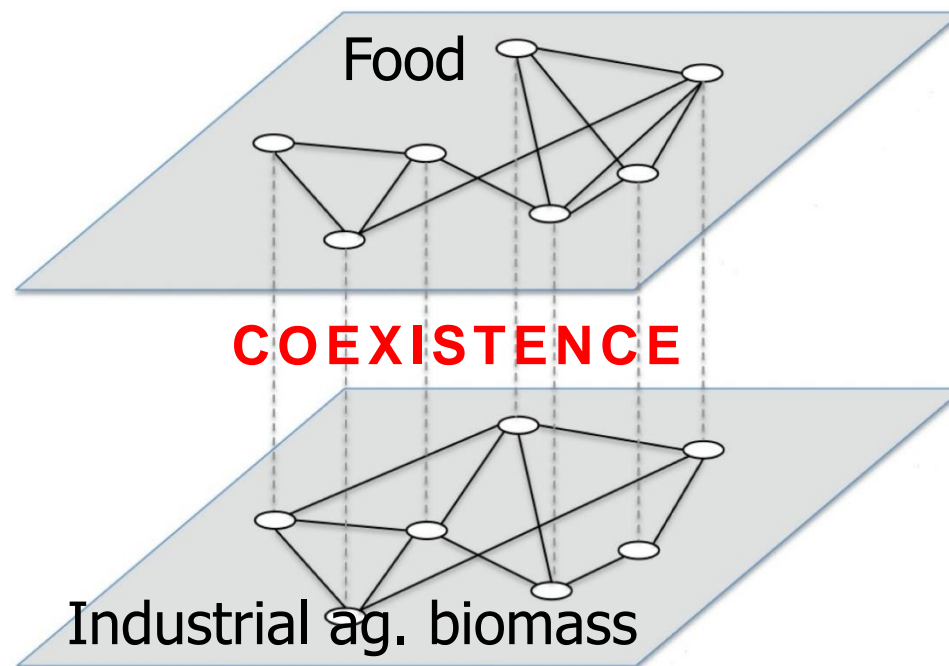
Path dependent and complex CAP as a backbone of the EU's bioeconomy policy

Quality in Bioeconomy	Focus	in the CAP policy
Economic quality (technical characteristic)	product process	<ul style="list-style-type: none">• to protect food and health quality• to increase competitiveness
Social quality (social expectations, externalities)	product service process	<ul style="list-style-type: none">• to ensure a fair income to farmers,• to rebalance the power in the food chain,• to support generational renewal,• vibrant rural areas
Enviro. quality (agroecosystems, externalities)	product service process	<ul style="list-style-type: none">• climate change action,• environmental care,• to preserve landscapes and biodiversity



The challenge of coexistence for bioeconomy

A coexistence can be understood as simultaneous functioning of various technologies and production systems, along with tools, practices and measures preventing unintended cross-contamination to preserve products' identity, and, as a result, functioning of different products in value chains.



Coexistence in the EU's organic law

- a holding may be split into clearly and effectively separated production units for organic, in-conversion and non-organic production
- a preventive and precautionary measures shall be taken, where appropriate, at every stage of production, preparation and distribution

Par. 9, pp. 7 and 8 of Regulation (EU) 2018/848 of the European Parliament and of the Council of 30 May 2018 on organic production and labelling of organic products and repealing Council Regulation (EC) No 834/2007. OJ L 150/1.



The estimated annual costs of coexistence in the investigated organic farms with parallel production in 2014 (N=369)



Coexistence cost (PLN/year/farm)	Mean	Share in the total coexistence costs (%)	Min	Max	Sample st. deviation
cleaning machines	1145,2	22,2	451,2	5487	178,5
spatial isolation in production	662,1	12,8	298,3	758,2	23,5
spacial isolation in warehouses	325,4	6,3	102,3	652,2	8,2
spatial isolation in transport	856,8	16,6	256,9	1456,2	86,9
temporal isolation in production	785,6	15,2	120,2	1078,6	98,6
temporal isolation in transport	352,2	6,8	82,4	1365	38,9
labelling	233,1	4,5	112,3	698,4	21,8
additional unit packages	549,6	10,6	145,7	1659,8	38,4
keeping records	253,4	4,9	52,9	600,8	16,8
Total	5163,4	100			



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Conclusions

1. Bioeconomy policy address the sustainability quality in limited scope.
2. Bioeconomy policy is coherent with CAP.
3. CAP have shown already a drift from quality resulted from sole economic expectations towards quality that addresses the economic, societal and environmental problems.
4. Bioeconomy objectives to deliver food with increased quality and non-food biomass is paving the new challenges for agricultural policy i.e. to ensure the coexistence of different production systems and products in value chain.



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