IEA Bioenergy

SWOT of biohubs in deploying biobased supply chains

Joint workshop between IEA Bioenergy & BioEast Initiative

Ioannis Dimitriou – Swedish University of Agricultural Sciences

(on behalf of all Task 43 colleagues involved in the workshop)

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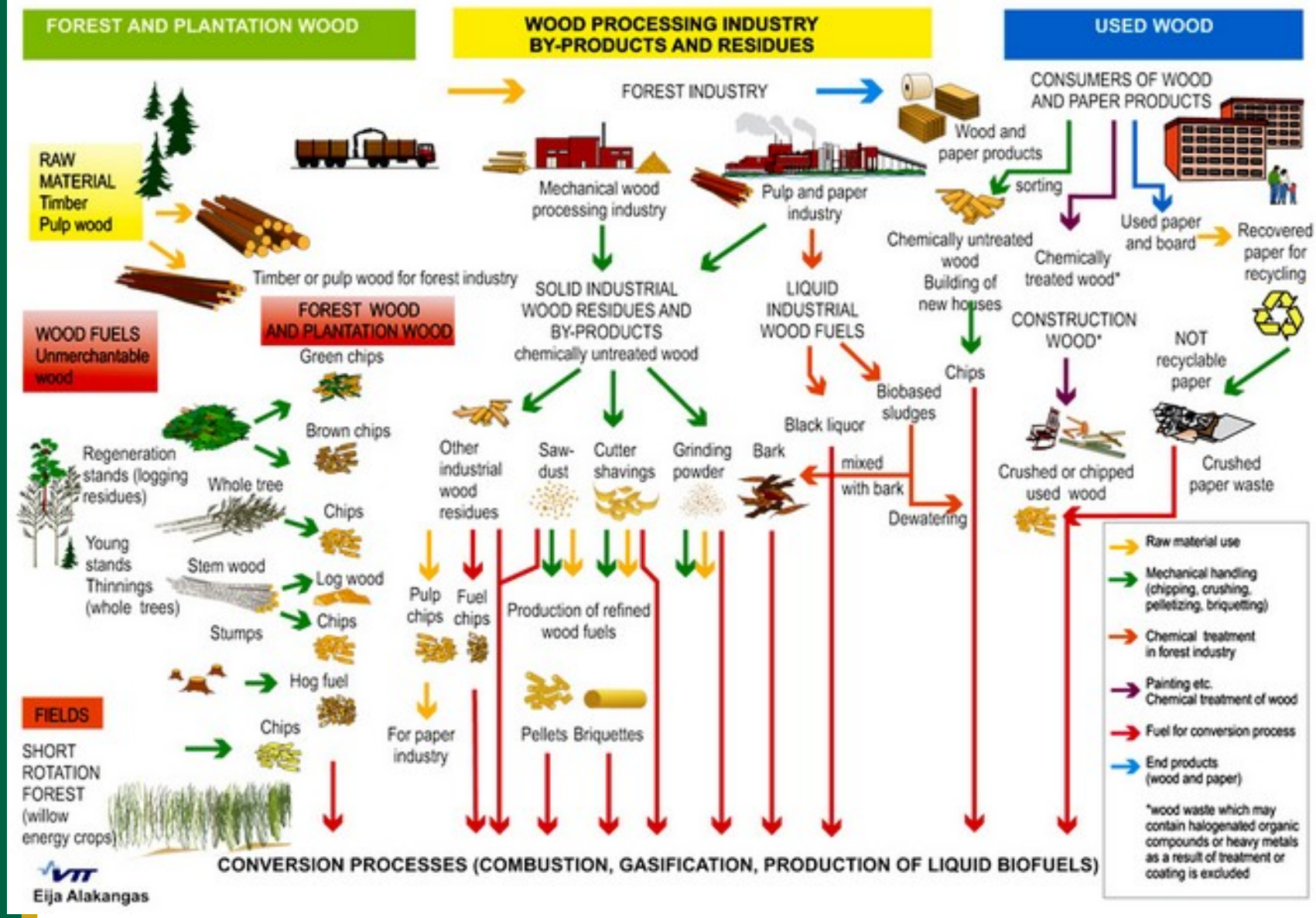
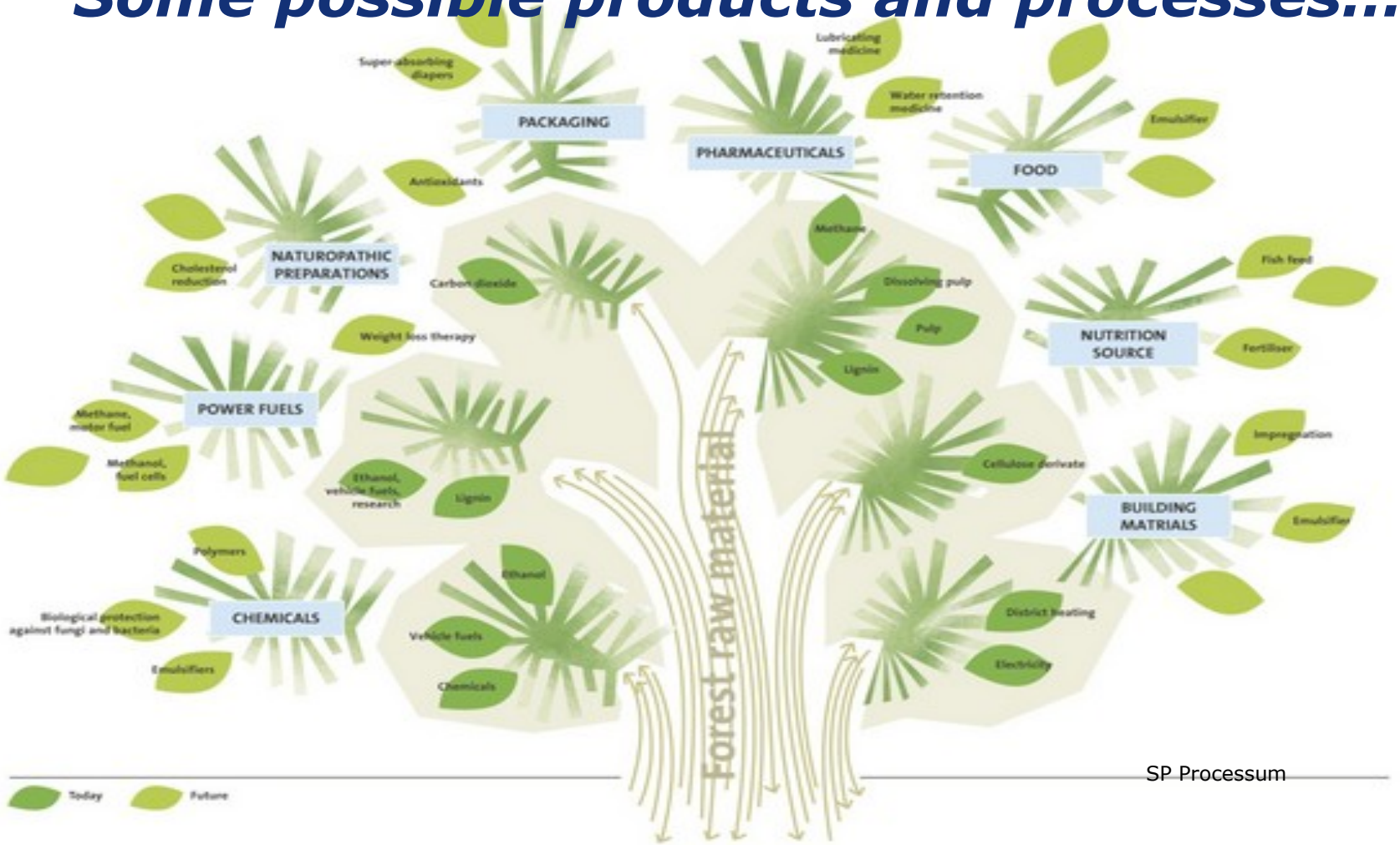
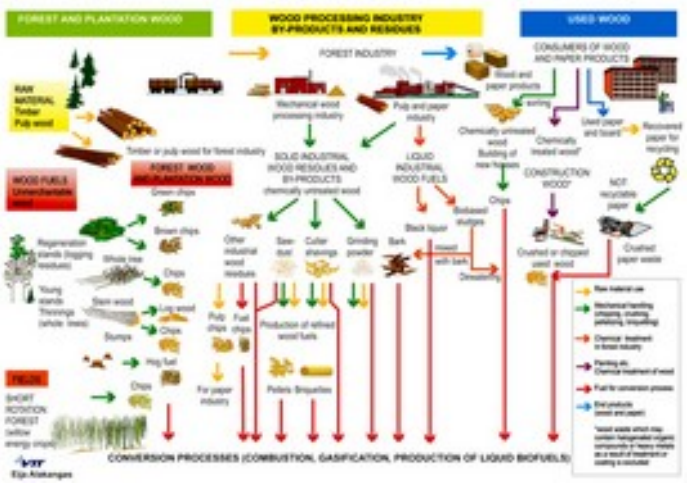

FOREST AND PLANTATION WOOD
WOOD PROCESSING INDUSTRY BY-PRODUCTS AND RESIDUES
USED WOOD
FOREST INDUSTRY
CONSUMERS OF WOOD AND PAPER PRODUCTS
RAW MATERIAL Timber Pulp wood
Wood and paper products
sorting
Mechanical wood processing industry
Pulp and paper industry
Chemically untreated wood
Chemically treated wood*
Used paper and board
Recovered paper for recycling
Timber or pulp wood for forest industry
SOLID INDUSTRIAL WOOD RESIDUES AND BY-PRODUCTS chemically untreated wood
LIQUID INDUSTRIAL WOOD FUELS
Building of new houses
CONSTRUCTION WOOD*
WOOD FUELS Unmerchantable wood
FOREST WOOD AND PLANTATION WOOD
Green chips
Chips
NOT recyclable paper
Brown chips
Biobased sludges
Black liquor
Regeneration stands (logging residues)
Whole tree
Other industrial wood residues
Saw-dust
Cutter shavings
Grinding powder
Bark
mixed with bark
Dewatering
Crushed or chipped used wood
Crushed paper waste
Chips
Young stands Thinnings (whole trees)
Stem wood
Log wood
Pulp chips
Fuel chips
Production of refined wood fuels
Stumps
Chips
Hog fuel
FIELDS
Chips
For paper industry
Pellets Briquettes
SHORT ROTATION FOREST (willow energy crops)
CONVERSION PROCESSES (COMBUSTION, GASIFICATION, PRODUCTION OF LIQUID BIOFUELS)
Raw material use
Mechanical handling (chipping, crushing, pelletizing, briquetting)
Chemical treatment in forest industry
Painting etc. Chemical treatment of wood
Fuel for conversion process
End products (wood and paper)
*wood waste which may contain halogenated organic compounds or heavy metals as a result of treatment or coating is excluded
VTT
Eija Alakangas

Some possible products and processes…



SP Processum

Complexity…



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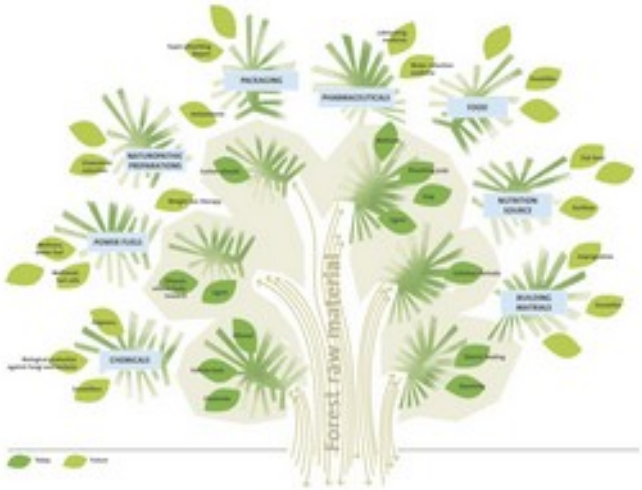

+ New and additional market players/supply demands = …

Biohub SWOT workshop

- 4 Biohub cases presented + role of Biohubs in commoditisation of biomass
- Participants predominantly from the BioEast Initiative plus T43 participants from Austria, Australia, Belgium, Canada, Croatia, Finland, New Zealand, Sweden.
- A consensus-based SWOT analysis was done with participants using Sli.do.
  - Group anonymously generated list of **Strengths** and all were able to vote positively or negatively for each suggestion listed
  - The process was repeated for **Weaknesses**, **Threats** and **Opportunities**

Biohub SWOT workshop (cont.)

- The top 4 **Weaknesses** were assessed by the group for how important they are on a seven-point Likert scale
- The group then anonymously provided ideas to mitigate the **Weaknesses** and the suggestions were voted positively or negatively by the group
- The process was repeated for the top 3 **Threats**
- Finally, the participants assessed the importance of the top 3 **Opportunities** on a seven-point Likert scale
- The group then anonymously provided ideas of action to realise the **Opportunities** and the suggestions were voted positively or negatively by the group

Biohub Strengths

slido

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slido.com
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Popular ideas

What are the STRENGTHS of a bio-hub as compared to a conventional biomass supply? 0 2 8

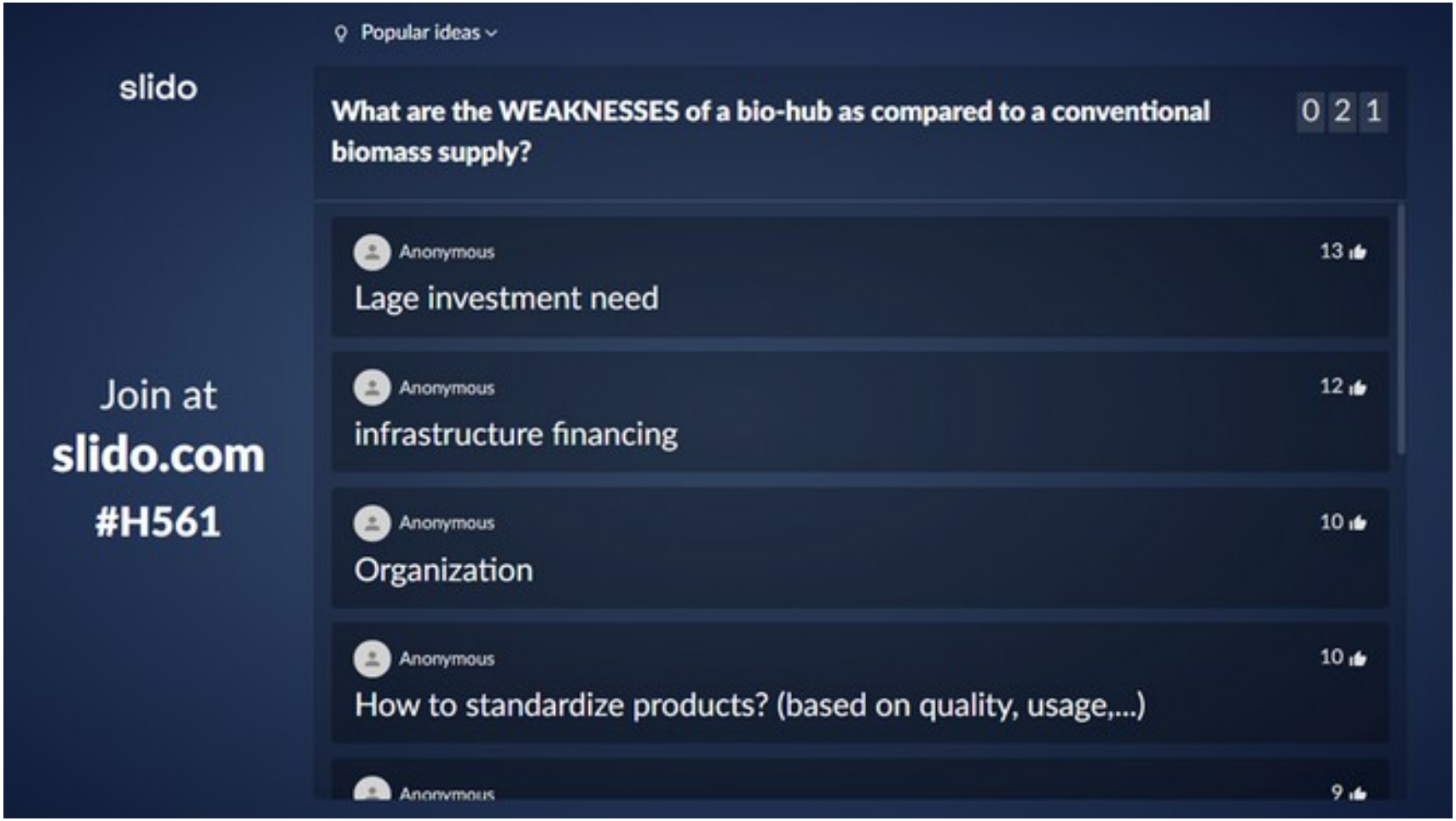
Anonymous 20
Security of supply

Anonymous 15
Handle biomass from multiple sources.

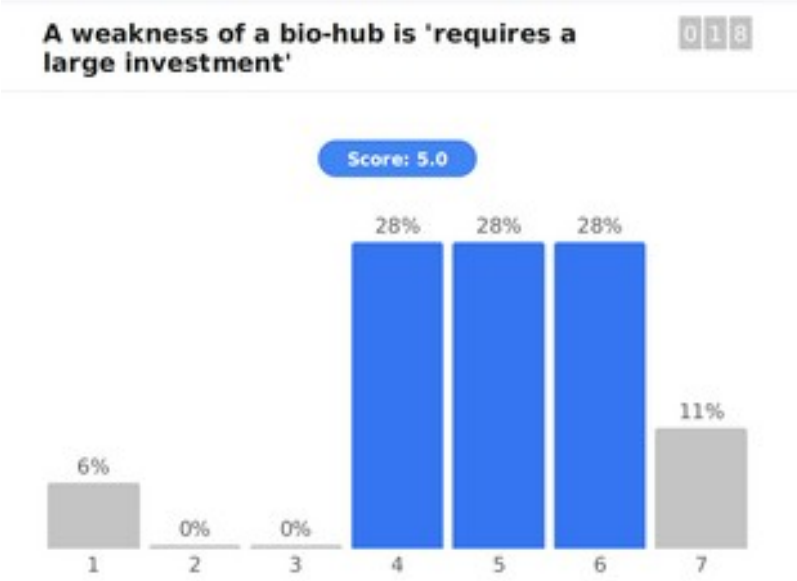
Anonymous 14
Flexible supply from a diverse set of feedstock for flexible demand/different types of end users

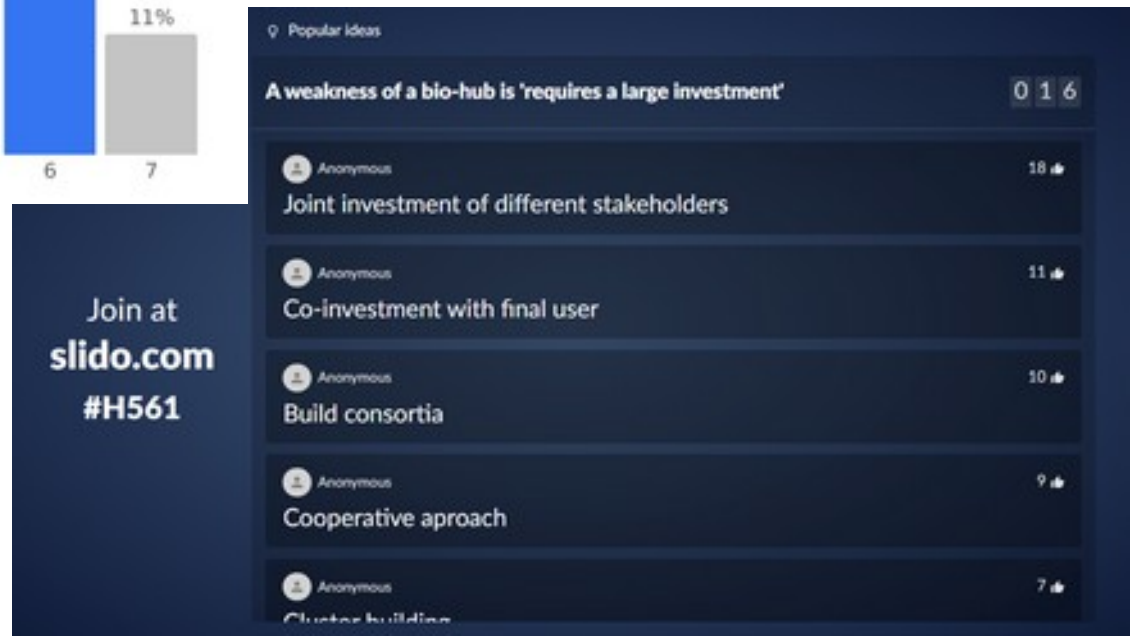
Anonymous 13
flexibility

Biohub Weaknesses

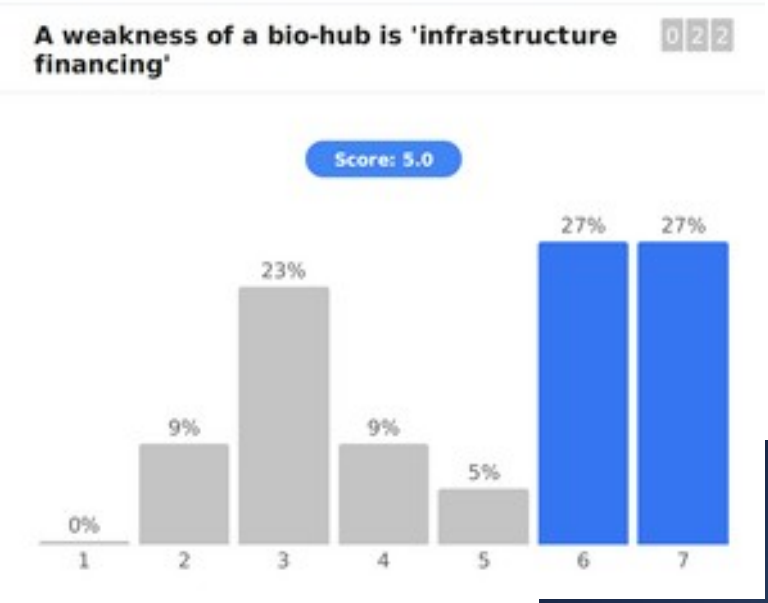


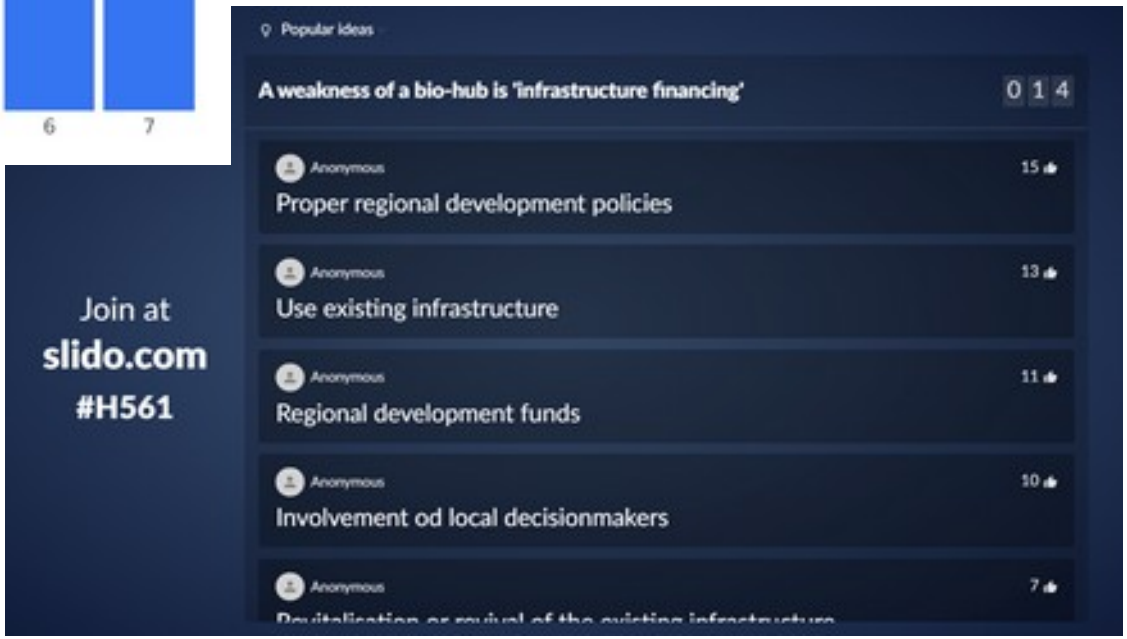
Biohub Weaknesses



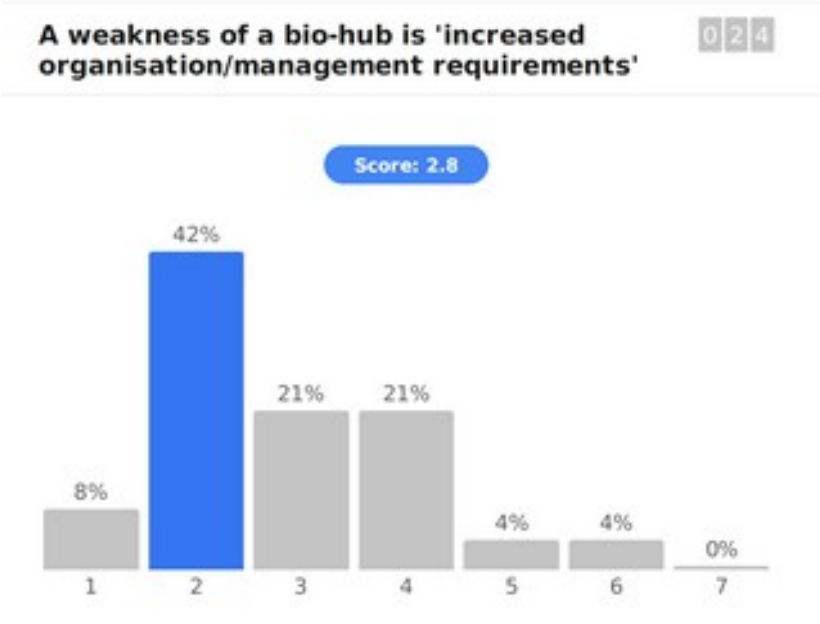


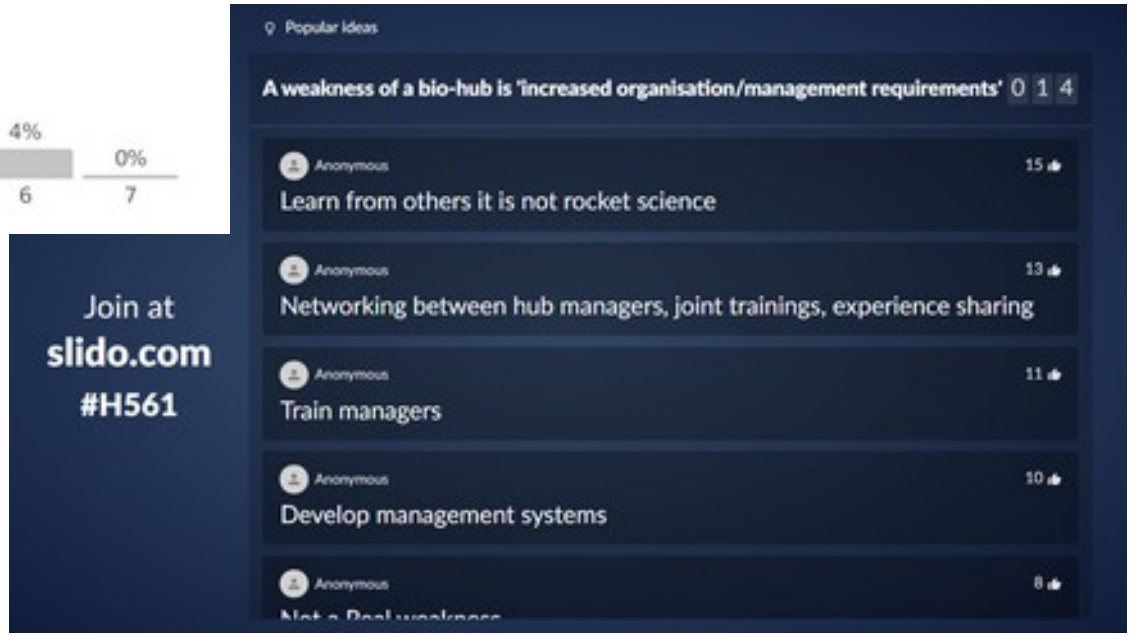
Biohub Weaknesses





Biohub Weaknesses





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Biohub Threats

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Popular ideas

What are the THREATS of a bio-hub as compared to a conventional biomass supply? 0 2 3

Anonymous 14
Large impact on all users in case of disaster or accidents.

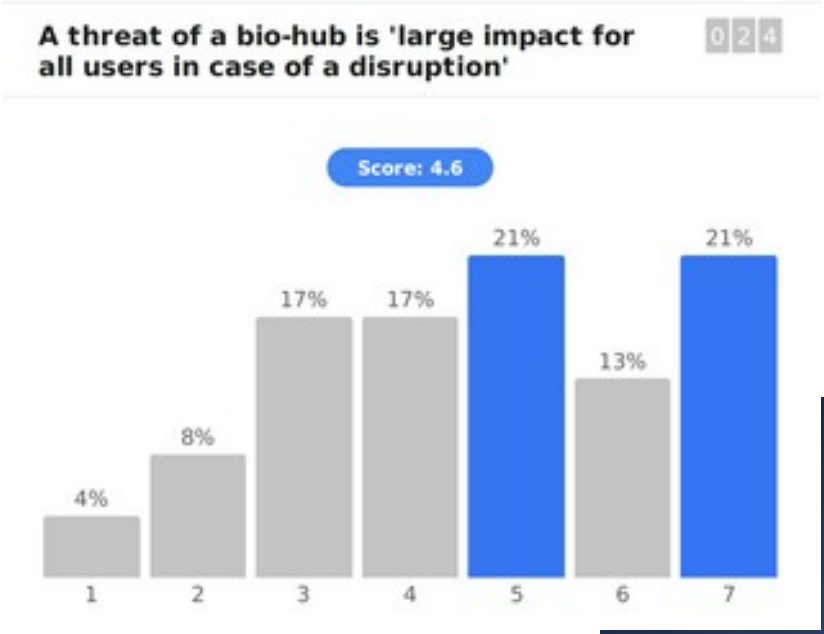
Anonymous 10
Too much market influence

Anonymous 9
Need to manage relationships with multiple raw biomass providers.

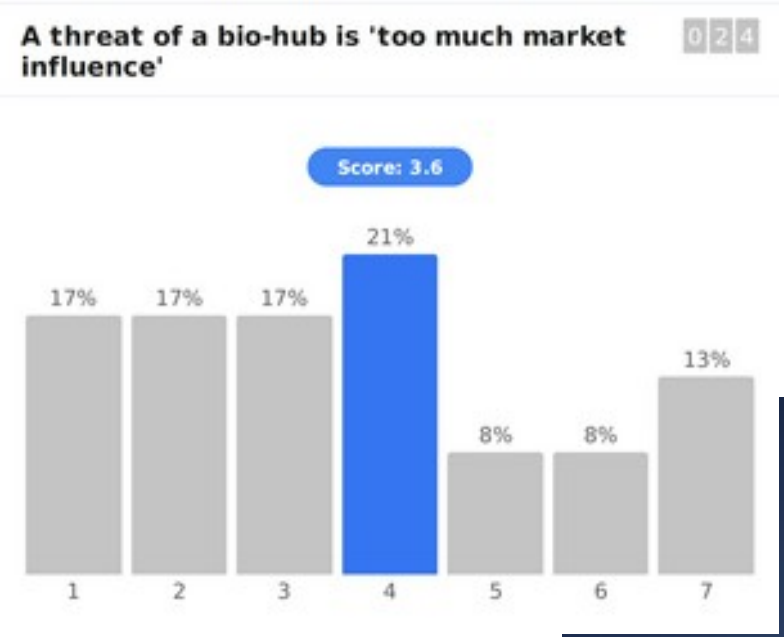
Anonymous 7
Long term investment VS versatile market

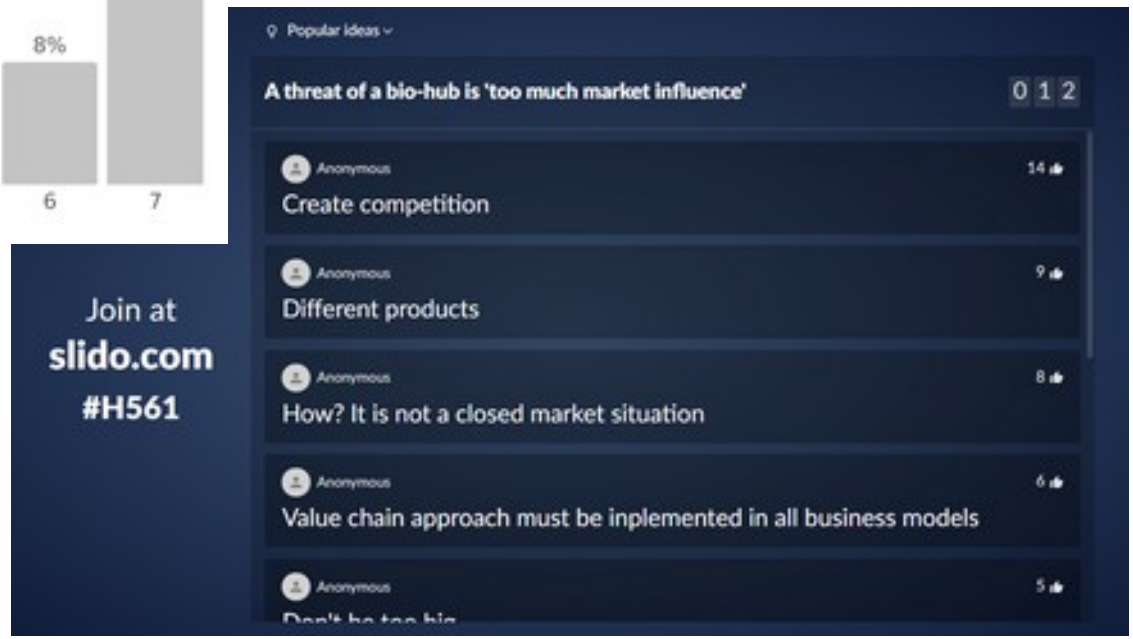
Anonymous 6

Biohub Threats



Biohub Threats





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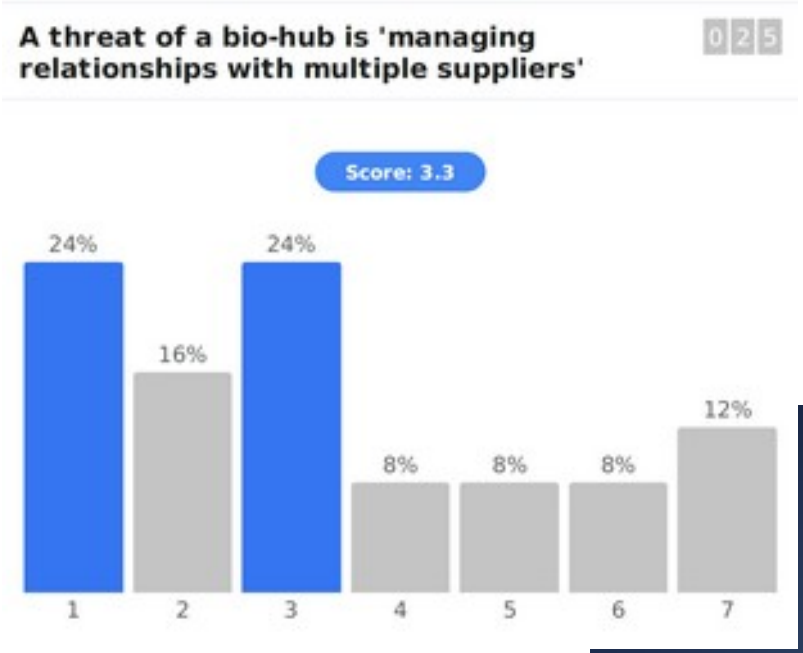

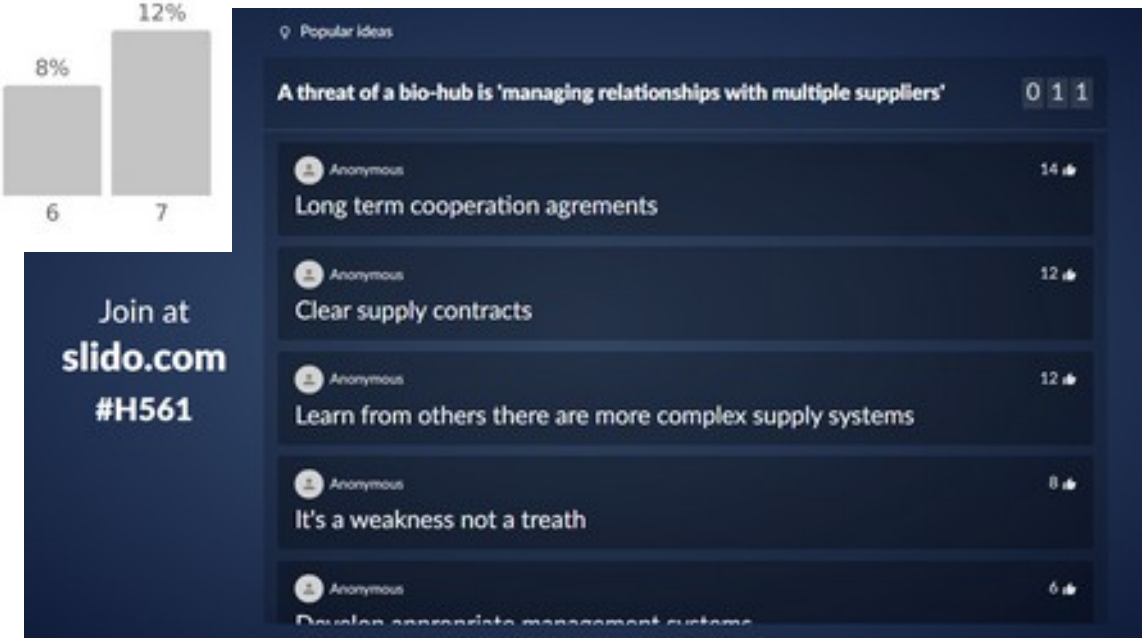

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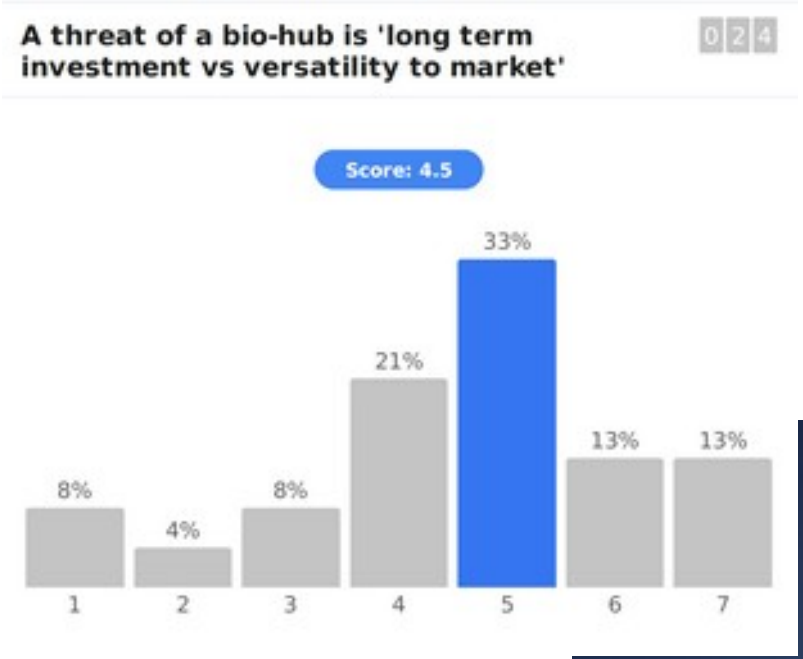

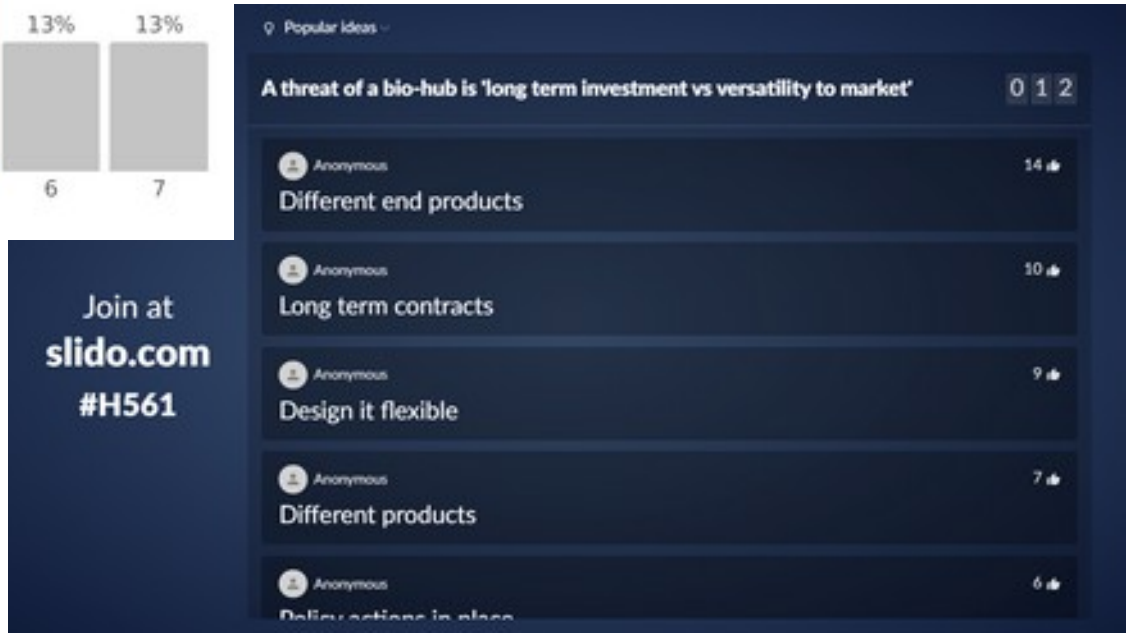

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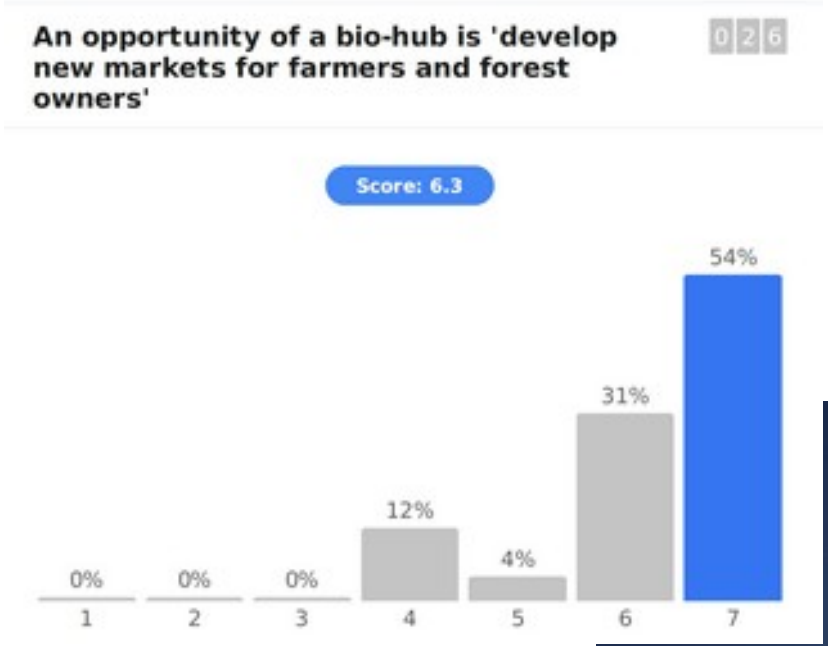
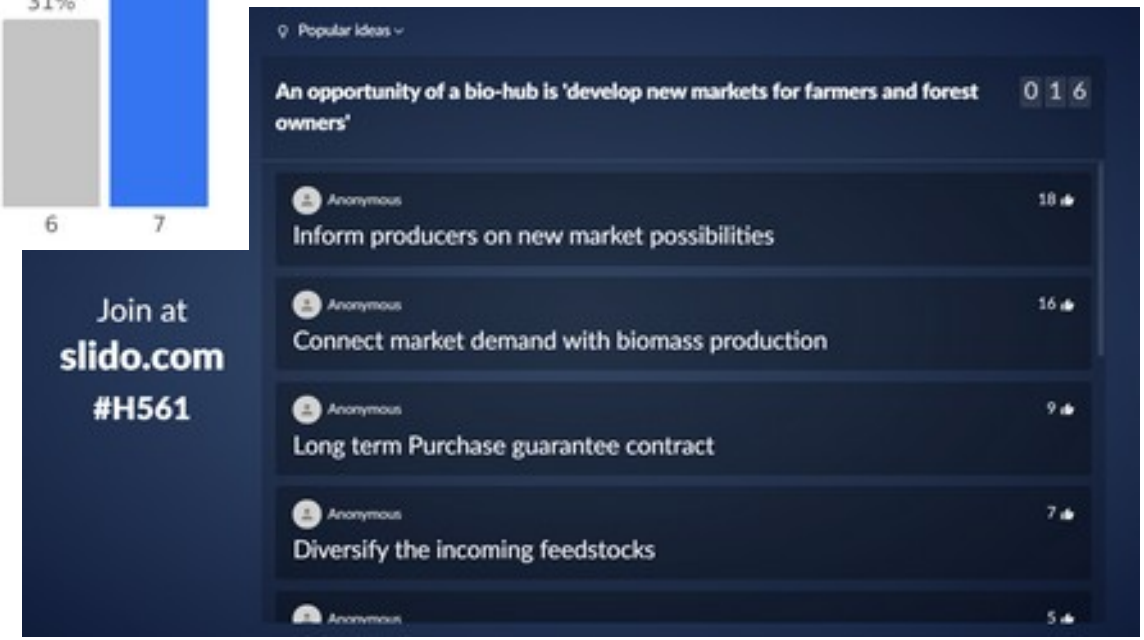
Biohub Opportunities

Biohub Opportunities





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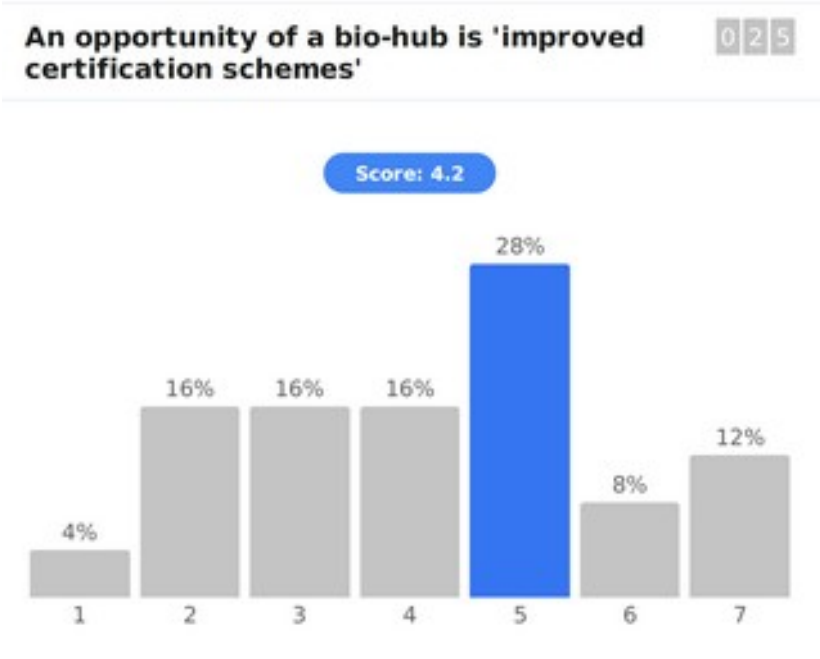

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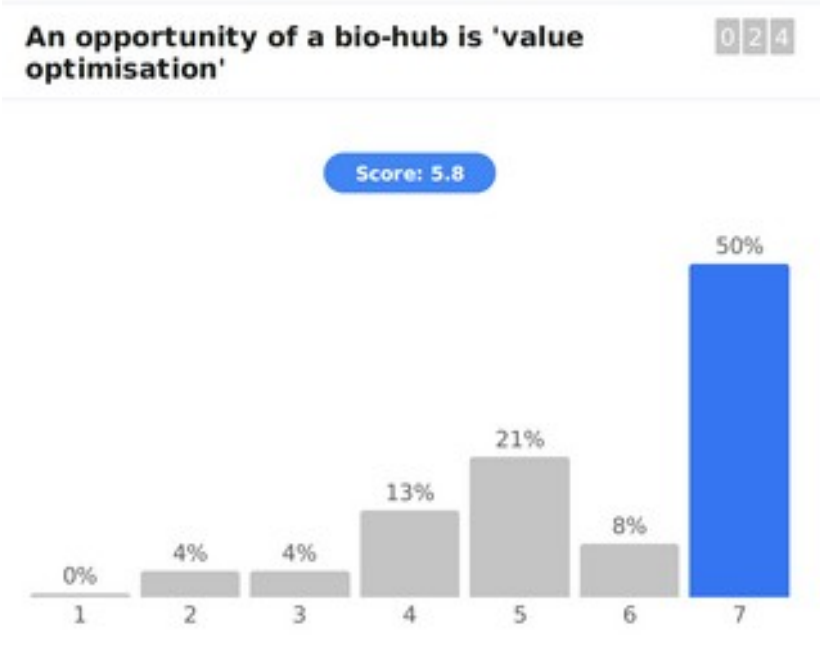

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Next Steps

- Properly analyse group SWOT data
- Explore options to repeat the process with other expert groups
- Conduct a validation survey across T43 network with SWOT results
- Use final SWOT report to guide Biohub project work