SISCODE CO-DESIGN FOR SOCIETY IN INNOVATION AND SCIENCE

DELIVERABLE 6.4:

SISCODE BUSINESS MODEL

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LIST OF ABBREVIATIONS

Abbreviations	Expanded
APRE	Agenzia per la Promozione della Ricerca Europea
AUTH	Aristotle University of Thessaloniki (Thess-AHALL)
Biosense	Biosense Institute
CoRRI Forum	Informal forum of co-creation and RRI
CUBE	Cube/Continuum museum
CV	Ciência Viva - Agência Nacional para a Cultura Científica e Tecnológica
ENoLL	European Network of Living Labs
ER	Exploitable Results
EU	European Union
FBC	Fab Lab Barcelona
H2020	Horizon 2020 programme
IAAC	IAAC - Institute for Advanced Architecture of Catalonia
IPR	Intellectual Property Rights
KERs	Key Exploitable Results
KTP	Krakow Technology Park
Maker	Foreningen Maker / Viadukten
MOOC	Massive Open Online Course
PE	Public Engagement

Abbreviations	Expanded
Polifactory	Polifactory the official makerspace/Fab Lab of the Politecnico di Milano
POLIMI	Politecnico di Milano
PPT	PowerPoint Presentation
Q&A	Questions and Answers
RRI	Responsible Research and Innovation
SGD	Science Gallery Dublin
SISCODE	Co-design for society in innovation and science
SPI	Sociedade Portuguesa de Inovação
STI	Science Technology and Innovation
TUDO	TU Dortmund University
TRACES	Association Traces Théories et Réflexions sur L'Apprendre la Communication et L'Education Scientifiques
TRL	Technology Readiness Level
WP	Work packages
WS	Workshop

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TABLE 1 - DEFINITIONS OF KEY CONCEPTS

Key concept	Definition
Co-creation	Co-creation is a non-linear process that involves multiple actors and stakeholders in the ideation, implementation and assessment of products, services, policies and systems with the aim of improving their efficiency and effectiveness, and the satisfaction of those who take part in the process. (Rizzo et. al, 2018)
Responsible Research and Innovation (RRI)	Responsible Research and Innovation (RRI)[1] is 'a transparent, interactive process by which societal actors and innovators become mutually responsive to each other with a view to the (ethical) acceptability, sustainability and societal desirability of the innovation process and its marketable products (in order to allow a proper embedding of scientific and technological advances in our society)'. (Von Schomberg, 2012)
Co-creation ecosystem	A co-creation ecosystem is defined as the totality of factors in which a process of co-creation alongside the SISCODE definition of co-creation is embedded. This encloses actors just as much as framework conditions, such as norms and structures. Furthermore, the approach does also allow us to consider the function of concrete practices – be them on the operational level of co-creation or the managerial level of the co-creation initiatives.
Co-creation Journey	A pilot bottom-up initiative composed of iterative participatory processes which are developed under principles of co-creation. Each co-creation lab is developed as a space for the reflexivity and action research in order to encourage practitioners and involved stakeholders to manage and acquire better understanding of their collaborative processes (i.e. sharing feedback in order to build a common knowledge basis on co-creation).
Actor-Network theory (ANT)	Actor-network theory (Latour, 1987) is a conceptual and methodological approach to developing and validating social theories on the interconnectedness of actors in the specific framework (network). The

[1] Link: https://ec.europa.eu/programmes/horizon2020/en/h2020-section/responsible-research-innovation (Accessed 18 April 2021)

	methodology includes non-human actors in the development of social theory.
Social innovation	According to Howaldt and Schwarz (2010), social innovation is 'a new combination and/or new configuration of social practices in certain areas of action or social contexts prompted by certain actors or constellations of actors in an intentional targeted manner with the goal of better satisfying or answering needs and problems than is possible on the basis of established practices. An innovation is therefore social to the extent that it, conveyed by the market or "non/without profit", is socially accepted and diffused widely throughout society or in certain societal sub-areas, transformed depending on circumstances and ultimately institutionalized as new social practice or made routine. As with every other innovation, "new" does not necessarily mean "good" but in this case is "socially desirable" in an extensive and normative sense. According to the actors' practical rationale, social attributions for social innovations are generally uncertain.'
SISCODE Business Model	SISCODE Business Model is a strategy with integrated service-based business models on how to support institutionalisation of co-creation practice at organisational and project scale (i.e. micro, meso and macro scales) by developing a strong actor network in a defined co-creation ecosystem (i.e. SISCODE).
Target audiences	The target stakeholders and end-users of the products and services provided by the project partners through SISCODE.

Executive summary

The deliverable D6.4 *SISCODE Business Model* is developed under task T6.4 *Co-design of the business models and the exploitation networks* of the SISCODE project in M36 (April 2021). This deliverable is one of the four reports of WP6 *Exploitation Strategy* that oversaw the planning, support and implementation of sustainability and exploitation actions in the project. It aims to systemise the exploitation action plans outlined in *D6.1: Exploitation Strategy Plan* and design a business model for the provision of services by the project partners as a long-term plan to the exploitation of SISCODE and its outcomes. The specific objective of this document is to co-design three SISCODE services that would be enacted by the partners which have the resources, such as expertise and facilitated access to target audiences, to provide them.

As part of the exploitation strategy work package that is transversal to all WPs, the development of D6.4 gathers inputs from all WPs and their outcomes with a specific focus on the findings from D6.1 *Exploitation strategy* and *D6.2 Analysis of exploitable results and actions*[2]. The document consists of six chapters. The first two chapters are introductory and refer to the initial task and its development over time, as well as the interlinks between this task and other WPs and their outputs. The third chapter demonstrates the journey of implementing task T6.4 through seven activities aiming to build capacity among partners in the development of sustainability action plans and business modelling for innovative solutions and exploitable results. The activities are classified into five training and capacity-building sessions with the SISCODE labs and two online co-creation sessions to analyse the exploitation and self-sustainability of project key exploitable results (KERs). In addition to the activities, desk research and internal consultations among partners were used to co-design the business models of the services. The fourth chapter provides a backing theory on how business models for the enactment of systemic innovation and a resounding social impact can be implemented and the value placed on culture of innovation in co-creation and RRI. Subsequently, the last three chapters of the deliverable elaborate on the design of the business models for the three SISCODE services.

The three SISCODE services are: i) Knowledge-transfer and capacity-building by the labs and their networks, ii) Consultancy for local and regional policy makers on the integration of co-creation and RRI in public sector innovation, and iii) Operationalisation and

[2] SISCODE. *D6.2 Analysis of exploitable results and actions.* Link: https://siscodeproject.eu/wp-content/uploads/2021/04/D6.2-Analysis-of-exploitable-results-and-actions.pdf

institutionalisation of co-creation through CoRRI Forum. The services are illustrated through design briefs describing their key features including the key topics, actions, resources and competencies that would be essential for their successful implementation. In addition, further evaluation of the services is performed through a feasibility assessment and SWOT analysis to give a realistic picture of the efforts and resources that would be required for their implementation and the potential risks that can prove as obstacles. The service-based business models used for the design briefs are developed and described through the SISCODE Business Model Canvas and Customer Journey tools that were applied in the development of value creation and scenarios of the prototyping phase of the SISCODE co-creation journeys. As a conclusion, a set of recommendations are stipulated based on the analysis of the strengths and weaknesses of the services in order to provide potential solutions to overcome them.

D6.4 *Co-design of the business models and the exploitation networks* was concluded and submitted in April 2021 by SPI with the support of KTP, Maker, ENoLL and Polimi as the internal reviewers. The deliverable will serve the partners as guidance in the implementation of the proposed service business models post-SISCODE.

1. Introduction

Society in innovation and science through co-design (SISCODE)[3] is a Horizon 2020 research and innovation project (2018 – 2021) aimed at stimulating the use of co-creation methodologies in policy design, using bottom-design-driven methodologies to pollinate Responsible Research and Innovation, and Science Technology and Innovation policies.

SISCODE is composed of eight work packages of which five were responsible for the co-production of new knowledge obtained from the desk and action research, as well as one work package responsible for the development of ten innovative solutions of different technology readiness levels (TRL) and scalability potentials. The scaling of the innovative solutions and practice is monitored under WP6 that is dedicated to the exploitation of the outcomes and outputs of the project.

This deliverable is developed under task T6.4 *Co-design of the business models and the exploitation networks* and aims to:

- integrate key exploitable results and exploitation actions into the service-based business models;
- develop services to secure the sustainability and scaling of the co-creation methodologies, methods and tools developed in SISCODE (i.e. SISCODE legacy);
- analyse the strengths, weaknesses, opportunities and threats of design and delivery of three services; and
- elaborate recommendations to overcome risks for the successful implementation of the services.

During the implementation of the WP6 and this task, main features of the SISCODE legacy were distinguished: i) the know-how on sensitisation and building of the individual and collective capacities in co-creation practice and development of co-creation journeys (i.e. pilots/prototyping); ii) repository and know-how on the application of design methods and tools for the purpose of co-creation and its four phases; and iii) community of researchers, practitioners, policy makers, citizens and entrepreneurs that have shown interest in and/or already used RRI and co-creation practice in research and innovation (i.e. CoRRI Forum).

[3] Link: https://cordis.europa.eu/project/id/788217 (Accessed 20 April 2021)

Considering that the SISCODE project is focused on innovation with societal impact, the service-based business models are developed and take into consideration the participatory processes that support open innovation with and for society by co-creation, the value of stakeholders' involvement and opportunities for their self-empowerment, as well as fertilisation of cross-sector and transdisciplinary collaboration (Kohlgrüber et. al, 2019). The objective of such business models is to feed into the evolving demands such as social needs, societal challenges and social value creations. Therefore, the *foci* of the deliverable are business models to provide a set of services that can be developed and implemented by individual organisations or by collaborations of two or more organisations. The composition of the services is based on the reciprocity and interactions[4] between individuals, organisations, community and the tangible outputs and intangible outcomes. Subsequently, they are an attempt to gather key lessons learnt and stimulate their further use and application in the work of SISCODE partners and many other professionals, organisations and projects successors. Besides, this document may serve as an inspiration and guidance complementary to previous SISCODE deliverables on how to develop and implement services that promote co-creation and Responsible Research and Innovation (RRI) following the SISCODE approach.

[4] The observation and reflection have been influenced by the Actor-network theory as SISCODE has produced many valuable moments, activities, synergies, partnerships, concrete results and tangible outputs that influenced the way everyone involved interacts with one another.

2. Initial task and development throughout the project

2.1 Development of the task

Task T6.4 *Co-design of the business models and the exploitation networks* was initiated in the second half of the project implementation (M19-M36) aimed to develop innovative business models based on the service development. Moreover, the original plan was to describe the business opportunities for project partners and produce materials that would be used in the exploitation strategy during the project lifetime, as well as for business development activities post-SISCODE.

According to the *Description of Action* (DoA)[5] stipulated in the Grant Agreement, the business models and the associated financial forecasting would have been analysed in this deliverable according to the following methodologies: return on investment, resource efficiency, competitive advantage, opportunity cost, value proposition, among others. However, SISCODE decided to approach it differently, looking into the task of business modelling from two different perspectives:

- Support development of business models and/or sustainability strategies among the co-creation labs and especially in regard to their innovative solutions; and
- Support SISCODE partners to develop a community of professionals interested in co-creation methodologies, methods and tools developed and appropriated in SISCODE, which will be the main features of the SISCODE legacy plan to pollinate RRI through co-creation in the European landscape and beyond.

Within project duration, WP6 has supported and encouraged all partners to work together on different project activities, namely to co-design and implement online sessions (i.e. round tables, workshops, webinars) for exploitation and knowledge-transfer (internal and external). Along these lines, task T6.4 was oriented on developing meaningful connections and dynamics between partners and within stakeholders of the co-creation journeys. A lot of prominence has been given to developing a stronger understanding of the social processes and negotiation spaces among the SISCODE partners. Subsequently, the SISCODE Business

[5] *Description of Action* (DoA) refers to the detailed account of the action which would be undertaken to implement different aspects of the H2020 project. Each work package is briefly described in the DoA accounting the key objectives and actions which will be implemented until the end of the project duration.

Model focuses on the established synergies among SISCODE partners and their capabilities to create and sustain relations, fluidity and dynamics by delivering following services post-SISCODE:

- Knowledge-transfer and capacity-building by the labs and their networks;
- Consultancy for local and regional policy makers on the integration of co-creation and RRI in public sector innovation; and
- Operationalisation and institutionalisation of co-creation through CoRRI Forum.

Furthermore, to support reflection in the task development processes, inspired by the actor-network theory (Latour, 1987), the following questions were taken into the consideration:

- What are the shared values created and obtained in SISCODE among the partner organisations and professionals, the co-designed and co-produced outputs and outcomes?
- What are the goals of the SISCODE partnership and established relations and dynamics? What are their constraints?
- How to facilitate negotiation and alignment of the interests among the SISCODE partners and use of SISCODE legacy?
- How to design future interactions between partners and obtained results?
- What are the main features of the service-based business models?
- How to specify the requirements of the new services?

The answers to these questions are transversally provided in chapters 4 and 5 when describing the conceptual framework and services.

2.2 Relation to other WPs and their outputs

The development of deliverable D6.4 is an action transversal to all WPs and their outputs. In the design process of the business model, all tangible and intangible processes and project results have been taken into consideration, namely the exploitation strategy and individual key exploitable results and actions.

Table 2 describes in detail the interlinks between WP6 and other WPs and their outputs.

TABLE 2 - THE RELATION BETWEEN WP6, D6.4, AND OTHER WPS AND THEIR OUTPUTS

Work package (WP)	WP6/D6.4 relation to other WPs and their outputs
WP1: *RRI approaches and methodologies* (M1 – M6)	WP1 ensured that SISCODE contributed to the state of the art of co-creation practice in the RRI landscape and explored ongoing and past H2020 projects, whilst developing a theoretical framework to guide the processes of the co-creation. It also supported the construction of the knowledge repository in WP2 to feed into the design methodologies and real-life experimentations in WP3 and WP4. At the sustainability level and for the purpose of business modelling, the outputs of WP1 have been considered as a foundation and undertaken perspectives on the SISCODE trajectory.
WP2: *Benchmark and compare co-creation cases across Europe* (M7 – M24)	WP2 had a systemised view of the international co-creation cases through SISCODE lenses and provided insights on interlinks between bottom-up and top-down co-creation approaches at the convergence of science, technology and innovation and society. From the WP6 perspective, the input received from this WP and its outputs were relevant for the development and navigation of real-life experimentation in the pilot projects.
WP3: *Experimentation in co-creation labs* (M7 – M24)	WP3 consists of know-how on design, implementation, monitoring and evaluation of co-creation journeys within the pilot projects. The WP has put into practice co-creation methodology, methods and tools that showed how to approach co-creation at a micro-scale in a specific context and within an ecosystem of co-creation. The meetings held with and between labs contributed to the peer exchange, collective reflections on journeys and active learning. The overall outputs and learning outcomes of this WP are the anchor for co-design and scalability potential of the business models.
WP4: *Playground for policy making*	WP4 aimed to sensitise policy makers on how to uptake design-led and bottom-up approaches in policy making and governance processes in RRI at the local and international level. In 11 workshops co-facilitated by the

Work package (WP)	WP6/D6.4 relation to other WPs and their outputs
(M7 – M24)	SISCODE partners, it was ensured that the involved policy makers have a chance to learn more about the SISCODE approach to planning and implementing co-creation journeys in local contexts and the utilisation of design methods and tools to meet the aim of co-creation practice in RRI.
WP5: *Co-creation for implementable RRI* (M25 – M36)	WP5 provided an understanding of the models of an ecosystem of co-creation. Through the aggregation and profound analysis of the findings from WP1, WP2 and WP3, the dimensions of the dynamics and framework conditions of co-creation ecosystems are dissected under WP5. In parallel, this WP has produced one serviceable and sustainable output of SISCODE that constitutes as one of the key resources for the business models.
WP6: *Exploitation Strategy* (M1 – M36)	Deliverable D6.4 is developed in WP6. Under WP6, all tasks were interlinked and dependent on each other's planning and implementation. The plan has considered the exploitation strategy and key exploitable results and actions when developing the business model for post-SISCODE. It has thus considered the expertise, available infrastructure and resources of each partner. The SISCODE business model ensures SISCODE legacy and its impact on Science, Technology and Innovation research practice and policy making.
WP7: *Engagement and dissemination* (M1 – M36)	WP7 supported the visibility and sustainability of the project through stakeholders' engagement and dissemination of project activities and results. The communication and dissemination channels with a high number of followers allowed profiling of interested professionals and exchange of information relevant to the research and innovation community. The WP supported extending the reach of SISCODE to individuals, organisations and networks in Europe and beyond. Through its dissemination actions, this WP had supported the work of WP6 to deepen the audience-base of the exploitation actions.

3. Methodology

There are two methodologies enacted in the realisation of D6.4: i) Approach to the implementation of task T6.4, and ii) Approach to the development of SISCODE Business Model. The approaches were executed carefully to anticipate and guarantee the longevity of the project's outputs and their impact. Seven sets of actions were conducted in view of implementing task T6.4 and consequently, developing the SISCODE Business Model. In these actions, the WP6 leader was responsible for supporting the partners, monitoring the co-creation journeys of the labs, to forecast the exploitability and sustainability of their outputs and actions when it is still at an early stage. These actions entailed carrying out desk research on the dynamics of co-creation ecosystems, implementation of hands-on activities to inform and validate results of the project, and observation and evaluation of the project results to determine their service design potential. Out of the seven sets of actions, five were intended for internal training and capacity-building in co-design of business models for one's end-products to implement T6.4 and two were interactive, participatory meetings/workshops to support the development of business models for the project results.

3.1 Approach to implementation of task T6.4

The implementation of task T6.4 started through the conduct of meetings, training, info-sessions and consultations with the SISCODE labs to build their knowledge in assessing and anticipating the sustainability of their co-creation journeys and prototypes (Fig 1). These activities were conducted either solely by WP6 or to the support of WP3 for the sustainability of the labs' solutions. One long-term sustainability action was continuously carried out with the labs during the 21 months-long experimentation of their co-creation journeys (November 2019 to September 2020). These meetings were conducted online in which the labs presented their progress, challenges and next steps in their co-creation journeys and the sustainability of their solutions were discussed with the objective to ensure the labs continue to mould their solutions to make it sustainable. The sustainability of a new solution can be defined by its feasible and effective implementation and opportunity to evolve, replicate and scale at the service beyond the group of stakeholders included in its development and implementation processes. In addition to these regular calls, four separate training and mentoring sessions were organised between October 2019 and January 2021 with varying aims. However, all these sessions revolve around the sustainability of solutions and project outcomes as well as designing of business models. Two of these sessions were conducted in person, addressing

Customer Journey in Third Progress Meeting in October 2019, in Brussels, and Business Modelling in Fourth Progress Meeting in February 2020, in Copenhagen. The sessions were used to tackle two issues, i) aligning the labs' understanding and expectations of the project's prototyping phase and sustainability of solution and introduction to task T6.4; and ii) co-design of business modelling using an adapted Business Model Canvas to project value proposition and impact of prototyped solutions. The results of the sessions were used in the final sustainability assessment of the labs' solutions detailed in *D3.4 Experimentation Report labs' journeys as case studies*[6].

The second round of training and mentoring sessions with the labs took place online in April 2020 for further training of practitioners (extended to all labs' co-creation team members) on developing sessions for knowledge-transfer and developing local business models or sustainability strategies. The second workshop was an info and debrief session in January 2021 held with all the labs after they had completed their co-creation journeys and were in the process of seeking new opportunities to scale their solutions. In this session, the next steps and potentialities of each lab's solution were discussed individually after a short tutorial on what Intellectual Property Rights are, which funding opportunities are available, and how to use open sources and Creative Commons copyleft licensing[7].

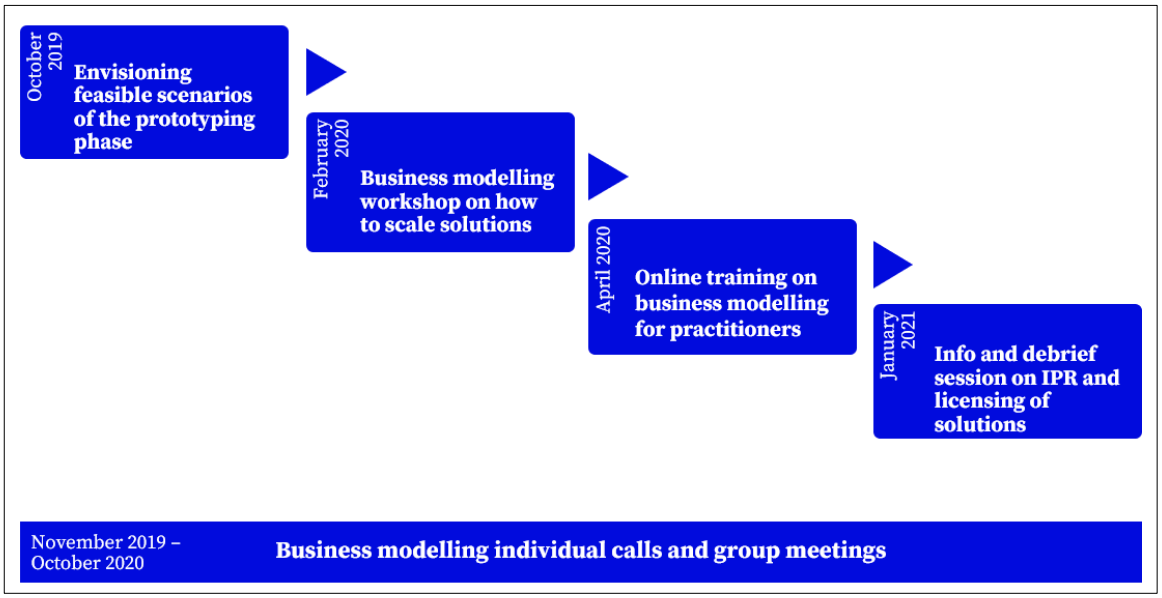

FIG 1 – FIVE SETS OF TRAINING ACTIONS IMPLEMENTED UNDER TASK T6.4

[6] SISCODE. *D3.4 Experimentation Report labs' journeys as case studies* Link: https://siscodeproject.eu/wp-content/uploads/2021/01/D3-4-Co-creation-journeys-as-Case-studies-final_small_2.pdf (Accessed 10 April 2021)

[7] Link: https://creativecommons.org/ (Accessed 10 April 2021)

In addition to the five training and mentoring sessions mentioned above, the evaluation of the project results to measure their exploitation potential and design of the action plan for their sustainability/exploitation was performed. Two separate sets of actions were conducted to assess the value propositions and self-sustainability of project results (Fig 2).

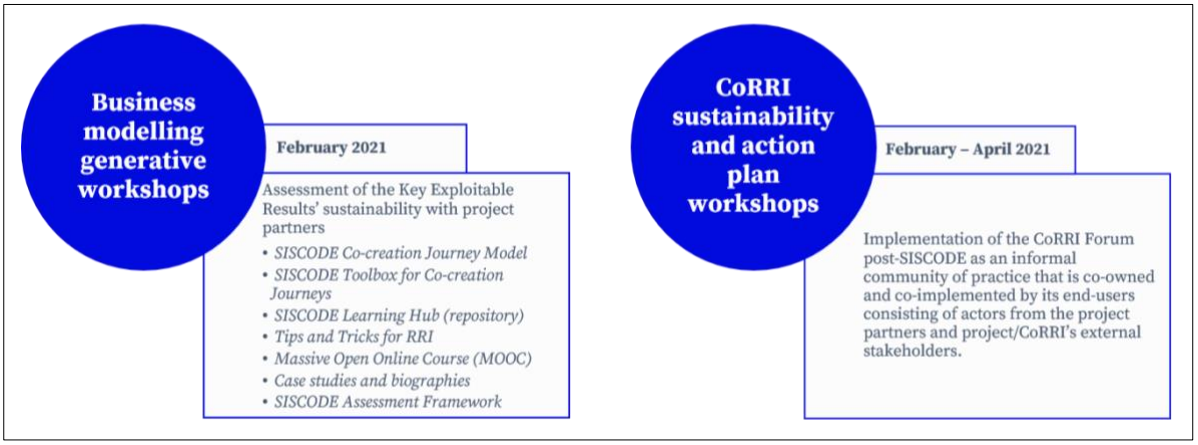

FIG 2 - TWO SETS OF ACTIONS IMPLEMENTED TO ASSESS THE KERS OF SISCODE

Two 2.5-hour workshops in February 2021: two back-to-back sessions were held online with the project partners to inform about the existing Key Exploitable Results (KERs) of the project that can and will be exploited post-SISCODE by the partners (Fig 3). The workshops employed SWOT analysis to explore seven of the SISCODE KERs with partners and their networks (Fig 4). Moreover, the workshops were used to inform the partners of their content and purpose as they have been recently published and not yet fully exploited. The sessions were useful in identifying the KERs that are the most valuable to the partners and potential barriers that could prevent their exploitation. This was a highly relevant action that fed into the development of D6.1, D6.2 and D6.4 as it provided the opportunity to assess the value propositions of the project for stakeholders who would benefit from the results in the period after the project and thus, supply to the designing of the actions for post-SISCODE exploitation plan in D6.1 and the services of SISCODE in D6.4 (see chapter 5).

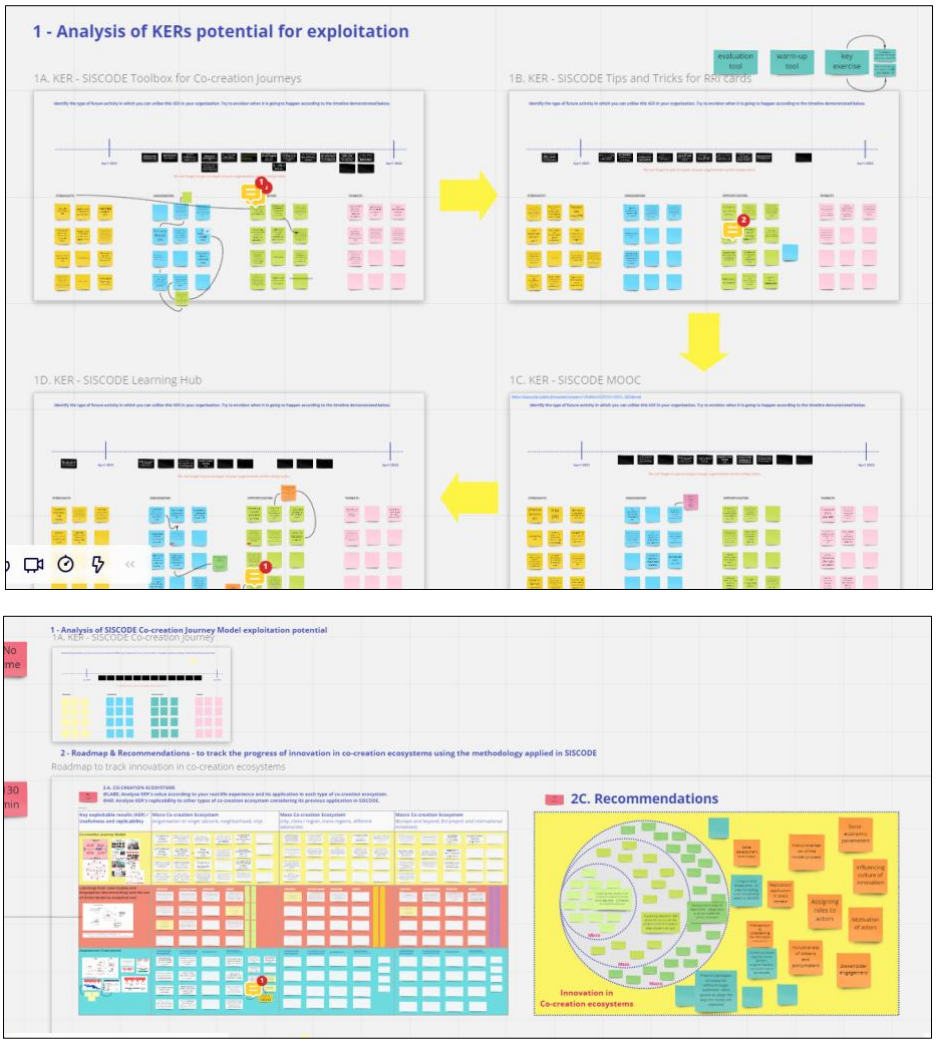

FIG 3 - SWOT ANALYSIS OF THE SISCODE KERS DONE IN THE BUSINESS MODELLING WORKSHOPS IN 2021

CoRRI sustainability and action planning between February and April 2021: four online workshops were held with the project partners and their networks, as well as the external stakeholders of SISCODE (including representatives of the European Commission, other EU projects, practitioners, academics, social innovation communities and citizens), some of whom would eventually be the co-owners of the forum. The CoRRI Forum is an inclusive and informal community of practice that is co-organised and co-implemented by its end-users and target audiences. CoRRI was co-designed and prototyped in 2020 to define its key elements and where it can fill in the gap (i.e., knowledge, information and know-how) that exists in the co-creation ecosystem[8]. As one of the project's interactive and long-lasting KERs, CoRRI was analysed to identify the following qualities: i) the benefits of CoRRI for different

[8] SISCODE. *D6.3: Network of co-creation labs for RRI (CoRRI Network)*. Link: https://siscodeproject.eu/wp-content/uploads/2021/03/D6.3-NETWORK-OF-CO-CREATION-LABS-FOR-RRI-CORRI-NETWORK_Small.pdf

stakeholders, ii) how the end-users of CoRRI can contribute to the sustainability of the forum, iii) the formats and tools that can be used for the dissemination, communication and implementation of activities of the forum, iv) the action plan or roadmap for the implementation of a set of activities for the first year, v) the topics which would be addressed through the activities, and vi) working groups that would implement specific activities in the following 12 months after the conclusion of SISCODE.

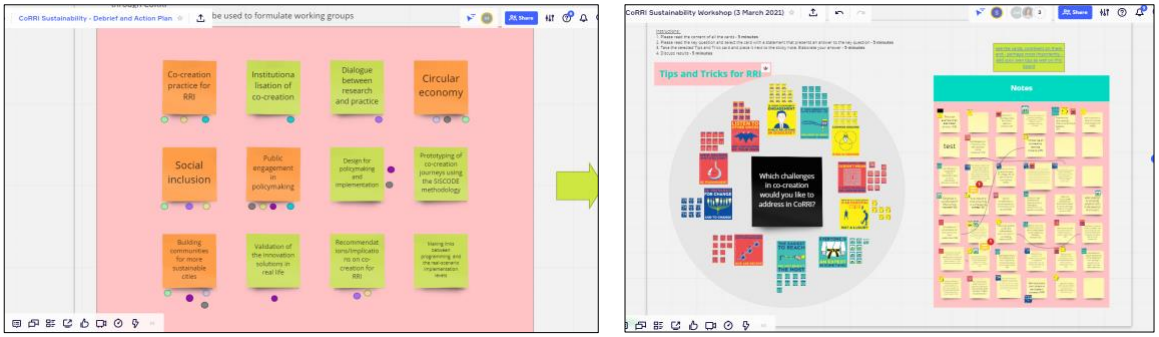

FIG 4 - CORRI FORUM SUSTAINABILITY ACTION PLAN WORKSHOPS IN 2021

3.2 Approach to developing SISCODE Business Model

The SISCODE Business Model aims to summarise the value propositions of the project results, the project partners and actions as a whole and design comprehensive and practical methodologies in the form of service-based business models, for the implementation of exploitation actions post-SISCODE. This document is not only for use by the project partners but aspires to set a methodology for the exploitation of project results and actions in other initiatives. The deliverable was designed in the last months of SISCODE after the majority of the KERs had reached the expected level of technology readiness and could be exploited post-SISCODE. The content and context for this deliverable were fed through the training and capacity-building actions detailed above in section 3.1, desk research conducted by the WP6 leader on SISCODE reports (e.g. deliverable of WP3, WP5 and WP6), and consultations with partners on the best approaches to sustain the impact of the project. The co-design of service-based business models resulted in three services, transversal and comprehensive to the overall processes and interactions between individuals, organisations, alliances and results obtained for the past three years. The services are presented as well-rounded compact structures that can be implemented by at least one or more partners through the integration of two or more actions and KERs.

4. Business models for systemic innovation and innovation with societal impact

4.1 Value proposition of co-creation

Co-creation has become a popular approach to developing collaborative processes, especially in research and innovation (R&I) initiatives that consider end-users and target audiences to be actively involved in the development of new products, services, processes and systems (Tanev, Limerick & Stuedahl, 2015). These processes involve co-design and co-production that can be grounded on the principles of social and participatory innovation. In the configuration of the co-creation practice in SISCODE, primary emphasis is made on the service and process innovation while the product innovation is secondary. The services are the type of solutions that are fluid and determinate, and can bring about the transformation of organisational culture (social values and norms) when developed and integrated into the design of organisational systems. The complete overtake of such practice takes time and capacity-building. That is why the systemic approach to innovation is relevant and co-creation has a future to set the foundation of responsible and inclusive design. European R&I frameworks are nowadays more oriented and focused on co-design and co-production of systemic innovation and take notice of design elements when requesting from organisations and networks to apply for certain calls and initiatives. At the European scale, co-design has been already embedded in the governing structures, hence, mostly has been connected to the consultation and feedback processes on the new action plans[9], policies and strategies of the European Commission. Co-creation practice also proved to be effective in involving all relevant stakeholders in the development process of innovation, namely in operationalising Responsible Research and Innovation. Co-creation is not an efficient approach by default – it may demand more resources than available, e.g. in instances when time as a key factor is not thoroughly considered and becomes a precondition for continuation of co-creation processes.

In SISCODE, ten pilots and 21-month long co-creation journeys demonstrated the value of co-creation among the individuals, collectives and organisations that acquired new

[9]Action plan for Social Economy: https://ec.europa.eu/info/law/better-regulation/have-your-say/initiatives/12743-EU-action-plan-for-social-economy (Accessed 12 April 2021)

competencies through active participation and determination to innovate solutions for the context-dependent societal issues, social needs and social value creations. All of these issues were addressed through stakeholder and citizen engagement. Consequently, they resonate with the topics of Responsible Research and Innovation such as citizen science, public engagement, open innovation and science, among others. Even if the longevity of the term Responsible Research and Innovation is prudent to an uncertain future, the concept is sound and integrated into the co-creation of innovation led by responsible and inclusive design, according to the SISCODE real-life experimentation in ten different locations/regions/countries.

4.2 Co-creation ecosystems

Co-creation ecosystems are usually initiated and co-facilitated by their creators. Nevertheless, in their nature, they are compelling to the multi-stakeholder engagement and cannot exist without it. The development of such ecosystems can be a continuous and long-lasting effort from its co-creators. Making co-creation ecosystems sustainable is possible by assembling it with the clarity of its purpose, shared mission and meaningful engagement of everyone involved. The potential of such emerging ecosystems is that they are disrupting traditional boundaries of cooperation between different stakeholder groups that weren't previously collaborated to a large extent (Ketonen-Oksi & Valkokari, 2019). They are also fragile and prone to becoming unstable due to the socio-economic and political changes of the environment and context in which they were created. Without persistent co-moderation the co-creation processes may arise and disappear on different occasions and instances, depending on the needs and requirements for which they were co-constructed.

4.3 Culture of innovation in co-creation and RRI

The culture of innovation with co-creation value is becoming mainstream. The uptake of such practice is preconditioned by the ability of individuals, organisations and collectives to apply existing know-how and use of their resources. The experienced co-creation practitioners are important multipliers that each co-creation ecosystem should have in its inception. Their mentoring and co-facilitator role is essential for faithful uptake of co-creation and design methodologies. SISCODE has formed a pool of professionals who were providing capacity-building sessions at the beginning of co-creation journeys. After 21-month of experimenting, the main ambassadors of such practice are the ten co-creation labs

(fab labs, living labs, and science centres and museums) who now have the capacity to participate in the multiplier events among their local/regional alliances and the SISCODE networks (Fab Lab Network, Ecsite, ENoLL).

Other SISCODE partners, such as academic, research, and business organisations have also enriched their understanding and contributed to developing the co-creation methodologies, methods and tools and have tested them on different occasions such as the workshops with policy makers, CoRRI Forum cycles of workshops, local events and workshops in other EU projects, as well as at the SISCODE final conference.

The culture of innovation in SISCODE depended a lot on the openness and responsiveness of the local stakeholders and alliances in each of the pilots, yet, it was enhanced by the partners' ability to have ongoing dialogue and reflections between researchers, practitioners and business consultants on the approach and practice of co-creation and RRI.

The SISCODE culture of innovation created an opportunity for each project partner to develop new modes of practice that can be applied within their departments, organisations and networks external to SISCODE. In different words, SISCODE created a favourable atmosphere for the institutionalisation of co-creation practice in each of the organisations, depending on their interests and needs.

4.4 Reliable resources and infrastructures of co-creation

From 2014 to 2020, the Science with and for Society (SwafS) calls[10] supported the projects that tackled and still tackle RRI, including SISCODE, and have been co-designing and co-producing an extensive number of methodologies, tools, repositories, courses, residential and online activities and multiplier events. The credibility of some of these resources is high as they were exploited in the successive RRI projects. However, there is no overall systematisation of these resources and evaluation of their scalability potentials in the exploitation by other EU-funded projects than RRI.

SISCODE has produced and appropriated existing operational and analytic models, design methods and tools, training and coaching sessions including a Massive Open Online Course

[10] Link: https://ec.europa.eu/programmes/horizon2020/en/h2020-section/science-and-society (Accessed 23 April 2021)

(MOOC), a learning hub, and other types of repositories that are indispensable resources for anyone interested in co-creation and RRI, regardless of their experience maturity. Besides, the 17 partners of which 10 are the labs, count with a different type of expertise and infrastructure that should be taken into consideration when developing service-based business models (Table 3).

TABLE 3 - EXPERTISE AND INFRASTRUCTURE PER TYPE OF ORGANISATION

Type of organisation	Expertise and infrastructure per type of organisation
Academic and research organisations	**Expertise:** action research, science-technology-and-innovation policy design, monitoring and assessment of co-creation, translation of practice-based knowledge to scientific publications, design-led innovation with societal impact, participatory governance and democratisation of governance processes, theoretical approach to developing and sustaining ecosystems of co-creation, synergies with other EU and RRI projects. **Infrastructure:** multi-disciplinary teams of professionals experienced in co-creation, RRI and social innovation; scientific community and networks that benefit from open and citizen science.
Labs	**Expertise:** stakeholder engagement at the micro scale, prototyping and scale of solutions at the local/regional levels, use of design methodologies, methods and tools for co-creation practice, expertise in local and global community building and hands-on approach to open innovation via prototyping methods. **Infrastructure:** physical spaces in which co-creation can be planned and put into practice, teams of professionals who are the multipliers/SISCODE ambassadors of co-creation journeys; open innovation platforms to disseminate and share expertise.
Networks	**Expertise:** overall understanding of co-creation and perspectives from the angle of their members (i.e. SISCODE ambassadors); synergies and alliances on disseminating and exploiting SISCODE legacy in future events and for the capacity-building of other members with the support of the SISCODE ambassadors; communication and dissemination,

Type of organisation	Expertise and infrastructure per type of organisation
	coaching and training. **Infrastructure:** lab members that have participated in SISCODE and have the know-how on co-creation and RRI practice; participatory annual events, working groups, and other features relevant for labs' further development.
Business and consulting organisations	**Expertise:** use of design tools in project management, exploitation and business modelling; cooperation with the European and regional policy makers; overall understanding of co-creation and RRI. **Infrastructure:** support and consulting services, access to a wide range of stakeholder groups at the European level and beyond.

5. Co-design of business models and exploitation networks

This chapter sets forth three service design briefs describing the key elements and attributes of the services:

- Knowledge-transfer and capacity-building by the labs and their networks;
- Consultancy for local and regional policy makers on the integration of co-creation and RRI in public sector innovation; and
- Operationalisation and institutionalisation of co-creation through CoRRI Forum.

These services are a derivation of the actions which were developed as part of the exploitation plan for the project. In addition, the services are based on the expectation to sustain co-created *modus operandi* of SISCODE, and ensure that relations, dynamics of co-creation, and all resources and infrastructures are put into practice post-project. To concisely project the overall process carried out to develop the three services below, the following steps were taken:

a) ***Implementation of actions and development of exploitable results.*** Each WP developed a set tangible and intangible results such as deliverables (new knowledge), toolkits and models (methods and tools), co-creation and training sessions (activities), co-creation journeys and prototypes (innovative solutions), partnerships and networks (synergies and alliances).

b) ***Assessment of exploitable results and bracketing of the project's 14 key exploitable results.*** SISCODE had produced 53 exploitable results of which 14 are key exploitable (

d) Table 4). The overall analysis and selection of key exploitable results is presented in D6.2.

TABLE 4 - 14 SISCODE KEY EXPLOITABLE RESULTS IN THEIR CLUSTERS

Clusters of Key Exploitable Results (KER)	KER	Titles of KERs
New Knowledge	KER1	*D2.2 Case studies and biographies*
	KER2	*D3.5 Assessment report*
	KER3	*D4.1 Design for Policy Making*
	KER4	*D6.3 CoRRI Network*
Methods and tool	KER5	*Co-creation Journey Model*
	KER6	*Manifesto*
	KER7	*Massive Open Online Course*
	KER8	*SISCODE Co-creation Journey Toolbox*
	KER9	*SISCODE Learning Hub*
	KER10	*Tips and Tricks for Responsible Research and Innovation*
	KER11	*Interactive Guidebook*
	KER12	*Co-design Canvas*
Synergy approaches	KER13	*CoRRI Forum*
	KER14	*Transnational system of co-creation labs*

e) ***Collection and evaluation of the partners' individual exploitation plans for post-SISCODE.*** A form was used to collect the partners' exploitation plans for the 14 KERs looking at the channels, target audiences and synergies which would be used in their exploitation and the expected impact.

f) ***Evaluation of the KERs and partners' exploitation plan for the development of the exploitation strategy plan.*** The exploitation plans of each partner were collectively

evaluated and matched to form 11 actions that would exploit a collection of the KERs through different activities (Table 5). The 11 activities were further analysed and clustered to form the three services based on their complementarity to be implemented simultaneously by one or more partners and exploit multiple KERs at once.

TABLE 5 - ACTIONS EXTRAPOLATED FROM THE EXPLOITATION STRATEGY PLAN FOR SISCODE

Actions	
A1	Dissemination of exploitable project results
A2	Implementation of training and capacity-building workshops
A3	Fostering synergies with different initiatives
A4	Implementation of permanent virtual access points to KERs
A5	Publish results in scientific and non-scientific publications
A6	Completion and dissemination of new KERs
A7	Development of informative and training materials
A8	Contribute to the sustainability and exploitation of CoRRI
A9	Conduct consultancy and other services (e.g. lectures)
A10	Apply knowledge and information in other EU projects
A11	Jointly implement activities (workshops, webinars, info-sessions)

g) ***Matchmaking between actions and expertise of the partner organisations.*** Table 6 shows an outlined attempt to matchmake the expertise of SISCODE partners and exploitation actions that promise concrete offer for further capacity-building of individuals (i.e. knowledge, skills, values and attitude), organisations and alliances that necessarily do not have extensive experience in co-creation and RRI. Therefore, in the table below the selection of exploitation actions and target audiences is taken into consideration.

TABLE 6 - MATCHMAKING BETWEEN ORGANISATIONS AND EXPLOITATION ACTIONS

Type of organisation	Exploitation Actions (primary set)	Target audience / Service end-users
Academic and research organisations	• Implementation of training and capacity-building workshops (A2) • Publish results in scientific and non-scientific publications (A5) • Conduct consultancy and other services (e.g. lectures) (A9)	• Students and early-stage researchers • Research community • EU projects • Local and regional policy makers • Education community outside of academia
Labs	• Implementation of training and capacity-building workshops (A2) • Conduct consultancy and other services (e.g. lectures) (A9) • Possible project concept and project proposals (A10)	• Other labs, practitioners, local and regional policy makers and their communities
Networks	• Implementation of training and capacity-building workshops (A2) • Conduct consultancy and other services (A9) • Jointly implement activities (workshops, webinars, info-sessions) (A11) • Possible project concept and project proposals (A10)	• Potential-members and member organisations (including SISCODE labs) and their communities
Business and consulting organisations	• Conduct consultancy and other services (A9) • Contribute to the sustainability and exploitation of CoRRI (A8) • Apply knowledge and information in other EU projects (A10)	• Research and Innovation community in the context of EU projects (researchers, practitioners, civil society organisation representatives, networks, policy makers, entrepreneurs)

h) ***Use and adaptation of the service design tools.*** WP6 leader tailored the Business Model Canvas and Customer Journey tools and applied them in the development of value creation and scenarios of the prototyping phase of the innovative solutions in the SISCODE co-creation journeys (Fig 5). These tools were adapted and utilised in the co-design of the SISCODE service-based business models. Therefore, each service brief is outlined through the value proposition and co-creation journey for scalability of the service.

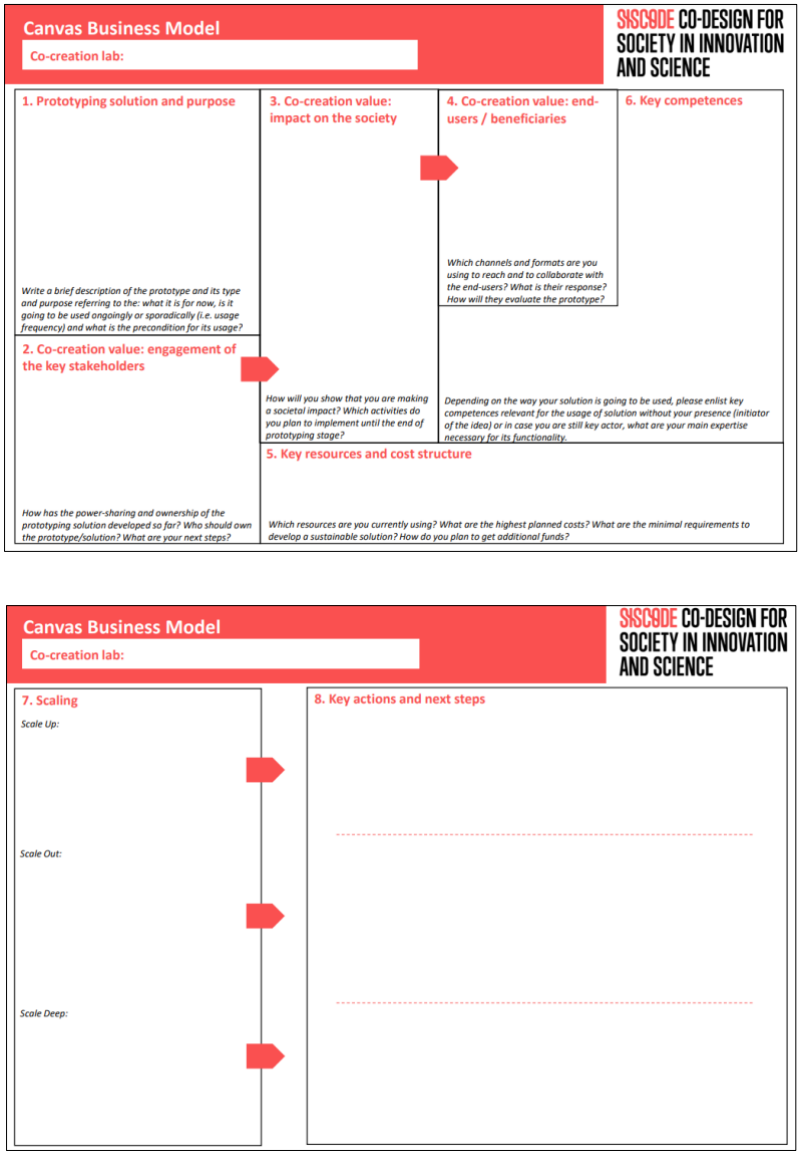

FIG 5 - THE BUSINESS MODEL CANVAS OF THE SISCODE CO-CREATION JOURNEY DEVELOPED BY WP6

The following subchapters illustrate the three service briefs that are co-designed as the service-based business models. The overall goal of this section is to describe each of the

services so that SISCODE partners can more easily understand the values, actions, key issues, factors, and success indicators, among others when considering to develop and implement them individually or in partnership. The service briefs contain three fiches each illustrating the different aspects of the business model: value proposition, feasibility of service, and sustainability.

5.1 Design brief of service 1: Knowledge-transfer and capacity-building by the labs and their networks

This service is designed to apply the knowledge and know-how acquired by the partners, particularly the 10 labs and three networks, to increase familiarity with appropriate co-creation methodologies among various stakeholders. Building capacity for implementable co-creation in RRI and STI policymaking is one of the main objectives of SISCODE. The labs have relevant role in multiplying practice-based knowledge to other labs, practitioners and their communities. The labs have gained a substantial amount of knowledge and know-how on the application and adaptability of the SISCODE co-creation journey methodology and its tools. They are first-hand resource in delivering multiplying events. The networks are an ecosystem in which these multiplying events can be developed and implemented. Therefore, this service aims to ensure that the labs and networks jointly implement capacity-building activities for target audiences interested in adapting the journey for their own co-creation processes or simply acquiring knowledge on the subject. This service is two or more series of activities designed, organised and implemented by the labs and networks as a complete package/programme to train on the application of the SISCODE co-creation journey. The activities can come in several forms depending on the nature of the partners' organisation and their capacity to organise the activities. These activities can be workshops, webinars, info-sessions, lectures, online or on-site training and other capacity-building exercises.

This service mainly targets the stakeholders that have the capacity and resources to enact co-creation journeys such as the innovation communities, other labs and their representatives, potential members of networks and private and public businesses (Fig 6).

FIG 6 - TARGET STAKEHOLDERS THAT WOULD BE INTERESTED IN SERVICE 1

In the following text, the service is defined through a definition of its value proposition (Table 7), feasibility assessment (Table 8) and the levels of sustainability (Table 9).

5.1.1. Business Model Canvas: Value proposition

TABLE 7 - BUSINESS MODEL CANVAS OF SERVICE 1

Service 1	**Knowledge-transfer and capacity-building**
Key topics	According to SISCODE, the co-creation journey is developed and implemented in four phases: context analysis, reframing of problem, envisioning of alternatives and prototyping and development. Some examples of the topics that can introduce co-creation journey are: ● *Introduction to co-creation journey (conceptual framework)* ● *Introduction to the development of co-creation ecosystem based on the principles of co-creation as promoted by SISCODE (through an example of the case study of one of the co-creation labs)* ● *Pitfalls and barriers to innovation with societal impact when applying co-creation practice (learning outcomes from ten co-creation labs)*

Service 1	Knowledge-transfer and capacity-building
	• *Opportunities and strengths of co-creation practice (learning outcomes from ten co-creation labs)* • *Use of previously identified topics and interests of labs and other SISCODE target audiences such as co-creation online[11,12,13,14], creation of synergies with similar/complementary initiatives[15], transparency in communication[16], engagement of policy makers in co-creation[17], open innovation and science communication[18].*
Exploitation actions	From the 11 actions, this service encompasses seven of them. The service envisions implementation of at least two or more of the actions below in one activity. The actions have been classified into two classes as 'primary' and 'secondary' set of actions. In order to ensure the activities have tangible impact in the community and deliver relevant and resourceful information/knowledge/skill, the primary set were identified as the leading action(s) to implement with the support of the secondary set. That entails the service cannot be seen as 'knowledge-transfer and capacity-building' if it does not have one or more of the primary actions. <u>Primary set:</u> • *Conduct consultancy and other services (e.g. tutorials)* • *Implementation of training and capacity-building workshops*

[11] Link: https://siscodeproject.eu/article/first-corri-workshop-context-analysis/ (Accessed 28 April 2021)
[12] Link: https://siscodeproject.eu/article/second-corri-workshop-problem-reframing/ (Accessed 28 April 2021)
[13] Link: https://siscodeproject.eu/article/third-corri-workshop-envisioning-alternatives/ (Accessed 28 April 2021)
[14] Link: https://siscodeproject.eu/article/fourth-corri-workshop-development-and-prototyping/ (Accessed 28 April 2021)
[15] Link: https://siscodeproject.eu/article/lets-create-synergies/ (Accessed 28 April 2021)
[16] Link: https://siscodeproject.eu/article/transparent-communication/ (Accessed 28 April 2021)
[17] Link: https://siscodeproject.eu/article/engaging-policymakers/ (Accessed 28 April 2021)
[18] Link: https://siscodeproject.eu/article/open-innovation-and-science-communication/ (Accessed 28 April 2021)

Service 1	Knowledge-transfer and capacity-building
	• *Jointly implement activities (workshops, webinars, info-sessions)* • *Possible project concept and project proposals* <u>Secondary set:</u> • *Dissemination of exploitable project results* • *Development of informative and training materials* • *Apply knowledge and information in other EU projects*
Co-creation values	**Target audience and end-user engagement:** This service can be offered in various ways: • As an introductory course for the labs and their local partners when developing local/regional co-creation journeys; • As a tutorial/consultancy for single organisations and their representatives; and • As a new way of collaborating in the network as an innovation community of labs and other types of organisations (e.g. new concepts, strategies, among others). **Use of design methods and tools:** SISCODE has co-produced and appropriated a variety of design methods and tools that can be applied in the delivery of this service (e.g. SISCODE Toolbox for Co-creation Journeys; Interactive Guidebook). **Dissemination and impact on society:** For measurement of impact, surveys and assessment forms before and after the provision of the service should be used to gauge the participants' gain from the activities. The end-users should be allowed to directly interact with the service providers within the time frame of the service. In this manner, the end-users are also contributors to capacity-building as they bring new knowledge and observations or skills to the process, especially in interactive and grouped activities with multiple target audiences.

Service 1	Knowledge-transfer and capacity-building
Key resources	The key resources for the service include all the KERs in the most recent formats, human resources (trainers and facilitators) and other types of resources necessary to conduct the actions (e.g. time, space, means, support platforms and tools for engagement). A strong connection is also needed to create a substantial base of audiences to acquire the service. This is a potential critical resource that can be supplied by the networks which already have a large number of stakeholders in their organisations.
Key competencies	The competencies needed to implement this service are not limited to the skills and knowledge gained through SISCODE co-creation journeys but also through other daily professional activities that encourage culture of innovation through co-creation. The partners need to be fully aware of the KERs potentials and how to integrate them into the process of 'uptaking co-creation journey methodology'. The KERs should be studied and their content/technicalities/functionalities should be discussed in development stage of service. Adaptability and flexibility with using various platforms for the activities are also necessary competencies.
Intellectual Property Rights (IPR)	The service will be provided as part of SISCODE and its legacy plan. The service could be offered as an open access. If so, the suggestion is to license it under the Creative Commons 4.0 (https://creativecommons.org/licenses/by/4.0/).

5.1.2 Feasibility of the service

TABLE 8 - ASSESSING THE FEASIBILITY OF SERVICE 1

Indicators	Timeline		
	May - July 2021	**August - October 2021**	**Long-term**
Key issues	Identification of new opportunities in which this service can be integrated Time and effort requirement to tailor SISCODE resources to service design that will address the needs of end-users	Access to SISCODE KERs and other resources Time requirement and availability of service end-users for proper training	Organisation and interest of partners to continue implementing the service
Key factors (internal)	Implementation of joint activities to demonstrate post-SISCODE collaborative spirit and support between the labs and networks	Supply of human and capital resources to organise and implement the service	Time, experts, physical space/virtual platforms, training materials
Key factors (external)	Limited access to resources post-SISCODE Dissemination and outreach to target audiences is slow and not far reaching	Active participation in the activities of the service and continuous engagement to complete the series of activities	Continuous interest in the service Adaptability to cope with changes in the format of the service
Uncertainties	Identification of the opportunity/ies (e.g. Horizon Europe – calls for 2021)	Time constraint to prepare the materials for the service	Disinterest from the partners to continue with the service
Success indicators	Number of activities that follow SISCODE approach and are developed for potential and new members of SISCODE networks Number of activities developed for labs and local communities Number of sessions in which SISCODE co-creation approach was implemented	Number of service end-users that participated in activities of the service Number of support activities developed and implemented within service Service developed as a long-term programme/offer to labs/communities	Service design is iterated and service is provided in continuity according to the identified needs of lab communities/ network members

	in the process of project proposal conceptualisation	Proof of institutionalised co-creation practice in the SISCODE networks	

5.1.3 Sustainability

TABLE 9 - SUSTAINABILITY INDICATORS OF SERVICE 1

Sustainability levels	Indicators
Scale up	The institutionalisation of co-creation practice in SISCODE networks and in the activities provided to its members. Visibility and recognition of co-creation approach by the European policy makers. The institutionalisation of co-creation practice in the long-term in SISCODE co-creation labs. Visibility and recognition of co-creation approach in the local communities in which co-creation is promoted and developed.
Scale out	The service is expanded to other networks and initiatives in Europe and beyond.
Scale deep	The new practitioners that successfully learnt about and applied co-creation journey become trainers and ambassadors and have continued the multiplying effect.

5.2 Design brief of service 2: Consultancy for local and regional policy makers on integration of co-creation and RRI in public sector innovation

This service is designed to secure the integration of co-creation and RRI in public sector innovation, provided by the SISCODE academic and research organisations. The consultancy in its nature is a form of short-term advisory and capacity-building service which results in the transfer of resources in the form of knowledge and skills from the service provider to the service end-user. In this case, the end-users are the organisations of the public sector and

policy makers at a local or regional level, as well as innovation communities that require scientific input (Fig 7). The main objective of this service is to transfer knowledge and know-how to help public sector and innovation communities improve public and citizen engagement in design of public services and new policies.

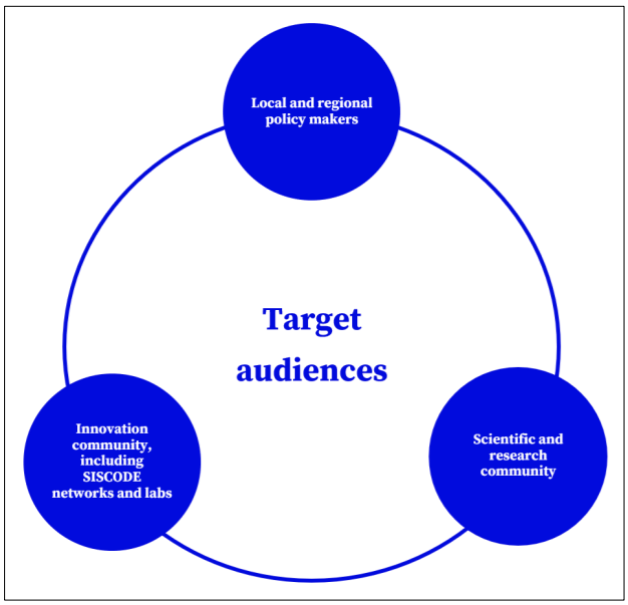

FIG 7 - TARGET STAKEHOLDERS THAT WOULD BE INTERESTED IN SERVICE 2

In the following text, the service is defined through a definition of its value proposition (Table 10), feasibility assessment (Table 11) and the levels of sustainability (Table 12).

5.2.1 Business Model Canvas: Value proposition

TABLE 10 - BUSINESS MODEL CANVAS OF SERVICE 2

Service 2	**Consultancy for local and regional policy makers on integration of co-creation and RRI in public sector innovation**
Key topics	This service can be promoted and offered to any local and regional public organisation that is interested in understanding better how to operationalise co-creation and work more closely with citizens and different types of publics. In addition, the service is valuable as it can offer a methodological approach based on the qualitative SWOT analysis of readiness to integrate

Service 2	Consultancy for local and regional policy makers on integration of co-creation and RRI in public sector innovation
	co-creation in certain department/local initiative. The benchmarking conducted in SISCODE can support the counting benefits of institutionalised co-creation in the local/regional public organisations. This would require SISCODE partners to perform a thorough study of the landscape and identification and benchmarking of the topics that would best serve the end-users. Some examples of topics for the activities include: ● *The benefits and downfalls of public engagement in local policymaking* ● *Application of co-creation in policymaking as a standard procedure and how bottom-up approaches can be implemented* ● *Influencing the European innovation ecosystem and common approaches to innovation to adopting co-creation, based on the case studies[19] elaborated in SISCODE*
Exploitation actions	From the 11 actions, this service encompasses four. The actions have been classified into two classes: the primary action is identified as the leading action to implement and in addition, the actions in the secondary set can be integrated into the primary action. Primary action: ● *Conduct consultancy and other services (e.g. lectures)* Secondary set: ● *Publish results in scientific and non-scientific publications*
Co-creation values	**Target audience and end-user engagement:** The service can be provided to the individual organisations and their representatives

[19] SISCODE. D2.2: Case studies and biographies: https://siscodeproject.eu/wp-content/uploads/2020/11/D2.2-Case-Studies-and-Biographies-Report_small.pdf

Service 2	Consultancy for local and regional policy makers on integration of co-creation and RRI in public sector innovation
	or the regional networks. At the same time, the service can be offered to the EU-funded projects that employ a similar approach to SISCODE and/or have policy makers as partners or target audiences. The engagement of the target audiences will be done on a one-to-one basis in which either the target audiences contact the service providers or vice versa. Depending on the organisational resources of the partners, the consultation can be done in different formats such as online or on-site, with or without demonstration of tools and single or grouped interactions. **Use of design methods and tools:** Based on what has been provided by SISCODE, several of the KERs can be used for demos. The partners providing the service should study and choose the appropriate tools for the consultation. In case of need, support from other partners such as the labs and networks should be requested. **Dissemination and impact on society:** Narrowing the gap between academia and public sector innovation is the key impact of this service. Through knowledge transfer and educated advice, the public sector would benefit through the acquisition of reliable applications and methods that would be supported by academic research from the project and the service providers.
Key resources	The key resources from the project that can be utilised in this service are KER1, KER2, KER3, KER 4, KER5, KER 6, KER 7, KER 8, KER 11, KER 13 and KER 14. However, human resources from the partners that provide the service will be needed. These resources would include time, research efforts and means of communication with the end-users.

Service 2	Consultancy for local and regional policy makers on integration of co-creation and RRI in public sector innovation
Key competencies	The service providers are expected to be fully aware of the results and outcomes of the project, especially pertaining to the findings of WP1, WP2, WP3, WP4 and WP5. The KERs that are used for the service should be critically analysed and their application must be understood in order to provide the service (e.g. the service provider should have knowledge of how they were used in the project and the outcomes). Moreover, it is vital that the service provider has an academic and research background in the field of co-creation, social innovation, RRI and STI policymaking.
Intellectual Property Rights (IPR)	The service will be provided as part of SISCODE and its legacy plan. The service could be offered as an open access. If so, the suggestion is to license it under the Creative Commons 4.0 (https://creativecommons.org/licenses/by/4.0/). In case the service is sub-contracted, the service provider should identify another type of licensing.

5.2.2 Feasibility of the service

TABLE 11 - ASSESSING THE FEASIBILITY OF SERVICE 2

Indicators	Timeline		
	May - July 2021	**August - October 2021**	**Long-term**
Key issues	Identify opportunities to develop and implement the service Define preconditions for implementing the service (required resources) Promotion of the service among new EU projects and local/regional policy makers	Provision of resources from partners for the service	Updating of tools and knowledge acquired through the project as it might become outdated as new knowledge is uncovered
Key factors (internal)	Identification of the topics that partners can provide the service for and the individuals who would provide the service	Supply of human and capital resources to organise and implement the service	Time, experts, physical space/virtual platforms, training materials
Key factors (external)	Dissemination and outreach might be time-consuming and a lot of work might be required to find target audiences, especially outside of the EU-funded projects		Continuous interest in the service Satisfaction with the services
Uncertainties	Not enough time to prepare action plans and evaluate the process and create a safe number of target audiences to contact	Time and resource constraint to prepare and organise the service provision Administrative barriers within universities to provide service at the local/regional level	Sufficient demand from local/regional policy makers Disinterest from the partners to continue with the service
Success indicators	Action plan from one or more of the academic partners to implement at least one service in the coming year SISCODE partners who	Satisfaction of the service end-users and additional requests for more services SISCODE partners who work directly with	Repetition of the service by multiple partners for the second and third year post-SISOCODE

	work directly with local, regional and international policy makers recommend this service and collaboration with research and academic partners	local, regional and international policy makers recommend this service and collaboration with research and academic partners	

5.2.3 Sustainability

TABLE 12 - SUSTAINABILITY INDICATORS OF SERVICE 2

Sustainability levels	Indicators
Scale up	Representatives and departments of various public organisations are aware of benefits to embedding co-creation in public sector innovation and development of new services and policies.
Scale out	Reach new target audiences and extend consultancies to different sectors of public administration and geographical scope.
Scale deep	The policy makers under consultancy could provide recommendations to their units and departments on how to transform their public services into more inclusive and participatory experiences. A sign of proof of the institutionalisation of co-creation in units, departments and organisations should appear.

5.3 Design brief of service 3: Operationalisation and institutionalisation of co-creation through CoRRI Forum

This service is designed to facilitate operationalisation and institutionalisation of co-creation by the research and innovation community in the context of local and EU initiatives. Within SISCODE, the service is conducted through CoRRI Forum that is co-moderated by the business and consulting organisations, whereas in the scenarios of upscale can be exploited

by any organisation with the wide multi-actor and cross-sectoral reach, and of moderate expertise in co-creation and its values. The scale of service may vary and it can be designed as a grass-root or international initiative. The main precondition is to involve early-stage and moderate/experienced service end-users so that the exchange and peer learning is secured. The two main objectives of this service are:

- **the operationalisation of co-creation:** the service offers online co-creation activities to build capacities of early-stage researchers and practitioners of co-creation on how to apply this approach in their real-life practices; to experienced researchers and practitioners provides a reflective space for peer exchange and sharing of examples of practices in order to discuss and measure the effectiveness of co-creation;
- **the institutionalisation of co-creation:** provision of support to service end-users in understanding necessary steps and procedures to operationalising co-creation; ensuring the discussion and design of embedment of such practice into all 'pores' of structures of the end-user teams, organisations, networks and alliances (e.g. EU projects).

In SISCODE, this service is channelled through CoRRI, a community of practice that has been conceptualised, prototyped, implemented and tested in the SISCODE project. Throughout its journey, CoRRI has engaged policy makers, academics, students, researchers, EU projects, RRI initiatives, and entrepreneurs, among others (Fig 8). These target audiences of CoRRI were not only the participants of the different activities but potentially the long-term co-owners and co-implementers of the initiative.

FIG 8. TARGET STAKEHOLDERS THAT WOULD BE INTERESTED IN SERVICE 3

In the following text, the service is defined through a definition of its value proposition (Table 13), feasibility assessment (Table 14) and the levels of sustainability (Table 15).

5.3.1 Business Model Canvas: Value proposition

TABLE 13 - BUSINESS MODEL CANVAS OF SERVICE 3

Service 3	**Operationalisation and institutionalisation of co-creation through CoRRI Forum**
Key topics	The key topics of service follow the topics identified by the SISCODE partners and service end-users in one of the CoRRI's sustainability workshops (see chapter 3). They are prone to sensitisation of co-creation as an approach, as well as they, are transversal concepts that address certain issues that can be overcome by the use of co-creation: ● *Co-creation practice for RRI* ● *Social inclusion* ● *Circular economy* ● *Public engagement in policy making* ● *Building communities for more sustainable cities*

Service 3	Operationalisation and institutionalisation of co-creation through CoRRI Forum
	• *Institutionalisation of co-creation* • *Dialogue between researchers and practitioners* • *Design for policymaking and implementation* • *Prototyping of co-creation journeys using the SISCODE methodology* • *Validation of the innovative solutions in real life* • *Recommendations/Implications on co-creation for RRI* • *Making links between programming EU initiatives and the real-scenario implementation levels* These topics serve to develop working groups for which different type of activities can be developed.
Exploitation actions	From the enlisted 11 exploitation actions, five of them correspond to this service: <u>Primary actions:</u> • *Contribute to the sustainability and exploitation of CoRRI (A8)* • *Conduct consultancy and other services (e.g. tutorials) (A9)* <u>Secondary actions:</u> • *Fostering synergies with different initiatives (A3)* • *Apply knowledge and information in other EU projects (A10)* • *Jointly implement activities (A11)*
Co-creation values	**Target audience and end-user engagement:** CoRRI Forum is co-designed and co-produced on the principles of co-creation journey, it is open and of value to anyone who has an interest in key topics and envisioned actions promoted by the community and its members. **Use of design methods and tools:** The service will provide mentoring to the practitioners interested in design approaches to innovation and co-creation so that they can learn how to select, appropriate and utilise design methods and tools in their real-life

Service 3	Operationalisation and institutionalisation of co-creation through CoRRI Forum
	and EU initiatives. Many methods and tools can be repeatedly utilised in the same and different phases of the co-creation journey. **Dissemination and impact on society:** The service will promote the dissemination of results shared and co-produced within the CoRRI Forum. The moderated exchange and feedback sessions can help end-users to understand each other's perspectives. For example, design researchers can utilise this service to better understand how other practitioners apply design in their practice and support them in appropriation of the tools and/or provision of consultancy to design more complex co-creation initiatives.
Key resources	The key resources from the project that can be utilised in this service are KER1, KER2, KER3, KER 4, KER5, KER 6, KER 7, KER 8, KER 10, KER 11 and KER 14. The main necessities are the human resources, equipped professionals who can co-moderate meetings and exchange and feedback sessions, as well as coordinate groups in their peer mentoring and coaching. These individuals can be mobilised from the CoRRI community of practice in which four roles are distinguished: ● Co-moderators/administrators of the community ● Ambassadors ● Group co-facilitators ● Supporting experts. As the community is based on virtual collaboration, the requirement is to have concrete communication channels to implement service, such as mailing list, Slack channel for thematic discussion/organisation, shared Google folder with the upcoming meetings and minutes, storage platform for the repository, as well as available platforms for online collaboration and implementation of online activities (Miro/Mural, Zoom/Google Meet).

Service 3	Operationalisation and institutionalisation of co-creation through CoRRI Forum
Key competencies	Coordination and know-how in the management of community/network; Facilitation, training and coaching skills; Know-how in use of online collaborative tools for the meeting and events; Affinity for multi-stakeholder and cross-sectoral collaboration; Experience in stakeholders' engagement and community building;
Intellectual Property Rights (IPR)	The service is provided as part of SISCODE and its legacy plan. The service is open access and can be replicated by anyone. It is licenced under the Creative Commons 4.0 (https://creativecommons.org/licenses/by/4.0/).

5.3.2 Feasibility of the service

TABLE 14 - ASSESSING THE FEASIBILITY OF SERVICE 3

Indicators	Timeline		
	May - July 2021	**August - October 2021**	**Long-term**
Key issues	Definition of an action plan Prioritisation of the needs (topics and key events) Identification of group co-facilitators	Prototyping and implementation of meeting and events Systematisation of the available resources Prioritisation of the needs (topics and key events) Evaluation of the implemented activities	New procedures for optimisation of the service Matchmaking tool and pool of ambassadors, experts and group co-facilitators Optimisation of the volunteer-professional management Monitoring and evaluation

Key factors (internal)	Availability of CoRRI's members in co-moderation of CoRRI and co-facilitation of the groups Matching needs and available expertise among the CoRRI members	Ability to reproduce and sustain co-creation journey methodology in CoRRI	Dynamics of collaboration and innovation through co-creation Culture of research and innovation
Key factors (external)	Availability of open-source platforms for larger audiences (limitation of free and trial versions)	Availability of open-source platforms for larger audiences (limitation of free and trial versions) New funding opportunities to support the development of new initiatives as joint efforts of different CoRRI members	New funding opportunity to support development of CoRRI's structure
Uncertainties	Sustainability through volunteering Evaluation grid to monitor effectiveness of CoRRI on creating new synergies and encouraging peer exchange	Sustainability through volunteering and potential disinterest to continue	Sustainability through volunteering and potential disinterest to continue
Success indicators	Number of new members Number of working groups Number of meetings Number of joint events Number of participants in the events Number of ambassadors	Number of meetings Number of joint events Number of participants in the events Number of returning participants and how many of them became the members of CoRRI Repository/platform available to anyone	Awarded funding Number of meetings Number of joint events Number of members New joint initiatives by members Repository/platform available to anyone Expressed satisfaction

	Expressed satisfaction by the members	Expressed satisfaction by the members	by the members Presence of official website and social media

5.3.3 Sustainability

TABLE 15 - SCALABILITY INDICATORS OF SERVICE 3

Scalability levels	Indicators
Scale up	The service can contribute to and make an impact at the European level by providing recommendations on inclusive and responsible collaborative research and innovation practice and policy making.
Scale out	The service can be utilised by SISCODE networks to extend their services and member engagement and promote stronger peer exchange and collaboration at the European scale. The service can be utilised by other EU projects to utilise the services of CoRRI and reach to the targeted organisations/communities.
Scale deep	The increased membership of the EU project representatives would encourage integration of co-creation in the working culture of organisations/development and implementation of EU funded projects.

6. SWOT analysis for the SISCODE services

This section contains the SWOT analysis of the three services that has been performed to evaluate significant factors that would affect their implementation in the long-run. These characteristics were derived through the visualisation of the service focusing on its feasibility and relevance in the co-creation ecosystem and for the members of the co-creation communities in Europe (Table 16). The goal of this section is to illustrate the potentialities and shortcomings of the services that should be taken into consideration in the ideation and implementation stages by the providers of the services.

TABLE 16 - SWOT ANALYSIS OF THE SERVICES

Strengths	**Weaknesses**
Profound knowledge and know-how acquired by all partners that can be used transversally in all the services (as primary service providers or supporters)	Many uncertainties about the partners commitment and capacity to provide the resources and have the availability to provide the services
Have a set of highly relevant and applicable KERs that can be used in the provision of the services	Lack of visibility once the project ends and promotion of the services and exploitation actions have to be implemented by the partners
Strong and diverse expertise presented by the partners that can be used to balance the presence of different knowledge and skills for the provision of the services	Lack of in-depth knowledge of the co-creation journeys and their processes among all the partners
Diverse types of activities can be provided for each service that would meet the needs of a wide range of target audiences	
A unique approach to co-creation in the form of the co-creation journey that can be the selling point for the project	
Pool of professionals and organisations with wide range of expertise in co-creation and RRI	
10 labs as SISCODE ambassadors of co-creation journey methodology	

Opportunities	Threats
Creation of stronger collaboration between partners that can be beneficial in the implementation of similar initiatives and actions outside SISCODE Acquisition of new knowledge and methods/tools that would feed into existing results of SISCODE to magnify the impact of the outcomes Provide a long-term exploitation strategy and service-based business models to other projects in social innovation and/or projects emphasising RRI dimensions (e.g. citizen science, public engagement, gender equality, etc.) Create synergies with other members of the co-creation ecosystem that are not involved in the SISCODE project through activities of the services Opportunity to increase the outreach and socio-economic impact of SISCODE through the application of the KERs through a wider network and for a longer period	The partners need to provide resources not funded by the project and thus, would come from external sources that are not definitive and consistent Some of the KERs have not yet been exploited due to being available at the end of the project and the partners will need to experiment them before the real-life applications The quality-of-service provision depends on the overall impression of the end-users. In case the services are only developed in English language, this may discriminate against the involvement of many potentially interested target audiences.

7. Recommendations for other practitioners and researchers on the exploitation of the service business models

These recommendations aim to impart relevant proposals of actions that can and/should be enacted in order to facilitate the provision of the three services. The recommendations are not service-specific, however, give an overall indication of how the SISCODE services as a whole can be delivered effectively and with maximum efficiency. Below are 5 recommendations for uptake and use by all the project partners (Table 17).

TABLE 17 - RECOMMENDATIONS FOR THE EXECUTIONS OF THE SISCODE SERVICES

N.	Recommendations
1	Partners use the time within the project to create working groups to commit to the provision of a service(s) and develop the preliminary action plan.
2	For joint activities, seek a balance among the partners to form a cluster or a working group in order to enrich the activities with deeper knowledge and experiences brought by different backgrounds e.g. partners from academia can partner with labs and networks to bring the perspective of theory and research together with experimentation and practice into the activities of the service.
3	Advocate for the common platform as a repository of RRI projects under SwafS calls, hence, develop a section on design methodologies to operationalise and institutionalise co-creation.
4	Push towards the creation of synergies with target audiences during the interactions with them. Find a way to include anyone interested in the activities not only as spectators or recipients but also contributors. This can help create a wider base of end-users and potential co-implementers in the future activities.
5	The development and implementation of the three services should follow co-creation principles as indicated by the SISCODE working definition.

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