



**POWER4BIO**  
REGIONS FOR  
BIOECONOMY

Evidence-based bioeconomy policies – a bioeconomy sector analysis for BIOEAST countries

**Biljana Kulišić (EIHP, Croatia) and Markus Lier (Luke, Finland), Task leaders, H2020 BIOEASTsUP project**



FOR BOOSTING THE REGIONAL BIOECONOMY IN CEEC

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# The experience: a kick in a back is also a step forward



Positive options of bioeconomy have to be presented in a way that is understood by policy makers!

How can we get more value-added of the current biomass streams?

How to upscale the national priorities into EU policy frameworks?

How to identify and support national champions?

Where to start?

- Bioeconomy perceived as something imposed rather than an option to grow

- Comfortable with the abundance of biomass in the macro-region

- Low priority at the political agenda

- Advanced research community in bio-based fields

- Absence of clusters but with individual champions in the novel bio-based industries

- Policy makers lagging “too complex” +

=

**Despite the funding and political support available, all bioeconomies and individual sectors of the BIOEAST are performing lower value added than the EU average.**

# Sustainable & Circular: Bioeconomy the European way



“The bioeconomy covers all sectors and systems that rely on biological resources (animals, plants, micro-organisms and derived biomass, including organic waste), their functions and principles.

It includes and interlinks: land and marine ecosystems and the services they provide; all primary production sectors that use and produce biological resources (agriculture, forestry, fisheries and aquaculture); and all economic and industrial sectors that use biological resources and processes to produce goods and services.

A lucrative topic for digitalisation?

A kick start for IT sector?

Is that climate change adaptation?

Is that increased competitiveness?

To be successful,

Merging work of different ministries!?

any needs to have

Modernisation of traditional sectors?!

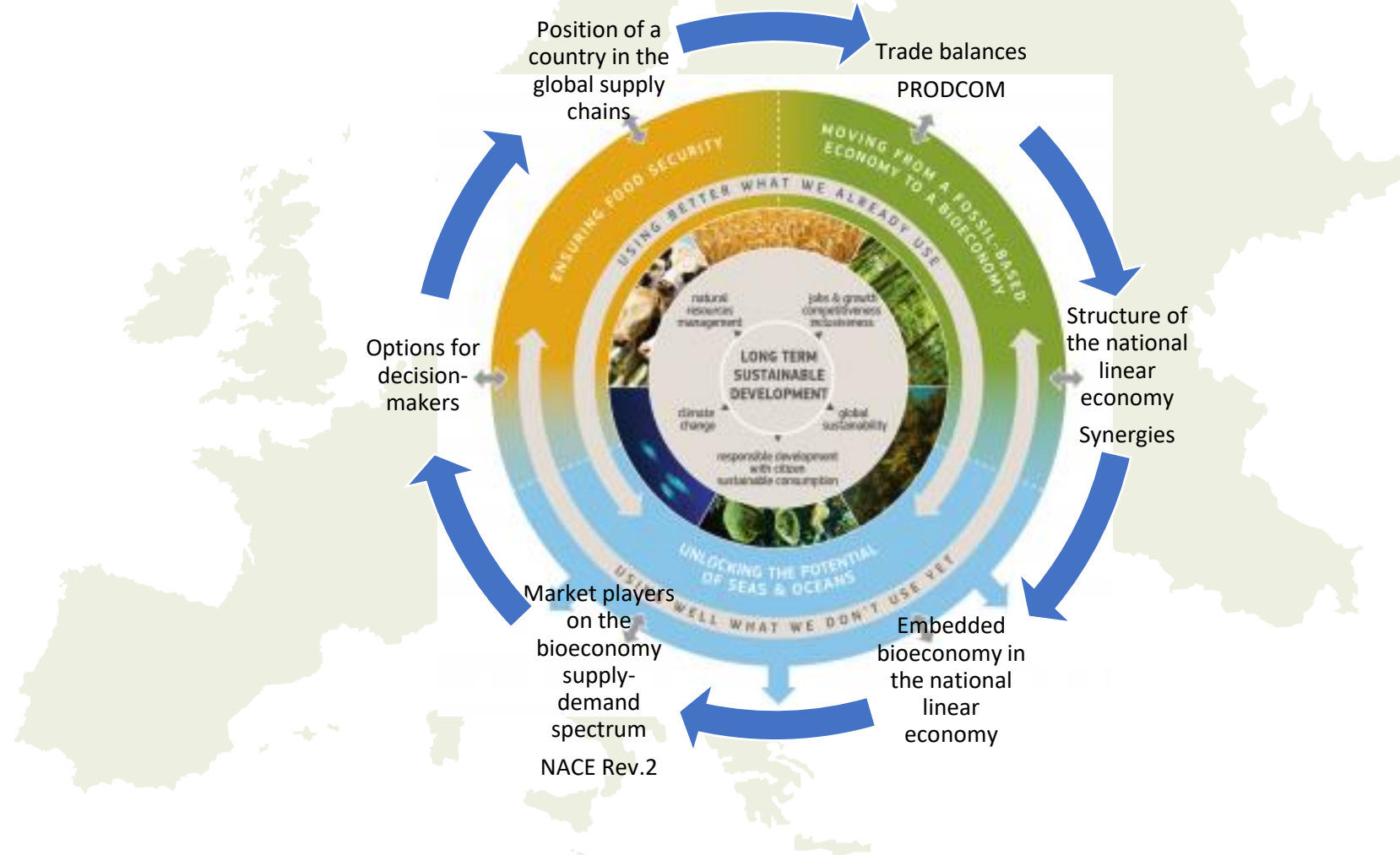
ularity at its heart.

This will drive the renewal of our industries, the modernisation of our primary production systems, the protection of the environment and will enhance biodiversity.”

Being competitive with producing and consuming less!?

the EU bioeconomy definition

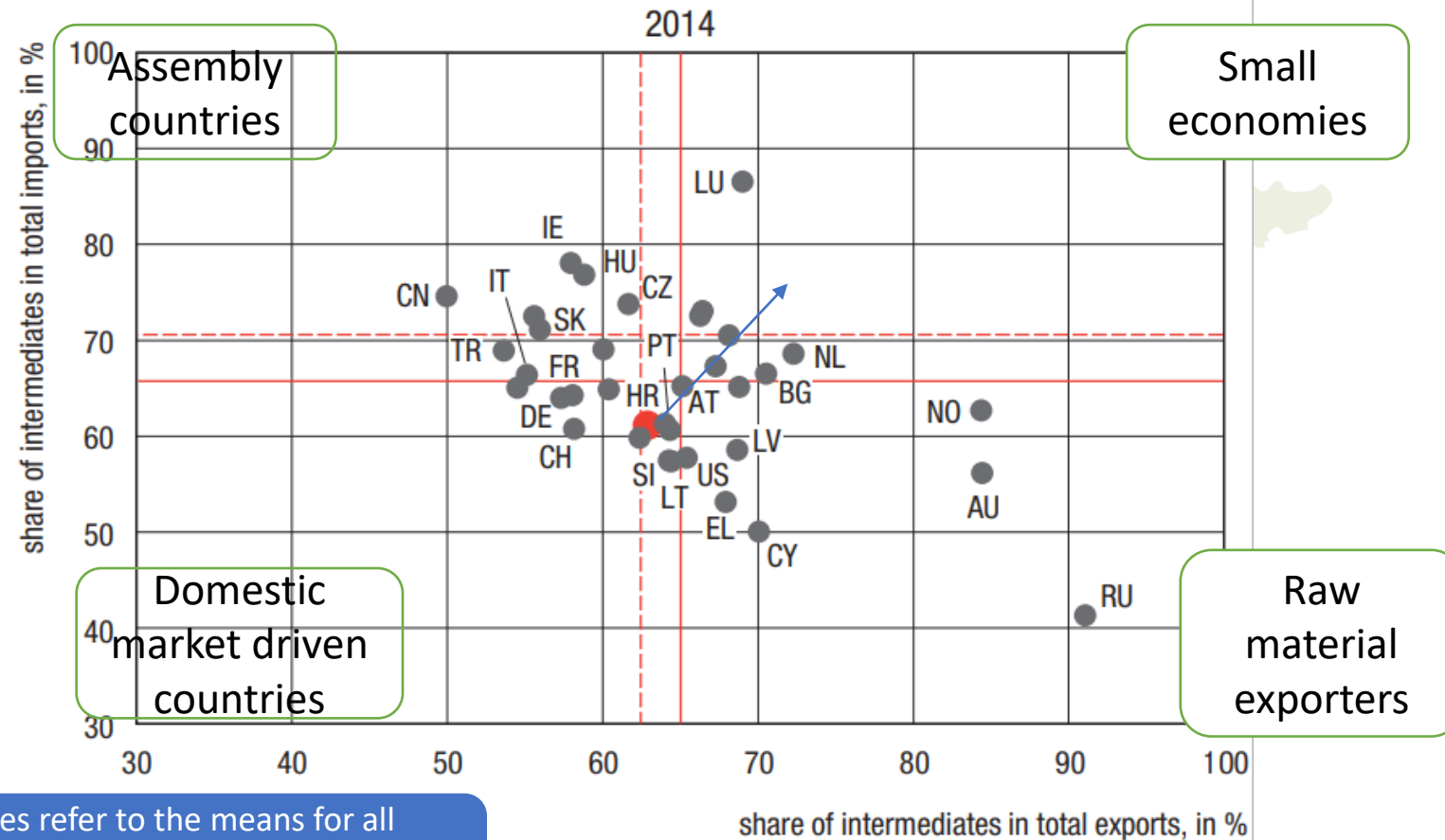
# Statistical evidence based bioeconomy policy: the BIOEAST way



# How to align national priorities with



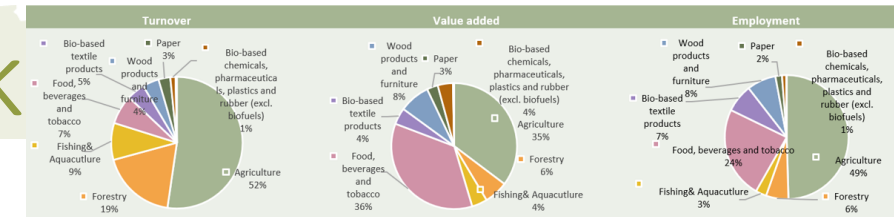
# Position in the global value chains: where is “the perfect position” of your country? Can bioeconomy help?



Note: Solid red lines refer to the means for all countries, and the dashed red line refers to the means of the CEE countries.

# Climate change: what is at stake

Structure of the embedded Croatian bioeconomy [17]



estimated to 217,000 employees that generate 11.30 billion€ turnover and 3.47 billion € value added (2017)

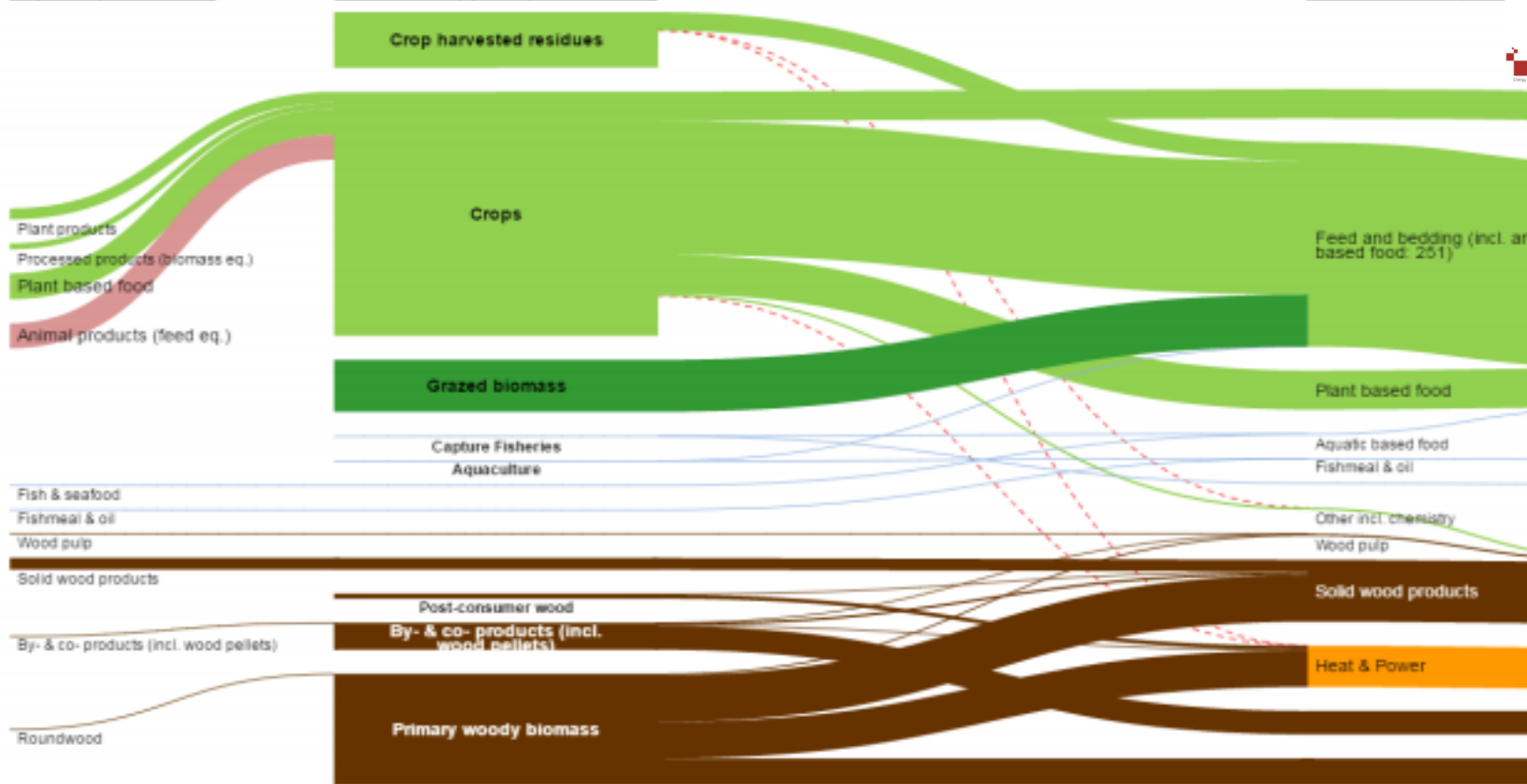
- turnover per person employed: ~ 52.2 k€ (EU average: 125 k€)
- value added per person employed: ~ 15.9 k€ (EU average: 34 k€)

Imports (total 1,737)

Biomass supplies (total 10,895)

Biomass balances in Croatia, Last dat 1000 T of dry matter

Biomass uses (total 10,895)

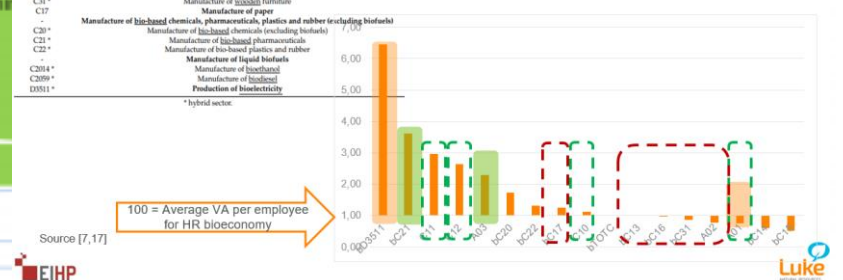


Source: data from the BIOMASS project, European Commission – Joint Research Center  
Please note: Supply and use figures might not match due to estimation errors, stock changes, waste and/or loss of biomass or differences in the data sources used

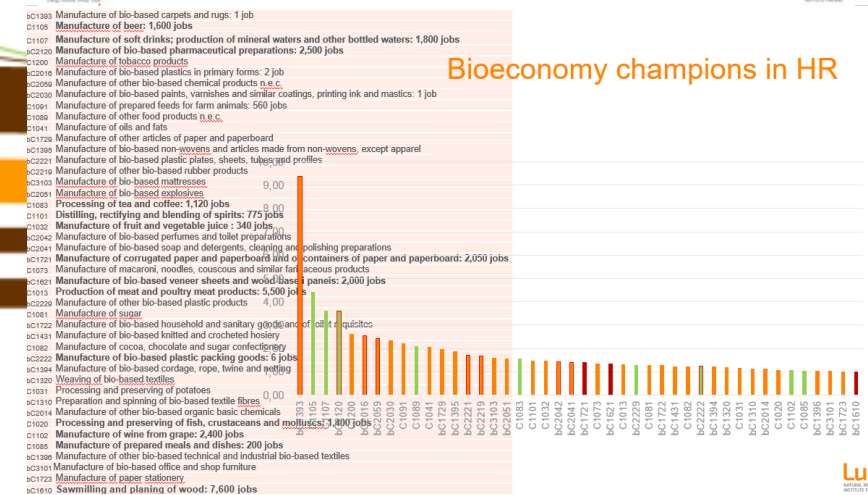
**EIHP**

Code	Bioeconomy Sector (Parent Categories in Bold)
A01	<b>Agriculture</b>
A02	<b>Forestry</b>
A03	<b>Fishing and aquaculture</b>
A04	<b>Aquaculture</b>
A05	<b>Fishing</b>
C01	<b>Manufacture of food, beverages and tobacco</b>
C02	<b>Manufacture of food</b>
C03	<b>Manufacture of beverages</b>
C04	<b>Manufacture of tobacco</b>
C05	<b>Manufacture of bio-based textiles</b>
C06	<b>Manufacture of bio-based textiles</b>
C07	<b>Manufacture of bio-based textiles</b>
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VA per employed person in the Croatian bioeconomy, by sector



Bioeconomy champions in HR



# This is how transition to circular and sustainable bioeconomy can help HR



- New varieties, infrastructure, business models to adapt to climate changes
- Biomass of good quality: aiming towards higher value bio-based product with less quantity
- Tailoring schemes for the existing bioeconomy players to pick up with innovations
- Synergy with „**industry strategy**” in bio-based and potentially bio-based industries: how to support existing bioeconomy champions to benefit from the low carbon footprint?
- Prioritize **bio-based sector in decarbonisation strategy**: switch to renewables in energy, transport and storage or find new solutions
- Overview of labour force to investigate the needs for synergies with „**educational & demographics strategy**”:
- Biomass is renewable but limited source at the time: where we can get most of it?

# The Bioeconomy has a huge potential for...

## Job creation

The bioeconomy already accounts for 8% of the EU's workforce. Bio-based industries could **create up to 1 million green jobs by 2030** especially in rural and coastal areas.

**Example:** the local deployment of biogas production can create up to 4000 jobs in high value organic waste management and jobs in the long run.

## Climate mitigation and a carbon-neutral future

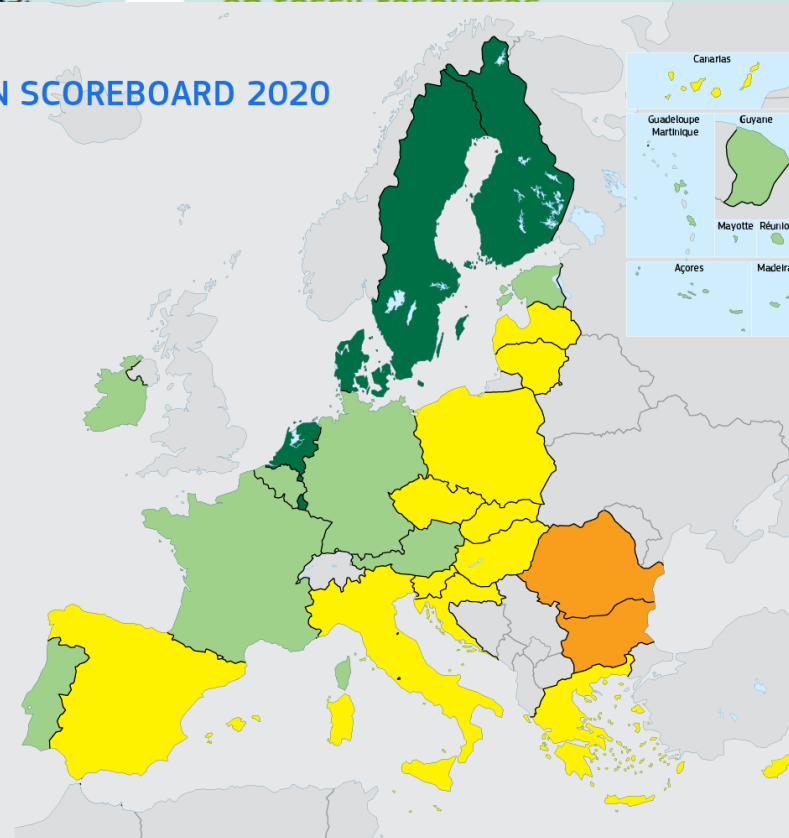
The bioeconomy **reduces emissions and our dependence on fossil resources**

Instead of 1 ton of fossil fuel, 1 ton carbon dioxide source of renewable energy use.

## EUROPEAN INNOVATION SCOREBOARD 2020

### Innovation performance groups

- Innovation Leader
- Strong Innovator
- Moderate Innovator
- Modest Innovator



## A renewed and strengthened base and modernisation

Deploying the bioeconomy **innovation will modernise fisheries and forestry, and**

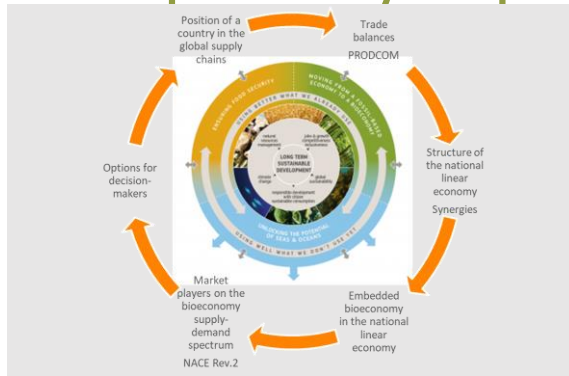
**Example:** Avoiding food waste. 100 billion annually. Agri-food waste can be turned into biodegradable plastic for food packaging.

our oceans every year, but with the help of bioeconomy this amount can be reduced by 90% by 2025.

Research and Innovation

110

# Statistical evidence based bioeconomy policy options for Croatia



Strongly disagree

Priority transition of bio-based industry to clean energy

43

Spin offs of new value-added chains from waste and by-product streams from field to fork production to support VA champions

47

Investing in R&D bio-based packaging to support the food & beverage industry

46

Increasing the share of A03 fishing and aquaculture for bioeconomy as a competitive advantage

4

New business models for C11 beverage industry to transition to bioeconomy

37

Increasing value of wood-based economy by reverting the exports of timber and pellets

37

Focusing on high-VA bio-based industries with strong education (bio-cosmetics, bio-pharmaceuticals, bio-chemistry, bio-plastics) with less labour inte

31

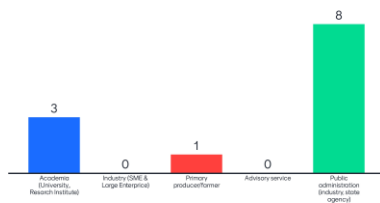
Tourism and hospitality industry as a segment to bioeconomy strategy.

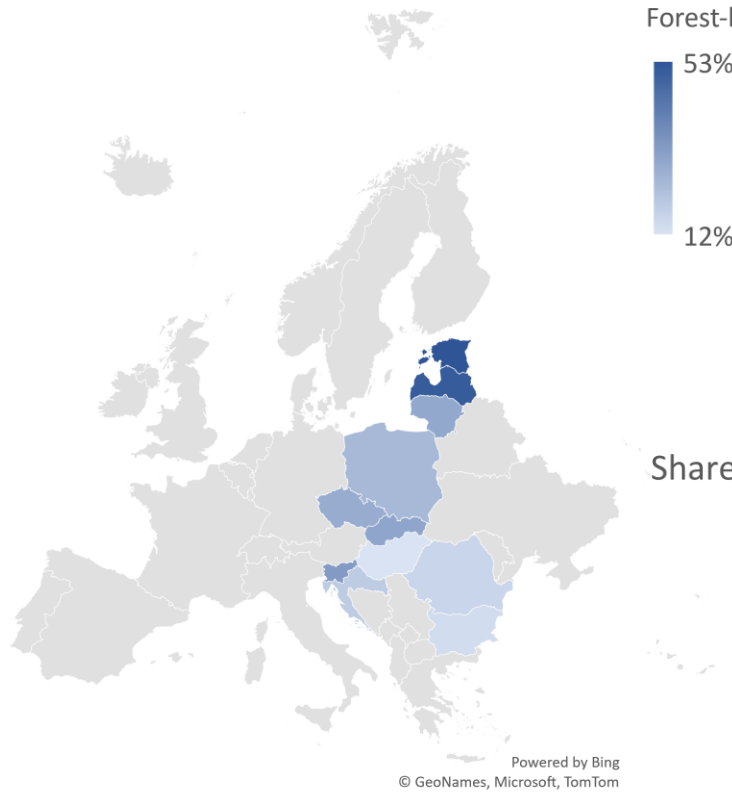
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Strongly agree

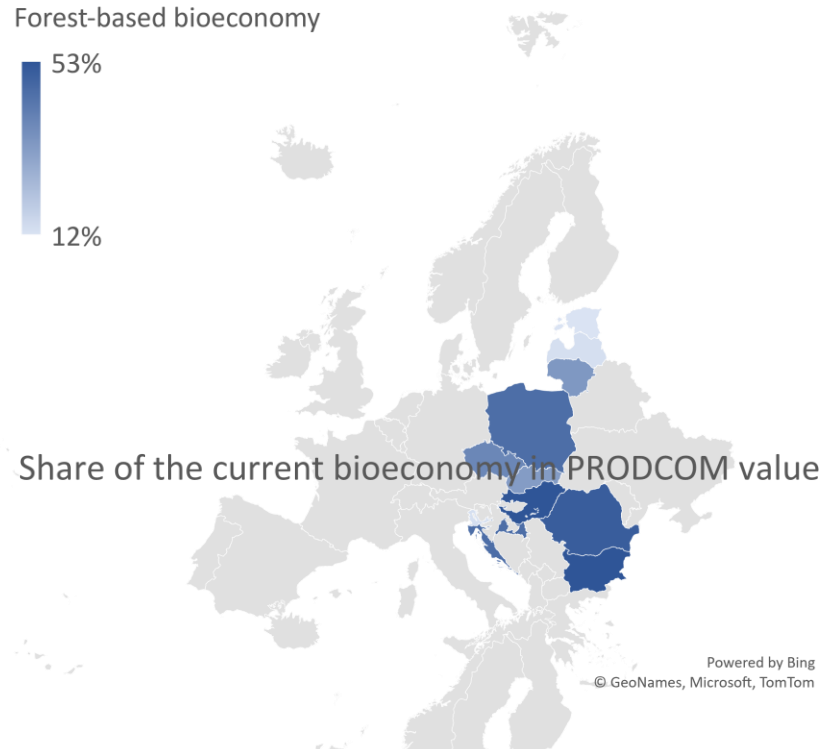
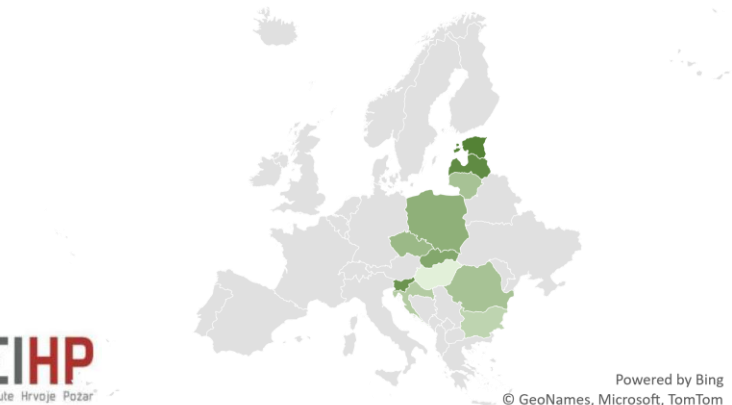
To which stakeholder group you belong?

Mentimeter

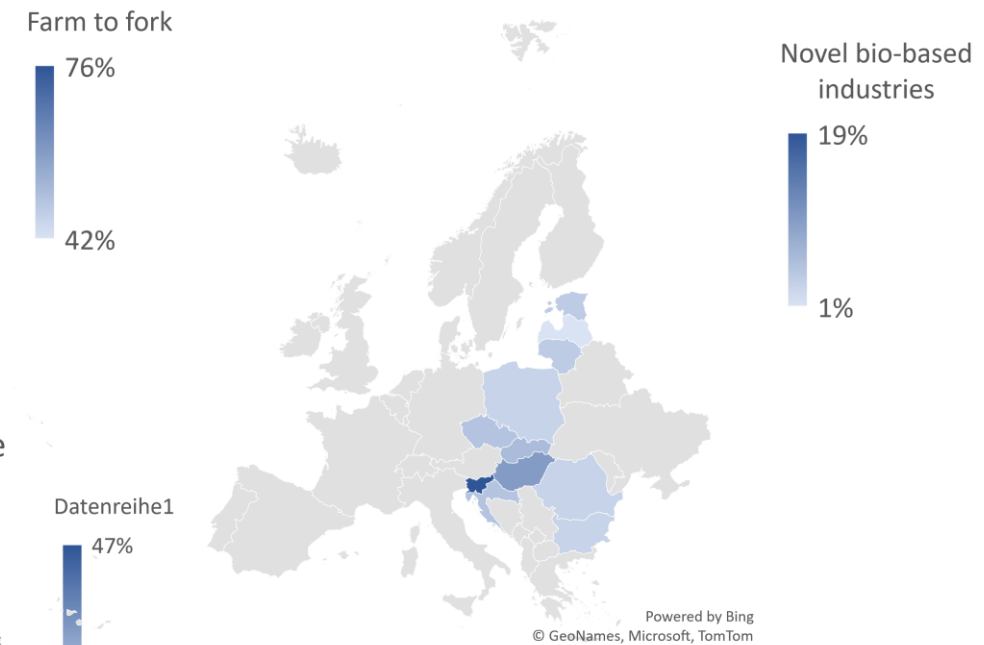
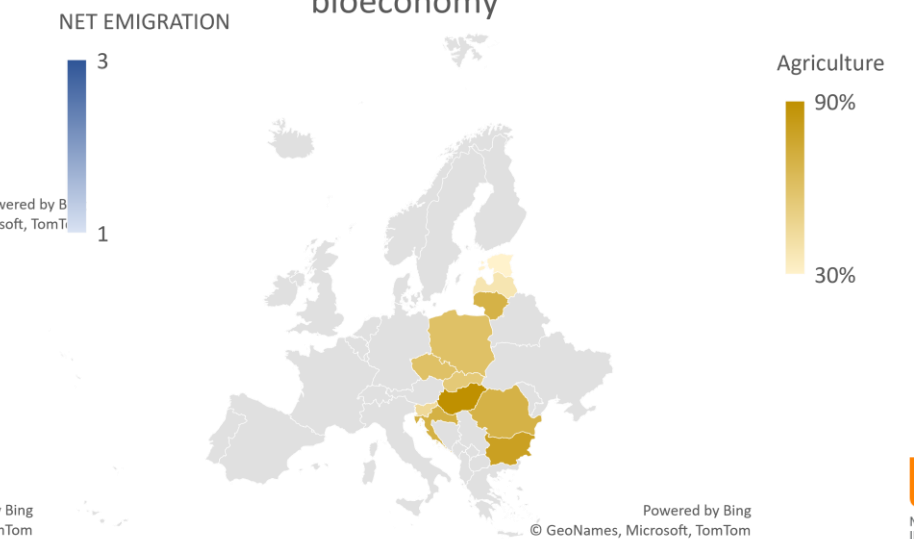




Share of forestry biomass supply to the current bioeconomy



Share of agricultural biomass supply to the current bioeconomy



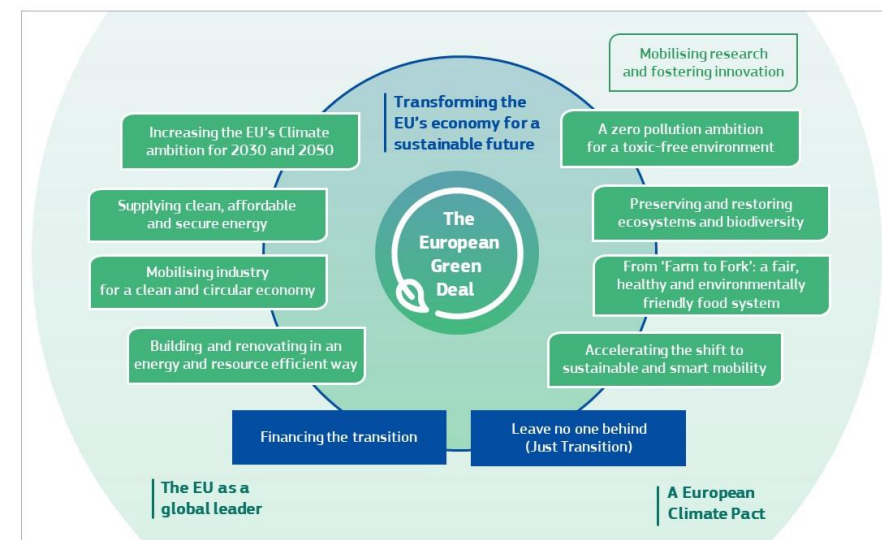
# 2050: a sustainable, carbon-neutral society



## Foresight Exercise

2030

## National Bioeconomy Action Plan & SRIA



2020



evidence-based statistical data,  
verified by the national stakeholders

# Conclusions: one step forward, two steps back



- Conclusions: one step forward, two steps back
- Encourages strategic thinking that bioeconomy topic demands concerted policy and is not an issue of a single ministry
- Identifying stakeholders groups
- Identifying where to start from in the post-COVID19 economy
- **The BIOEAST approach towards statistical evidence provides reasonable options for transition to bioeconomy**



Reasonable  $\neq$  attractive



Thank you for your attention

[www.bioeast.eu/bioeastsup](http://www.bioeast.eu/bioeastsup)

**BIO**   
**EAST** **SUP**



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# Thank you for your attention!



Biljana Kulisic, bkulisic@eihp.hr

Markus Lier, markus.lier@luke.fi



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