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Achieving social-ecological fit in projectified environmental governance: Exploring vertical and horizontal dimensions

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ABSTRACT

Social-ecological fit has been a popular approach to assessing the connectedness between social and ecological systems in environmental governance. However, the role of projects in social-ecological fit has yet to be explicitly problematized and conceptualized. Given the centrality of projects - i.e. temporally limited organizations that bring various actors into collaboration to pursue clearly defined goals and tasks - in environmental governance, this is a serious shortcoming in the literature. In this paper, we fill this gap by drawing on the hitherto unconnected literatures on projectified environmental governance and social-ecological fit. We then assess the extent to which fit can be achieved in projectified environmental governance. To do this, we develop a novel framework for assessing the vertical and horizontal dimensions of social, spatial, and temporal fit and conduct an empirical study of the European Union's LIFE Program and environmental projects funded by the program in Estonia. Our results suggest that the spatial and temporal fit of projects is contingent on social fit, i.e., the alignment of interests and needs of project-related actors. Frictions between various levels of decision-making also condition the possibilities of achieving fit horizontally across stakeholder groups and ecological systems as well as of sustaining project results over time.

1. Introduction

Creating a better connection between social and ecological systems is a central concern in environmental governance – over the last decades, the discussion on social-ecological fit has been a much-debated topic (Folke et al., 2007; Young, 2002; Young et al., 2008). Achieving fit, i.e. a "match or congruence between biophysical systems and governance systems" (Young, 2008, p. 26), entails not only creating and modifying institutions and governance arrangements on different levels, but also carefully considering the dynamics of social-ecological systems (SESs) (Galaz et al., 2008). Since the inception of the concept of fit, the discussion has evolved considerably, and numerous types of fit and methodological considerations for studying fit have been identified (Vatn and Vedeld, 2012; Bodin, 2017). Importantly, in addition to studying the fit between governance systems and ecological systems, the literature has also focused on the fit between governance systems and the interests and expectations of social groups (e.g., Boakye-Danquah et al., 2018; Epstein et al., 2015). Fit thus entails looking *within* governance arrangements and *across* social and ecological components in SESs. While multiple propositions and suggestions have been made, the role of projects as vehicles for achieving fit has yet to be explicitly problematized and conceptualized. Given the central role of projects in environmental governance, this shortcoming is critical. In this paper, we address this gap in the literature.

Projects have become an integral part in virtually all parts of contemporary society – scholars argue that we live in a "project society" (Lundin et al., 2015). Nowadays, a common way to address any kind of pressing challenge is to create a project, in other words, a temporally limited organization that brings various actors into collaboration to pursue clearly defined goals and tasks (Lundin and Söderholm, 1995). Projects are often touted for providing innovative spaces for developing new knowledge (Lindkvist, 2008; Nilsen, 2013; Sydow et al., 2004) and increasing the capacity to adapt to local contexts and needs compared to permanent organizations, such as bureaucracies (Sjöblom and Godenhjelm, 2009). The role of projects has also grown in environmental policy and governance (Munck af Rosenschöld, 2019; Sjöblom and Godenhjelm, 2009), referred to as "projectified environmental governance" (PEG) (Munck af Rosenschöld and Wolf, 2017). Due to the

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claimed strengths of project-based organizing, PEG shows great promise, on paper, to achieve social-ecological fit.

Taking this into account, *the aim of this paper is to evaluate the extent to which fit can be achieved in PEG and what determines this fit.* To do this, we develop a novel framework to study social-ecological fit in PEG by assessing both the vertical and horizontal dimensions of three forms of fit: social, spatial, and temporal. Empirically, we study the European Union's (EU's) LIFE Program and environmental projects funded by the program in Estonia. The LIFE program is the principal funding mechanism for environment and climate action in the EU and has since its inception funded over 5000 projects in the EU Member States (European Commission, 2021a). By focusing on EU LIFE, we are thereby able to analyze the social-ecological fit of PEG critically.

The paper is structured as follows. First, we discuss our conceptual framework, drawing connections between projectified environmental governance and fit in SESs. We refine and expand the literature on social-ecological fit by assessing both the vertical and horizontal dimensions of three types of fit: social, spatial, and temporal. Second, we present our empirical case of the EU LIFE environment sub-program as well as our data and methods. Third, we present our results from our empirical analysis of the spatial, social, and temporal fit of PEG. Lastly, we conclude our paper with a broader discussion on the role of projects in the pursuit of social-ecological fit.

2. Conceptual framework

2.1. Projectified environmental governance

The project is a staple organizational form in the private sector, and the projectification of business organizations has long been a topic of interest (e.g. Martinsuo and Geraldi, 2020; Midler, 1995). Since the 2000s, there has been growing interest in exploring projectification in the public sector (Andersson, 2009; Fred and Hall, 2017; Godenhjelm et al., 2015; Hodgson et al., 2019; Jensen et al., 2017; Söderberg, 2020) and in environmental policy and governance (Munck af Rosenschöld and Wolf, 2017; Sjöblom, 2009). In this paper, we build on the concept of "projectified environmental governance" (PEG) put forward by Munck af Rosenschöld and Wolf (2017) to explore the critical role of projects in achieving fit. PEG can be described as "[a]n arrangement constituted by organizations and individuals across sectors involved in temporary project-driven activities for the purpose of pursuing selected goals as well as the formal and informal institutions that guide these activities" (Munck af Rosenschöld, 2019, p. 335).

We focus on three main traits of PEG identified in the literature: 1) collaboration, 2) scope, and 3) temporality (see Munck af Rosenschöld and Wolf, 2017). First, utilizing projects to organize work involves integrating actors across sectors. The focus on collaboration stems from the perceived need to generate new knowledge and to integrate existing knowledge among project stakeholders as well as to increase the legitimacy of governance arrangements (Andersson, 2009; Godenhjelm and Johanson, 2018; Johansson et al., 2007; Obstfeld, 2012). However, existing research presents contradictory evidence for the ability of projects to enhance collaboration. Allan (2012) argues that the short timeframe of projects makes participation less meaningful and hampers trust-building among participants. Others have argued that projectification has spurred a "project class", which has the necessary competence to obtain project funding and manage projects (Kovách and Kučerová, 2009). Projects thus generate collaboration, but its form and outcomes are contested.

Second, projects are concerned with generating change by carrying out well-defined tasks (Lundin and Söderholm, 1995), compared to permanent organizations, such as bureaucracies, whose interests lie more in organizational routines (Rämö, 2002). By being task-oriented, projects steer attention and resources to a specific problem domain, considering the particularities of the context (Lundin and Söderholm, 1995). Projects also allow for experimentation and the testing of new policies (Jensen et al., 2017), as project participants can detach themselves from everyday work and interact with actors outside their normal work environment. In this sense, the discussion on PEG is clearly linked to the debates on sustainability experiments (e.g. Loorbach et al., 2017; Turnheim et al., 2018) and strategic niche management (e.g. Smith et al., 2014). While the role of projects is central in these debates, the organizational characteristics and temporality of projects are typically not sufficiently problematized (but see Nylén, 2021). Even though most sustainability experiments are organized as projects, not all projects are devised to contribute to an ongoing transition process in a strategic fashion. By focusing on PEG, we suggest that PEG can be understood as an umbrella concept, and as a broader approach, for studying projects and their capacity to generate change in the context of sustainability and environmental governance.

Third, the temporariness of projects highlights important temporal challenges in environmental governance (Marsden et al., 2012; Munck af Rosenschöld and Wolf, 2017). As Sjöblom (2009) argues, "the gradual development towards increasingly non-permanent and informal structures is, in fact, one of the most important – although still very much neglected – administrative changes of the past decades" (Sjöblom, 2009, p. 165). Being short-term organizations, projects and project-based governance arrangements can provide temporal flexibility to address specific social-ecological problems in a just-in-time manner (Andersson, 2009; Hodge and Adams, 2016). However, research has shown that projects operate in hybrid environments with multiple, and often conflicting, temporal expectations and norms (Dille et al., 2018; Söderberg, 2020). To be adaptive and flexible, projects need to address these expectations. As projects have set end dates, another core challenge is ensuring that project-generated knowledge and results are continued and sustained after the project finishes (Godenhjelm et al., 2015; Hartmann and Dorée, 2015; Munck af Rosenschöld, 2019; Sydow et al., 2004). Failing to do so increases the risk of knowledge loss and fragmentation, which in turn casts doubts on the long-term effectiveness of project organizations in addressing problems.

2.2. Studying social-ecological fit and projectified environmental governance

Connecting ecological and social systems is a central challenge for environmental governance. The "fit" of SESs refers to the degree to which socially devised governance arrangements are aligned with the ecosystems that they are supposed to govern (Folke et al., 2007; Treml et al., 2015; Young et al., 2008). The literature on fit has grown substantially since the concept was first introduced some 20 years ago, and at least five different types of fit have been identified in the literature (Epstein et al., 2015). Bearing in mind the three central traits of PEG (collaboration, scope, and temporality), we will focus on three types of fit – social, spatial, and temporal.

We build our theoretical framework on the work by Bodin (2017), conceptualizing fit as having horizontal and vertical dimensions. In horizontal fit, the focus is on establishing linkages between social-ecological building blocks. For example, two actors may manage two separate parts of an ecosystem, but the actors themselves are not connected to one other. In vertical fit, the concern is on how to ensure connectivity between levels. Connecting actors on different levels of administration, such as on the local and national level, is crucial to avoid misfits in SESs. In other words, fit should be analyzed both across and between layers. Bearing this in mind, we next present how social, spatial, and temporal fit can be studied from the perspective of PEG (see Table 1). We evaluate the extent to which social-ecological fit can be established in PEG by focusing on the three types and two dimensions of fit.

Social fit refers to the extent to which institutions and governance arrangements are aligned with social circumstances, including the interests and needs of social groups, and connecting actors across societal sectors and levels (Boakye-Danquah et al., 2018; Epstein et al., 2015).

Table 1
Framework for studying fit in projectified environmental governance.

		Dimension of fit	
		Vertical	Horizontal
Type of fit	Social fit	Alignment of interests and values between supranational, national, and local levels	Alignment of interests and values between local stakeholders
	Spatial fit	Inclusion of different actors and ecosystem externalities across scales	Inclusion of different localities and ecosystem externalities among local stakeholders
	Temporal fit	Continuity and alignment of rhythms between levels of decision-making and ecosystems	Continuity and alignment of rhythms between local stakeholders

Ensuring social fit involves taking the perceived legitimacy and acceptance of governance arrangements in the eyes of social actors seriously (DeCaro and Stokes, 2013; Meek, 2013), which stresses the importance of considering the social aspects of fit in SESs.

In PEG, we understand social fit to mean the extent to which projects are aligned with the interests and values of social actors. *Vertical social fit* refers to the extent to which these interests and values are connected to different levels of decision-making. For example, aligning an EU project funding program with the interests of individual nation-states and local actors increases vertical social fit. Analyzing social fit from a multi-level perspective also highlights the notion of power situated in linkages across scales (see Bulkeley, 2005; Di Gregorio et al., 2019). Aligning different interests is thus of great importance to vertical social fit (see e.g. Robinson et al., 2017). *Horizontal social fit* is concerned with connecting interests and values on the level of the project. While collaboration in projects can broaden the knowledge base and enhance legitimacy in the eyes of relevant stakeholders (Godenhjelm and Johanson, 2018), research has shown that participation in projects is often skewed toward actors with significant knowhow and experience in working with projects (Kovách and Kučerová, 2009). Therefore, achieving horizontal social fit is crucial for situating projects in localities and ecosystems properly.

Spatial fit refers to the extent to which governance arrangements are geographically aligned with the ecosystems that they are supposed to govern (Fabritius et al., 2017; Dressel et al., 2018). Spatial fit becomes threatened if "management actions are applied at a coarser or finer scale than is relevant to solve the ecological problem…or because ecological processes transcend governance boundaries" (Bergsten et al., 2014, p. 6). To achieve spatial fit, one must ensure that the geographical focus of the governance system is in line with the entire ecosystem being managed, and identifying potential interlinkages between ecosystems.

In PEG, we treat spatial fit as the extent to which projects are aligned with the geographical space that they are supposed to cover (see Cinner et al., 2012). *Vertical spatial fit* refers to the extent to which habitats and protected areas are covered across different scales in the administrative hierarchy. For example, the emphases and goals of a policy program can limit the spatial scope within which projects can operate. *Horizontal spatial fit* focuses on the degree to which projects are able to cover ecosystems and habitats across the project level (see Bodin and Tengö, 2012). Failing to include important stakeholders in the projects potentially increases disintegration between applied efforts within and across ecosystems. For example, not including landowners (and the land that they own) in project efforts decreases the spatial scope and spatial fit of projects.

Temporal fit is concerned with how well governance arrangements are connected to ecosystems in time (Galaz et al., 2008), for example in terms of time frames, tempo, sequence, and timing (Munck af Rosenschöld et al., 2014). Failing to acknowledge, for example, at what time governance systems are implemented and how they perform over time has serious negative consequences for social-ecological fit.

In PEG, we conceptualize temporal fit as the degree to which projects are temporally aligned between levels and across scales. *Vertical temporal fit* refers to the extent to which projects are in line with 1) the rhythms of higher-level administrative and decision-making and 2) the rhythms of ecosystems. Different, and often conflicting, timing norms of actors in PEG render vertical alignment challenging (see Dille et al., 2018). Achieving vertical temporal fit in PEG thus involves establishing a better connection between the temporal dynamics of projects and permanent organizations as well as ecosystems. *Horizontal temporal fit*, in turn, is concerned with the level to which rhythms are aligned between local stakeholders. Ensuring that project-related activities and knowledge are sustained once the project is completed is a central concern for PEG. Improving horizontal and vertical temporal fit thus involves ensuring that the planning, knowledge production, and results produced in short-term projects are in line with the temporal demands of SESs.

3. Methods and data

Our empirical analysis builds on an in-depth case study (Gomm et al., 2009) of environmental projects funded by the EU LIFE program in Estonia. The EU LIFE program is the principal funding mechanism for environmental and climate action in the EU. The budget of the program increased sharply from 3,4 billion euros in 2014–2020 to 5,4 billion euros in 2021–2027, reflecting the Green Turn and a general effort by the EU to "protect the environment and the climate" (European Commission, 2019). The LIFE program funds projects to support collaboration across levels of social organization, sectors, and knowledge domains with the aim of producing replicable results and, by providing 55–60% of the project budget, leveraging investments in the field. The European Commission designs the program, administers the funds, approves, or rejects project proposals according to the program guidelines, and audits their results. Member States approve projects to operate on public land, provide co-funding, and participate in projects. Member States sometimes also initiate projects. Civil society and commercial actors routinely propose and manage projects and incorporate landowners into project activities. Projects have budgets ranging between 0,5 and 15 million Euros and last for two to seven years. Our focus is on projects funded through the environment sub-program as the central mechanism of the EU for the conservation of species.[1]

Estonia is a fruitful arena for studying PEG, as, overall, the EU countries of the Eastern enlargement in 2004 and 2007 are significant recipients of EU project funding, which aims to create positive and durable changes in these countries' societies. Since 2005, EU funding sources have contributed to roughly 10% (and up to 20% in 2010–2013) of Estonia's state budget. While the LIFE program is by no means the largest funding instrument available in Estonia, it is significant in the realm of environmental management. Unlike Structural Funds that are managed by national authorities, the LIFE program is centrally administered on the EU level. For the funding period of 2014–2020 (during which time this study was conducted), LIFE was managed by the Executive Agency for Small and Medium-sized Enterprises (EASME). The LIFE program hosts a national contact point at the Estonian Ministry of Environment, the main purpose of which is to inform civil society and commercial actors and inspire them to apply for funding. EASME interacts with projects through a liaison officer.

In all, 39 LIFE projects have been implemented in Estonia since 1992. We approached this empirical material qualitatively to gain a better

[1] While the focus of our empirical analysis is on projects funded by the "environment sub-program" of EU LIFE, throughout the text we also make references to the broader EU LIFE program when: 1) our interviewees mention LIFE more generally, and 2) characteristics and issues of the environment sub-program apply to the program as a whole (e.g., funding-related requirements).

understanding of *how* projects can increase and decrease fit. We first examined project documentation in order to understand the relevant project objectives, activities, and results. We then contacted all projects initiated within the last 10 years with an invitation for a semi-structured interview. Eight of them agreed to be interviewed (see Appendix 1). We also interviewed a representative of EASME (1), relevant personnel within Estonian public authorities (3), a project liaison officer (1), and a consultant (1) engaged with these projects. In total, we conducted interviews with 15 people, some of them several times. The interviews covered the following topics: planning the project, engaging project participants, links to external structures, project implementation, and project outcomes. The interviews lasted between 30 min and 2 h, and they were transcribed and analyzed using NVivo. We adopted an interactive analytical approach (Maxwell, 2013) in which the analysis was driven by both our theoretical framework based on concepts from the existing literature and by continuous engagement with the data. We applied close reading to detect descriptive and normative passages that highlighted various types of fit, and made changes to the framework to correlate better with the results of our analysis. We then coded these passages as pertaining either to the vertical or horizontal dimensions as presented in our framework.

4. Results

4.1. Social fit

4.1.1. Vertical social fit

The LIFE program guidelines allow a degree of flexibility in project aims, and the program has been praised for being able to adapt to local conditions in nation-states and regions. As explicitly expressed by a representative from EASME: "*LIFE…is very much a bottom-up approach [and] has a very high degree of flexibility. We impose in contracts nothing like many other programs…we [only] evaluate if this is fit for purpose*". However, a more detailed analysis revealed tensions on the vertical dimension.

The design of the environmental sub-program of the LIFE program focuses on Natura 2000 nature conservation areas and two EU directives – the Birds Directive and the Habitats Directive – to which the funded projects need to refer. Although projects can be submitted without addressing these areas or policies, they are disfavored in the evaluation of proposals according to LIFE project evaluation guidelines. By requiring nation-states to manage Natura sites and adhere to directives, the EU creates boundaries to direct project proposals in its desired direction. Providing funds to implement these regulations in specific sites or nationally improves the connection between local-level activities and directives and other program aims, while retaining a degree of flexibility for project actors. Therefore, the LIFE program can be seen as an opportunity to increase social fit between the European Commission and nation-state objectives.

Two contrasting objectives can be distinguished. From the point of view of the nation-state, additional funds brought into their field by LIFE program are, on the one hand, welcomed: "*as a push fund with what and within which to push more fundamental things in motion",* as expressed by a representative of the Ministry of Environment in Estonia. On the other hand, implementation of the program creates additional opportunities for oversight by the EU and local stakeholders. From the point of view of environmental NGOs, when LIFE projects create best practices, it is hard for state agencies to produce excuses for not meeting nature protection targets. As expressed by a LIFE project participant in a project: *"after [a LIFE project], it is very difficult for the country to say that we continued to let people visit the [habitats of endangered species], even though we have developed a scheme to protect them using EU money"*.

These considerations indicate that the aims and goals of various actors on the vertical axis are sometimes in conflict. The European Commission's aim to influence national policies through projects is not always univocally welcomed, sometimes provoking resistance. This is clearly acknowledged by the European Commission, as the representative of EASME explains how the money provided by the LIFE program helps to "*overcome some inherent or explicit resistance from the public authority to be more ambitious*". This friction between the European Commission and nation-states can also be identified in the process of determining project goals. Incumbent policy actors are inclined to influence projects so that their results align with pre-determined goals even when the innovative capacity of projects is stressed in their rhetoric (Vihma and Wolf, 2022). Again, two contrasting points of view can be distinguished. A representative of the Ministry stated that during application periods: "*sectoral priorities lie ahead…So, it is understood that if you do not have a thing on the sectoral priority list, the topic doesn't fly*". Therefore, during negotiations over project goals, projects are "reigned in" to align with national interests in exchange for co-funding. For example, in one of the projects, NGOs proposed a bold and innovative approach to influence a forest-dwelling endangered species' habitats through artificial reproduction. During negotiations with established actors in the policy network, these ideas were excluded from the project activities.

> The more the [state agency] came on board, the more formal and routine-like [the project] became. I think it is now something that could be done without a project. It is basically just an additional source of income for them…It may be innovative for them, but for me it has lost its attraction.
>
> (Project participant)

Friction in the vertical social dimension diminished opportunities for the project to use one-off solutions for the protection of the species. The risk tolerance of the central administration proved to be clearly inferior to that of the NGO, which eventually distanced itself from the project. Thus, the alignment of the PEG mechanism between the levels of government is not unproblematic and brings out discrepancies in terms of diverse values, goals, and operation logics.

4.1.2. Horizontal social fit

These above-mentioned frictions on the vertical level extend to the horizontal level and influence how actors that are involved in the project activities carry out their tasks. In some projects, frictions were low or understood as technical, and projects induced negotiations over solutions and the coordination of activities. For example, in the case of a project aimed at improving the habitats of an endangered volant species, the project was supposed to coordinate post-project activities between the national agencies and municipalities. These activities were intended to protect the habitats, several of them on heritage sites, while allowing for a degree of public access. Project partners report moderate success for the project. They were able to propose better techniques for protecting the habitats, and to achieve a more coordinated approach to wintering sites from both the nature and heritage conservation perspectives. In this case, a good vertical social fit can be detected.

However, if discrepancies between values and interests on the local level are significant, the coordinating efforts of projects may not be enough to solve underlying problems. In the Estonian forestry sector, logging and conservation interests collide fiercely, and attempts to reconcile them on the political level have so far failed (Vihma and Toikka, 2021). These conflicts are carried over into the projects. For example, a LIFE project designed to develop forest management techniques for conserving forest-dwelling species in cooperation with the representatives of state and private landowners ran into difficulties in improving horizontal coordination. The conflicts almost stifled the project, as partners were not able to find a common understanding of the project goals.

> What you immediately notice is the difference between [two main project partners]. We have different ideas and even speak a different language at times. I must be very careful how I express myself. Some issues are very sensitive, so all generalizations must be done quite

carefully. They are very tense, and the partners are in a defensive position.

(Project participant)

Therefore, projects are managed within existing structural limitations. These limitations of values and interests on the vertical dimension of multi-level governance structure the potential of horizontal coordination of local actors in PEG. In the following, we will elaborate further on the effect of these constraints on spatial fit.

4.2. Spatial fit

4.2.1. Vertical spatial fit

In the interviews, Estonian civil servants and NGO representatives praised LIFE environmental projects for being able to incorporate local landowners into conservation efforts. However, the potential for achieving fit depends on how the spatial application of policy instruments on the level of EU, nation-states, and local actors align. Projects in the LIFE environmental sub-program are expected to target Natura 2000 areas and refer to two directives. However, the program has recognized the potential spatial misfit through fragmentation of habitats and has in recent years promoted the establishment of ecological corridors between protected areas (European Commission, 2021c). While safeguarding Natura 2000 areas is coordinated and financed on the EU level, nation-states can decide themselves on the design and implementation of activities outside those areas. In practice, the potential of achieving spatial fit is therefore dependent on negotiations with national policies.

The challenges can be exemplified by a project aimed at conserving volant species. According to existing data, the situation of 12 of these volant species in Estonia is deteriorating (Keskkonnaamet, 2017). The main threats include the decline of quality in and destruction of both summer habitats and wintering grounds. An environmental NGO was looking to use LIFE project funding to coordinate conservation activities. Because the Habitats Directive only addresses one volant species out of 12, they focused on protecting this species. Moreover, because the summer habitats of this volant species fall outside Natura areas, the project activities could only focus on the areas where these animals stay during the winter. In the following excerpt, a project participant reflects on the limitations of project activities.

> What would need to be done would be to advise the owners of the summer colonies…, as [the volant animals] are often in the attics and church towers. [But] advising summer site owners was excluded from LIFE. It is difficult to write these advisory activities in accordance with the LIFE rules [that state that] when there is a classical nature protection project it should be connected to Natura areas.
>
> (Project participant)

This example points to a systematic vertical spatial misfit. The interests of the EU and nation-states with regards to environmental conservation are primarily manifested in nature protection areas. Consequently, project funding for voluntary activities outside nature protection areas is difficult to obtain. This is especially difficult in cases where resource use, such as in forestry or peat harvesting, conflicts with environmental aims. Therefore, the expectations of addressing entire habitats through project-driven policy funding programs does not always align with the interest of nation-states.

4.2.2. Horizontal spatial fit

Inclusion of local landowners and creating coherence in their action, i.e. achieving horizontal spatial fit, is one of the key aims and benefits of PEG. As indicated above, not all sensitive or significant ecosystems are located on conservation lands. Three of the eight LIFE environmental projects in Estonia included in our study targeted private landowners. Project managers describe the challenges of including hundreds of individual landowners into project activities. Our analysis shows that the potential for achieving horizontal spatial fit depends on the remuneration for conservation efforts. Although while projects generally do not include direct financial payments to landowners, when projects succeed in creating material motivation for landowners, participation and coherence is easier to attain. For example, as in the case of a meadow restoration project, the landowners received grazing infrastructure (incl. fences and shelters), and in return were contractually obliged to use those meadows for grazing after the project ended.

In case of forestry, however, the benefit is in most cases significantly lower than the potential gain from harvesting timber. Direct remuneration by the national authorities is given only when lands are incorporated into conservation areas, and even then the budget for remuneration is often too small to pay compensation to all interested landowners. Therefore, only those landowners whose logging interests did not prevail participated in the project and accepted alternative sustainable forest management plans.

Therefore, we suggest that PEG can achieve horizontal spatial fit, but with important reservations. In our case, all projects were able to include a portion of landowners (ranging from about 300 in the meadow restoration project to 60 in the forest species project). The capacity to achieve spatial fit depends on the spatial dimension of the LIFE instrument, the corresponding policies of nation-states, and the relation of project activities to market demands.

4.3. Temporal fit

4.3.1. Vertical temporal fit

The timing of projects in relation to ecological processes is of central importance. LIFE projects were often praised in the interviews for being flexible and accommodating activities according to the rhythms of species and habitats, especially compared to other environmental projects that need to adhere to tighter deadlines. This suggests that establishing a fit between the rhythms of projects and ecosystems is not a straightforward process. Still, even in LIFE projects, activities can only take place during clearly defined temporal boundaries after the project application has been approved. This calls attention to how projects fit bureaucratic routines as one of the baseline conditions for achieving social-ecological coherence.

With the aim of establishing accountability, work in bureaucracies is routinized and subjected to annual planning of budgets or task allocation. Projects, in contrast, are created in a more ad hoc manner based on demands and problems of social-ecological systems. Although the LIFE program funding cycle is annual, the timing of project proposals is not bound by bureaucratic work routines. Furthermore, projects often go through consultations and amendments before they are initiated, adding to the non-uniform timing. It is therefore challenging for bureaucracies to gain a comprehensive picture of (possible) future projects and their relationship to existing ones. In our interviews, civil servants expressed concerns about the misalignment of project-based activities. As a remedy, one interviewee even proposed a centralized system of project generation and management:

> All this project approval and related co-financing should be more centralized. That there should be a Project Council. That this would not be so accidental. At the moment, what is a bit of a weakness is that projects come in by accident, right. One day you will be contacted, they say, listen, we came up with this idea and we have partners and we should introduce you to it. Okay, come on in. We don't have a complete picture of what idea is on the table at some point in time, and who will call you tomorrow.
>
> (Civil servant)

The vertical temporal misfit also influences poor coordination between projects on the national level. When the ministry is an official project partner, it retains some information produced in the projects,

such as species monitoring results, in its databases. However, a significant amount of project-related knowledge faces an indeterminate future. As one civil servant stated, information created through projects is often lost because "*there is no system on the state level or on the ministry level for systematically saving project information*". Simultaneously, civil servants argued that subjecting coordination and decision-making to bureaucratic rhythms would remove the flexible qualities of projects and make them more dependent on established power structures within bureaucracies. Centralization would also negatively affect the horizontal social fit and, by proxy, spatial fit. This is an important point, as LIFE environmental projects were favored and praised by interviewees as vessels for addressing entire habitats and undertaking large-scale operations due to having generous durations of 2–7 years and ample funding compared to other EU programs such as Structural Funds. Importantly for civil society organizations, which often function on project-to-project basis, the timeframe of LIFE allows the hiring of full-time employees for project activities. This increases their engagement with the project and supports the heightened ambitions of the LIFE sub-program.

4.3.2. Horizontal temporal fit

The temporariness of projects also points to challenges in sustaining project results and activities after the project is completed. We identify at least two important pathways for ensuring continuity on the project level in the LIFE sub-program: 1) contracts between local landowners and project actors and 2) initiating new projects. Local landowners and project actors sign contracts that commit them to upkeeping habitats or continuing other environmental activities after the project is completed. According to a civil servant, surveys of LIFE projects made 20 years after the projects ended suggest that project activities were discontinued in only four cases out of 36. However, there is no regular long-term monitoring, and the occasional reports are not publicly available.

The second pathway is the use of project results to inform subsequent projects. LIFE project results are often disseminated among project professionals outside the given project. Our analysis suggests that LIFE projects routinely collect information from previous projects and learn from their results. In an interview, a civil servant referred to the "LIFE family" as the loose group of active people who often interact in relation to LIFE projects.

> The added value of projects depends on people, really. This is like a LIFE family, those long-term LIFE clients, people who have been engaged for a long time, project after project. These people are very motivated. Especially in nature [projects] people have intrinsic motivation. They are ambassadors of their topic as they constantly create events and are invited to those events like Green Week in Brussels or pan-European LIFE platform meetings. There is a good atmosphere, but it can happen that it becomes hermetic in terms of policy output. Just professionals.
>
> (Civil servant)

These forms of knowledge sharing events are encouraged by the LIFE Program. In addition, projects routinely disseminate information through publications. For example, EASME publishes reports that focus on success stories in sustaining project results. However, the reports also point to poor financing, oversight, and organizational issues as obstacles in sustaining project results (Neemo, 2018, 2020). While some interviewees pointed to informal channels of influencing policy through lobbying, several interviewees identified the need for vertical information sharing and institutionalization of project results in achieving significant impact.

5. Discussion

Our analysis reveals contradictory evidence of fit in PEG (see Table 2). In our empirical case, the comparatively low oversight of the funded projects allowed them to adapt to local conditions – a feature that is at the core of adaptive governance (e.g. Folke et al., 2005). For example, each of the LIFE environmental projects that we analyzed was based on specific local data on species and habitats, as well as addressing the complexity of local environmental conditions. However, projects are implemented within existing political-administrative structures and projects need to take into consideration existing limitations, such as conflicting interests, land ownership, legislation, and bureaucratic rhythms. Therefore, social, spatial, and temporal fit must be addressed within these existing constraints.

Table 2
Summary of results from the empirical case.

		Dimension of fit	
		Vertical	Horizontal
Type of fit	Social fit	Flexible program guidelines on the EU level increase potential for fit, but rigid national guidelines may decrease fit	Cooperative approach generates fit in non-contested areas, whereas conflicts in forestry result in struggles to achieve cooperation
	Spatial fit	Focus on Natura areas prevents achieving fit vis-á-vis entire habitats and makes fit dependent on national priorities	Inclusion of landowners produces fit, but fit is limited in areas with high interests in logging or peat harvesting
	Temporal fit	Flexible guidelines increase potential for temporal fit, while decreasing coordination between projects on the national level	Motivation of local landowners and "project class" produces fit, but lack of coordination makes it frail

By assessing the three types of fit both vertically and horizontally, we can specify the mechanisms of how connections between social and ecological systems are made and what disrupts them (see also Bergsten et al., 2019). Specifically, our analysis highlights interlinkages between the different types and dimensions of fit. In our case of EU LIFE environment sub-program in Estonia, we show how social fit can both spur and hinder the achievement of spatial fit from both horizontal and vertical dimensions (see Fig. 1). The potential to achieve fit depends on how well the policy instruments on the level of the EU, nation-states, and localities align. Therefore, addressing entire habitats through project-based funding does not always line up with the interest of nation-states and requires additional oversight. These discrepancies between actors on different levels of decision-making set the stage for similar discrepancies among local stakeholders and landowners. While some local actors may be motivated to develop innovative environmental solutions, others are not, and may distance themselves from the project. Therefore, projects need to adjust themselves to local ambitions and goals: the motivation of local landowners to participate in the project influences spatial fit.

Most importantly, we argue that the temporality of projects sets boundary conditions for achieving fit. While projects can indeed include relevant partners and produce legitimate solutions quickly, projects have set end dates. Therefore, their long-term efficiency and ability to sustain social-ecological fit depends on how well project generated results can be institutionalized. The link between projects and permanent organizations as well as the possibility of projects to generate transformative change has been discussed widely in the literature, emphasizing the politico-administrative conditions of projectified governance (see e.g., Sjöblom et al., 2013; Godenhjelm et al., 2015; Munck af Rosenschöld, 2019; Vihma and Wolf, 2022). In our material, we identified two main obstacles to the continuity of project results. First, if projects are not considered legitimate from the point of view of participating actors on different levels, project results are easily forgotten. Compared to, for example, technological development projects in the private sector, where there is a market that drives the uptake of innovations and knowledge, environmental projects operate in a

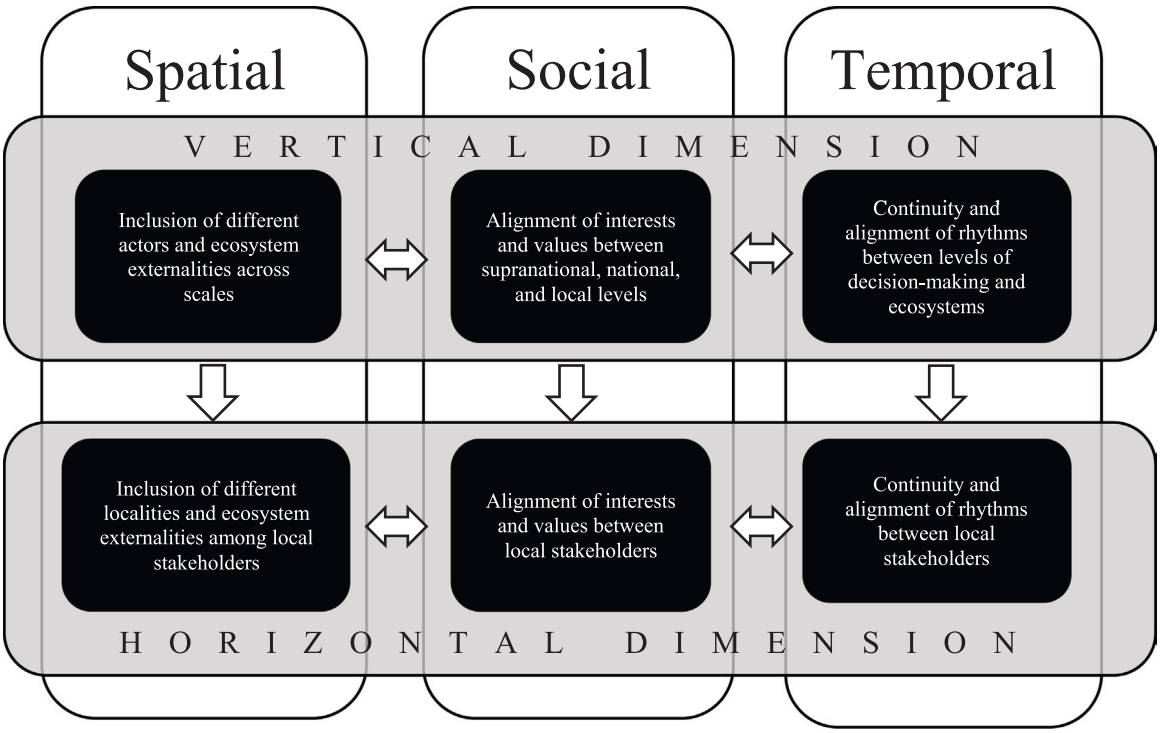

Fig. 1. Interlinkages between types and dimensions of fit in PEG.

much more complex context with political contestation (Vihma and Wolf, 2022). There is therefore a real risk that valuable information is not captured. Second, projects tend to involve certain types of professional partners, which casts doubt on the ability of projects to ensure continuity outside the immediate "LIFE family", as expressed by one of our interviewees. This resonates with the notion of the "project class" put forward by Kovách and Kučerová (2009) to portray the tension between the professionalization of project work and achieving well-balanced representation of local stakeholders or decision makers in the projects.

These considerations bring us back to the question of social coordination between various temporary endeavors in an increasingly projectified world. While we sympathize with the understanding that adaptative governance should not be approached as a one-shot but rather a continuous endeavor (Hodge and Adams, 2016; Rist et al., 2013), we see that a degree of institutionalization of project results would ensure continuity and harmonization of knowledge beyond the local level. However, how and to what extent project-based cooperation can break from existing pathways and power relations stemming from central coordination remains an open question (Vihma and Wolf, 2022). We argue that assuming a more explicit focus on temporality would clearly benefit the literature on adaptive governance.

Finally, we wish to draw attention to some limitations of our study. First, we focus on projects funded through the environment sub-program of EU LIFE. This means that LIFE projects that specifically address climate change or coordination between government environmental action were left out of our analysis. To gain a more comprehensive view of the LIFE program as a whole, future studies would benefit from assessing both sub-programs. Second, as our data consists of interviews and documents, we rely on the accounts of our respondents, project outputs, and other documents to assess social-ecological fit. Including firsthand environmental field studies would increase the validity of our findings. We argue, however, that our approach sheds important light on the interrelatedness of different types of fit and connection between different levels of decision-making.

6. Conclusion

The aims of this paper were to evaluate the extent to which fit can be achieved in PEG and what determines this fit. By drawing on the literatures on PEG and social-ecological fit, we refine and contribute to the fit literature by assessing both the vertical and horizontal dimensions of three types of fit: social, spatial, and temporal. Based on this framework, we conducted an in-depth case study of the environment sub-program of the EU LIFE program in Estonia. We argue that incorporating PEG into the discussion on social-ecological fit has clear merit. Our paper makes two main points. First, the capacity of projects to achieve fit is contingent on how the three types of fit are in line with one another. Second, by clarifying the vertical and horizontal dimensions, we argue that more attention needs to be directed toward the multi-level and multi-scale design of initiatives that are put forward to address social-ecological fit. Achieving fit requires us to consider frictions and conflicts among different levels of decision-making as well as across stakeholder groups operating on the local level and across ecological systems.

CRediT authorship contribution statement

Johan Munck af Rosenschöld: Conceptualization, Methodology, Writing – original draft, Writing – review & editing, Funding acquisition. **Peeter Vihma:** Conceptualization, Methodology, Investigation, Writing – original draft, Writing – review & editing, Funding acquisition.

Declaration of Competing Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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Appendix 1. Estonian LIFE projects initiated between 2007 and 2017

Project*	Sub-Program	Duration (years)	Interviewed
Water management**	Integrated Projects for Environment	9	no
Water systems**	Climate Action	4	yes
Volant species 1 ***	Environment	7	yes
Volant species 2	Environment	4	yes
Communication	Environment	5	yes
Awareness	Environment	2	no
Meadows 1	Environment	6	yes
Meadows 2	Environment	5	yes
Springs	Environment	5	no
River	Environment	5	no
Hazardous materials	Environment	4	yes
Urban meadows	Environment	4	no
Recycling	Environment	6	yes
Monitoring	Environment	2	no
Insects	Environment	5	no
Forests	Environment	2	yes
River 2	Environment	3	no
Pollution	Environment	3	yes

* The names of the projects are omitted to ensure the confidentiality of the projects included in our study.
** Between 2007 and 2017, the LIFE sub-programs of "Climate Action" and "Integrated Projects for Environment" in Estonia funded only one project each. We gathered data on the project funded by Climate Action, but due to the small number LIFE projects funded outside the "Environment" sub-program in Estonia, they were excluded from our empirical analysis.
*** The project is led by a foreign partner, but Estonian partners participate in the project.

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