

Landing and Knowledge Inventory

Knowledge creation

(Deliverable 7.2)

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Preface

NEST builds on innovation ecosystems that contribute to the long term systemic change of societal systems involved in health policy and the healthy living of people. We call this the health transition and we view this as a complex, mission driven and long term learning process.

We identified, based on our experience and the literature, four key determinants pivotal for this transition. They are the themes of our Innovation Communities Of Practice (ICOP) and each theme supports the paradigm-shift from the classic regime systems towards a more sustainable and just system. The themes identify and position, they “nest”, themselves in the transition. Develop further the knowledge base, possible actions and methods to do so and offer innovation ecosystems practical support in the development of the specific themes. In the project these are the SIEHLs.

The themes; social business development, reflexive monitoring, engaged community science and knowledge creation are all in a different phase of development and have their own learning process supported by learning questions. The themes are highly interrelated and the ICOPs work on many points together to develop the theme further and to support the SIEHLs efficiently from their demand articulation to the use of methods and instruments.

This landing document shows the different level of development of the themes and their learning questions show the direction for development.

Introduction

Where people interact with each other with the goal of increasing health, they use knowledge and new knowledge will emerge in their interaction. In the past, scientific knowledge has played a major role in this as well as scientific methods for acquiring new knowledge. While this method has been extremely successful, its embrace has also led to a division between groups that are considered to have the right knowledge and methods to unlock knowledge and those that do not. The latter thus find themselves in a position of being excluded as potential creators of new knowledge and receiving only knowledge that they may apply to their situation. Not only does this make the successful application of knowledge much more difficult, but it also ignores the fact that the application of knowledge in a specific context often requires additional knowledge about the specific aspects of that context, or *place-based knowledge*: knowledge that is present among those who co-create the context. The co-creation of knowledge thus requires the active involvement of all those present in a given context and a process that allows them to contribute equally to the creation of new knowledge.

In the context of the EU NEST project, Work Package 7 (WP 7) has the task of creating and running an International Community of Practice (ICOP) supporting 'Knowledge Creation' in the Social Innovation Ecosystems for Healthy Leaving (SIEHLs) of the project. The role of ICOP includes exploring how knowledge is co-created in a SIEHL, who is involved, how this knowledge can be shared and applied beyond the boundaries of a SIEHL. Special attention is given to the political dimension of knowledge creation; the extent to which power plays a role in the recognition of forms of knowledge and the extent to which knowledge is accessible to all participants involved in the knowledge creation process. WP 7 aims to create a framework that participants in a SIEHL can use to make themselves aware of the forms of knowledge present in an ecosystem, how this knowledge is used, how new knowledge is created and how this knowledge can be shared.

Terms and definitions

Social Innovation Ecosystems for Healthy Leaving (SIEHL): a SIEHL represents a dynamic network of stakeholders united to tackle complex social issues, especially those pertaining to promoting healthy living and societal well-being. This ecosystem comprises individuals, communities, organizations, and institutions collaborating to create innovative solutions. It embraces diversity, drawing on a wide range of backgrounds, expertise, and viewpoints.

International Community of Practice (ICOP): the International Community of practice refers to a group of people who share a common interest, profession, or passion and come together to learn from one another, solve problems, and collaborate on shared goals. ICOPs are characterized by their informal nature and focus on peer-to-peer knowledge sharing and collaboration.

Knowledge co-creation: understanding of how people can act under certain conditions to achieve shared goals

Healthy living: Healthy living encompasses a holistic approach to maintaining or improving one's physical, mental, emotional, and social well-being. It involves making conscious choices and adopting behaviors that support overall health and vitality. It encompasses not just physical health, but also mental, emotional, and social well-being. It emphasizes the importance of addressing all aspects of health to achieve a balanced and fulfilling life.

Explicit knowledge: is information that can be clearly documented and easily shared. This type of knowledge is structured and straightforward to share, making it accessible to learn from written documents or verbal communication.

Tacit knowledge or implicit knowledge: in contrast to formalized or explicit knowledge, is knowledge that is challenging to articulate or extract. As a result, it is more difficult to transfer to others through writing or verbal communication.

Knowing-how: alternative description of knowledge that is mostly tacit, but can be explicit, but is used by participants to act.

Knowing-that: knowledge that is the result of a reflexive process on action. This type of knowledge is explicit and can be shared, stored, etc.

Place-based knowledge: refers to the understanding and insights that individuals or communities have about their local environment, culture, and resources. This type of knowledge is often rooted in specific geographical locations and encompasses factors such as local traditions, ecological conditions, and historical contexts.

Constructivist view of knowledge: the idea that knowledge is constructed by participants of a community instead of knowledge that is uncovered or invented. The process of construction of knowledge is collaborative and reflexive.

Models of knowledge creation

Knowledge creation is the result of people working together in their practice. This collaboration can have different goals, including changing or improving this practice, as for example in SIEHLs. In this article, we want to clarify which models of knowledge creation we use to understand this knowledge creation and give participants of SIEHLs tools to promote knowledge creation.

We assume that complex social problems require interactive knowledge co-production and social learning with actors from these societies to arrive at actionable and context-embedded knowledge for social transformation (Schuurman et al. 2024; Wittmayer et al. 2024). This is often based on pragmatist assumptions about the ways knowledge and action inform one another, generating contingent knowledge in a process of action and experimentation (Harney et al., 2016; Popa et al., 2015).

Here we understand knowledge as a social construct as opposed to knowledge as an objectively definable product that can be discovered (Jakubik 2011). Knowledge as a social construct assumes that the process of arriving at knowledge is the main focus in the model of knowledge creation.

Several philosophers have tried to specify the nature of knowledge. Polanyi makes the distinction between tacit knowledge and explicit knowledge (Gourlay 2006). The former is the knowledge

that people possess and enable them to live and work with each other. Some of this knowledge is innate and intuitive. Some of it is also learned and can be made explicit. Explicit knowledge is objective, theoretical and transferable. Put in other words, the two types of knowledge are at the one hand about knowing-how; the procedural knowledge of everyday life that we do not think about but use to live -with each other. On the other hand, it is about knowing-that; knowledge in symbolic forms that can exist independently of individual knowers and is the result of a process of reflection and conscious appreciation (Gourlay 2008. These two forms of knowledge are also present in Dewey's theory of knowledge (Bulle 2018). Dewey argues that in order to construct or to produce knowledge, the knowing-that, there must be a critical community of inquirers that actively engages in critical reflection on their activities (Harney et al. 2016)

More recently, there has been interest in knowledge creation as an essential part of creative organizations. In particular, this has looked at how new knowledge is created and what conditions are needed to do so. One of the most prominent contributions in this field comes from Nonaka (et al.) who, in several publications, from 1995 onwards, has developed a widely supported model for knowledge creation in companies. Nonaka views knowledge as a 'dynamic human process of justifying personal belief towards truth' emphasizing its dynamic aspect. For the process of knowledge creation in organizations, he has developed a model in which he distinguishes three elements; (1) the SECI process in which a conversion takes place from tacit to explicit knowledge, (2) a shared context in which the knowledge creation can take place, called 'Ba' and (3) the resources that are part of the process, inputs and outputs, a moderator etc. (Nonaka 2000).

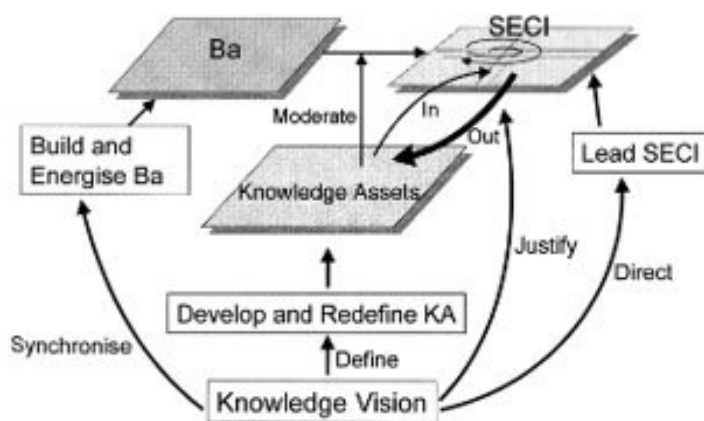


Fig 1: schematic representation of dynamic knowledge creation process (Nonaka et al. 2000)

The SECI process is the dynamic core of Nonaka's model. Here, 'tacit knowledge' is made explicit in social interaction and absorbed back into tacit knowledge through its application in social interaction. This is not a circular process but a spiral one; the knowledge present in the organization increases, broadens and changes. This conversion from tacit to explicit knowledge is criticized by Jakubik (2011) and Gourlay (2006), among others. The core of the criticism is that

tacit knowledge can never be fully converted to explicit knowledge. Reality is not a dichotomy in which knowledge is either tacit or explicit but a duality in which both forms of knowledge can exist simultaneously. Gourlay adds to this critique that in Nonaka's model, explicit knowledge is ultimately labelled 'true' knowledge by managers. These use a predetermined schema about which knowledge might be useful or 'true' for this purpose. The latter criticism fits into a critical discourse in which knowledge equals power. The problems identified by Gourlay and Jakubi fit within the ethical problems surrounding knowledge creation in transformative research as described by Wittmayer et al (2024) which will be addressed later. As we acknowledge the critic on the SECI-process as defined by Nonaka et al, we do, in line with the constructivist view, hold that the heart of knowledge creation is social embedded action. Instead of the SECI-process we choose the Practice Ecosystem Framework from Jakubik as the heart of the knowledge creation process.

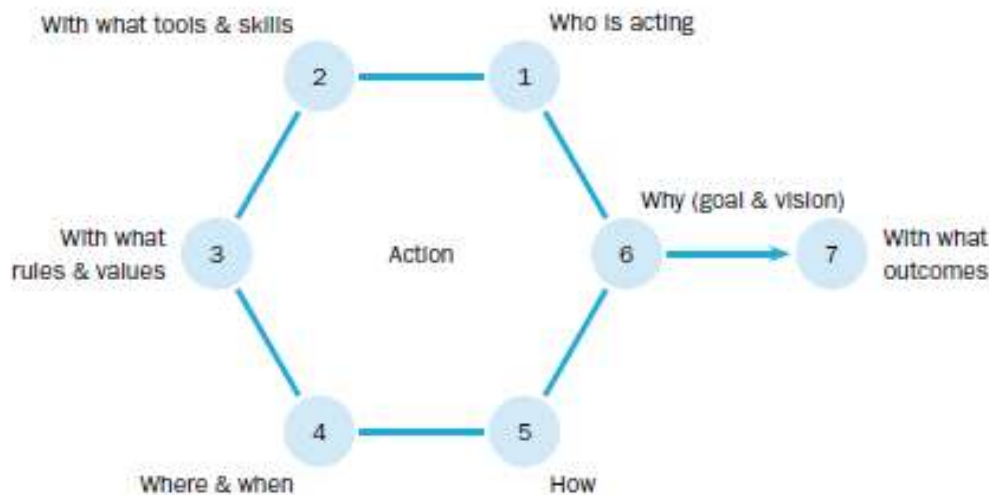


Fig 2. Practice Ecosystem Framework (Jakubik 2011)

In Nonaka's model, the social action in which knowledge is created needs a context that enables it. Nonaka calls this shared context 'Ba' which he divides into four types; the creating 'Ba' in which individuals interact face-to-face with each other, a 'Ba' in which individuals engage in dialogue with the collective, a Systemizing 'Ba' in which knowledge is formalized, shared and stored and an Exercising Ba in which knowledge is put into practice. Nonaka links the types of 'ba' to the SECI process. But even when the knowledge creation process is conceived in terms of a more generalized social action process, a context is needed in which the process can take place. For this reason, Jakubik does not distinguish between the types of 'Ba's but describes a "Ba" as "dynamic knowledge creation spaces" where sensing, acting, feeling, and thinking comes together' (Jakubik 2018). This description of a dynamic context corresponds to what Dewey calls a particulate social and historical context (Hanrey et al 2016). However, Nonaka et al.'s description of the 'Ba's'

provides us with concrete inputs to describe the context in which the action between participants takes place and to question their suitability for knowledge creation.

The third component of Nonaka's dynamic knowledge creation process consists of assets needed to support the process. Again, Nonaka distinguishes four categories linked to the SECI process. These are experimental, conceptual, systemic and routine assets.

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Four categories of knowledge assets (Nonaka and Takeuchi)	
Experiential knowledge assets Tacit knowledge through common experiences • Skills and know-how of individuals • Care, love and trust • Energy, passion and tension	Conceptual knowledge assets Explicit knowledge articulated through images, symbols and language • Product concepts • Design • Brand equity
Routine knowledge assets Tacit knowledge routinized and embedded in actions and practices • Know-how in daily operations • Organizational routines • Organizational culture	Systemic knowledge assets Systemized and packaged explicit knowledge • Documents, specifications, manuals • Database • Patents and licenses

Fig 3. Four categories of knowledge assets (Nonaka et al. 2000)

Nonaka's model provides some concrete tools for looking at knowledge creation in SIEHLs. In doing so, we need to bear in mind that SIEHLs can take very different forms and try to achieve different goals in different ways. However, the starting point is that in a SIEHL, people work together with a particular, shared mission. The collaborating people may have different backgrounds, and thus bring with them different forms of knowledge (Wittmayer et al. 2024). With Jakubik (2018), we argue that it is precisely in the interaction of working together towards a particular goal that knowledge is mobilized and created. How this happens is an important and still fundamental question. Both Nonaka and Jakubik provide models by which this interaction can be examined in a targeted way. A study of Living Labs (Lehmann 2015), a specific form of innovation through co-creation, shows that the models described above are well applicable to identify at which stages of the co-creation cycle and by which stakeholders' knowledge is applied or created.

Ideally, we consider the innovation in a SIEHL as a form of co-creation and thus also the knowledge creation that takes place in it. Pearce et al (2020) defined this co-creation for specific health interventions. New knowledge can emerge from deliberate implementation of a designed intervention combined with a rigorous research design on how it works. Although this view seems more in line with the –old school- scientific approach to arrive at ‘true’ knowledge in its elaboration, it combines methodological rigor with equal contribution by all participants of a

community. Co-creation of knowledge according to Pearce et al. only occurs when it results from four collaborative processes; : (1) generating an idea (co-ideation); (2) designing the program or policy and the research methods (co-design); (3) implementing the program or policy according to the agreed research methods (co-implementation), and (4) the collection, analysis and interpretation of data (co-evaluation). In their model they seem to be primarily looking for the creation of objectifiable knowledge about the efficacy of interventions. The main message is that co-creation should take place in all phases of an intervention and that the methods used to jointly generate new knowledge should be reliable.

In all theories or models that look at the creation of knowledge from a constructivist viewpoint, it is important that all participants can contribute to this equally. In practice, this turns out to be very difficult. There is a big chance that certain forms of knowledge remain underexposed. Where people work together, there is usually also a political reality in which power and interests play a role. Several authors point out that this is no different with knowledge creation. Not all participants in a SIEHL are equal and often not equal. In their contribution to knowledge creation, it is therefore quite conceivable that not all participants can play an equal role. The weight of scientific knowledge or practical knowledge among lay people may be weighed differently by different participants. Depending on the power these participants can exercise in the dynamic knowledge creation process, in other words, the extent to which their voices are heard, some views may prevail, and others disappear. In the context of the SIEHL, inherent power inequalities must therefore also be considered. Wittmayer et al. (2024) describes these problems in detail as ethical issues when doing Transformative Research. These ethical problems arise along three dimensions; the axiological dimension in which issues arise about who determines what research is done and why that matters. In many cases, the demand to improve a situation does not arise from below but is determined by administrative or scientific elites. In the ontological dimension, ethical questions arise about who determines which reality is true. In the epistemological dimension, questions arise about whose knowledge systems and ways of knowing are included, privileged or legitimized in TR practice. The question then is whether the scientifically correct, the socially robust or the practicable knowledge will win. Precisely because these power differences always exist in the context in which research or an intervention is done, Turnhout et al. (2019) argue that it is wrong to pretend that these actions take place in a politically neutral context. Instead, participants should also describe the context in political terms. Jakubik's (2018) Practice Ecosystem Framework provides a good entry point for this with the first question 'who is acting'. Linked to this question should also be the question of who is not acting and why that is. Schuurman (2024) shows in their research that, despite all good intentions, there can be many reasons why participants in a practice do not make their voices heard.

For the ICOP Knowledge Creation, we use Nonaka et al.'s model in which we replace the SECI process with Jakubik's Practice Ecosystem Framework. We adopt a constructivist view of knowledge creation in which participants in a specific context interact with each other to use and produce knowledge. This knowledge can be a form of Knowing-how or of Knowing-that. The latter knowledge is produced when participants critically reflect on their practice. The context in which knowledge creation comes about is thus a reflexive practice. It is very important to describe this practice and the way it enables the creation of knowledge. Nonaka's Ba's and the concept of knowledge assets can here be helpful. The objective is on the one hand to examine with each other whether there is enough space in the context to reflect with each other; on the other hand, to critically examine the extent to which the participants can contribute to knowledge creation.

Learning questions

The ICOP has a first set of learning questions:

- 1) Can we make an adequate description in terms of Ba of the shared contexts in which knowledge is created?
- 2) Can we use this description to improve these shared contexts so that knowledge creation is enhanced?
- 3) What types of knowledge are being used in the Siehl and can we identify which knowledge is missing?
- 4) How can we facilitate a SIEHL to enhance their knowledge creation process?

Practical reference to social ecosystem in Health Living (SIEHL)

The Knowledge Creation ICOP can provide SIEHLs with tools to identify where, by whom, and how knowledge is co-created in the process of collaboration. By increasing awareness within the SIEHL, the ICOP can effectively share relevant knowledge and pinpoint areas where knowledge is missing.

Furthermore, the ICOP offers practical resources (methods, tools) to help local social ecosystems for healthy living to analyze their structure and operations. This will reveal which voices are being heard, which are not, and the reasons behind this, allowing for more inclusive dialogue and knowledge sharing.

The ICOP poses fundamental questions to the SIEHL regarding the conception of knowledge:

- How do you view knowledge in the SIEHL? According to a constructivist perspective on knowledge it is required that knowledge is developed through a social process and is 'embedded' in practice.
- What knowledge do you perceive in the SIEHL?
- What knowledge is still missing?

Capacity building

The ICOP gathers questions from the SIEHLS related to knowledge co-creation, offers methods based on these questions to arrive at practical solutions and supports change agents within the SIEHLS to develop capacities for knowledge co-creation. Methods that lay within the realm of expertise of the ICOP Knowledge Creation or methods that are facilitated through members of the ICOPs Social Business, Reflexive Monitoring or Engaged Community. One key method utilized is an *action research approach*, which involves a cyclical process of planning, acting, observing, and reflecting. This approach fosters collaboration among participants and encourages iterative learning, allowing for the continuous refinement of practices based on real-world experiences and feedback from within the SIEHLs involved in the NEST project. By integrating action research, the ICOP emphasizes the importance of participatory engagement, ensuring that knowledge generation is relevant and responsive to the needs of the SIEHL.

Reciprocity SIEHL and ICOP

The relations between the ICOP on Knowledge Creation and the SIEHLs need to be based on the concept of reciprocity, where the ICOP both learns from and supports the SIEHLs.

During the consortium meeting held in Bragança in June 2024, multiple workshops helped to identify the benefit and needs for reciprocity between the different SIEHL's and the ICOP Knowledge creation. We combine the input of these workshops with the current experience with the SIEHL and the theoretic framework.

The ICOP could offer the SIEHL:

- A structured framework how to connect and interact with members from the SIEHL
- Guidelines in how to share individual visions and knowledge with the collective
- Guidelines on how knowledge is formalized, shared and stored within or beyond the SIEHL
- Provide guidelines how to transfer the different types of knowledge into practice

The SIEHL could offer the ICOP:

- Success and failure stories about connecting and interacting with the community, how to create, share and implement the knowledge they obtained and helping the ICOP expand its knowledge and build a database of relevant use cases
- Proactively communicate their needs to the ICOP and specify how it can assist them
- Experience about if and how, by the ICOP provided methods and tools work in practice

For both groups, the most efficient methods for sharing needs and stories – such as calls, visits, documents, and accessible communication channels – must be discussed. The connection between ICOP and SIEHL must enable smooth, two-way communication between all parties involved. This can be accomplished with a “change agent” and with a parallel process of learning how to co-create. Change agents are skilled to establish, facilitate and sustain change processes through ICOPS and SIEHLs. In the ICOP, they will first help apply specific working methodologies and facilitate co-creation and co-learning. Towards the end of the project, they will oversee the framing, governing, and facilitating of the SIEHLs.

In practice, one of the first actions established by the ICOP is to get in touch with the SIEHL's to get an understanding of their core functions, the context in which they can be supported, and how we can best communicate and collaborate with them.

Furthermore, the ICOP needs to gain insight into which type of knowledge they are currently using and which they might miss. The ICOP could also help with addressing which type of knowledge could be added. The insights gained will guide the support strategy over the remaining of the project. Another issue which is a priority for knowledge co-creation is the involvement of all the members. From practice and communication with SIEHL's we understand that it can be challenging to make sure everyone is heard. The ICOP Knowledge Creation can provide a framework which addresses all types of knowledge but also on how to involve all different layers within the SIEHL, making sure everyone is heard.

Reciprocity ICOP to ICOP

Next to the ICOP of knowledge creation the facilitation of thriving ecosystems for healthy living encompasses the following three key learnings found in the ICOP of Reflexive Monitoring, Social Business Development, and Engaged Community.

The ICOP for **Reflexive Monitoring** is set up to monitor the impact that is created the SIEHLs, enabling the SIEHLs to assess the effectiveness of their local initiatives, adapt strategies based on feedback, and ensure that diverse perspectives are considered in decision-making processes. This ongoing evaluation fosters a more responsive and resilient ecosystem that can better meet the needs of its community members related to healthy living. The ICOP Knowledge Creation works in close proximity to Reflexive Monitoring to gather valuable insights from this process. By collaborating closely, these two elements ensure that feedback and reflections inform the ongoing development of knowledge, enabling more effective strategies and fostering continuous improvement. Including the following questions:

- Why those resources, and what knowledge is being aimed for?
- Can the theoretical model of knowledge creation provide new insights for reflexive monitoring?

The ICOP for **Social Business Development** facilitates SIEHLs by providing access and insights in various funding models that ensure their sustainability and long-term viability of the SIEHL. This support not only strengthens their capacity to thrive but also fosters a culture of entrepreneurship and innovation within these local communities. These funding models are developed with a deep understanding of the various types of knowledge present in local communities, ensuring that they are relevant and effective to the SIEHL. By leveraging local expertise and insights, the ICOP encourages SIEHLs to adopt practices that resonate with community values and needs. The following question are posed by the ICOP Knowledge Creation to Social Business Development:

- How can we create such a context that knowledge is created?

The ICOP for **Engaged Community** is vital for cultivating thriving SIEHLs, as it focuses on building trust between the SIEHL and the ICOP. By prioritizing open communication and collaboration, the ICOP engaged community creates an environment where individuals feel valued and heard. This trust not only enhances relationships among community members but also encourages collective problem-solving from within our ICOP, ultimately leading to a more resilient SIEHL. The following questions are posed by the ICOP Knowledge Creation to Engaged communities:

- How do you involve all participants and avoid leaving participant out?
- How do you enable them to become productive as co-creators of knowledge?
- To what extent do participants become true co-creators?

- What do you do with the suggestion to politicize the context? And how do you identify the missing voices from the environment?

Network & working groups

The ICOP on Knowledge Creation can profit from the knowledge generated in different working groups thanks to the network and connection of its members and of the NEST consortium at large.

Existing networks/connections

- SIEHL Eemsdelta:
There is an exciting network with stakeholders of the SIEHL Eemsdelta. Together with ICOP-facilitator Annet and Alien there is a close collaboration and a good network. They are also joining the committee of Eemsdelta, which will make it easier to get a wider network and a more diverse working group.
- SIEHL network in the municipality of Groningen (2 Living Labs): 2021-2025.
- SIEHL network in the Province of Drenthe (2 Living Labs): 2021-2025)
- SIEHL network in Portugal
- SIEHL network Rotterdam Impact Coalition; including THRIVE Institute, Voor Goed Agency, Social Impact Fund Rotterdam and The Municipality of Rotterdam

Future/to be contacted connections

- [Healthy ageing researchers at WHO](#)
This group of practitioners is working on identifying how community-based social innovations are functioning across many rapidly ageing countries and on the policies, programs and health system factors underpinning their success.
- Network of other existing SIEHL's (outside NEST)

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