
The Prospective Impact Assessment Process (PIAP) through Systemic and Eco-Social Future Design in a Case Study of Future DiverCities Project (FDC)

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Abstract: This paper addresses the challenge of meaningfully exploring and anticipating eco-social and systemic impacts ex-ante and during innovation processes. It introduces the *Prospective Impact Assessment Process* (PIAP), developed as a transdisciplinary methodology responding to the need for cultural impact assessment.

The paper presents analysis and results from applying PIAP in the Future DiverCities (FDC) project aimed at re-imagining culture-led urban regeneration. It contributed to artistic pilot objectives and project outcomes generating policy recommendations based on Theory of Change and co-created impact statements.

The study suggests that PIAP differs from conventional impact assessments in its underlying logic of knowledge and value creation. Its contribution lies in combining strong empirical grounding with design-driven practices and *Frame Innovation* (Dorst, 2015). PIAP prioritises contextualised and experiential valuation of impacts through embedded assessment using storyboarding, the Futures Wheel and heat map analysis, making impact networks visible while preserving situational meaning.

Keywords: Prospective impact assessment; cultural impact assessment; innovation management; eco-social transition; transformative learning; design driven process; culture-led regeneration; change-making, eco-social policy recommendations, capacity building

1 Introducing an innovation management problem

This paper addresses a central challenge in innovation management: how to meaningfully explore, identify, and anticipate eco-social and systemic impacts before and during social innovation processes in cultural and artistic intervention contexts. Such contexts are characterised by complexity, interdependencies, situated user experiences, and evolving human–nature relations, which challenge conventional, linear impact assessment (IA) approaches.

Recent research highlights the need for systemic change across societal levels and calls for new tools that enable experimentation with the nature of change and interaction in more comprehensive and future-oriented ways (Vataja, 2023). In line with this, the European Union emphasises the role of the social sciences and humanities in understanding eco-societal needs, supporting eco-societal transformations, and advancing more holistic perspectives on R&D impacts (SSH, 2026).

Previous studies have argued that assessing social innovation impacts requires attention to the entire process of actions and interventions, rather than a sole focus on outcomes, and the adoption of holistic, context-sensitive approaches (Buckland & Murillo, 2013; cf. Vataja, 2023). However, many existing impact frameworks—often socio-technical in nature and grounded in linear logics (IOOI)—remain ill-suited to addressing intertwined eco-social challenges, where needs, values, and meanings emerge through experiential and context-dependent interactions (cf. Salonen & Salonen, 2023).

At the same time, R&D projects and policy initiatives increasingly require explicit impact evaluation as part of project management and accountability. These practices are typically evaluation-oriented, ex-post or mid-term, and rely on stable indicators and predefined policy logics, which can be difficult to operationalise in early-stage, exploratory, and innovation-driven contexts (cf. Boni & al. 2019; Vataja & al., 2019).

The need for PIAP driven IA in eco-social regeneration in FDC

This paper summarises the development of the *Prospective Impact Assessment Process* (PIAP) as a transdisciplinary approach to addressing systemic eco-social impacts in Future DiverCities (FDC) project and presents results from PIAP application in a case of culture-led urban regeneration (NEB, 2023; Autti & al.; 2024, Pakarinen & al., 2026; FDC, 2026).

Observations from previous FDC (2016–2021) showed that one existing IA method provided insufficient information (Paldanius, & Kajanus, 2021). At the start of FDC's second phase, we recognized the importance of PIAP to better achieve project objectives and apply it to projects beyond FDC.

FDC is grounded in the concept of soft urbanism, which approaches the city as a multisensory and experiential environment and emphasises the emotional and cultural impacts of the built environment. The city is understood as a living organism composed of adaptable and flexible spaces, calling for experimental and design-led research approaches (cf. FDC, 2026). This approach is supported by the notion that eco-societal systems are so-called soft systems whose boundaries are malleable and less clear (Vataja, 2023, 94–98). In such contexts, cultural impact assessment (CIA) requires continuous, experiential, and developmental forms of knowledge, making FDC an appropriate setting for experimenting with and developing PIAP.

2 Theoretical frameworks for PIAP

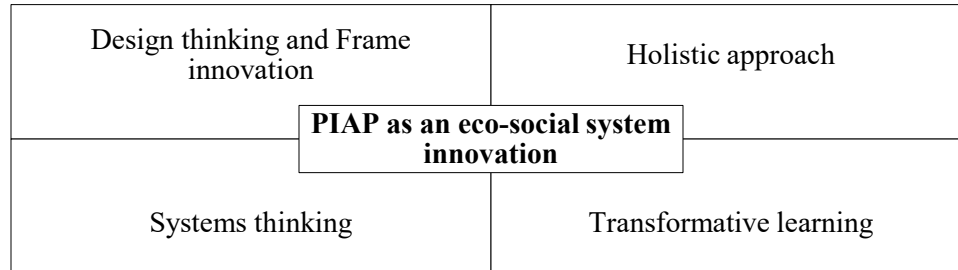


Figure 1 PIAP mission as an eco-social system innovation: developing one’s agency for change-making: The Pedagogical Framework for PIAP supports a holistic understanding of complex problems by addressing people- and life-centred needs across possible future scenarios to eco-social transition.

Backgrounding theories

Building eco-social capacity and change-making agency requires a pedagogical foundation grounded in explicit theoretical frameworks. The development of PIAP draws on multiple theoretical perspectives related to design thinking, grounded in a holistic understanding of human cognition and decision-making. This theoretical framework (Figure 1, table 1) is built on an integrated approach that intertwines *Planetary Social Pedagogy* (Salonen & al., 2023) and *Transition Design* (Irwin & al., 2022; Autti & al., 2024).

Design thinking, Frame Innovation (Dorst, 2015) & transition design

The PIAP is based on design thinking and *Frame Innovation* by Kees Dorst (2015). At its heart, solving possibilities require the ability to take on new perspectives. The key element of *Frame Innovation* is its concreteness it brings to planning. It can be seen as a generally positive and problem-solving attitude and a co-sense-making process: reflection-in-action (design abstraction) and pursuing parallel lines (framing new possibilities). (Autti et al., 2024.)

Drawing on *Frame Innovation* and – deriving from it – PIAP could drive the ability to see, think and do differently. We find that creative design thinking is experiential learning (Kolb, 2015, 32-36) by nature. In this kind of learning, an open and curious attitude as well as divergence, convergence and chaos vary in a dynamic process. Transition Design similarly foregrounds changes in mindset and worldview as prerequisites for more holistic design actions and futures-oriented thinking (Irwin & al., 2022). This epistemic openness is likewise embedded in *Frame Innovation* and transformation-oriented pedagogical approaches. (Pakarinen & al., 2026.)

Design thinking is characterized by questioning both the outcome of the things being developed and the means to achieve it. Dorst uses design abstraction to justify this: since we know only little about the desired outcome character in the early stages of development, it is not possible to assume what to do and how to act to achieve the goals. Dorst states that framing is the key to design abstraction, which is developed by creating new ways of looking and acting within a paradoxical problem situation. (Dorst 2015, 49-56.)

Holistic approach, systems thinking & transformative learning

Central to this approach is the recognition of perception, experiential knowledge, and embodiment as integral to thinking and action. In line with research on embodied cognition, which emphasises that cognition is not confined to the brain alone (Kahneman, 2011), PIAP acknowledges the role of emotions and bodily experience in sense-making and engagement with the surrounding world. This perspective aligns with epistemic learning as described by Salonen & al. (2023), where experiential processes enable the emergence of affective, intuitive, imaginative, and embodied forms of knowledge. (Cf. Dewey, 1934; Senge, 2006.)

Furthermore, Salonen & al. (2023) advance similar arguments in their *Planetary Social Pedagogy Framework*, emphasising that sustainable transformation requires a deep, holistic, and systemic understanding, alongside a fundamental shift in human thinking (Salonen & al., 2024). Such transformation entails learning to “see differently” through experiential and embodied forms of knowledge. (Cf. Joutsenvirta & Salonen, 2020, 186-193; Keto & al., 2022.) The Pedagogical Framework for PIAP stems with Laininen’s (2018) view of transformative learning process through which the core values of eco-social education could be seen: systemic worldview, responsibility, sufficiency, interpersonality, connectedness to nature, and future orientation. (Pakarinen & al., 2026.)

Table 1 Table summarizes our withdrawals from the background study for eco-societal pedagogies and lists key mechanisms and features for change-making and how they are related to the PIAP-driven policy recommendations (tables 6–9).

<i>Pedagogical approach</i>	<i>Transition design approach</i>	<i>Key features for change-making</i>	<i>PIAP Continuum Concept</i>
World Relationship	Posture and Mindset	Recognition of perception Experiential knowledge & embodiment Openness and respect for whole	Embrace life to re-empathise
Co-creative Skills	New Ways of Working	Deep connection to nature Collective orientation Systems thinking Participatory processes	Co-creating shared and just future for all
Agency	Theories of Change	Planetary orientation Transdisciplinary approach Transformational activism Capacity for renewal	Right structures create independence
Future Orientation	Visions of Transformation	Anticipating orientation Imaginative, openness & affective Co-created visions Shared pathways for change	Remembering the future

Source: Adapted from transition design (Irwin & al. 2022) & *Planetary Social Pedagogy* (Salonen & al. 2023). Vataja & al. (2019, 326-327) also argues that impact foresight should serve interorganisational continuous learning.

3 Case example: PIAP in FDC

FDC is a four-year project (2023–2026) funded by the Creative Europe and implemented by European organisations seeking to re-imagine culture-led regeneration of urban empty spaces (FDC, 2026). FDC aims to influence, how urban spaces can be sustainably revitalised through culture. The project responds to several challenges:

- to strengthen the ecosystemic capacity of cultural actors,
- to integrate and assess eco-social considerations within cultural development strategies,
- to assess prospective impact assessment of cultural engagement and activities,
- to develop policy recommendations.

The development of PIAP was initiated in FDC and implemented in 8 city pilots: Berlin, Zagreb, Liepāja, Kuopio, Marseille, Florence, Timișoara and Athens. Each pilot had a mechanism expected to drive change according to Theory of Change (ToC; UNDGGOCO). To achieve FDC’s goals, engaging in dialogue and collaborating closely with the scientific community was essential (FDC 2021.) The participatory approach of PIAP bases on the insights of cultural operators, city inhabitants engaged in regenerative action, and local stakeholders. The development of PIAP stems from the need to perceive the impacts of a planned project as early as possible and to review the direction of the project as it progresses. (Autti & al., 2024.)

4 The methodology of FDC impact assessment analysis

Summary of PIAP implementation in FDC project

The PIAP methodology has been developed through an applied science approach grounded in our long-standing experience as design professionals. Its development has been organic and hands-on, evolving iteratively in response to pilot needs and emerging insights throughout the process.

The initial adaptations of PIAP’s participatory phase were implemented on site in Florence and Kuopio. To enable independent use of PIAP, the workshops were later moved online, after which two pilots implemented them autonomously based on guidance provided by the development team.

PIAP was developed to support the selection of project actions and outputs based on their prospective impacts. Its development is grounded in the assumption that planning actions at a sufficiently concrete level as possible enables the simultaneous consideration of actions and their impacts.

During the FDC project, impact statement surveys targeting pilot stakeholders were integrated into the PIAP process. The surveys aimed to strengthen the reliability of PIAP

outcomes and to support the formulation of policy recommendation. The surveys were co-created separately for each pilot, and their results were used indicatively alongside other data generated through PIAP.

PIAP in short

The process is grounded in *Frame Innovation* (Dorst, 2015). PIAP methodology unfolds in three iterative phases (Table 1).

In the **Pre phase**, the core team establishes the foundations of the process by developing an understanding of the project context, including key stakeholders (both human and non-human) and existing paradoxes or conflicts. These insights inform the desired direction of change and its articulation through a Theory of Change (ToC). In addition, the PIAP process requires a design-oriented topic or goal to guide the ideation of actions and outputs in the subsequent workshop, as well as the formulation of criteria for prospective impact assessment.

Table 2 The steps and methods in the three phases of PIAP.

<i>Pre phase</i>	<i>Participatory phase</i>	<i>Post phase</i>
Understanding the context	Somatic walk	Processing of workshop results
The current situation	Stakeholder map	Possibilities & risks
Key stakeholders	Paradoxes	Roadmap Cards of ToC
Theory of Change (ToC)	Themes	Mapping activities
Workshop topic	Framestorming	Future scenario: storyboarding
Evaluation criteria	Storytelling & storyboarding	
Facilitative preparations	Futures wheel	Reflection
	Heat map	

Source: Pakarinen & al. (2026)

The **Participatory phase** engages the broader project team, stakeholders, and end-users in creative workshops to explore possible futures. The workshop begins with a somatic approach, followed by familiarisation with the project context based on inputs provided by the core team, including stakeholders, key tensions, and thematic insights. Participants then generate solutions through framestorming, which encourages approaching the topic from multiple perspectives. Selected ideas are further developed through storytelling to increase concreteness, after which their potential impacts are explored using the Futures Wheel (Figure 2). The workshop concludes with assessing these impacts against predefined criteria to identify potential positive and negative effects.

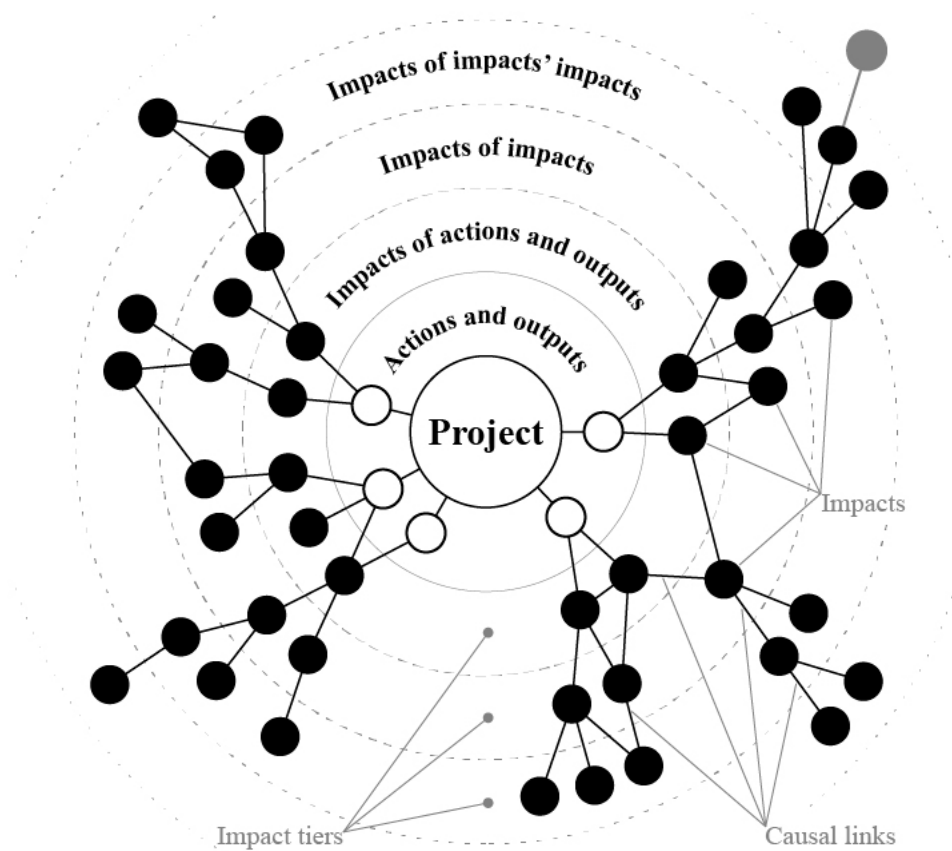


Figure 2 A thematic model of the Futures wheel (cf. Benckendorff, 2008).

In the **Post phase**, the core team translates workshop outcomes into concrete next steps. Data generated during the workshop are analysed to identify ideas with the greatest potential for realisation, which are then examined in greater depth using the outputs from Futures Wheel and heat map. In this analysis, positive impacts are framed as possibilities and negative impacts as risks. These are further mapped against the UN Sustainable Development Goals (SDGs) to broaden understanding and to support the identification of indicators for tracking project progress, informing the project roadmap and Theory of Change. Finally, during the mapping activities, the core team formulates a plan for next steps and re-empathises with stakeholders through future-oriented storytelling to reinforce shared understanding and build confidence in the chosen direction.

Data management protocol and research ethical questions

A Data Management Plan (DMP) was prepared in accordance with academic research standards using the DMPTuuli-service. Workshop data are not fully anonymous, as participants were met in person, whereas post-phase survey data are anonymous and based on informed consent. Data collection was carried out in collaboration with the pilots, with varying degrees of coordination with us, which may be reflected in the results. Machine

learning tools were used solely for translation and linguistic editing; no data were generated, transcribed, or analysed using AI.

4 Showcasing the results of PIAP first iteration

The prospective impact pro-active tables

During the FDC project, pilots created impact statements to describe both implemented actions and actions envisioned, together with their anticipated impacts. Stakeholder surveys were used to assess the perceived significance of actions, and the highest-rated positive and negative impact statements for each pilot were synthesised into tables (Tables 3–5). This data was used to identify key risks and opportunities and to map them against relevant SDGs, thereby strengthening the understanding of the ToC aligned with FDC goals.

Table 3 Prospective Impact Pro-active Table with the strongest positive and negative impact statements for Cluster Biodiversity.

<i>Impact statement</i>	<i>Risks (rebound)</i>	<i>Possibilities</i>	<i>Connected SDGs</i>
Due to complex ownership relations, increased interest in exploring the space encounters resistance from responsible institutions/bodies, making it difficult to act freely within the wider spatial context. (Zagreb / KONTEJNER, Neg.)	Complex ownership relationships challenge and slow down operations and decision-making.	Cooperation with the community and educational organisations promotes future work and engages young people with the future work.	Goal 4: Quality education Target: 4.7: global citizenship and appreciation of cultural diversity and of culture's contribution to sustainable development (SDG4)
Involving local artists and the student population in activities of researching and mapping KONTEJNER and the wider Vjesnik complex contributes to interest in this spatial context and KONTEJNER's artistic program (example: the Sensitive Mapping of Vjesnik workshop). (Zagreb / KONTEJNER, Pos.)	Nature tourism and, the increased invasion in nature enhances the wear and tear of nature. Risks may not have been considered in the development of operations.	Collaboration with educational organizations brings long-term impact. Actions create a more positive reputation for the region.	Goal 8: Decent work and economic growth Targets: 8.3 policies for entrepreneurship, creativity and innovation 8.6 youth education 8.9 beneficial and sustainable tourism (SDG8)
Karosta Nature Service Point – an exhibition in the city centre – is a threat to local nature, causing an excessive influx of tourists and vacationers into the open-air area (prospected action) (Liepaja, Neg.)	The rights and carrying capacity of nature (non-human actors) are	New operating models and cooperation between	Goal 16: Peace, justice and strong institutions Target: 16.3 promote the rule of law at the national
Artist residencies in Karosta, which result in works and			

<i>Impact statement</i>	<i>Risks (rebound)</i>	<i>Possibilities</i>	<i>Connected SDGs</i>
performances about the Karosta environment, contribute to the recognition of the neighbourhood. (implemented action) (Liepaja, Pos.)	incompatible with human rights / interests, e.g. economic perspectives.	different actors are created. Emotional experiences created by art	and international levels and ensure equal access to justice for all (including nature). (SDG16)
Through talks, exhibitions, and performances, the project showed why it's important to support legal rights for natural habitats—and inspired city makers, artists, students, scholars, residents, and the public to think about caring for the environment in the long term. (Berlin / PAL, Pos.)	Actions may be perceived as a threat and may give rise to a counterreaction.	evoke empathy and caring and create shared value.	Goal 15: Life on land Target: 15.9 integrate ecosystem and biodiversity values into national and local planning (SDG15)

Source: Pakarinen & al. (2026)

Table 4 Prospective Impact Pro-active Table with the strongest positive and negative impact statements for Cluster Commoning.

<i>Impact statement</i>	<i>Risks (rebound)</i>	<i>Possibilities</i>	<i>Connected SDGs</i>
Kuopio Cultural Machine Workshop has been rented as an event space for various cultural actors and individuals. This has demonstrated the need for similar event and cultural spaces in Kuopio. (Kuopio / ANTI, Pos.)	Activities, which are targeted to a specific audience exclude others and weaken the sense of community in the area.	Regular and facilitated activities promote the formation of community.	Goal 11: Sustainable cities and communities Targets: 11.3 enhance inclusive and sustainable urbanisation and capacity for participatory 11.4 protect local cultural and naturel heritage 11.7 provide access to safe and inclusive green and public spaces 11.8 support strong regional development planning (SDG11)
As the garden grows in popularity, conflicts arise between associations, residents, and the school over access and decision-making. (Marseille / LA FRICHE & CHRONIQUES, Neg.)	Too much activity causes disruption, which strains the community.	Culture and art spaces like pilot projects are used and much-needed meeting places.	Goal 12: Responsible consumption and production Target: 12.2 promote universal understanding and awareness for sustainable development and lifestyles
Some groups feel excluded from activities, which creates social tensions and weakens the sense of belonging to the neighbourhood. (Marseille / LA FRICHE & CHRONIQUES, Neg.)	Increased popularity of a location increases the risk of conflicts between interest groups.	Regular meetings support intergenerational activities.	
Regular gatherings in the garden have fostered intergenerational exchanges, allowing older			

<i>Impact statement</i>	<i>Risks (rebound)</i>	<i>Possibilities</i>	<i>Connected SDGs</i>
residents and children to share stories, knowledge, and caregiving practices. (Marseille / LA FRICHE & CHRONIQUES, Pos.)			in harmony with nature. (SDG12)

Source: Pakarinen & al. (2026)

Table 5 Prospective Impact Pro-active Table with the strongest positive and negative impact statements for Cluster Impermanence.

<i>Impact statement</i>	<i>Risks (rebound)</i>	<i>Possibilities</i>	<i>Connected SDGs</i>
Without constant management and a clear activity selection mechanism, the space risks becoming cluttered and content incoherent. Uncontrolled use and lack of a maintenance and organization strategy can negatively affect the experience of participants and the community. Over time, this can weaken the educational and cultural value of the initiative, lead to degradation of the space, and reduce the impact and sustainability of the project in the long term. (Timișoara / PLAI, Neg.)	Poor operational management reduces the quality of content, the amount of activity, and people's engagement with the activity.	Low-threshold events (e.g., flea markets) increase broader interest in activities. Sufficient structures generate independence. Activities guide towards eco-socially sustainable construction.	Goal 10: Reduced inequalities Target: 10.2 promote universal social, economic and political inclusion for all. (SDG10) Goal 16: Peace, justice and strong institutions Target: 16.7 Ensure responsive, inclusive, participatory and representative decision-making at all levels. (SDG16)
By creating a space well thought out in form and organization, the connection between people, community and nature is facilitated. The space is harmoniously integrated into the landscape and constructed from local and reusable materials, providing community members with a place of reference that supports a sense of belonging. Thus, the collective identity and cultural and affective ties within the community are strengthened, with a lasting impact over time. (Timișoara / PLAI, Pos.)	Activities cause disturbances in the area. Possible negative impacts of the activity may not be recognised.	A concrete cultural space promotes the accessibility of informal learning and education. Joint activities foster active participation among participants.	Goal 17: Partnerships for the goals Targets: 17.g enhance the global partnerships for sustainable development complemented by multi-stakeholder partnerships that mobilise and share knowledge, expertise
By opening a PLEX Café with places to rest, gather and work, we attract diverse audiences, engage them in the project and create a new		Shared experiences create a sense of	

<i>Impact statement</i>	<i>Risks (rebound)</i>	<i>Possibilities</i>	<i>Connected SDGs</i>
meeting point in the neighbourhood. (prospected action) (Athens / PLEX, Pos.)		inclusion and commitment to the community and common goals.	17.h encourage and promote effective public, public-private and civil society partnerships, building on the experience and resourcing strategies of partnerships.
A dimora has reinforced the sense of belonging between participants and community members through shared experiences, rituals or collaborative events, deepening personal and collective ties. (Florence / LAMA, Pos.)		Joint activities raise appreciation for different actors and for nature.	(SGD17)

Source: Pakarinen & al. (2026)

PIAP Continuum Concept for Change-Makers

Further analysis of impact statements produced through PIAP in the FDC pilots were synthesised to the policy recommendations (figure 2). They connect the work to EU-level initiatives, generalise pilot results, and enable comparison with other projects.

The impact statements were thematically analysed to identify essential elements, relationships between themes, and mutual influences across pilots. Key terms and guiding questions were articulated alongside themes and subsequently integrated into the pedagogical framework (figure 1; table 1). Tables 6–9 present a summary of the key ideas underpinning each concept, outlining the intended values they aim to deliver.

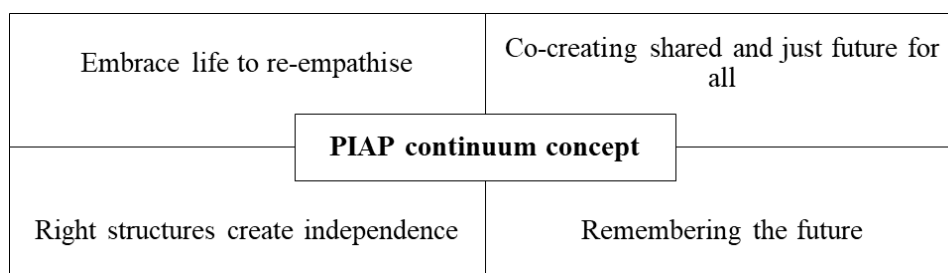


Figure 3 PIAP Continuum Concept is a mission-orientated and transitioning framework of policy recommendations (cf. Larrue & al., 2024.). Ideally, all four themes co-occur and mutually influence one another.

Embrace life to re-empathise

This concept fosters shared, embodied experiences and experiential learning, strengthening holistic community empathy, making abstract phenomena tangible, and generating new perspectives to guide reflective action for the planet (Laininen, 2018, 29, Salonen & al., 2024).

Table 6 Embrace life to re-empathise. Together, these elements encourage individuals and communities to engage deeply with their environment, broaden understanding, and translate empathy into meaningful, reflective action.

<i>Description</i>	<i>Key features</i>	<i>Guiding questions</i>
Sharing experientiality as a driver for change “re-scripts” perception of the world.	Internalise the systemics of life-sustaining factors.	How might we cultivate a holistic, situational, and empathetic way of relating to the world?
Embracing holistic communal empathy toward one’s own sphere of life.	Foster nature empathy and sociality through experiential engagement and care practices between humans and other living beings.	How might we ensure the legal rights of nature, both living and non-living?
Making abstract phenomena tangible through embodied, co-located experience.	Embrace interdisciplinarity and the productive disruption introduced by external actors.	How might we use the capacity of art and the creative sectors as a key driving force for change through experiential practices?

Source: Pakarinen, Autti & Partio (2026). PIAP-Continuum Concept for Change Makers.

Co-creating shared and just future for all

This concept advances participatory practices as an essential collective process for creating shared meanings. Participatory art and creative practices are shared processes, where empathy for all living and non-living beings emerges as a bodily experience. (Cf. Dewey, 1934, 12, 39, 71-73, 126-127.)

Table 7 Co-creating shared and just future for all. The co-creative process is done together, facilitated by the artist, and the action itself produces shared meanings and values.

<i>Description</i>	<i>Key features</i>	<i>Guiding questions</i>
Positioning participatory art as an essential collective process.	Internalise an understanding of what is needed more—and less—for the common good.	How might we ensure moderate and eco-socially sustainable consumption across all activities?
Emphasizing interdependent models of action towards responsibility and shared value creation	Foster dialogue and multi-perspective collaboration, integrating responsible communication and storytelling, that also strengthen social and emotional skills	How might we develop the capacity to integrate emotions and shared experiences into sustainable decision-making?

<i>Description</i>	<i>Key features</i>	<i>Guiding questions</i>
Framing art and creative industry as a social business opportunity	Develop and experiment with new concepts and models through creative methods.	How might we strengthen social business models as drivers for resilience and prosperity?

Source: Pakarinen, Autti & Partio (2026). PIAP-Continuum Concept for Change-Makers.

Right structures create independence

This concept engages with the idea of independent agency, in which autonomy is framed as the capacity to act meaningfully, responsibly, and creatively within cultural relationships at both individual and community levels.

Table 8 Right structures create independence. Together, these elements help build the conditions in which independent, confident, and sustainable action can emerge for the common good.

<i>Description</i>	<i>Key features</i>	<i>Guiding questions</i>
Recognising artists and the wider creative sector as empowered actors in testing new ideas and generating meaning.	Create and facilitate structures that enable independent action and a supportive working environment, fostering proactive engagement for both individuals and communities.	How might we use community and art pedagogy to facilitate sustainable activity?
Supporting one's own agency, strengthening socially resilient decision-making, and enabling participatory engagement.	Ensure that actions deliver meaningful benefits to all stakeholders—communities, local authorities, and society at large—contributing to the common good.	How might we support traditional organisations in adopting activism for hope and pursuing ambitious impacts for a brighter future?
Encouraging systemic value creation beyond financial or reputational considerations.	Support the continuity and sustainability of independent activity, both socially and financially.	How might we enable different actors to effectively support intra-community organisation and development?

Source: Pakarinen, Autti & Partio (2026). PIAP-Continuum Concept for Change-Makers.

Remembering the future

This concept emphasises envisioning and collectively shaping a hopeful future for both communities and society by making the future tangible in the present and bringing future-oriented belief and hope into current action.

Table 9 Remembering the future. “People need art to re-imagine a new world.” -Selma Vihunen, movie director (Joutsenvirta & Salonen, 2020, 187)

<i>Description</i>	<i>Key features</i>	<i>Guiding question</i>
Bringing us the bright future.	Explore authenticity in producing transformative future scenarios to guide decisions.	How might we enhance the capacity and opportunities of young generations to shape their futures?
Highlighting the importance of seeing and feeling the future in the present, for example through local heritage.	Create a shared narrative that ensures continuity in collaboration with communities, art, and education.	How might we support resilience and future-making capacity by strengthening traditions and local heritage?
Fostering care and inclusion, and the principle of leaving no one behind.	Foster future-oriented agency by overcoming constraints and internalising a proactive, forward-looking mindset.	How might we foster a sense of belonging to the community and ownership of a collective bright future for all?

Source: Pakarinen, Autti & Partio (2026). PIAP-Continuum Concept for Change-Makers.

5 Reflection and conclusions

Contribution to the current understanding in the IM community

We suggest that PIAP differs from conventional IAs in its underlying logic of knowledge and value creation (table 10). PIAP has evolved through an empirical, practice-based process in experimentation of real-world FDC contexts. This bottom-up development accounts for both the strengths and the current limitations of PIAP (tables 9–11).

Sanul & Köse’s (2026) have proposed a CIA framework that separates dimensions of value in three categories (socio-spatial, social and ecological), while PIAP delivers systemic value (intermingled dimensions), thus shared themes and mechanisms of systemic transition are presented (cf. Partel & Dunphy, 2016, Belfiore & Bennett, 2010).

Closely related to systemic value is PIAP’s holistic perspective, in which impacts are understood as relational and situated through interactions between people, places, practices, and environments, in contrast to socio-technical IA approaches that emphasise policy-level generalisation and predefined domain boundaries.

The distinctive contribution of PIAP lies in its combination of strong empirical data and design-based conceptualisation skills, which enable complex experiential insights to be structured, visualised, and discussed without reducing them to purely quantitative metrics. PIAPs iterative and anticipatory methods, including tools such as the Futures Wheel, support continuous learning by enabling the exploration of indirect, long-term, and systemic implications of actions before they materialise.

Table 10 PIAP integrates design thinking, sense-making, and participatory, experiential learning to support innovation processes in which impacts are still emerging. PIAP builds a perspective by operationalising impact assessment as an iterative, action-based, and learning-oriented process (figure 1; table 2).

<i>Other IA</i>	<i>PIAP</i>
Focus: inputs & outcomes	Focus: actions & end-users' insights
Shared value	Systemic value
Reflection with critical thinking	Reflection-in-action: experiential doing and understanding
Storytelling	Anticipatory storytelling & visualised storyboards
Nature–culture relationship framed as an ecosystem service	Nature and culture are inseparable
Participation (stakeholder involvement)	Inclusion and sense of belonging
Socio-technical focus: generalising, policy-level approach, emphasis on comparability	Inclusive and meaning-driven: situational and contextual (case-specific)
Based on Theory of Change (ToC) as a formal mode and theory based	ToC grounded in agency and actors' capacities
Assessing/evaluating impacts of other activities on culture	Assessing impacts of cultural activities
External communication and comparability	Internal capacity building, testing and decision making during the process
Formal – regulation-driven	Informal – transformative, learning-oriented

Source: Cf. Boni & al. (2019), Partel & Dunphy (2016) and Sanul & Köse (2026).

As summarisation, the FDC project and PIAP can be understood as applying and combining principles from *Planetary Social Pedagogy* (Salonen et al., 2023) and the *Transition Design Framework* (Irwin et al., 2022). This alignment resonates with broader EU-level discussions, such as those highlighted in EU Green Week (2026), which promote life-centred approaches and emphasise the systemic role of culture, nature, and creativity in enabling sustainable, resilient, and competitive futures (Tables 6–9).

Overall, this study demonstrates how design-led, participatory foresight can be integrated into IM to anticipate and take responsibility for systemic eco-social impacts, rather than merely measuring outcomes ex post.

Discussion of FDC impact assessment

Our view of the prospective assessment in the FDC project was that the evaluation of impact statements should be conducted with the involvement of stakeholders. This approach provides a broader perspective beyond the project team itself, extending towards their end-users. (EU commission, 2022, cf. Double material analysis.)

Although the post-phase impact statement surveys remained a relatively modest number of responses ($n = 127$), the collected data provided valuable empirical input for the further development of PIAP. In particular, the survey results informed the refinement of action-oriented insights and supported the conceptual work underpinning the PIAP Continuum. The Continuum concept was developed by synthesising the complete set of impact statements generated during the FDC project ($n = 80$; Tables 6–9).

In the early phase of the FDC process, PIAP included a portfolio analysis approach based on decision analysis (PDA) to support the evaluation of alternative actions generated during the process. However, effective application of DA typically requires a sufficient volume of comparable data, which was not feasible in this context. The PDA component was therefore ultimately removed from PIAP. Although early attempts were made to apply PDA by valuing impacts identified through the Futures Wheel, the method proved poorly suited to the participatory phase of the process. In particular, the approach disrupted the context-specific nature of the identified impacts by abstracting them from their situational and relational grounding.

In addition, the analytical tool used to conduct the valuation and portfolio analysis was experienced as heavy and misaligned with the intended mode of analysis. Rather than supporting iterative, inclusive sense-making, it steered the process towards premature formalisation. Consequently, PDA was excluded in favour of methods better aligned with the participatory, contextual, and exploratory nature of PIAP within the FDC context.

PIAP thus represents a form of systemic innovation, aligned with mission-oriented and transformative approaches, as its meaningful application requires time-intensive, iterative engagement and the adoption of a design-thinking mindset focused on learning and adaptation.

PIAP does not aim at generalisation or standardised assessment; instead, it focuses on meaning-making and contextualised interpretation in-situ, supporting development processes in an agile, on-the-way manner. Consequently, questions of validity, cross-pilot comparability, and boundary conditions become relevant primarily if the objective were to produce directly comparable results across cases. However, cultural impacts are inherently situated and tied to context-specific meanings and cultural competences, rendering them only limitedly comparable at the level of experience and significance. Even when quantitative indicators, such as participant numbers, are used, their interpretation remains dependent on the contextual conditions within which they emerge.

This approach distinguishes PIAP's experiential, iterative, and design-thinking-driven logic from calculation-based portfolio decision analysis. It underscores the importance of organisational agility and experimentation: if assessment becomes overly abstract and detached from lived experience, meaning-making and engagement diminish. The primary objective of developing PIAP has been to guide project steering from the perspective of the created impacts. The pros and cons of PIAP are showcased in the table 11.

Table 11 Pros and Cons of PIAP.

<i>Pros</i>	<i>Cons</i>
Somatic approach recognizes the importance of emotions in decision-making.	It is yet unclear how the somatic approach can be utilized in dealing with abstract issues.
A creative process brings new perspectives to problem solving and enables versatile foresight of impacts.	The process takes time, which is ill-suited to the current pace of work.
Systems thinking and Futures Wheel help identify and understand interdependencies.	Identifying impacts and interdependencies requires a change in mindset, which is difficult.
Futures wheel supports the recognition of a wide range of possible impacts.	Estimating probabilities is unreliable (Kahneman, 2011).
PIAP prioritises contextualised and experiential valuation of impacts by embedding assessment directly within the Futures Wheel and heat map analysis, making impact networks visible while preserving their situational meaning (Figure 4).	Identifying potential, but total surprises is difficult. Futures wheel can seem overwhelming and cluttered (Benckendorf, 2008).
The pursuit for concreteness (e.g. storyboards) supports planning and implementation.	Learning design thinking as an iterative and agile development flow: Learning a new way of thinking and operating requires the ability to learn and unlearn.
A holistic approach to development helps to focus attention on the essentials compared to working with a on the terms of a predetermined toolkit.	The level of knowledge and skill is not always enough to perceive everything in one go. It takes time and a later return to knowledge to deepen understanding.
Cooperation with end-users ensures the relevance of the implementation and the desirability of the results.	Sufficient engagement and involvement of end users in project work is a challenge. Attention to the needs of nature depends on the active attention of people.
Contextuality supports concreteness and consideration of those involved.	Contextuality reduces comparability of impact assessment results between projects. The possibility to produce comparable results would make PIAP more interesting from the point of view of project funders.
Storytelling, storyboarding, and place making in action support empathy, ownership, and the integration of impacts into coherent narratives.	Action requires creativity, propensity, and courage so that divergent and convergent thinking can take place at the same time.

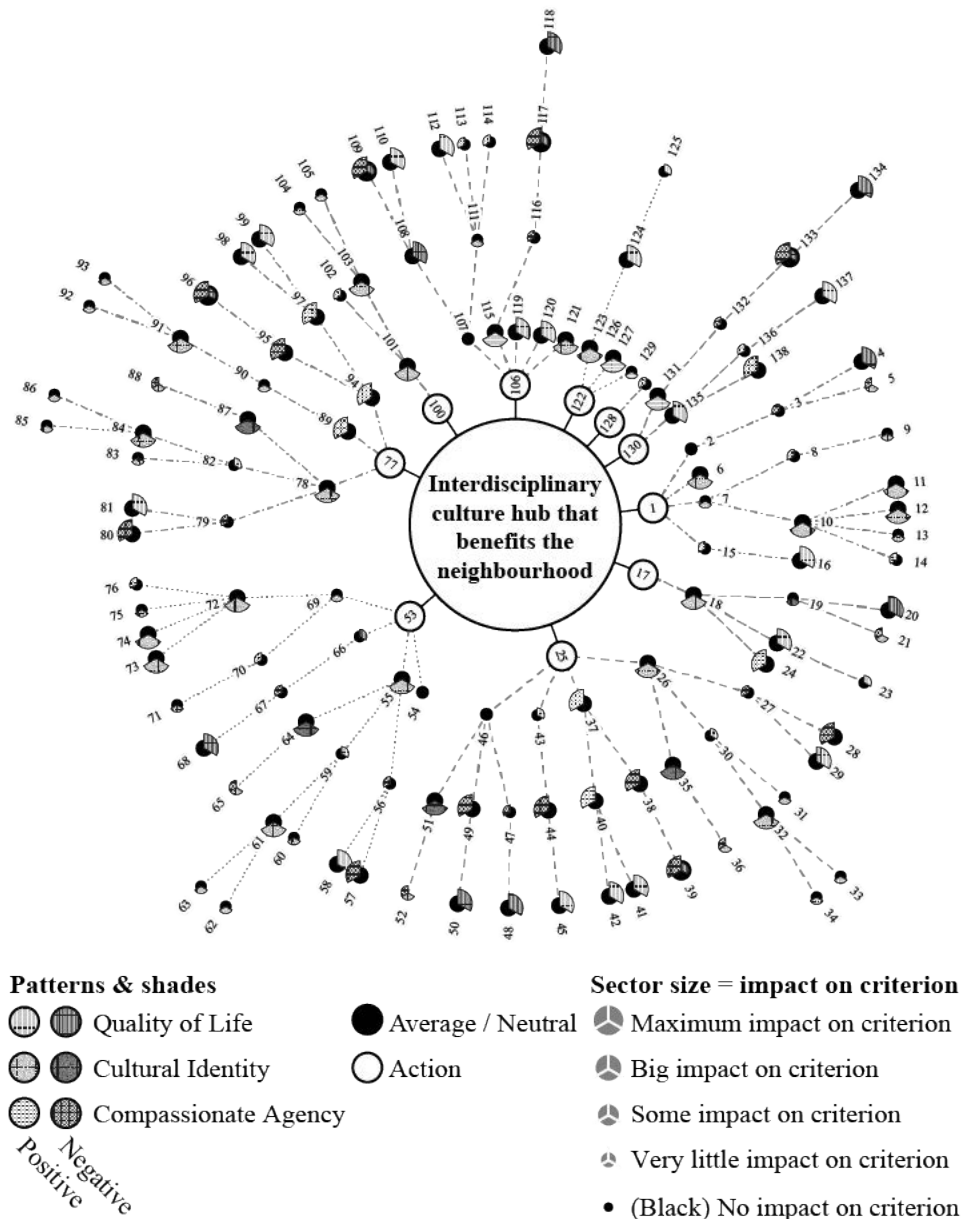


Figure 4 Futures wheel and Heat map results visualised after pilot in Zagreb had run the participatory workshop. Each number refers to an action, outcome or recognised impact. Heat map criteria function as value laden lenses for interpreting and prioritising impacts, addressing nature and human actors simultaneously and often in overlapping ways.

6 Areas for feedback & development

During the FDC, the first PIAP version was implemented and policy recommendations were conceptualised. There has arisen a need to study several fields more deeply to develop PIAP further (table 12).

Future work will involve continued experimentation with portfolio decision analysis (PDA). One potential avenue for exploration concerns the use of PDA for comparing probability-based portfolios, given that estimating probabilities is known to be cognitively challenging for humans (Kahneman, 2011). Another possible use case relates to the comparison of interdependencies between impacts (cf. Kajanus & al., 2026), as the realisation of interdependencies seems similarly difficult to assess.

Cross-project comparability and return-on-investment (ROI) considerations are likely to be of interest to funders; however, this raises a critical question regarding the extent to which such comparability can be pursued without conflicting with the contextual sensitivity that characterises PIAP.

The development of PIAP will continue in 2026 and beyond through further refinement of the guidebook and tools, which remain openly available for experimentation and use. A related outcome is an open university Master's-level course (*Prospective Impact Assessment in Sustainable Project Work*, 5 ECTS), running until spring 2026 and planned for online delivery in 2027, which is also expected to inform further PIAP development. To broaden applicability, an additional round of field-testing in a new RDI project is needed.

At the same time, a more comprehensive literature review is needed to position PIAP more firmly within the broader field of IA. Deeper engagement with research on CIA, mission-oriented innovation, anticipatory governance, and transformative evaluation would strengthen its conceptual grounding while preserving its empirical, exploratory, and design-driven nature.

Table 12 How might we yet develop PIAP? This table collects aspects of PIAP's future development needs.

<i>Area of development</i>	<i>Description</i>
Pedagogical theoretical foundation	How might we further develop the aspects of PIAP to strengthen its validity and theoretical foundation (e.g., planetary social pedagogy, transition design)?
Holistic understanding and somatic approach	How might we use somatic approach with abstract problem fields?
PIAP positioning	How might we better position PIAP among other impact assessment approaches?
PIAP process and its tools	How might we better achieve project objectives and extend the application of PIAP beyond the FDC context?
PIAP Post phase	How might we field-test and refine the post-phase of PIAP to better support decision-making and further develop project roadmaps?

<i>Area of development</i>	<i>Description</i>
Rebound	How might we more effectively surface rebound loops and anticipate surprising impacts and consequences?
Inclusion	How might alternative participatory tools be developed to foster inclusion and meaningful engagement across culturally and linguistically diverse groups?
ROI	How might we develop cross-project comparability without losing meaningfulness and contextual sensitivity?
PDA	How might we use portfolio decision analysis (PDA) to enable comparisons between probability-based portfolios?
Futures wheel	How might we enhance the capacity to identify impacts that are difficult to anticipate (unknown unknowns)
	How might we support the recognition of interdependencies?
Visualisation of data collected through Futures Wheel and Heat map	How might we make the data visualisation easier and more automated? How might we better support decision making through data visualisation?
Visualisation of interdependent impact pathways	How might we better understand the complexity of parallel phenomena and uncover unexpected interdependencies?
Feedback and development	How might we develop the recognition of impacts to become more reflective, to include a feedback or validation loop that enables increasingly precise?

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Table of tables

Table 1 Table summarizes our withdrawals from the background study for eco-societal pedagogies and lists key mechanisms and features for change-making and how they are related to the PIAP-driven policy recommendations (tables 6–9). **Source:** Adapted from transition design (Irwin & al. 2022) & *Planetary Social Pedagogy* (Salonen & al. 2023). Vataja & al. (2019, 326-327) also argues that impact foresight should serve interorganisational continuous learning.

Table 2 The steps and methods in the three phases of PIAP. **Source:** Pakarinen & al. (2026)

Table 3 Prospective Impact Pro-active Table with the strongest positive and negative impact statements for Cluster Biodiversity. **Source:** Pakarinen & al. (2026)

Table 4 Prospective Impact Pro-active Table with the strongest positive and negative impact statements for Cluster Commoning. **Source:** Pakarinen & al. (2026)

Table 5 Prospective Impact Pro-active Table with the strongest positive and negative impact statements for Cluster Impermanence. **Source:** Pakarinen & al. (2026)

Table 6 Embrace life to re-empathise. Together, these elements encourage individuals and communities to engage deeply with their environment, broaden understanding, and translate empathy into meaningful, reflective action. **Source:** Pakarinen, Autti & Partio (2026). PIAP-Continuum Concept for Change Makers.

Table 7 Co-creating shared and just future for all. The co-creative process is done together, facilitated by the artist, and the action itself produces shared meanings and values. **Source:** Pakarinen, Autti & Partio (2026). PIAP-Continuum Concept for Change-Makers.

Table 8 Right structures create independence. Together, these elements help build the conditions in which independent, confident, and sustainable action can emerge for the common good. **Source:** Pakarinen, Autti & Partio (2026). PIAP-Continuum Concept for Change-Makers.

Table 9 Remembering the future. “People need art to re-imagine a new world.” -Selma Vihunen, movie director (Joutsenvirta & Salonen, 2020, 187). **Source:** Pakarinen, Autti & Partio (2026). PIAP-Continuum Concept for Change-Makers.

Table 10 PIAP integrates design thinking, sense making, and participatory, experiential learning to support innovation processes in which impacts are still emerging. PIAP builds a perspective by operationalising impact assessment as an iterative, action based, and learning oriented process (figure 1; table 2). **Source:** Cf. Boni & al. (2019), Partel & Dunphy (2016) and Sanul & Köse (2026).

Table 11 Pros and Cons of PIAP.

Table 12 How might we yet develop PIAP? The table collects aspects of PIAP's future development needs.

Table of figures

Figure 1 PIAP mission as an eco-social system innovation: developing one's agency for change-making: The Pedagogical Framework for PIAP supports a holistic understanding of complex problems by addressing people- and life-centred needs across possible future scenarios to eco-social transition.

Figure 2 A thematic model of the Futures wheel (cf. Benckendorff, 2008).

Figure 3 PIAP Continuum Concept is a mission-orientated and transitioning framework of policy recommendations (cf. Larrue & al., 2024.). Ideally, all four themes co-occur and mutually influence one another.

Figure 4 Futures wheel and Heat map results visualised after pilot in Zagreb had run the participatory workshop. Each number refers to an action, outcome or recognised impact. Heat map criteria function as value laden lenses for interpreting and prioritising impacts, addressing nature and human actors simultaneously and often in overlapping ways.