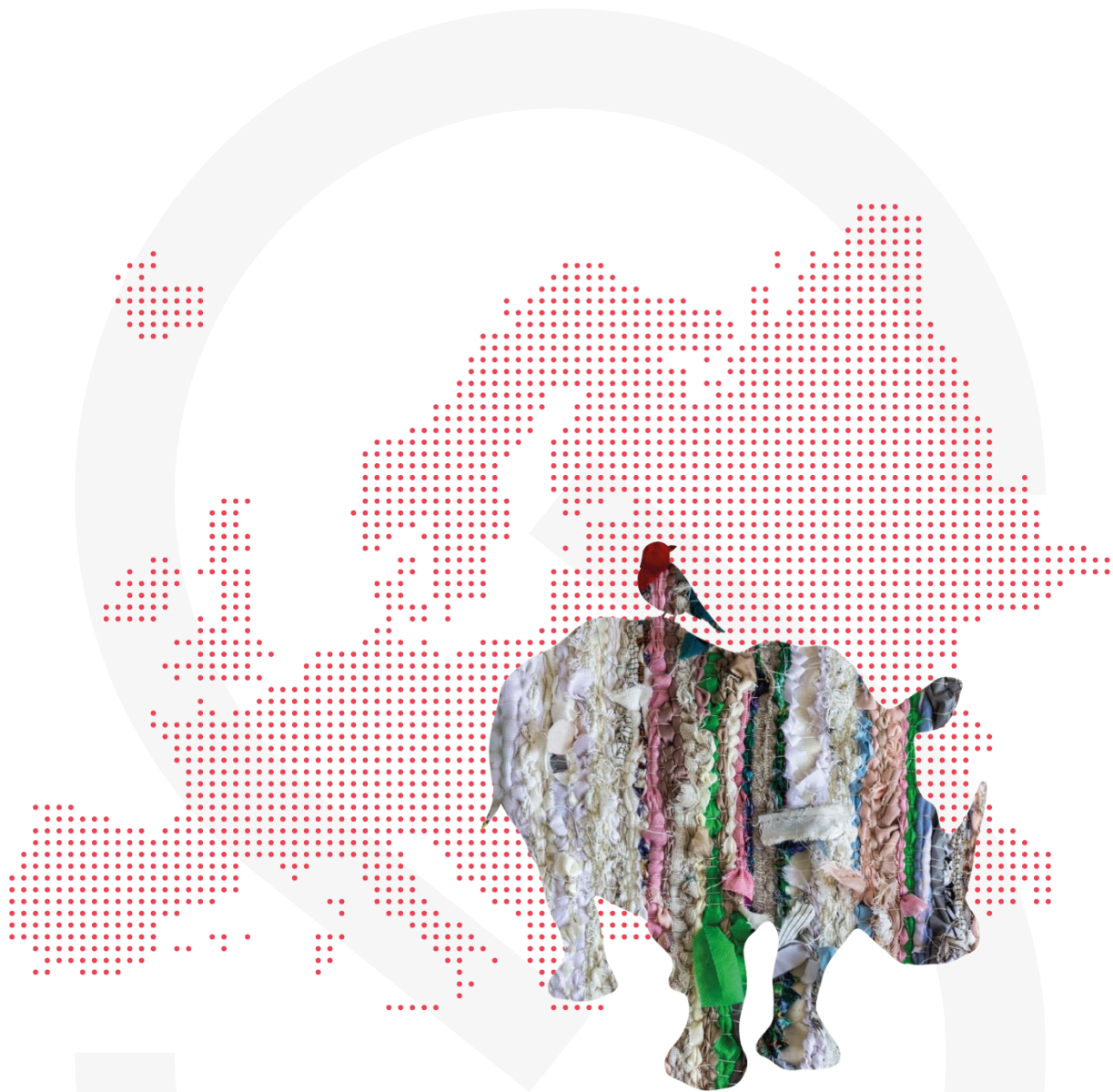




An european multidisciplinary Industrial symbiosis community

Yearly Justification report – First Grant Period

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Introduction

The LIAISE COST Action (CA22110) aims to advance the adoption of Industrial Symbiosis (IS) practices by fostering collaboration among researchers, policymakers, and industry stakeholders. In its first year, the initiative successfully implemented several activities, some of them transversal and other ones across their four working groups (WGs), contributing significantly to the Action's objectives. Below is a detailed summary of the progress and achievements.

Update of the technical work of LIAISE COST Action

Working Group 1 (WG1): Technical Synergies in Industrial Symbiosis

Activities:

- Conducted eight WG meetings and several sub-team and bi-weekly core group meetings.
- Developed the State-of-the-Art Report on Industrial Symbiosis, analyzing 267 academic papers and mapping 162 global IS cases.
- Held a workshop in Brussels (September 2024) focused on technical perspectives, featuring keynote speakers and poster presentations.
- Conducted data mapping, identifying 414 types of materials exchanged in IS activities (e.g., chemicals, waste, energy).

Key Deliverables:

- D1.1. State-of-the-Art Report on Industrial Symbiosis topic and its different subareas

Working Group 2 (WG2): IS Business Models

Activities:

- Organized six virtual meetings and a hybrid workshop in Istanbul (September 2024).
- Identified and ranked technical and non-technical barriers to IS adoption.
- Initiated a collaborative paper focusing on IS implementation and finalized the research structure.
- Conducted webinars and brainstorming sessions on circular business models.

Key Deliverables:

N/A

Working Group 3 (WG3): Enhance the awareness and acceptance of Industrial Symbiosis

Activities:

- Organised five virtual meetings and a hybrid workshop in Riga (October 2024).
- Mapped 117 stakeholders through surveys and workshops.
- Published a report on governance analysis and IS-related policies (July 2024).
- Developed training sessions, including summer school programs on IS and circular economy in Albania and Armenia.
- Published a scientific paper reviewing IS in the Circular Economy.

Key Deliverables:

- D3.4. Report about the collaborative section set up on LIAISE website for enhancing IS awareness.

Working Group 4 (WG4): Dissemination and Exploitation

Activities:

- Established the Action's visual identity (logo, templates) and website with a collaborative section.
- Conducted social media campaigns, increasing visibility across platforms like LinkedIn and YouTube.
- Released dissemination materials (flyers, posters) and press releases.
- Published newsletters summarizing key activities and achievements.

Key Deliverables:

- D4.2. LIAISE visual identify (logo, templates, etc.) and usage manual for the COST Action implementation
- D4.3. Website and social media platform of LIAISE COST Action launches and available
- D4.1. Communication, dissemination, exploitation, sustainability and networking strategy plan for LIAISE COST Action

Grant Expenditure

Table 1. Budget Grant Period 1

LIAISE Budget GP1	Budget (EUR)
Meetings	100,889.1€
Mobility of Researchers and Innovators	13,000€
Presentations at Conferences organised by Third Parties	5,500€
Dissemination and Communication Products	8,748.1€
OERSA	454.64€
FSAC (15%)	19,288.78€
TOTAL	147,880.62€

This year's budget was €153,984.16, which means that we spent €6,103.54 less than expected. Below is an explanation of the expenses incurred in each category:

Meetings

This category includes the following events:

Table 2. Expenditures in meetings in the first grant period

Meeting description	Place and Date	Attendants	Budget
First Thematic Workshop with stakeholders: "Industrial Symbiosis: Are you aware of its possibilities?"	22/02/2024 Vilnius (Lithuania) F2F Meeting	58	1,500€
Second General Meeting (CG, MC and WGs meetings)	23-25/04/2024 Alicante (Spain) Hybrid Meeting	66 + 40 stakeholders	55,167.76€
Fourth Thematic Workshop with stakeholders: "Eco-Bridges: Fostering Understanding and Engagement in Industrial Symbiosis for a Sustainable Future"	27/06/2024 Belgrade (Serbia) F2F Meeting	50	1,000€
Third Thematic Workshop with stakeholders: "Green Connections: Promoting Sustainable Development with Circular Economy and Symbiosis"	13/07/2024 Yerevan (Armenia) F2F Meeting	38	1,000€
Second Thematic Workshop with stakeholders: "Industrial Symbiosis and its opportunities for industry"	06/09/2024 Portoroz (Slovenia) F2F Meeting	32	2,000€
WG1 Workshop "Industrial Symbiosis from a technical perspective: challenges and opportunities"	10/09/2024 Brussels (Belgium) Hybrid Meeting	29 + 10 online	22,496.54€
Working Group 2 Meeting	17/09/2024	12	5,895.56€
Working Group 3 Meeting	03-04/10/2024	9 + 9 stakeholders	9,330.34€
Fifth Thematic Workshop with stakeholders: "Industrial Symbiosis - from idea to realization "	29/10/2024	29	2,595.90€

As we can see, there are a total of 9 meetings, of which 5 are stakeholder workshops, one is a technical conference/workshop, two WGs meetings and one general Action meeting (GC, MC and WGs). It can be seen that the diversity of actions has been adequate and that the number of participants has always been high, including, in many events, a large presence of stakeholders from outside the action.







Figure 1. Some images of the meetings organised under LIAISE COST Action-Grant Period 1

Mobility of Researchers and Innovators

This category includes the following grants.

Table 3. Expenditures in mobilities in the first grant period

Grant Description	Date	Budget
STSM: Merim Kasumović - Academic Stakeholder Mapping	13-20/05/2024	1,750€
VM: Radu Mirza - Empowering Young Researchers (EYR)	13/05-08/08/2024	500€
VM: Aleksandar Erceg - Developing base for the State-of-the-Art Report on Industrial Symbiosis	10/07-31/07/2024	500€
VM: Pawel Krzeminski - Identification and selection of promising Industrial Symbiosis opportunities	01/08-11/10/2024	500€
STSM: Yasemin Ülker - Industrial Symbiosis in the Textile Industry: A case study comparing Turkiye and Portugal	09-15/09/2024	1,500€
STSM: Llesha Llesha j- Industrial Symbiosis Awareness: Economic and Organizational Key Performance Indicators (KPIs)	22-28/09/2024	2,250€
STSM: Estelle Giacomi - Advancing Industrial Symbiosis: Mastering Life Cycle Assessment for Sustainable Innovation.	07-11/10/2024	2,500€
STSM: Olesea Plotnic - Developing and Implementing Future Training Programs for Industrial Symbiosis in Romania	07-19/10/2024	1,500€
VM: Olivija Filipovska- Connecting and Raising Awareness for Industrial Symbiosis	21/10-31/10/2024	500€

It can be seen that a wide variety of topics related to the Industrial Symbiosis and the research and capacity building objectives of the action have been funded.

Presentations at Conferences organised by Third Parties

This category includes the following grants.

Table 4. Expenditures in presentations at conferences in the first grant period

Grant Description	Date	Budget
ITCYRIG: Ina Keçi - "NDUSTRIAL SYMBIOSIS AND CIRCULAR ECONOMY UNDER THE FRAMEWORK OF INDUSTRY 4.0	12/06-15/09/2024	1,100€
ITCYRIG: Donjeta Bucaj - Dispelling Myths Addressing Taboos that Hinder the Zero Waste Economy	24/08-25/08/2024	1,500€
ITCYRIG: Dr. Natālija Cudečka-Puriņa- Development of a methodological framework for Circular Economy business model valorization	22/09-25/09/2024	900€
DCG: Almudena Muñoz Puche- Attendance EU Circular Week	21/10-24/10-2024	1,000€

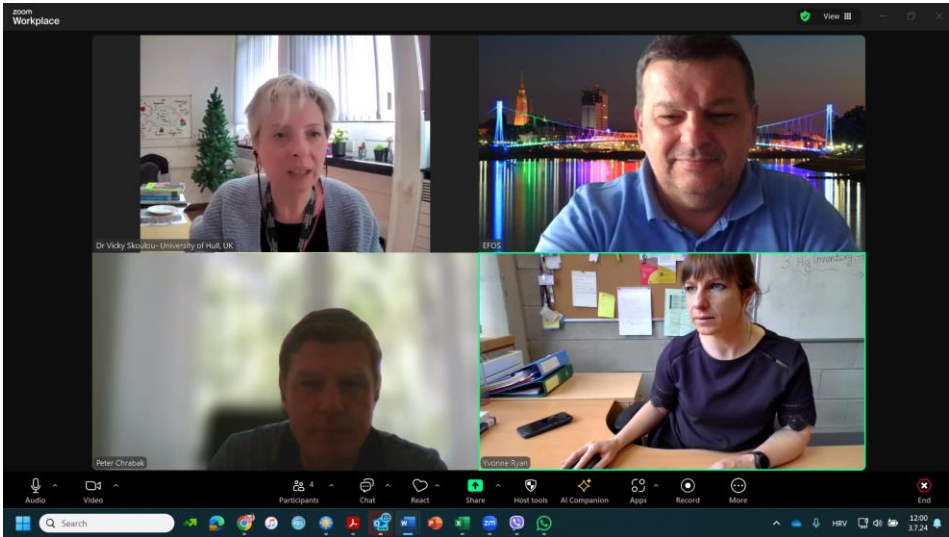






Figure 2. Some images of the grants funded under LIAISE COST Action-Grant Period 1

Dissemination and Communication Products

This category includes the following products.

Table 5. Expenditures in dissemination products in the first grant period

Dissemination product	Link	Budget
Action Website	https://www.liaise-action.eu/	2,680€
LIAISE COST Action Visual Identity	https://www.liaise-action.eu/liaise-visual-identity/	900€
LIAISE COST Action Dissemination materials (design and print) - Leaflet - Roll up	https://www.liaise-action.eu/wp-content/uploads/2024/06/liaise_leaflet.pdf ; https://www.liaise-action.eu/wp-content/uploads/2024/06/liaise-rollup-rev02.pdf	1,024.44€
Materials for external events - Pens	N/A 	260.8€
LIAISE COST Action Dissemination IS flyer	https://www.liaise-action.eu/wp-content/uploads/2024/11/ARTES-FIMNALES-POSTER-3-sin-marcas.pdf	1,682.86€
WG1 workshop proceeding	https://www.liaise-action.eu/publication/proceedings-book-industrial-symbiosis-from-a-technical-perspective-challenges-and-opportunities/	2,200€

OERSA

This category includes the following items.

Table 6. OERSA expenditure in the first grant period

Items	Budget
Virtual Communication tool (Zoom)	259.5€
Shipping Costs: - Shipping cost of roll up for the Fifth Workshop of Stakeholders - Shipping cost of roll up for the WG1 workshop	70.14€
Bank charges	125€

Deliverables completed during the first grant period

Table 7. Deliverables submitted and published during the first grant period of the Action

	Title	Month
4.2	LIAISE visual identity (logo, templates, etc.) and usage manual for the COST Action implementation (WG4)	M3
4.3	Website and social media platform of LIAISE COST Action launched and available (WG4)	M4
4.1	Communication, dissemination, exploitation, sustainability and networking strategy plan for LIAISE COST Action (WG4)	M6
3.4	Report about the collaborative section set up on LIAISE website for enhancing IS awareness (WG3)	M9
3.1	State of the art report on Industrial Symbiosis topic and its different subareas (WG1)	M12

Other Activities implemented during the first grant period

Booklet

To enhance collaboration and understanding among Management Committee (MC) members, a booklet was created, profiling each member. This resource provides insights into their expertise, ongoing research, and contributions to the LIAISE COST Action. By fostering knowledge-sharing and connectivity, the booklet serves as a valuable tool to strengthen the network and promote interdisciplinary cooperation within the Action.



Figure 3. MC Booklet

Leaflet translations

As part of its dissemination efforts, LIAISE COST Action translated its informational leaflet into multiple languages, including Albanian, Hungarian, Lithuanian, Montenegrin, Macedonian, Portuguese, Romanian, Serbian, Slovenian, Spanish, Turkish, and Twi. This initiative aimed to enhance the reach and impact of the Action by ensuring accessibility to diverse linguistic audiences, thereby fostering broader awareness and engagement across various regions.



Figure 4. Leaflet translated

Monthly Webinars

The LIAISE COST Action organized monthly webinars to provide members with a platform to share their projects, research, and innovative ideas. These webinars aimed to integrate more participants into the network, fostering inclusivity and collaboration. They also served as a critical opportunity for members to present their work, exchange insights, and explore potential synergies.

For attendees, the webinars were an invaluable chance to stay informed about ongoing activities, learn from diverse perspectives, and identify opportunities for interdisciplinary cooperation. This initiative has been instrumental in strengthening the Action's community and advancing its goals.

In addition, these webinars are recorded and uploaded to the YouTube channel account.

- May 2024: Networking Activities funded by the Action. https://www.youtube.com/watch?v=T1wj_RS5W28&list=PLFLQI5qNOnKEkxnnopZAvdrkG81qT5qC&index=5
- June 2024: Effective dissemination strategies for LIAISE COST Action. <https://www.youtube.com/watch?v=CkDUNrjNHXI&list=PLFLQI5qNOnKEkxnnopZAvdrkG81qT5qC&index=4>
- September 2024: Advancing Industrial Symbiosis- Bioproduct innovations, organic waste management and green transitions. <https://www.youtube.com/watch?v=-pXeE2I3IA4&list=PLFLQI5qNOnKEkxnnopZAvdrkG81qT5qC&index=3>
- October 2024: Exploring Symbiosis and Sustainability from a business perspective- from Big Data analytics to bioethanol networks. <https://www.youtube.com/watch?v=3RCASCMcjPQ&list=PLFLQI5qNOnKEkxnnopZAvdrkG81qT5qC&index=2>

Science Café Initiative

A Science Café serves as an informal, interactive platform designed to facilitate open discussions on pressing scientific and societal topics. The primary objective is to engage diverse audiences, including researchers, practitioners, policymakers, and the general public, fostering knowledge exchange and encouraging collaborative problem-solving.

In October, the LIAISE COST Action successfully organized a Science Café focusing on Decarbonization: Top 25 Trends. This event brought together experts and stakeholders to explore

innovative solutions and strategies for achieving a low-carbon future. Discussions centered on technological, economic, and policy trends, with an emphasis on practical applications and community engagement. This initiative highlighted the Action's commitment to promoting dialogue and driving impactful changes.



Figure 5. Science Café topic

Other Actions carried out: Dissemination Videos

The LIAISE COST Action produced a series of dissemination videos to enhance visibility and engagement with its initiatives. These videos highlighted the overall goals of the Action, its significance in advancing Industrial Symbiosis, and the achievements of its various working groups.

Additionally, event-specific videos were created to promote and document activities such as workshops, webinars, and thematic meetings. These videos provided an accessible summary of key discussions, outcomes, and contributions, ensuring a broader reach to stakeholders and audiences unable to attend in person. This approach not only amplified the impact of past events but also encouraged participation in future initiatives, reinforcing the Action's commitment to transparency and inclusivity.

Some examples are here:

- General Meeting in April: https://www.youtube.com/watch?v=blPyGjsyRFk&list=PLFLQI5qNOnKHCSmC5_2mpflGDD1Ljj5s
- General Dissemination video of LIAISE: https://www.youtube.com/watch?v=W3RwBAIIB9o&list=PLFLQI5qNOnKE9w8vwBVj29PkWi_xdeTPQg

- G1 Workshop: <https://www.youtube.com/watch?v=IX3IRn9Uq4>

Other Actions carried out: Newsletter

The LIAISE COST Action launched an annual newsletter to keep members, stakeholders, and the broader community informed about the latest developments, achievements, and upcoming activities. The newsletter served as a key communication tool, sharing highlights from working group progress, event summaries, and important publications.

By distributing the newsletter regularly, the Action ensured that its objectives, impact, and resources were effectively communicated, fostering ongoing engagement and awareness among all participants and the public.

The link to the newsletter is here: <https://www.liaise-action.eu/wp-content/uploads/2024/11/liaise-newsletter-1.pdf>

Other Actions carried out: First podcast

The LIAISE COST Action launched a podcast series to provide a platform for in-depth discussions on Industrial Symbiosis and related topics. The podcast featured interviews with experts, researchers, and stakeholders, offering insights into ongoing projects, challenges, and innovative solutions.

This initiative aimed to reach a wider audience, including those who prefer audio content, while also giving members an opportunity to share their work and findings in a more accessible format. The podcast contributed to raising awareness of the Action's goals, fostering collaboration, and promoting knowledge exchange across diverse networks.

The first episode is here:

- <https://www.youtube.com/watch?v=jlp5-Ty7qo&feature=youtu.be>
- <http://xn--https-ix3b//podcasters.spotify.com/pod/show/liaise-cost-action/episodes/Reaching-stakeholders-for-promoting-Industrial-Symbiosis-e2qhe9s>

Other Actions carried out: Attendance to other events

The LIAISE COST Action actively participated in various external events to raise awareness and foster collaborations with other initiatives. These events included conferences, workshops, and symposia focused on sustainability, circular economy, and Industrial Symbiosis. By attending and contributing to these gatherings, the Action was able to expand its network, share its progress, and learn from other stakeholders in the field.

Notable events attended included the Towards a Greener Future workshop on current trends in sustainability and circular economy research, as well as the Forest Protection and Sustainability conference, where representatives from the LIAISE Action presented findings and engaged in discussions on key issues in environmental research and policy. These activities were crucial for building synergies and positioning the LIAISE COST Action as an active participant in the global dialogue on sustainable development.



Figure 6. Attendance to external events

Other Actions carried out: Yearly Internal Evaluation

This Yearly Internal Evaluation Report provides a comprehensive overview of the LIAISE COST Action's achievements, challenges, and overall progress during the first grant period. The purpose of this report is to evaluate the effectiveness of the Action activities, assess the alignment with strategic goals, and outline areas for improvement as they prepare for the next second grant, which just started in November 2024.

The first grant period set the foundation for our long-term objectives, emphasizing collaboration across Working Groups, stakeholder engagement, and effective resource allocation. Through structured assessments and feedback from participants, we have identified key successes in fostering interdisciplinary exchange and advancing knowledge dissemination.

The Yearly Internal Evaluation Report demonstrates the significant progress and accomplishments of the LIAISE COST Action during its first grant period, establishing a strong foundation for its future endeavours. Participants acknowledged substantial achievements, including effective networking, the creation of interdisciplinary teams, and the completion of deliverables such as the State-of-the-Art report. These outcomes highlight the Action's capacity to foster collaboration, knowledge dissemination, and engagement among its diverse network of researchers and stakeholders.

While the Action exceeded or met expectations for most respondents, areas for improvement were identified. Key challenges included varying levels of participation among Working Group members, logistical concerns for event accessibility, and the need for more streamlined communication and coordination. Suggestions such as sending calendar invites for meetings, promoting events on

social media, and enhancing communication strategies within and across Working Groups reflect actionable steps to address these issues.

Feedback from the Management Committee and Working Group members consistently emphasized the Action's strengths, including effective leadership, strong management practices, and a supportive community. The evaluation further underscored the importance of maintaining transparency, strategic planning, and opportunities for networking.

Looking ahead, the insights gained from this evaluation provide a valuable framework for refining operations in the second grant period. By addressing areas of concern and building on established successes, LIAISE COST Action is well-positioned to advance its objectives, drive impactful research, and strengthen its contributions to Industrial Symbiosis and sustainability.

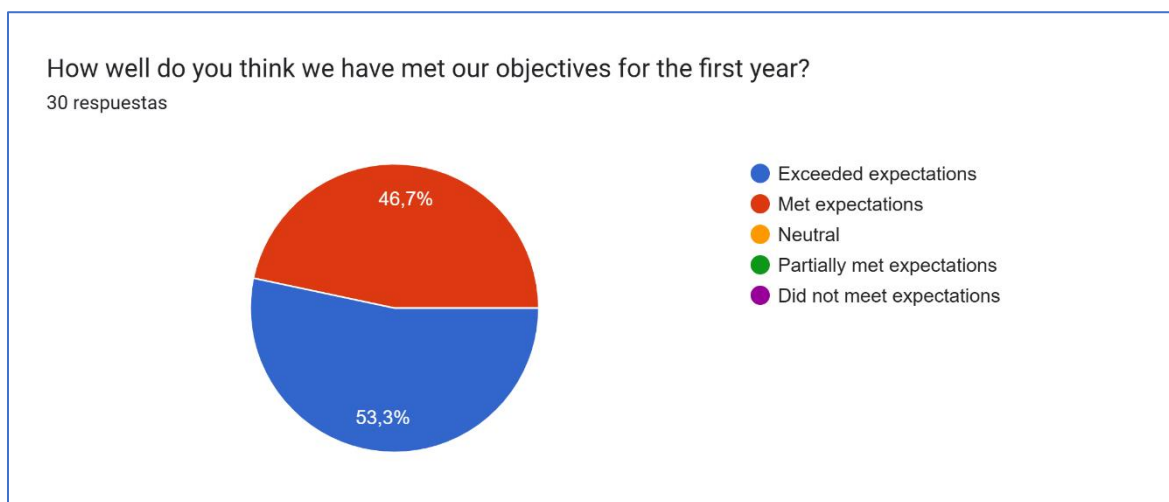


Figure 7. First Year Internal Evaluation

Young Research Programme

The Young Researcher (YR) Programme, coordinated by Dr. Taner Sar and Dr. Eda Orhun, is designed to empower and support early-career researchers within the LIAISE COST Action. The programme aims to facilitate professional development, enhance networking opportunities, and ensure that young researchers play an active role in the Action's activities.

Actions Implemented:

- **First Draft of Actions:** The initial framework for the YR Programme has been developed, outlining key activities and objectives to support young researchers in their career progression.
- **Mentorship Programme:** This initiative pairs young researchers with experienced mentors to guide them in their research and professional development, fostering valuable relationships and knowledge exchange.
- **Training Pills:** A series of short training sessions, such as a workshop on How to Write a Paper, are scheduled to help young researchers build essential skills for academic and professional success.
- **Specific Workshops:** These workshops are organized to provide young researchers with the opportunity to present their work, receive feedback, and engage with a broader scientific community.

- Digital Connection Survey: This survey promotes connections for Young Researchers, encouraging participation in Short-Term Scientific Missions (STSMs), either as students or hosts, facilitating cross-border collaborations and knowledge sharing.
- Increase YR Representation: Efforts are underway to increase the number of young researchers from various countries within the Management Committee (MC), ensuring diverse representation and strengthening the network across regions.

This programme is central to enhancing the visibility and integration of young researchers within the LIAISE COST Action, fostering the next generation of leaders in Industrial Symbiosis and related fields.

Gender Equality Programme

The Gender Equality Programme, coordinated by Dr. Andrius Puksas and Dr. Noemia Bessa Vilela, is focused on promoting gender balance and inclusivity within the LIAISE COST Action. The programme aims to address gender disparities, encourage equal participation, and ensure that women and men have equal opportunities to contribute to and benefit from the Action's activities.

Key Actions:

- Gender Equality Plan: Dr. Puksas and Dr. Bessa Vilela are preparing a comprehensive Gender Equality Plan for the COST Action, which will be finalized once the COST Programme provides official instructions (expected by the end of November).
- Defining KPIs: They will establish key performance indicators (KPIs) to measure gender balance within the Action and track progress towards achieving equality.
- Actions to Promote Balance: The plan will include specific actions to foster gender equality, such as supporting women in leadership roles, increasing female representation in key decision-making processes, and addressing barriers that may hinder women's participation in scientific and leadership activities.
- This programme plays a crucial role in ensuring that the LIAISE COST Action not only promotes scientific excellence but also fosters a more inclusive and equitable environment for all participants.

Conclusions

The first year of the LIAISE COST Action demonstrated significant progress in fostering Industrial Symbiosis. The collaborative efforts across WGs, combined with strategic dissemination and inclusivity initiatives, have set a strong foundation for achieving the Action's long-term goals. Future activities will build on these successes, expanding stakeholder engagement and addressing technical and policy-related challenges to IS implementation.