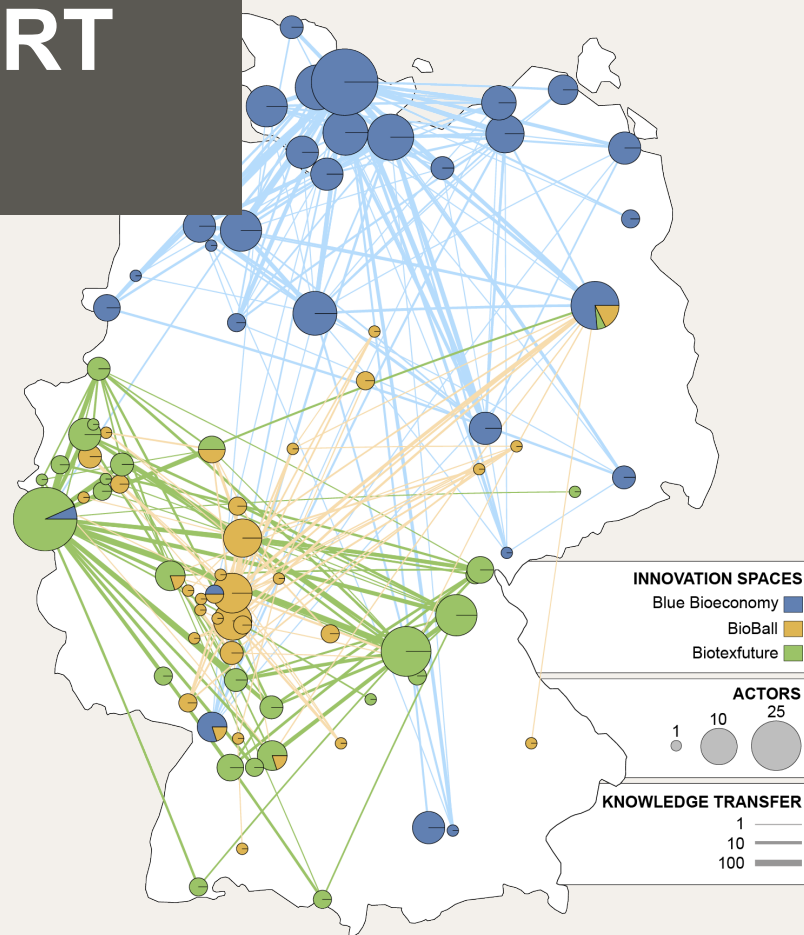


# REPORT NO. 2

**BIOTEXFUTURE**  
TRANSITION LAB



## COMPARING THE BIOECONOMY INNOVATION SPACES: FIRST INSIGHTS

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- 1. THE BIOECONOMY INNOVATION SPACES**
- 2. METHODOLOGY OF THE SITUATIONAL ORGANIZATIONAL NETWORK ANALYSIS**
- 3. KEY RESULTS**
- 4. NEXT STEPS: COMPARATIVE NETWORK ANALYSIS**

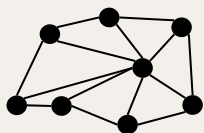
# THE BIOECONOMY INNOVATION SPACES

## Funding concept

Individual projects (publicly financed)



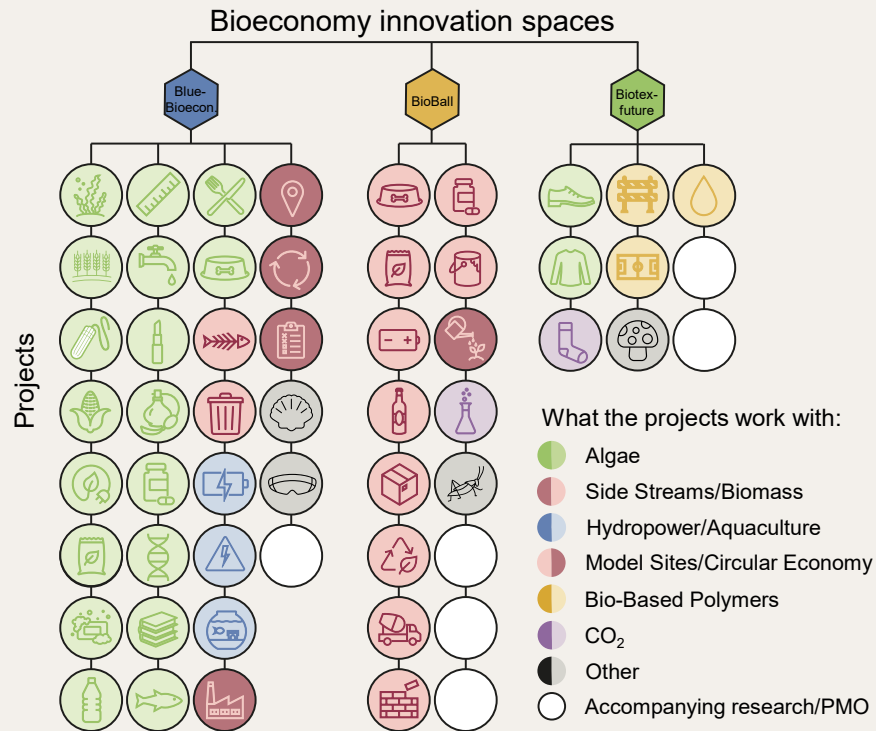
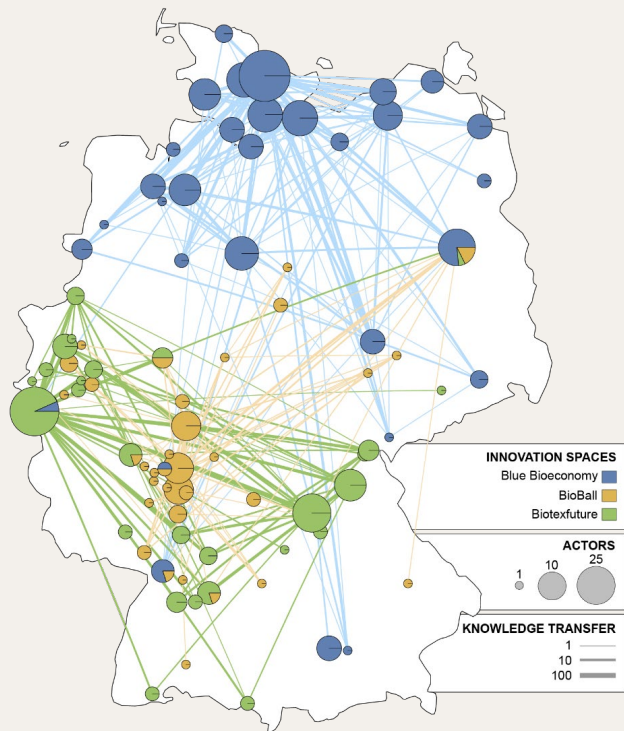
Innovation space with networked projects



- **Funding concept:** Project associations of the Bioeconomy Innovation Spaces (German Federal Ministry of Education and Research; 2019 – 2025)
- **Characteristics:** 1. The organizations within the bioeconomy domain define their research priorities. 2. Specify, develop and approve new projects and partners on their own. 3. A central project management office (PMO) that assumes administrative and coordinative tasks. 4. Promote the emergence of synergies.
- **Blue Bioeconomy (BlueB):** Promote aquatic circular economies that include fish, mussels and algae in order to contribute to the sustainable use of seas and waters.
- **BioBall (BB):** Promote the material use of biogenic residual and waste materials – in the densely populated metropolitan region of Frankfurt Rhine-Main.
- **Biotexfuture (BTF):** Transform the textile value chain from petroleum-based to bio-based.
- **NewFoodSystems:** Develop solutions for the transformation of food and nutrition systems.

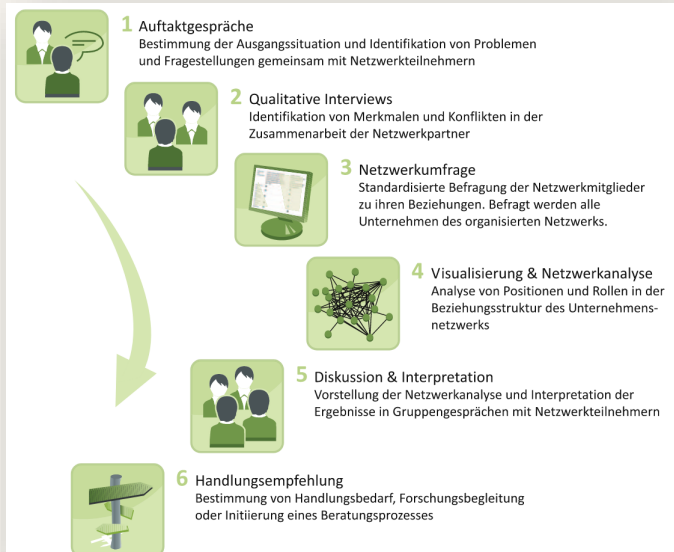
# THE BIOECONOMY INNOVATION SPACES

The three surveyed bioeconomy innovation spaces



# METHODOLOGY

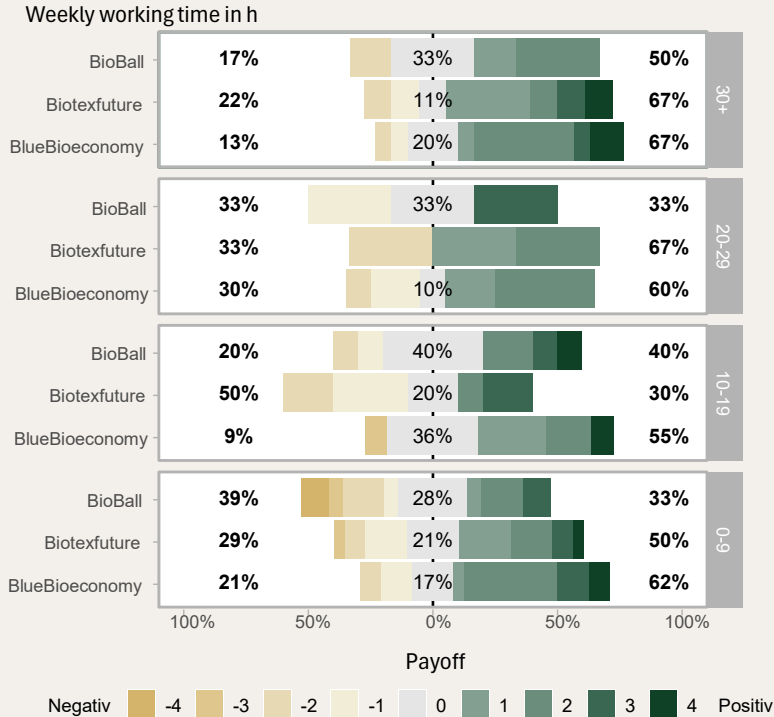
## Situational Organizational Network Analysis



- **Objectives.** This study applies the Situational Organizational Network Analysis (SONA) (Glückler et al. 2020) to analyze opportunities and risks of collaborative innovation. To this end, selected aspects of the innovation spaces were analyzed and visualized:
  - the diversity of project goals and the utilization of results.
  - the bottlenecks of innovation cooperation.
  - the network of knowledge exchange to promote innovation collaboration.
- **Method.** A digital, pseudonymized network survey was used to collect data on individual experiences and perceptions as well as knowledge sharing with other project members.

# POTENTIAL

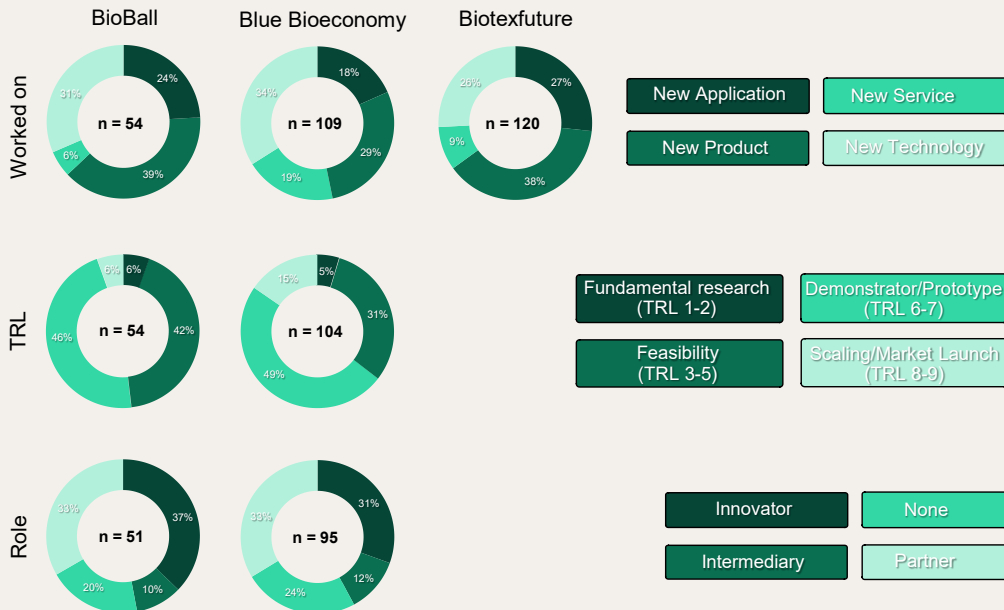
How do you rate your cost-benefit balance when comparing your work effort with the overall project outcome to this day?



- 200 persons responded to the survey invitation (BTF: n = 64; BB: n = 50; BlueB: n = 86).
- The three surveyed innovation spaces reported 2445 weekly working hours (BTF: n = 856h; BB: n = 467h; BlueB: n = 1122h).
- As well as an average working time of 12.42 hours (BTF:  $\bar{x}$  = 13,38h; BB:  $\bar{x}$  = 10,38h; BlueB:  $\bar{x}$  = 13,52h).
- Respondents reported a slightly positive cost-benefit ratio of 0.622 (BTF: 0,55; BB: 0,3; BlueB: 1,02).
- Positive ratings increase with the commitment of effort to the project: the more hours worked, the more frequently members reported positive ratings.
- Participants with fewer weekly working hours give the most negative cost-benefit balance. The innovation spaces could consider measures to increase the benefits for project staff with low working hours.

# WORK

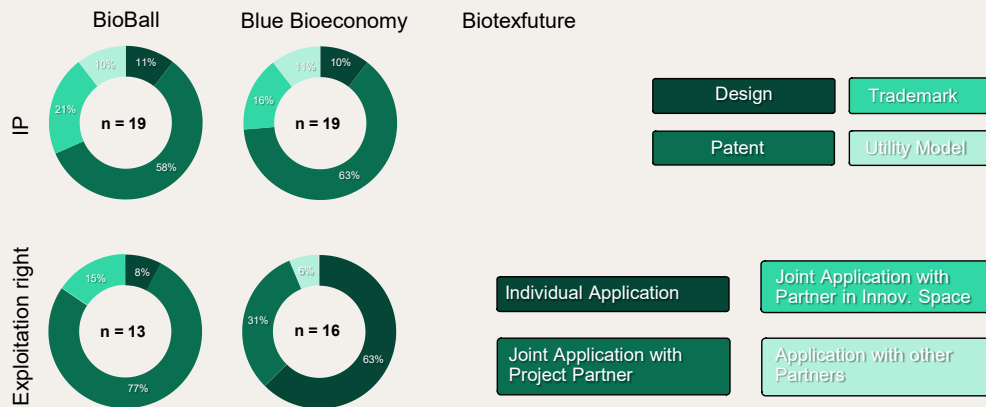
Which of the following categories have you worked on?



- The members of the innovation spaces worked most often on new technologies and new products. While perusing various TRL maturity levels, they focus on demonstrators/prototypes.
- **Innovators** are the source of innovation or originators of discoveries, inventions and new solutions.
- **Innovation partners** support innovation processes through collaboration and may also provide the solution themselves but are not considered owners of intellectual property. Innovation partners were the least involved in knowledge sharing among the three roles.
- **Multipliers** contribute to the dissemination of innovations and promote the adoption of new solutions in suitable contexts by providing information, advice and mediating partners. People with governance responsibility (advisory board, management office, and transfer project) in particular took on this role.

# UTILIZATION

Are you or your organization seeking intellectual property rights in your project?

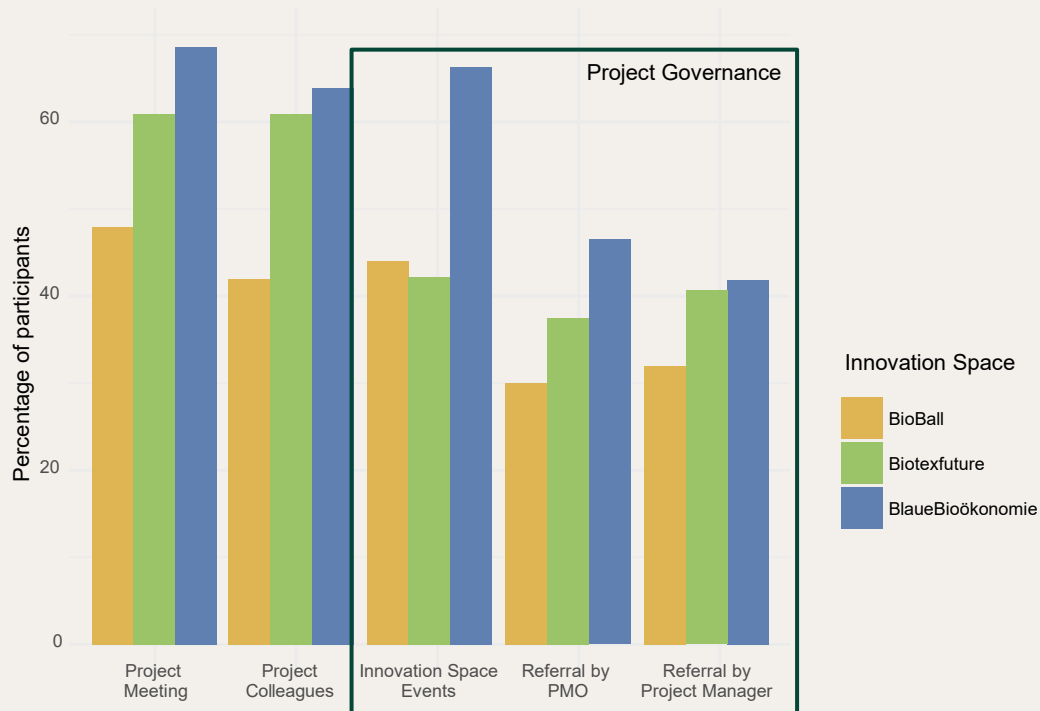


- Some BioBall and Blue Bioeconomy participants are interested in intellectual property rights. The top priorities are patents, trademarks, utility models and last designs.
- Different exploitation rights are sought in the innovation spaces. In the Blue Bioeconomy, individual applications are sought centrally. In BioBall, it is primarily joint applications with project partners.



# OPPORTUNITIES TO CONNECT

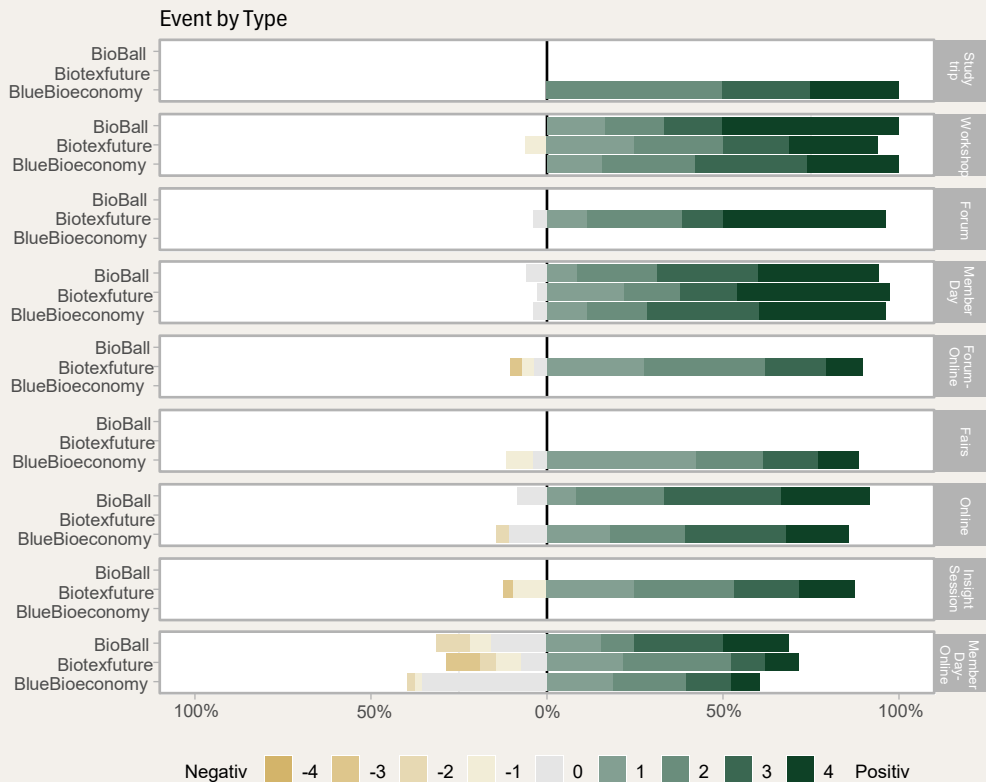
Have you made new work-related contacts through any of the following opportunities?



- The most frequently mentioned opportunities for new contacts were project meetings, project colleagues and events organized by innovation spaces.
- Members found new contacts through their project work and meetings, but also through the initiatives and intermediation by the project governance.
- The project governance, including organized events, the PMO, and Project Managers, is the biggest driver for networking (in all innovation spaces), as it has facilitated over 50% of the indicated new contact opportunities.

# EVENTS

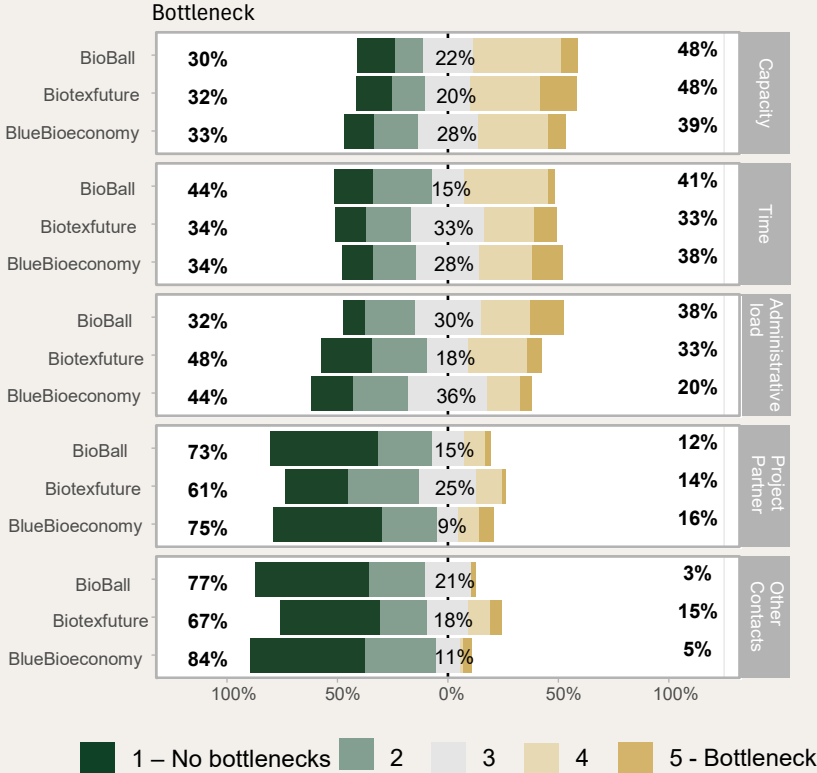
How useful do you think the events have been to this date?



- The three innovation spaces surveyed have organized six different event (62 Events) formats: Study trips (n=1), workshops (n=18), forums (n=6), member days (n=12), online events (n=11) and insight sessions (n=14).
- All event types are rated almost exclusively positively. Study trips, workshops and Member Days were rated the most positively. The online events were also rated well. The online version of the Member Days is rated most negatively in all innovation spaces.
- Due to the coronavirus pandemic, in-person formats such as Members Days and forums were organized online. The online versions of the in-person formats were always rated more negatively than the in-person format.
- The more often two people have met at events, the more likely they are to share knowledge.

# BOTTLENECKS

To what degree have the following items posed bottlenecks in the completion of your project?

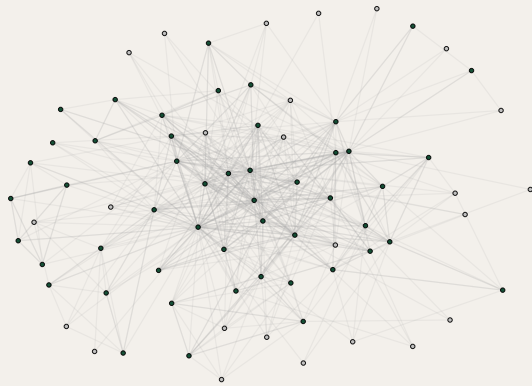


- Members reported that capacity, time and admin load were the dominant bottlenecks in their projects.
- Conversely, the majority of members did not perceive contacts to project partners in their project or to other people beyond their project a bottleneck.
- Although the knowledge networks are highly interconnected and no project members are isolated from the network, less than 50% of all members declared themselves completely satisfied with their contacts to the project partners. A few participants even perceived the contact as a slight obstacle.
- The higher the weekly working hours, the more frequently access to project partners is perceived as a problem.
- The administrative load is always perceived as a bottleneck, but it is particularly perceived as a bottleneck by people with lower weekly working hours.
- Time and capacity is consistently a problem for all working hour constellations.

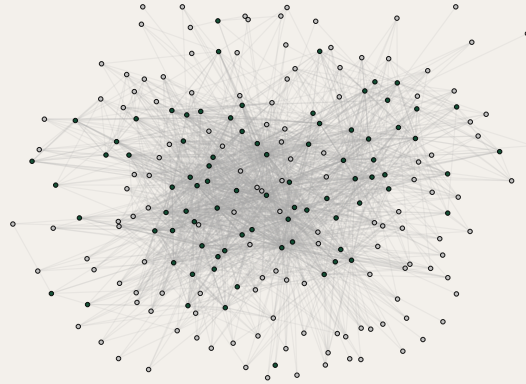
# NETWORKING

Who are the people in BIOTEXFUTURE that you have spoken to individually?

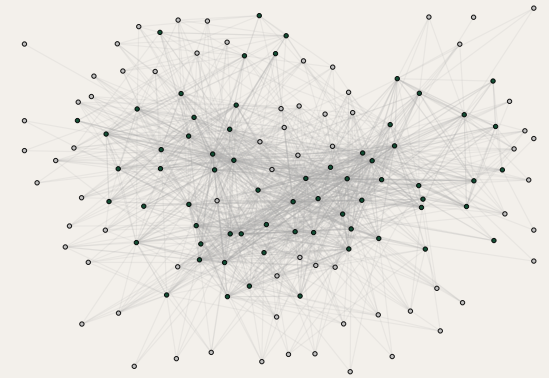
BioBall



Blue Bioeconomy



Biotextfuture

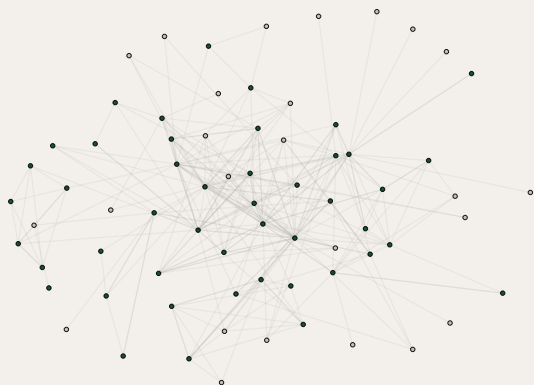


Network measure	BioBall	Blue Bioeconomy	Biotextfuture
<b>Nodes</b>			
Respondents	50	83	66
<b>Ties (edges)</b>			
Density	.21	.19	.26
Reciprocity	.68	.71	.77
<b>Network</b>			
Diameter	4	4	4
Centralization	.51	.49	.42

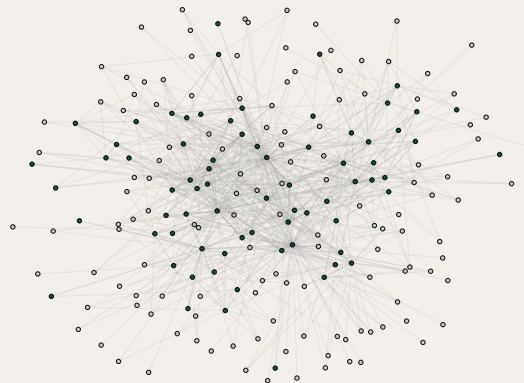
# KNOWLEDGE SHARING NETWORK

Who are the individuals who have helped you solve problems or build new knowledge in your project?

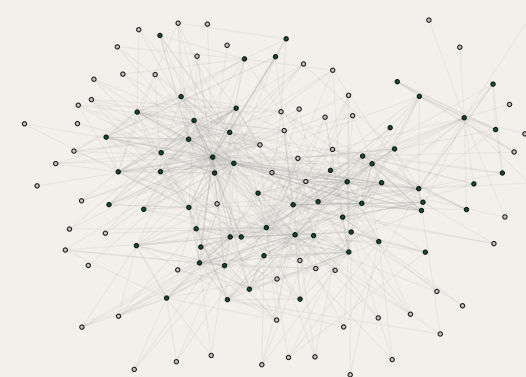
BioBall



Blue Bioeconomy



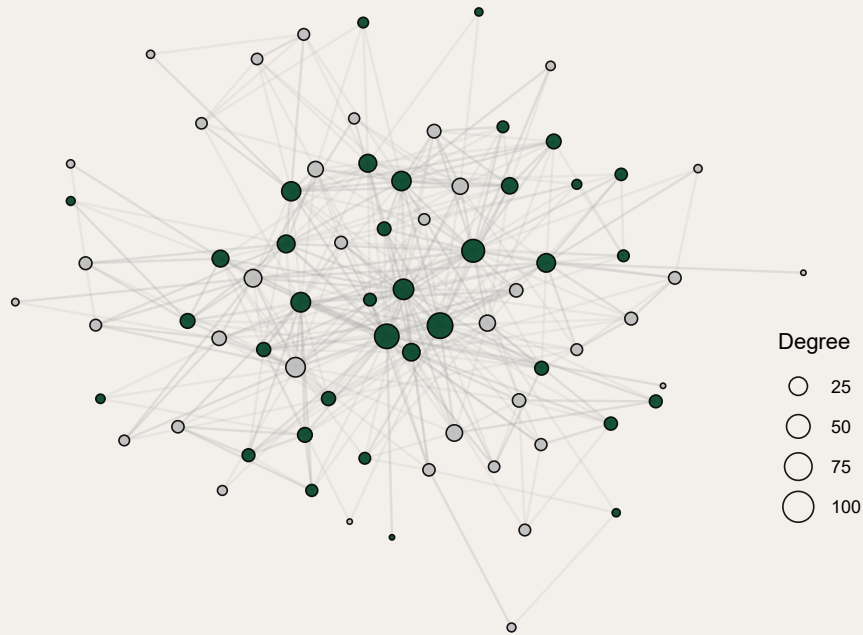
Biotexfuture



Network measure	BioBall	Blue Bioeconomy	Biotexfuture
<b>Nodes</b>			
Respondents	46	73	62
<b>Ties (edges)</b>			
Density	.11	.097	.13
Reciprocity	.48	.55	.53
<b>Network</b>			
Diameter	7	5	6
Centralization	.29	.29	.38

# INSPIRING INPUT

## Blue Bioeconomy Knowledge Network

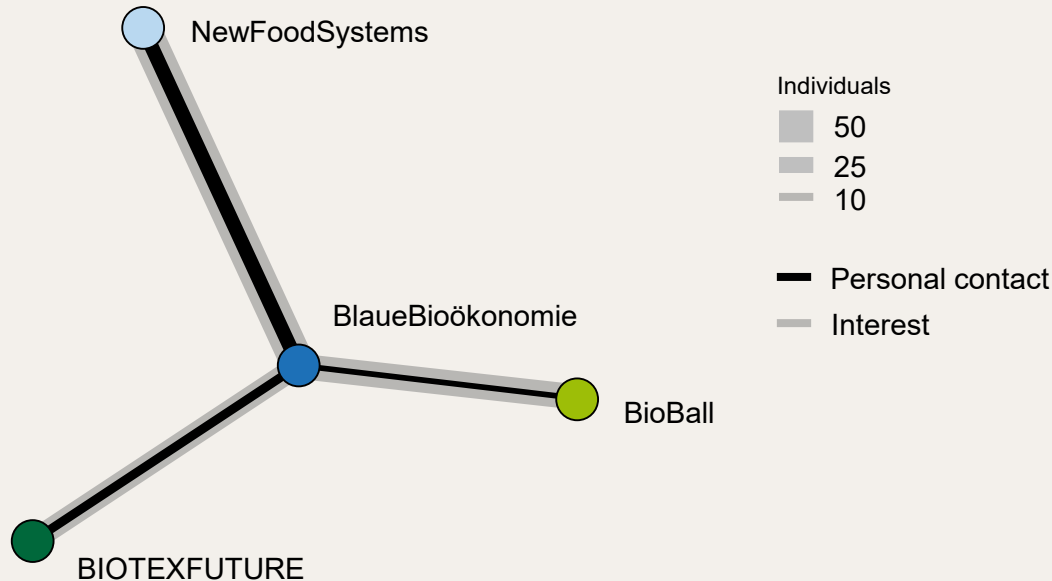


● Received inspiring input    ○ No inspiring input received    — Knowledge transfer

- On average, almost half of all survey participants stated that they had received inspiring input from other projects (BlueB 49.31%; BioBall 46%; BTF 57.35%).
- The more a person requests and receives knowledge from others (indegree), the more likely this person reported to have gained inspiring input.
- BlueB: Members most frequently mentioned the general exchange as a source of inspiring input. “Input e.g. from the Haff project regarding possibilities for sustainable water purification processes.”
- BTF: A respondent wrote: “Inspiring input for new resources, materials and new technologies regarding innovative textiles and applications. Also, new personal contacts for a network of business partners.”
- BioB: The events were highlighted most frequently: “At the BioBall workshops we were able to gain very interesting insights into numerous relevant topics.”

# NETWORKING BETWEEN THE INNOVATION SPACES

Which of the other BMBF innovation spaces on the bioeconomy would you like to find out more about?



- Of the survey participants (Blue Bioeconomy), 90% declared their interest in an exchange with other bioeconomy innovation spaces.
- Interest in an exchange with NewFoodSystems was expressed 50 times, and 20 times each in an exchange with BioBall and Biotextfuture.
- Project staff have already networked with the other bioeconomy innovation spaces. When comparing the stated interest in networking with actual networking, it becomes clear that less than half (40 contacts) have been realized.

# CONCLUSIONS



- Dense knowledge networks have emerged in each of the three innovation spaces. Especially the project governance has made great contributions to the growth of the networks by organizing multiple types of events and by facilitating new contacts.
- Yet, current knowledge networks still offer unexploited potential for additional synergies from cross-fertilization.
- The survey also showed that a lot of potential exchange between the innovation spaces has already been realized, but that there is still a lot of unrealized interest. Networking across innovation spaces will continue to be of interest to members after the funding phase.
- The next steps are further comparative analyses of the three innovation areas:
  - Break down drivers of knowledge exchange more precisely (e.g. exact event types and their influence).
  - Measure synergies and break down drivers of synergies.
  - The role of people in knowledge exchange and synergy creation.



## INSIGHT 2025 - 02

Please reach out for full report,  
feedback and questions to

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