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(Original) abstract

Capacity-building can be an important vehicle to diffuse and promote climate policies by equipping jurisdictions with the necessary knowledge and expertise they need to adopt and implement effective measures. Despite this potential, capacity-building is an under-researched mechanism of global policy diffusion. This paper analyses the proliferation of and interaction among carbon-pricing capacity-building projects and actors with the aim to identify patterns and effectiveness conditions for diffusion. It takes a network approach by conceptualising and analysing the global carbon-pricing capacity-building network, which comprises a considerable number and diversity of actors and activities.

Capacity-building projects are not exclusively driven by external experts, governments and organisations; the receiving jurisdiction's leverage to steer project design and content can be a crucial factor, shaping the process of infusing external expertise into domestic policy-making and implementation. They are crucial parts of the carbon-pricing capacity-building network. The types of interactions between the suppliers and receivers of policy expertise can influence the degree of capacity-building effectiveness. For this reason, the paper differentiates various types of network interactions. Beyond that, there are multiple suppliers of capacity-building projects in the field of carbon pricing policy, including NGOs, international organisations and governments. The type of interaction among those actors can increase/decrease the effectiveness of capacity-building in a given jurisdiction. The paper maps capacity-building projects globally. It identifies effectiveness conditions by analysing the role that central actors and brokers play and by evaluating the interaction among multiple capacity-building projects and actors across multiples scales.

1 Introduction

Capacity-building projects can be a vehicle for fostering policy diffusion and implementation. Two types of interaction can be vital for this process: first, the nature of the interaction between the suppliers and receivers of capacity-building and, second, the nature of the interaction among multiple suppliers of capacity-building projects. The supply of policy lessons and technical expertise as such but also the ways in which it interacts with the receiver's demand are decisive for the process of infusing external policy experiences into a jurisdiction's policy process. From this follows that capacity-building projects are not exclusively driven by the supplier of capacity-building; the receiver's receptiveness and leverage to steer the design of those projects can be crucial factors, shaping the process of infusing external expertise and experiences into domestic policy design and implementation. Additionally, the interaction among multiple suppliers of policy advice and capacity building can increase the effectiveness of project financiers' efforts to infuse certain policy elements, but it can also render some efforts ineffective, in the case of conflictive interaction among capacity-building projects. This

paper develops an analytical framework to, on the one hand, analyse the interaction among capacity-building projects initiated by different external financiers, and on the other, the role that central actors and brokers can play in the complex structure of interacting capacity-building projects.

Policy diffusion studies generally examine how a policy spreads from one pioneering source to a number of other jurisdictions (Börzel and Risse 2012a, Gilardi 2012, Wettestad and Gulbrandsen 2015). However, once various jurisdictions have adopted the policy, they can also become active promoters of their own variants—in the case that they have adjusted some of the policy elements, which seems likely in the case of a complex policy such as GHG emissions trading. This raises the question of what happens when varying sources of policy experience and knowledge exist at the same time and when, as a result, different actors engage in promoting their particular experience and knowledge in the same external jurisdictions. This question has not received much attention in the policy diffusion literature so far. This paper seeks to contribute to existing research by focusing on the complexity of diffusing policy from various sources to various receivers.

Conflict and competition among external actors can cancel out their respective influences, whereas coordination and cooperation can mutually enhance their impacts. This aspect seems highly important for understanding the extent to which a given policy has been influenced by a multitude of external sources and actors. A detailed mapping of the external actors, their activities, and their interaction is essential to understand the complex processes involved in GHG emissions trading infusion. This paper aims to contribute insights into those processes by proposing an analytical framework on the effects of interacting externally funded capacity-building projects on GHG emissions trading.

Policy diffusion does not only depend on the political decision to adopt a particular policy that has already been adopted elsewhere. The diffusion process depends on the technical level, which requires sufficient knowledge to enable informed design decisions, along with the capacity to devise and implement the policy. Capacity building thus can play a crucial supporting role, enabling a jurisdiction to effectively design and implement a policy. Nonetheless, capacity building has rarely been analysed as a separate diffusion mechanism; rather, it has largely been subsumed in the broader category of positive and negative incentives that manipulate jurisdictions' utility calculations to compel them to adopt a certain policy (Börzel and Risse 2012a, 2012b, Carrapatoso and Well 2013). This conceptualisation neglects the fact that capacity building can also support and enable learning by actors who have already taken the principled decision to adopt a policy that is inspired by policy in another jurisdiction. This paper strives to contribute to the policy diffusion literature by highlighting and singling out the role that capacity building can play in those processes.

Capacity building aims at enhancing the capability of a jurisdiction to take effective (climate) action. Capacity-building projects financed and provided by actors who have already gained experience with a given policy can be a decisive factor in supporting the infusion of a policy into a jurisdiction—especially in cases in which the adopting jurisdiction does not have much experience with the respective type of policy, the necessary technical and infrastructural capacity, or a solid knowledge base pertaining to the policy that it seeks to adopt. Awareness and knowledge of external jurisdictions' policies is a precondition for their infusion. Actors who are familiar with the details of the original policy innovation and its implementation can play an important role in transmitting information and their experiences to jurisdictions that are interested in adopting a similar policy.

The interaction between external and domestic actors is an important element of capacity building, which requires the willingness of the receiving jurisdiction to engage in the

process of developing a GHG ETS (Foot 2010: 229). External-domestic interaction has been neglected by many diffusion studies, which have instead focused on either the external or the domestic influences (Gilardi 2012), or have considered the external and domestic factors as two separate blocks (Lenschow et al. 2005) but have not systematically conceptualised their interaction. By analysing the entire chain involved in capacity-building projects, this paper zooms into the interaction among external and domestic actors in diffusion processes, stressing the central role of some implementing consultants. The focus is on externally funded capacity-building projects and the activities of external actors and their interaction with domestic actors.

The following section outlines the contours of GHG emissions trading. This leads to a discussion of capacity-building projects, where I differentiate four types of their interactions: synergistic, complementary, duplicative, and competitive. Through their involvement in capacity-building projects, and through formal and informal contacts, external and domestic actors are connected in a network in which a small set of actors can hold central positions that provide them with leverage over other actors and their interactions. The concluding section proposes some research plans.

2 Greenhouse Gas Emissions Trading

The idea of reducing harmful emissions by setting a ceiling for certain emissions and permitting emitters to trade emission allowances first emerged in the 1960s (Coase 1960, Dales 1968). Its implementation as a policy instrument to reduce GHG emissions started in the early 2000s and has diffused to a number of jurisdictions globally at a slow but relatively steady pace (Gulbrandsen and Wettestad 2018).

In an ETS, a maximum emissions limit or—as in the case of China—a carbon intensity target is set for a defined group of emitters. This contrasts with a command-and-control approach of prescribing limits for each individual emitter. The emitters covered by an ETS obtain emission allowances for free or can purchase them in auctions or from other emitters. For predefined periods of time—generally one year—emitters must render to authorities the number of allowances that matches their actual emissions during that time. Surplus allowances can be sold or banked (in most systems). The price of a ton of carbon is determined by the supply and demand of allowances but some systems additionally contain price-control mechanisms. An ETS is a market-based policy instrument whose proclaimed advantages are cost-effectiveness, innovation fostering, and flexibility in achieving an overall emissions reduction goal, since it allows for investments in emission reduction measures where they are most cost-effective. When the allowance price is higher than the costs of investing in low-carbon technology, an ETS provides incentives for decarbonizing innovation (Dales 1968, Tietenberg 2006, van Asselt 2010: 126).

A number of jurisdictions have embraced GHG ETSs as part of their climate policy mix, starting in the early 2000s. By the end of 2016, twenty-one distinct systems covering thirty-five countries were operational globally at different levels of governance, from the supranational European Union (EU) level to the subnational, cross-border level of the linked systems of California and Quebec (ICAP 2017). The EU pioneered the field when it launched its ETS in 2005 (Ellerman and Buchner 2007: 67-69, Skjærseth and Wettestad 2008, 2009, Wurzel and Connelly 2011: 7-8), followed by New Zealand in 2008, and the subnational Regional Greenhouse Gas Initiative (RGGI) in the North-eastern United States in 2009 (Biedenkopf 2012). China joined this development in 2010 when it launched the process of developing seven pilot GHG ETSs, the first of which started operating in 2013 (Biedenkopf and Torney 2015). These ETS pilots were implemented in five cities— Beijing, Tianjin, Shanghai, Chongqing, and Shenzhen—and two provinces— Guangdong and Hubei (Lo 2013).

One of the stated purposes of the pilot ETSs was to pave the way for a national GHG ETS, which was launched in December 2017 but with a limited scope and still needs to be scaled up to a broader range of sectors.

Newly devising a GHG ETS is a complex undertaking that requires significant amounts of financial, technical, and knowledge resources. Creating a market for an artificially constructed commodity—emission allowances—requires the establishment of a number of processes, procedures, and infrastructures, some of which depend on the features of the economy in which the system is established (Bogojević 2013, van Zeben 2012). These include reliable systems for the measurement, reporting, and verification (MRV) of GHG emissions from all sources covered by the ETS, fair and effective mechanisms for allocating allowances and trading modalities, and competent institutions that can effectively regulate and monitor the market. Such design and implementation challenges require an elevated level of administrative and technical capacity and, in some cases, also the transformation of the regulator's understanding of their role in the process of effectively implementing an ETS (Goron and Cassisa 2017).

Designing a market is always accompanied by uncertainties, such as the actors' investment decisions and the economic developments that may impact on GHG emissions (Callon 2009). The functioning of a carbon market cannot be predicted with certainty, and most experiences so far have shown that creating a price signal for emission-reducing investments is challenging (Koch et al. 2014). Using other jurisdictions' experiences when newly designing a GHG ETS thus seems highly relevant with regard to this particular policy, even though countries' particularities require adjusting others' models and experiences to its specific context. This highlights the importance of interaction between external actors, who have already gained positive and negative experiences with designing and implementing a GHG ETS, and the actors who seek to adopt such a policy. The usefulness of sharing experiences and building capacity extends to private actors—in particular, to companies. The following section outlines a framework for analysing the interactions among the different projects and actors involved in the policy diffusion process.

3 Policy Diffusion and Implementation Through Capacity Building

A range of diverse actors—at the political and technical level—are involved in the process of policy diffusion through capacity building. Some of them can play a central role, in particular external financiers when they invest large amounts of funds in a great number of projects and consultants when the same company implements a large number of capacity building projects. On the capacity-building receiver side, central actors can be a powerful local coordinator who steers the specifications of projects.

Capacity building involves suppliers and receivers, both of which can be split in the political-level actors and technical-level actors. Actors at the political level take the principled decision to invest funds in capacity building projects (supplier side) and to allow the implementation of certain projects with certain objectives (receiver side). Actors at the technical level implement the projects either as the consultants who are hired to provide the capacity building (supplier side) or as the actors who are in charge of designing and implementing an ETS (receiver side).

Interaction can occur on a horizontal and vertical level. When there are multiple external financiers, they can harmonise, mutually support, duplicate or undermine each other's project goals. The same kind of interaction can trickle down to the levels of implementing consultants and local capacity receivers. In cases in which different actors negotiate capacity-building project contracts with external financiers, such vertical interaction can also occur at

the level of local coordinators. It seems however most likely that the interaction starts at the level of the external financier or the implementing consultant and then is mirrored in the results at the level of the receiver.

Vertical interaction takes place as a chain starting from the external financier negotiates the terms of a capacity-building project with a local coordinator and hires an implementing consultant. The implementing consultants mainly interact with the local capacity receivers through the implementation of the respective project's activities. Figure 1 below shows all possible interaction paths through which policy diffusion through capacity building unfolds.

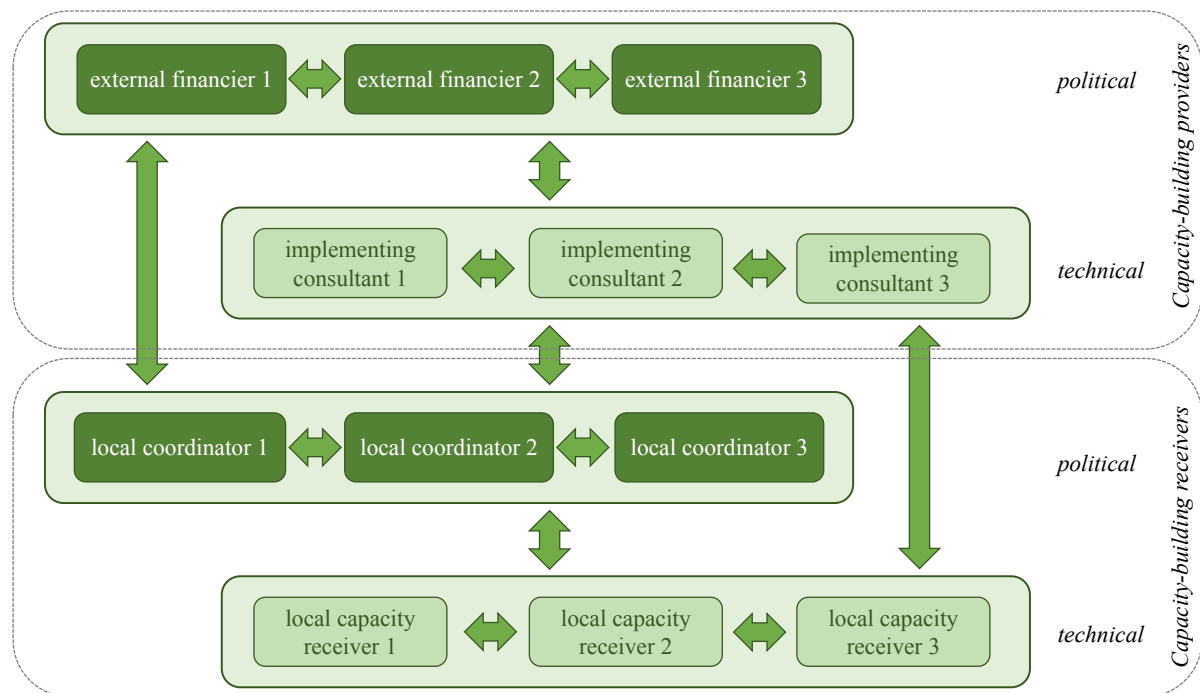


Figure 1: Capacity-building actor groups and interaction in a policy diffusion context

3.1 Externally Funded Capacity-Building Projects

Capacity building entails the systematic provision of expertise, technology, and finance with the aim of enhancing people's, governments', and non-state organizations' capabilities to pursue a certain policy objective or implement a particular policy effectively. Capacity is the ability to identify and solve problems. A lack of knowledge, weak organisation, and insufficient material and/or legal resources can all limit a jurisdiction's capacity (Buntaine and Parks 2013: 67). Capacity building aims to identify and overcome those obstacles and enhance the ability to achieve sustainable results. It supports a process of modernization in which new stages of problem-solving capacity are institutionalized and internalised (Weidner and Jänicke 2002: 1-2). Many capacity-building efforts aim to build capacity in ministries and government agencies, but non-state actors such as businesses and NGOs can also be the target audience (Sagar and VanDeveer 2005: 15).

The sharing of knowledge, technology, and infrastructure can support policy diffusion because it can enable jurisdictions to design a workable policy. In this way, capacity building can be a means to influence policy in another jurisdiction (Andonova et al. 2009: 64, Carbone 2010: 15). It involves cooperation between external and local actors—mainly at the technical

level—that leads to the development of suitable solutions to identified problems. Capacity building differs from policy dialogues and regulatory cooperation—which are the mutual exchange of experiences and joint agreement to change particular policies—in its unidirectional character, aimed at (policy) change in one target jurisdiction. Nonetheless, it still involves collaboration between the supplier and the recipient of the intervention, and therefore requires at least a certain degree of receptiveness and interest in adopting a policy within the recipient country (Foot 2010: 229, Müller and Slominski 2016, Torney 2014). Capacity building is thus a facilitative activity that can support policy diffusion through the intense sharing of information about a specific policy and by enabling a jurisdiction to adopt and implement that policy by means of infrastructure, technological, and financial support.

A range of different actors are involved in capacity-building projects: Financiers or donors provide the financial resources, usually motivated by the goal to steer a certain (policy) change in the recipient jurisdiction. The financier generally hires implementing agents or consultants who will design and implement the project. The required qualification is that these agents should be experts in the tasks necessary to achieve the financier's objectives. Such implementers are often external actors, but they can also originate from the jurisdiction that receives the capacity-building service. A third actor group involved in capacity-building projects provides local coordination. This role is generally filled by a local government agency or part of the government, but it can also be a non-state actor. Coordinators are involved in devising the modalities of the project and maintaining a dialogue with the financier and (some of) the consultants. A fourth group are the actual addressees and participants in the capacity-building measures.

Capacity-building projects can entail various activities, ranging from a series of workshops and teaching modules to intense interaction at a technical level, which can include embedded experts in certain government departments or agencies. Given the intensity of the latter activity, it seems more likely to exert an enduring influence on a particular policy than, for example, a series of workshops, which entail only a limited number of contact moments. Now that this subsection has outlined the contours of a single project, the following one focuses on the interaction among a number of externally financed capacity-building projects and its consequences for policy diffusion.

3.2 *Project Interaction*

When multiple actors have an interest in promoting certain policy changes in a given jurisdiction, they can interact with each other in mutually beneficial or detrimental ways, which has implications for the infusion of policy. The proliferation of capacity-building projects can result in inefficiencies and can increase the costs for both financiers and the partner jurisdiction, due to duplications and conflicts (Delputte and Orbie 2014: 676-677), but it can also generate efficiency gains in the case of joint efforts that pursue a harmonized strategy.

Four project interaction types can be differentiated: synergistic, complementary, duplicative, and conflictive. When external promoters of certain policies and policy designs collaborate to the extent that they pursue a harmonised strategy, their individual efforts can be strengthened and rendered more efficient (synergistic interaction). A similar mutually strengthening and efficiency-increasing effect can be achieved by means of complementary activities and the promotion of complementary policy elements through a division of labour (Gehring and Faude 2014). In both of these cases, the interaction is a conscious activity—interaction management (Oberthür and Pozarowska 2013)—in the first case a joint, and in the second a unifocal, one. When external actors independently and uncoordinatedly promote identical policies and designs, the effects of their efforts can still be mutually reinforcing (van

Leeuwen and Kern 2013), but at a higher cost to the individual project financiers, since efforts are duplicated. When external actors independently and uncoordinatedly implement capacity-building projects that aim to promote contradictory or conflicting policies and designs, the different efforts can cancel each other out or severely undermine each other's efforts (Biermann et al. 2009, Johnson and Urpelainen 2012, Zelli and van Asselt 2013). Table 1 below summarises these four types of project interaction.

	External actor interaction	Target actor within recipient jurisdiction	Project objectives and content
Synergetic	Harmonized strategy	Same	Same
Complementary	Coordination and consultation	Same	Different but mutually reinforcing
Duplicative	No coordination	Different	Same
Conflictive	No coordination	Same	Different and contradictory

Table 1: Types of project interaction

The different types of project interaction have implications for the infusion of policies. The first three types support policy infusion, but with varying degrees of efficiency from the financier's point of view. In the case of conflictive interaction, the effectiveness of some or all external actors can severely be undermined by the activities of their competitors. Conflictive interaction can lead to scepticism in the recipient jurisdiction, which can undermine the perception of the provided capacity-building service's authoritativeness and credibility (Andonova et al. 2009: 64) and can hamper or impede the policy infusion process. Table 2 below summarises the implications of the four types of project interaction for policy infusion.

	Implication for policy infusion
Synergetic	Efficient supporting effect
Complementary	Efficient supporting effect
Duplicative	Inefficient supporting effect
Conflictive	Hampering/impeding effect

Table 2: Project interaction's effects on policy infusion

The mere presence of capacity-building projects does not thus provide insights about their effectiveness and impact on policy infusion. Moreover, project interaction makes it difficult to identify the actual source of the diffused policy.

3.3 Central Actors and Brokers

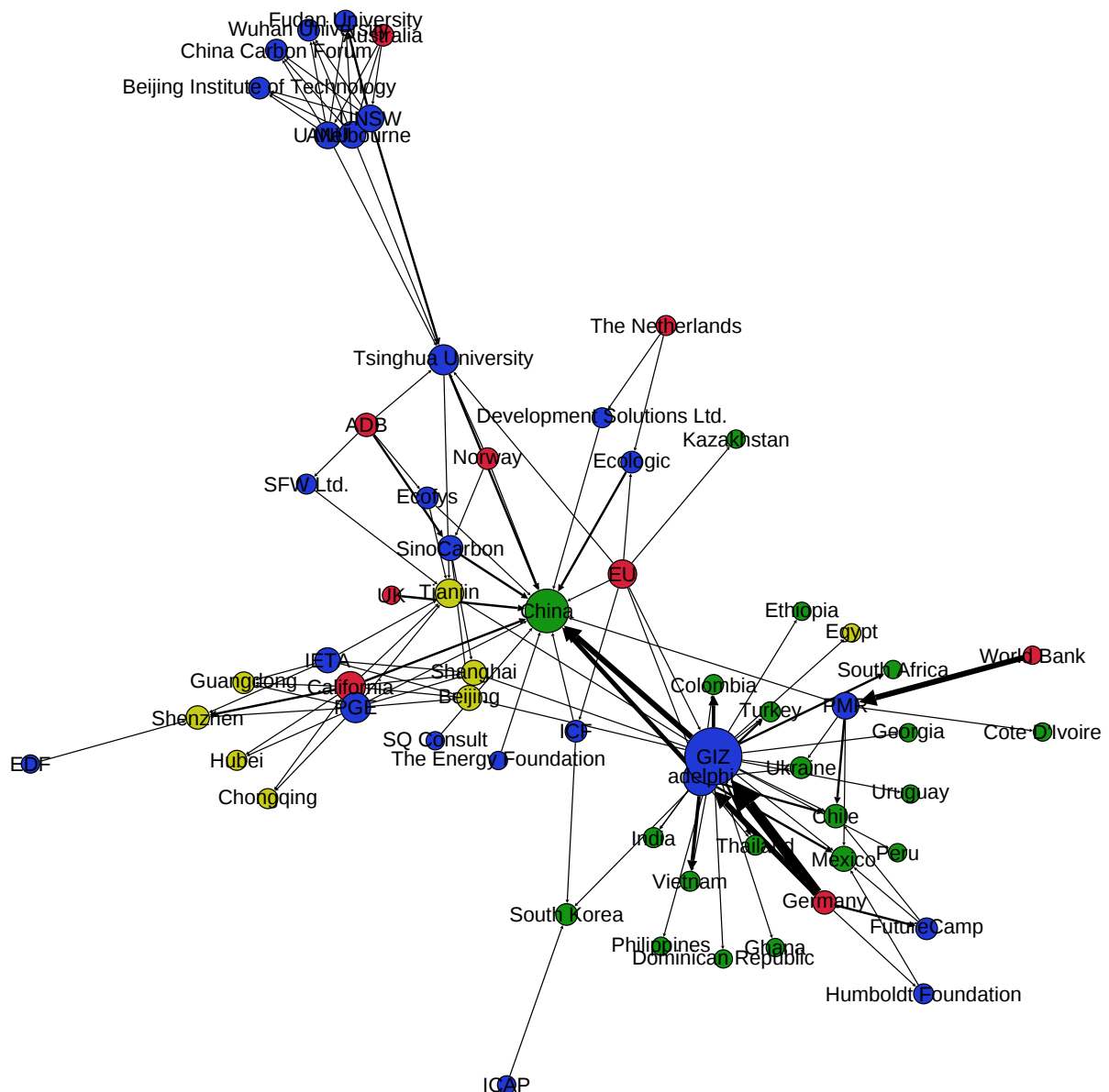
This subsection links the two previous ones by adding an actor-level perspective—based on the different actor groups identified above—to the previous discussion of differentiation among different types of interactions at the level of capacity-building projects and their implications for policy diffusion. Through their involvement in multiple projects, central actors in the network of capacity-building projects can steer the projects' content and interactions by acting as brokers and gatekeepers.

Actors' degrees of centrality in the network of all project actors can indicate their influence on the information flows and types of project interaction (Scott 2013). The members of different actor groups—but especially well-connected consultants and local coordinating agencies or ministries—can act as brokers and can connect projects through structural and

informal links by coordinating and steering different project activities (Kramer and Pahl-Wostl 2014, Scott 2013). Structural links emerge when actors are officially involved in multiple projects. Consultants, for example, can be commissioned by more than one financier to implement different projects, and thereby can ensure better coordination by acting as brokers. Also—and probably most importantly—local coordinating actors such as agencies and ministries can be in charge of many or of all projects, which enables them to foster the type of interaction that is in their best interest, acting as gatekeepers. Structural links can also take the form of institutionalized coordination meetings among financiers. Informal links, in contrast, occur through ad hoc contacts and information exchange.

4 Carbon-Pricing Policy Diffusion Through Capacity Building

Data collection on all global GHG ETS capacity building projects is still ongoing. A preliminary network visualisation reveals that there are a few central actors in GHG ETS capacity-building projects globally. Germany and the World Bank are the two actors who finance most of the global GHG ETS capacity building projects. Most of the German projects are implemented by the German development cooperation agency GIZ. The extent to which the individuals within GIZ coordinate has not been analysed so far.



5 Conclusions

This paper is still in an early stage and data collection has not been finalised yet. I have mapped most projects but still need to gather more detailed information about the actors and their relationships. The analysis of all capacity-building project activities and content to identify their interaction according to the four types (synergistic, complementary, duplicative, and conflictive) also requires some more data collection. In addition to data collection via desk research, expert interviews with a number of key actors seems necessary further to test the four types of project interaction since some of those activities are likely informal. Interviews also seem necessary to collect data on the interaction among external and domestic actors.

Capacity building can be an influential tool to empower low-income countries and emerging economies to engage in climate action, and thereby can contribute to the bottom-up dynamics envisioned by the Paris Agreement on climate change. The interaction among externally financed capacity-building projects is, however, a decisive factor for the effectiveness of those efforts. Different actors can engage in interaction management. Local coordinators' interaction with the external financiers and promoters of a particular policy design has not received much attention so far in policy diffusion studies. Key actors can act as gatekeepers in policy diffusion processes. They are well placed to engage in project interaction management, and are therefore important for understanding and influencing the effectiveness of the infusion process.

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