

# CREATING LOW-CARBON ECONOMIES: PROBING TRANSITION DYNAMICS THROUGH THE LENS OF FIELD THEORY

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## ABSTRACT

We employ field theory as an approach to analysing sustainable regional development by reconciling funding needs and funding procurement. Initial expectations that private capital would bridge the financial gap to decarbonize our economies and societies have not materialized. Instead, state-led coalitions increasingly introduce spatialized decarbonization strategies in which public development banks are pivotal, yet underappreciated, actors. Field theory provides a fresh perspective for mapping the particular context in which regional industrial policies intersect with broader national and supra-national investment programmes and funding needs for these long-term initiatives. Transitions are typically directed but open-ended social processes, necessitating agency to both alter context and institutions and stabilize the emerging new structures. Field theory can surpass limitations in approaches like transition studies and integrate change mechanisms across scales.

**Key words:** low-carbon transition; strategic action fields; sustainable finance; public development banks; France; Germany; EU Green Deal

## INTRODUCTION

The European Green Deal has been among the most prominent, and perhaps the most promising, albeit most conflictual, policy strategies in the past decades. It is supposed to help regions and countries in their rapid transition towards climate-neutral economies, and to foster sustainable economic *growth* for more just and inclusive societies (Hercelin & Dörry 2024). At the same time, Blühdorn *et al.* (2020) illustrate in impressive detail that a serious transition towards sustainability has not yet taken place because large groups of actors from science, politics and the economy associated with the sustainability narrative have not fundamentally emancipated themselves from

the growth narrative and its financial, social and symbolic resources (Ötsch *et al.* 2018). Put differently, change agents, that is, the agents of the sustainability narrative competing with that of the current capitalist growth model, have not (yet) sufficiently demonstrated its social effectiveness and relevance for implementation (Vogel & Hickel 2023), which, to date, has caused a systemic stabilization of ‘sustainability approaches’ via ‘non-sustainable practices’ (Hesse & Lange 2023).

Against this background, we introduce field theory to advance the discussion and help (i) unpack and analyse actor groups and their attached interests in the sustainable transition dynamics, and (ii) elaborate on new societal practices to address and overcome

the deep-rooted economic orthodoxy that has been a guiding logic in Western societies, including policies. We specifically discuss the state and its public institutions as change agents in this fundamental transition process from the perspective of the theory of action (Bourdieu 1977, 1998), subsequently translated into the more comprehensive concept of Strategic Action Fields (SAF, cf. Fligstein & McAdam 2012).

We, therefore, mobilize the SAF approach to unpack processes in the core fields, within and through which transformation processes are unfolding, which includes their defining relationships and key agents (and agency) in processes of change. *Fields* can be markets, but also other forms of organization, providing analytical purchase to break open the rigid, exclusive focus on the market as socio-economic spaces of entrenched neo-liberal discourses and epistemological conflicts in economization processes (Çalışkan & Callon 2009). Yet, SAFs can define a field through forms other than markets, for example, community economies or post-growth models (Steffestun & Ötsch 2023). Strategic *action* is about control in a given context (White 1992; Padgett & Ansell 1993) to create and sustain social worlds by elevating human capacity to secure the cooperation of others through shared meanings and identities (Fligstein & McAdam 2012, p. 17). This particular SAF element assumes rules and resources not to be static but rather “produced, reproduced and altered by socially skilled actors in relation to collective interests” (Moulton & Sandfort 2017, p. 145). Field theory, thus, allows for the relational conceptualization of various market and non-market actors and their collective agency. Guided by these heuristics, we seek to tease out specifics in terms of building (and sharing) capacity as well as meaning and identity among actor groups that motivate and guide their behaviour in transition dynamics. We underpin this conceptual probing with anecdotal empirical evidence from fieldwork in Hauts-de-France (France) and Saxony (Germany).

Our overall objective is to explore the potentiality of the SAF framework as a promising alternative to existing approaches in transition studies, here with a specific focus on the state and a significant and (politically) enabling group of actors, that is, public development

banks. This focus on the financial dimension is also motivated by the extraordinary investment challenges: The globally mandated shift to a low-carbon economy, as outlined in the Paris Agreement, requires massive investments in post-fossil infrastructure. A recent study projects an additional US\$50 trillion in investment until 2050 to reach net-zero emissions and stresses the importance of ‘innovative blending capital’, a mix of private and public investments, to address this challenge (World Economic Forum & Wyman 2021, p. 4).

Development banks essentially engage in two primary activities: making investments and providing loans as part of their own operations, and implementing government-mandated programs. While public development banks and their transformative role have been extensively discussed in political economy and (green) finance literature (e.g. Schmidt 2009; Hakenes & Schnabel 2010; Marois 2017, 2022; Geddes *et al.* 2020), economic geographers have somewhat overlooked them in analysing regional transformation processes, including the adoption of climate policies (notable exceptions are, e.g. Flögel *et al.* 2023).

We, therefore, proceed as follows: Section “The Analytical Gap and a Critique on Current Variants of Transition Studies” identifies analytical research gaps and limitations of current variants of transition studies and positions the SAF approach in the literature to address these shortcomings; Section “Public Banks as Catalysts of Change” introduces the article’s topical focus by outlining the particularities of public development banks and their transformative potential; Section “Fields of Strategic Action” presents the building blocks of SAF and discusses how to mobilize its analytical categories for further empirical inquiry on the example of public development banks; Section “Discussion and Concluding Remarks” concludes key insights and closes with further avenues for research.

## THE ANALYTICAL GAP AND A CRITIQUE ON CURRENT VARIANTS OF TRANSITION STUDIES

The discourse surrounding the concept of the Green Economy, which has historically been

rooted in discussions of manufacturing and industrial production, has now expanded to encompass the role of finance. This includes endeavours to finance sustainable projects and the sustainable transformation of the financial industry itself. Many aspects of the financial economy and financialization processes are recognized drivers of largely unsustainable processes, with ecologically and socially unjust consequences (Dörry 2024).

At the same time, finance is considered a key lever for any profound change towards net-zero economies. This understanding is underpinned by a growing number of supra-national roadmaps (e.g. UNEP 2017; EIB 2020), accompanied by their translation and implementation in national industrial policies (e.g. Lemmet & Ducret 2017; UNEP FI 2018; WWF 2018). Transition is indeed a long-term process involving much contingency and social, financial and systemic risk along the way. Recent studies suggest that, globally, we are witnessing a transformation of the roles of the state itself: states act increasingly as ‘de-risking’ devices for private capital (e.g. Gabor & Sylla 2023) but are, concomitantly, ‘entrepreneurial’ with regard to their role in reorganizing the economy and society and engaging in and through the financial markets (Mazzucato 2014; Mazzucato & Macfarlane 2023; Schindler *et al.* 2023).

The entrepreneurial state is partly organized via national development banks, which appear to be taking on an increasingly active role in this (fundamental) change process. Field theory offers insights into two different, yet entangled, situations of this process: firstly, through strategic action, which describes the tactics of actors to get other actors to cooperate, and, secondly, how these tactics change in a situation of crisis, which affects the conditions of (future) power and uncertainty. Conditions of crisis often produce ‘institutional entrepreneurs’ who can “create entirely new systems of meaning” (Fligstein 2001, p. 106), and here we investigate whether public development banks can take on the role of change actors, in particular with regard to old-industrial regions in Europe that have to repower their industries and align their energy systems to net-zero, and more broadly, to social and environmental sustainability efforts. Considering the intricate and diverse nature of the financial sector and

variations in its decarbonization endeavours, our focus on public development banks echoes the significance of the state government and its vast policy ‘tool box’, which (implicitly) also stresses the broader social fabric and human dimensions inscribed in each development bank. The SAF approach – primarily developed to analyse individuals’ behaviour and strategic action – thus helps to strengthen its analytical purchase for public and private (regional) actors and actor groups, to tease out their positionality, power and agency in dynamic change processes. In doing so, we address two key gaps in the literature: a critical inquiry into the application of SAF in the (changing) financial industry and into conceptual aspects of the well-established transition studies.

Firstly, the literature on economic growth and *finance* has stressed both the significance of patient capital, for example, high long-term savings and investment rates, and ‘capable’ institutions and governments (Commission on Growth and Development 2008) to better allocate long-term capital. Economic geographers have a well-established track record in investigating relationships between regional finance arrangements and organizations such as savings banks (Flögel & Gärtner 2020), cooperative banks (Hesse & Cihák 2007; Giagnocavo *et al.* 2012), regional stock exchanges (Amini *et al.* 2012; Glavina 2015) and small- and medium-sized industry firms in long-term relationships with their house banks (Handke 2011). Empirical insights of these works have contributed to a better comprehension of socio-economic impacts on regional development through directed funding. In general, however, this literature applies more to bank-based economies like Germany, Italy, France and Spain, than to market-based capital systems like those in the UK and the US. Pollard (2003) highlights the power asymmetries inherent in financial relationships between small firm financing and processes of uneven regional development. Occasionally so far, public development banks are indeed linked to the facilitation and implementation of climate change adaptation and mitigation policies and broader transformational strategies (e.g. Flögel *et al.* 2023).

Secondly, *transition studies* have particularly resonated among economic geographers,

which, however, emphasize the economic aspects rather than the political dimensions (e.g. Coenen & Truffer 2012; Hansen & Coenen 2015; Schiller *et al.* 2018) but nevertheless recognize crisis as an important aspect. Transition studies offer co-historical accounts of technological and societal transition processes (Elzen *et al.* 2004) mid- to long-term and articulate principles of evolutionary economic geography to explain path dependency, path development and path disruption of a given industry, nested in specific contexts (Martin & Sunley 2006; Hassink *et al.* 2014). Although adopted widely in economic geography, the transition studies' lack of geographical sensitivity has frequently been criticized. This under-conceptualized notion of space, addressable through field theory, has motivated scholars to engage in a series of respective conceptual adaptations (Lawhon & Murphy 2012; Hansen & Coenen 2015; Truffer *et al.* 2015). A second shortcoming important for the conceptual undertaking at hand is the transition studies' limiting scope for agency, including notions of "power, agency and general political economy phenomena" (Schmid *et al.* 2016, p. 265).

Independent of the uptake of transition studies by economic geographers, the study of environment- and sustainability-related challenges and transformation processes has gained traction in economic geography (e.g. Gibbs 2006; Hayter 2008; Braun *et al.* 2018). While earlier work of environmental economic geographers has focused on industrial manufacturing and production systems (Gibbs & Healey 1997; Deutz & Gibbs 2008), producer services (Schulz 2005; Jones *et al.* 2016), green technologies (Davies 2013) and the energy transition (Bridge *et al.* 2013), finance was largely overlooked. Recent contributions have addressed this deficiency by illustrating how parts of the financial industry are striving for sustainability (e.g. Zademach & Dichtl 2016; Dörry & Schulz 2018; Steffen & Schmidt 2021; Flögel *et al.* 2023), including potential impacts of climate policies on financial practices (e.g. Klagge & Reimer 2016; Bridge *et al.* 2019). Other scholars examine the adversarial relationship between fossil divestments by large financial institutions and the scale of capital flows into fossil energy industry (e.g. Cojoianu *et al.* 2020). Yet, transition processes are

essentially disruptive, directed but open-ended social processes and, by their very nature, political projects, although economic and economic geography scholarship has not yet fully appreciated the political sphere in its analyses.

Bourdieu's (2005a, 2005b [1972]) field theory can assist in generating reflection in both regards. It not only fundamentally criticizes the (assumptions of) economic orthodoxy of 'bounded rationality' but also opens the approach towards more progressive insights. The definition of a field, and its (socio-spatial) boundaries, can vary considerably, ranging from a 'global economic field' to something as specific as a 'firm'. Within a field, actors engage in competition to amass, exchange and assert control over different types of power resources. These resources are intertwined and transformed through various kinds of capital, including economic, social, informational, symbolic/cultural capital and physical force: the overarching objective is to influence and regulate the "direct transmission of power and privileges" (Bourdieu 2018, p. 26), defined through the historical context constitutive of the identity and the environment within which agents operate. This specific understanding of a 'field' builds upon earlier approaches to field theory (for an overview, see Martin 2003) and has inspired a wide range of 'field scholarship' interested in contextualized trajectories of social change. It has significantly influenced social scientists exploring the role of institutional actors in societal transitions, that is, the *agency* of 'collective strategies' (Fligstein & McAdam 2011) as experienced, for example, in the various (inter)national COVID response strategies.

Field analysis highlights the diversity of behaviour-shaping influences and places these individual units in a broader context. By stressing their *interconnections* rather than their inherent attributes, field theory allows for a systemic relational analysis of institutions, organizations, markets, individuals and groups, regardless of whether they are part of several fields or stand alone as fields themselves. Field theory attributes particular weight to the state, thus augmenting the economic focus typically favoured by economic geographers. Public development banks are but one instrument in the (contingent) process of design and

implementation of government policy for decarbonization and regional transformation. Below, we discuss them as state-related *agents of change*.

## PUBLIC BANKS AS CATALYSTS OF CHANGE

Public development banks are an actor group that is and has been vital in practice. We refer to public development banks as either wholly or partially owned by national or sub-national governments (e.g. municipalities) as well as to multilateral collaborations involving these institutions, like the European Investment Bank (EIB) (Deutsche Bank Research 2015). Other definitions may also incorporate various types of cooperative banks, social banks or citizen banks (Benedikter 2011; Remer 2014). However, for the sake of clarity in our particular context, we focus on banks with the majority of shares held by national or regional state authorities, often referred to as ‘development financial institutions’ (DFIs) or ‘promotional banks’ in EU terminology. Since “[f]inance is a relatively autonomous field of capitalist profit making with a strongly predatory aspect that sets it apart from the sphere of production” (Lapavistas & Powell 2013, p. 362), public development banks can be(come) pivotal in funding endeavours that drive the transition towards net-zero and environmentally sustainable practices in businesses, utilities and infrastructure. Setting them apart from large commercial or cooperative banks, they essentially have a dual role. Whilst they implement state-led programmes, for example, incentives or subsidized loans, they are also independent financial institutions, crafting their own investment and loan strategies. Public development banks, like the German KfW, benefit from a unique status, granting them state backing and access to privileged refinancing options akin to national treasury bonds. This allows them to make (more) patient and risk-tolerant commitments, particularly in addressing challenges related to net-zero transitions.

Although critics have pointed out a negative correlation between the extent of state ownership in development banks and economic development dynamics (La Porta

*et al.* 2002), here we offer a more nuanced view on their roles and governance structure (e.g. Schmidt 2009; Flögel 2018), for which Costa Rica’s Banco Popular y de Desarrollo Comunal (see Marois 2017) is a notable example. Within transforming ‘socio-technical systems’, human agency is vital in developing low-carbon social practices (Urry 2015). Governments and corporations often lack the agility to adapt swiftly to crises and shift entire economic, technological and social practices away from high-carbon systems. Financial support for phase-out policies then becomes crucial to sustain not only the transition processes of an entire system but also to ensure societal acceptance of the new socio-technical system. David Hume’s (1739) discussion of the notion of the ‘common good’ can be considered an early catalyst for the idea of ‘public goods’ in the long history of economic thought (Ferroni 2002) and ties in well with Marois’ reflection that “[f]or those social forces concerned with a green and just future for people and planet, this historically and evidence-based conceptualization opens the possibility, if never the necessity, of public banks being made to respond in the public interest” (Marois 2022, p. 367). Our transformation argument is, thus, twofold: Firstly, we refer to the transformation need for *rapid* decarbonization that alters the architecture of the current system. Here, public development banks act as both important funding channels for large, innovative energy/infrastructure projects and de-risking instruments for market-making and crowding-in private finance. Secondly, though, alternative thinking towards a *just* transformation can challenge the prevailing economic orthodoxy and put public development banks in the spotlight as representatives of social forces, thus offering *potential* for social action rather than merely being “a source or site of structural determination” (Marois 2022, p. 363).

Indeed, public ownership expands the scope of possibilities within the public domain, spanning politics, economics and societal influence and allows for innovative governance of institutional capacity and transformative potential, unconstrained by existing economic theories, while facilitating the identification of the main beneficiaries of a bank’s operations. Our focus includes public development banks at different scales (international, national and



sub-national/regional), as they can (a) pursue specific yet complementary policy goals, for example, general climate change-related objectives followed by the EIB combined with sector and context-specific development strategies for renewable energy production advocated by a regional development bank, and (b) appear to co-fund major development projects, for example, public infrastructures where several public development banks co-invest. In the European context, the EIB is undoubtedly the key actor involved in regional development projects, both within and beyond the EU's borders. Not least the EU's decarbonization targets until 2050 have refocused the EIB Group's investment priorities towards sustainability concerns, operationalized in its *Climate Bank Roadmap 2021–2025* (EIB 2020). Contrary to Clifton *et al.* (2021) or Ferroni (2002) in their assessments of regional public banks, we understand regional banks here as organizations at the sub-national level and analyse in particular a development bank of a German federal state, Saxony, and the French region Hauts-de-France. Both regions share specific structural traits, such as traditional state interventionism in France, the prominent role of the German KfW, as well as similar socio-economic trajectories, along with environmental and infrastructure challenges.

As state-owned financial institutions have gained prominence in the recent evolution of European economic governance, their role within the European financial system has undergone transformation in order to join reforms in economic and fiscal governance (e.g. the *Investment Plan for Europe*) with the prospect of a *Capital Markets Union* (CMU) (Mertens & Thiemann 2018). Important initiatives focus on the transformation of traditional bank loans into capital market instruments, which aligns with the broader goal of enhancing and integrating European financial markets. The CMU Action Plan primarily revolves around regulatory reforms. In contrast, the Investment Plan, and especially its key pillar *European Fund for Strategic Investment*, brings together supranational institutions, national governments, development banks and private financial entities to facilitate new financial opportunities arising from these regulatory changes. The corresponding “reconfiguration of state–finance

relations” assigns public development banks to their new role as “anchor investors for volatile capital markets, absorbing idiosyncratic as well as conjunctural risks to channel self-recursive finance into the ‘real economy’” (Mertens & Thiemann 2018, p. 186). It makes them pivotal in the EU's strategy of governance through financial markets, with the objective to revitalize aggregate demand and productivity growth by leveraging public funds and creating new asset classes for institutional investors, for example, (programme-tied) SME loans and infrastructure investment.

## FIELDS OF STRATEGIC ACTION

Building on Bourdieu's work, the SAF approach offers analytical entry points into actor groups who define change across time and scale, and, more importantly, into the groups that seek to prevent change or prefer a different change. A field is socially constructed and organized via social groups equipped with dissimilar resource levels in their fight for control and advantage via strategic action. SAFs are, thus, the “fundamental units of collective action in society” (Fligstein & McAdam 2012, p. 9). Change processes – or field ruptures – produce winners and losers; incumbents who fear loss of influence and resources have an interest in stabilizing the status quo. This can occur within a field and between fields. To facilitate empirical research in such transformative settings and thus to analyse change dynamics within and harmonization/stabilization between fields, it is important to tease out the relationships and (power) hierarchies between fields, and overlaps between fields.

A crucial operational step is to accurately define a ‘workable’ field, its actor groups (within and outside a particular field), institutions and actor-specific resources; above all, it is essential to carefully consider a field's spatial delineation, not explicitly addressed by SAF proponents. Each SAF consists of a range of core elements and actors subject to specific dynamics in response to *external* events. A SAF's conceptual categories comprise (a) incumbents, challengers and governance units; (b) social skill and the existential functions of the social; (c) the broader environment of the

field; (d) exogenous shocks, mobilizations and the onset of contention; (e) and (f) episodes of contention and settlement. Below, we sketch the principles of each building block and link them with concrete examples from the realm of transition policies implemented via public development banks.

Ad (a): *Incumbents* and *challengers* represent a field’s main actor groups (Figure 1). Whilst challengers’ actions revolve around change, incumbents’ actions often focus on creating stability, among which the state as a key *governance unit* can take on diverse roles. Incumbents usually represent the dominant actor group, including rules organized primarily according to incumbents’ interests. Private capital and large private commercial and investment banks, along with non-bank financial institutions (e.g. asset managers), have long dominated as the incumbents, benefitting from a leveraged economy for decades. Public development banks (and public capital) featured less prominently in the discourse, occupying, as challengers with limited influence, less privileged positions. Despite this, the state via its various public development banks can indeed “articulate an alternative vision of the field and their position in it” (Fligstein & McAdam 2012,

p. 13), yet still recognizing the dominant logic of incumbent actors.

Governance units oversee the compliance with a field’s rules from *within* the field, thus complementing external state structures that hold jurisdiction over all. Generally, field stability depends largely on the foundation of a SAF and whether it is “built on coercion, competition, or cooperation” (Fligstein & McAdam 2012, p. 14). With view to the energy transition, not only do powerful, large private banks and non-banks still operate in the fossil industries, they also encompass large parts of the financial sector reluctant to such adaptation. Public development banks, on the other hand, are not limited to becoming actual pioneers propagating technological, organizational or social innovations. They can be found outside niches and embrace financing organizations proactively striving for net-zero solutions, for example, within old industries. This defines the policy field together with the incumbent and challenger banks.

The German Kreditanstalt für Wiederaufbau (KfW) is the most significant public development bank in Europe at the national level. With 80 per cent shares held by the Federal Republic and 20 per cent by the Länder, it boasts the

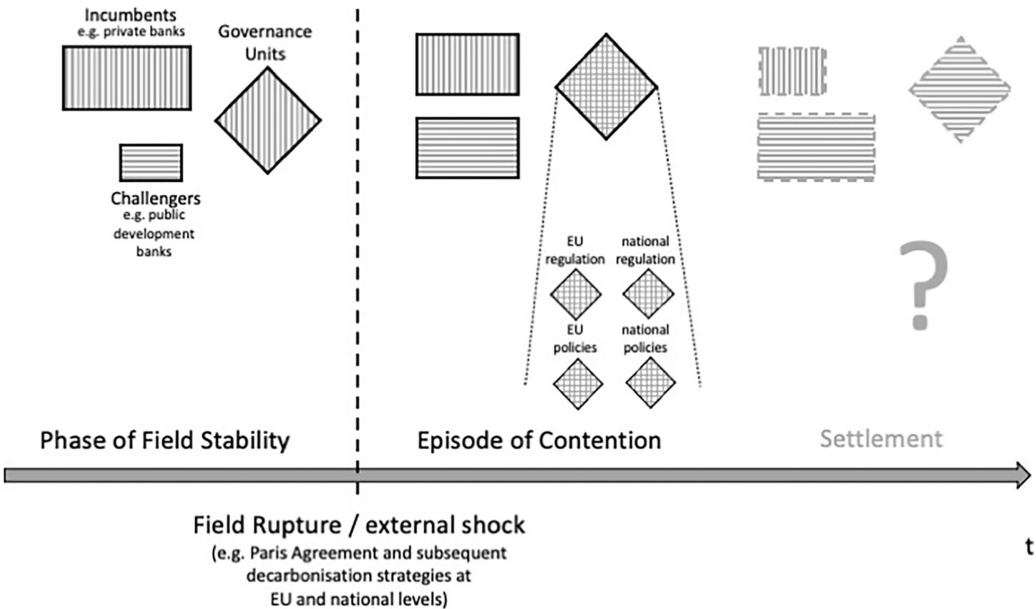


Figure 1. Transformation of a SAF over time (authors).

highest total assets among all EU member states' national development banks. The KfW plays a pivotal role in Germany's energy transformation (for a comprehensive overview, see Naqvi *et al.* 2018), mandated to implement national strategies for energy efficiency, particularly through modernizing the built environment. Its loans, indirectly channelled to individual households via commercial banks, along with energy efficiency requirements, are crucial for Germany's energy transition. Similarly, the Sächsische Aufbaubank (SAB), owned by the state of Saxony, plays a crucial role in Saxony's initiatives to address the nationwide phase-out of lignite mining and associated energy production. As a partner of the regional Climate and Energy Alliance (Umwelt- und Klimaallianz Sachsen), it closely collaborates with public and private stakeholders, channels funding to transformative large-scale projects and offers municipalities special low-interest loans to support the socio-ecological transition at the local level.

In France, the Banque Publique d'Investissement (Bpifrance 2023) primarily supports enterprises, executing the national *Plan d'investissement France 2030* aimed at decarbonizing and transitioning the economy. Similarly, regional public development banks are utilized by sub-national entities to implement regional development strategies. For instance, the Banque des Territoires Hauts-de-France in Northern France plays a pivotal role in financing the region's ambitious circular economy strategy, inspired by Rifkin's Third Industrial Revolution (Rev3) initiative. It involves collaboration among private firms, public institutions and civil society actors, with significant financial backing from public institutions. The Banque des Territoires Hauts-de-France provides direct loans for projects like low-energy building refurbishments and invests in renewable energy production. In 2021, it directly invested 44 million euros in 60 projects, often in combination with other (public) financing sources. Additionally, the bank offers long-term loans, some lasting up to 60 years, particularly for municipalities (Banques des Territoires HdF 2022).

Ad (b): *Social skill* adds to the strategic action pursued by incumbents and challengers. Social skill seeks to conceptualize the ability of actors

to motivate others to cooperate; thus aiming to grasp how to distinguish the unique roles of actors, whether they are upholding and defending current social structures or shaping new ones, and adept individuals frequently offer identities and cultural frameworks to inspire others (cf. Fligstein 2001). Understanding the nature of *collective action* within a field and interactions that manifest themselves in domination and contestation is, therefore, important, but our analytical needs require us to transfer the analytical focus away from individuals to groups of (corporate and public) actors. This includes the (intentional or unintentional) formation of strategic alliances across sectors and milieus, thereby even shaping new action fields. In our example, social skill can be translated as the need to mobilize collective action within and across fields. It involves studying mechanisms of communication and match-making of government programmes through public development banks. This is underpinned by (generous public) funding and the specific requirements of regional development in Hauts-de-France and Saxony, and recently crucially aligned with the EU's new Important Project of Common European Interest scheme: This will inject billions of EUR to foster the EU's (geo-)strategic value chains: microchip-making in Saxony and e-battery gigafactories in Hauts-de-France.

Ad (c): This overlap of development strategies in both regions, which respond to both geopolitical and decarbonization goals, hints to the *broader field environment*, which suggests that fields are embedded in complex layers of other fields. Some of these fields are more distant than others, some more dependent on an existing field than others, and, introducing a third analytical dimension, some fields being state fields whilst others are not (Fligstein & McAdam 2012, pp. 18–19). Crucially, no single field is sealed off and protected from influences from other fields. Quite the contrary, each field is permeable to, influence-able from and influential on (actor groups in) other fields and can, therefore, be defined as "multilevel strategic action fields" (Moulton & Sandfort 2017, p. 144). Multiple field overlaps are an important feature for our purpose because actor groups' success can result in greater strategic use of the available mechanisms (Evans & Kay 2008). Mechanisms are



developed and applied by socially skilled actors in one field but can amplify through double membership in other fields.

The architecture of field overlap is, thus, crucial to understand the potential amplifying impact of mechanisms as suggested through the notions of the ‘entrepreneurial’ and ‘de-risking’ state. This is vital to navigate probable pitfalls of potential politicization of and the risk of contradicting decision-making within a public development bank due to political considerations. Indeed, one application is rulemaking in a newly established field, here with a distinct focus on the state policies to finance new infrastructure for transition, which, however, in the cases at hand has coincided with a changing macro-environment, including geopolitical risks and changing monetary policies, that has left its imprints on the strategies of public funding schemes. In this regard, Goldstone’s and Useem’s (2012) caution to treat all types of organizations equally emphasizes the need to consider differences in values, norms and degrees of autonomy when considering the idea that social change occurs solely through altering actor configurations within SAFs. Rather, social change encompasses both ‘routine contention’ within existing institutions and norms, and ‘exceptional challenges’ aimed at transforming these institutions and norms (see Figure 1).

Ad (d): A key element of the SAF heuristic is *exogenous shocks* that lead to the mobilization and the onset of contention (Figure 1). As mentioned above, exogenous shocks can be an economic crisis, fundamental regulatory changes, novel technologies, natural hazards, major political/military conflicts or any other disruptive events that can destabilize an existing field and may cause ripple effects through other, proximate fields. While climate change as such cannot be conceptualized as a single shock, related key events such as the Paris Agreement and its aftermath correspond with this category. Deploying the SAF heuristic to the banking sector and its articulation with decarbonization imperatives, the Paris Agreement on Climate Change from 2015 – thanks to its binding character and its subsequent transposition into multinational (e.g. EU) and national regulation and policies – represents a field rupture that profoundly challenges banks

and their business practices. The growing societal and political calls for state intervention in the socio-ecological transition include a claim for the mobilization of state financing for large transformative projects. Rather than being an abrupt exogenous shock challenging hitherto practices and mechanisms, this claim developed gradually over time. It gained particular momentum following the Paris Agreement and is now increasingly advocated by a wide array of stakeholders, including policymakers and state authorities guiding the strategic direction of public development banks’ priorities. A former phase of field stability, in which private banks outweighed the role of public development banks in terms of agency and transformational power, has transitioned into an (ongoing) episode of contention (Figure 1).

Ad (e) and (f): Episodes of *contention* are characterized by newly emerging interactions between actors. These are marked by “a shared sense of uncertainty/crisis regarding the rules and power relations governing the field” as well as a “sustained mobilization by incumbents and challengers” (Fligstein & McAdam 2011, p. 10). In times of crisis (field rupture) and transformation, established rules and routines are questioned, leading to a dynamic interplay between innovative actions put forward by challengers and defenders of the status quo. The notion of *settlement* describes a post-crisis state of institutional stability of a SAF, that is, “when a generalized sense of order and certainty returns” (Fligstein & McAdam 2011, p. 10). A particular role in this restabilizing is assigned to the state (Fligstein & McAdam 2011, p. 10) and reflects some broader observations of a ‘new state capitalism’ (Alami, Dixon, et al. 2022) as a stabilizing force in current disruptive transition dynamics.

The social structure (main actors) of a SAF at the meso-level, including its membership, boundaries and institutional logics, establishes and reproduces its stability over time. *Membership*, in particular, relies more on subjective positioning than objective criteria, and the boundaries of a SAF can, thus, change depending on the context and issues at hand. The *institutional logics* within a field can also evolve over time, either through shared understanding or through contention. Four categories guarantee the stability of a field’s institutional

logics, that is, consensus sharing between field members, a specific set of actors holding power, a shared understanding of the nature of the ‘rules’ (with constant pressure for change and reaction to contention), and a broad interpretative frame amongst members to assess what others in the SAF are doing.

## DISCUSSION AND CONCLUDING REMARKS

Based on the earlier discussion of the evolving role of state intervention and policies implemented through public development banks, it is evident that these banks have assumed the role of challengers. They actively seize opportunities that arise from the field rupture. In contrast, private banks as mere incumbents often only hesitantly respond to adaptation pressure from regulatory or policy imperatives. Their adaptation strategies may frequently be considered under-ambitious as they tend to be restrained to minimum formal compliance while focussing on market and yield opportunities resulting thereof (the implementation of ESG standards and the weak accountability of certified financial products may serve as telling examples). While the exact nature of the new field(s) resulting from the net-zero and/or low-carbon transition remains uncertain, the current dynamics suggest an increasing role for public development banks in this process. Despite their transformative capacity, however, their role comes with at least two associated risks:

- a *Potential lack of policy consistency*: This risk involves the possibility of inherent contradictions affecting the decision-making process within one bank that may arise due to political considerations, such as when a larger, multi-purpose development bank simultaneously promotes the use of renewable energy while continuing to (indirectly) support companies in fossil fuel industries.
- b *Potential pitfalls of politicization*: A public and hence political mandate of a bank does not guarantee a progressive and successful take on decarbonization and just sustainability. Whether intentionally or unintentionally, “public banks can [also] be made to privilege environmentally destructive

and decidedly unjust ends” (Marois 2022, p. 367). However, the politicization of the banks “should not be shied away from, but embraced through open, representative and transparent democratic structures” (Marois 2017, p. 13). Such structures can not only help to avoid potential misuse of public funding instruments but also provide a strong justification legitimization for progressive standards and ambitious goals to help overcome the effects of organizational inertia and internal resistance within public development banks.

This paper has explored the potential of the SAF approach as a conceptual alternative to existing approaches to better understand ongoing transformation processes on the example of financing regional net-zero transitions. More specifically, we have shown how the SAF framework allows us to analyse the impact of binding climate policy approaches on the banking sector in general and the role of public development banks as an expression of the entrepreneurial and de-risking state in two regions. The SAF framework offers a compelling way to problematize spatial aspects through the operationalization of nested policy fields materializing within specific regional contexts. With its take on overlapping – and thus interfering – fields, the framework allows for both applying a multi-scalar view and avoiding the territorial trap of exclusive spatial demarcation and geographical essentialism. At the same time, the flexible demarcation of multi-level fields bears the risk of conflating causalities, which, however, can be avoided through a differentiated analysis of respective actors’ agency and their interplay.

Our focus here was less on empirical results but rather on conceptual considerations and the operationalization of a new approach for empirical research. We believe, however, that this first cross-fertilization of the SAF approach with the study of transition dynamics still allows for drawing some first important conclusions:

Firstly, its promising heuristic accommodates, better than the transition studies approaches, agency of actors and (public) policy. The analytical categories of incumbents and challengers and their strategies vis-à-vis ruptures and their divergent activities and

interactions in phases of contention help operationalize the specific patterns of transition in particular industries and regional contexts. Thus, the SAFs leave room to tease out contingencies in comparative regional study designs, for example, through the analysis of specific power constellations, strategic priorities and the purposeful design of funding schemes and resulting policy options via detailed studies of changing field architectures over time.

Secondly, defining a field presents a significant challenge, particularly regarding demarcation for studying its internal and external evolution over time. This challenge raises both ontological and practical research questions, such as feasibility, resources and accessibility. In the present example, at this early stage of transition, it remains to be seen whether a new field will settle that stresses public development banks more than before, or whether a second dominant field emerges, where public development banks and states react differently and independently from the private sector but remain subordinated to global capital markets (Alami, Alves, *et al.* 2022).

Thirdly, and given the growing role of public development banks in implementing decarbonization mitigation and adaptation measures on the one hand, and the longer term implications of a continued structural break with traditional economic systems and practices on the other, we can expect the role of public development banks to increase. Their risk-minimizing efforts, such as investments in new, immature technologies and transformative infrastructure, can be precursors to sector adaptation strategies and thus also influence the practices and strategies of private banks. At the same time, public development banks are a fundamental cornerstone of a new type of an 'entrepreneurial' state, and/or a 'hidden' investment state crucial in its contribution towards net zero. It is thus reasonable to anticipate the emergence of a new state-driven field, or at the very least, the formation of new intersections with existing fields.

Against this backdrop, further inspiration and guidance for empirical work on transition dynamics in a variety of distinct regional settings can be drawn from the following questions:

- a What are current practices in the processes of net-zero-oriented financial strategies? What is the particular role of governance units and what supportive values are needed?
- b What sort of tactics do socially skilled actors apply to induce cooperation, for example, alliance brokerage, rulemaking, resource brokerage and frame adaptation in the current episode of contention and struggles?
- c What are the interactions between incumbent and challenging actors (mutual benefit, discrepancies, interdependent interests, collaborations, etc.) within a field and across fields?

Each of these inquiries necessitates tailored and context-specific operationalization. Such research is not only important but also promising, as we hope to have demonstrated.

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