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Collective Resources in Entrepreneurship: A Reconceptualisation of Resource Mobilisation

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<a> ABSTRACT

Some resources needed by an entrepreneurial firm to pursue opportunities are collective by nature, which means that these resources are owned and used by more than one actor. Collective resources (e.g., natural resources and resources collectively co-created in networks) cannot simply be bought in a market because of the shared governance, and thus require alternative resource-mobilization approaches, for example through social arrangements. We therefore ask how entrepreneurial firms mobilise collective resources for opportunity exploitation.

We conceptually explore the mobilisation of collective resources through utilising theoretical insights from the resource-based view, resource dependence theory and new institutional economics. Additionally, we use examples from the Norwegian salmon farming industry to illustrate different mobilisation approaches for collective resources. We argue that collective resources are mobilised without ownership transfer, which requires for idiosyncratic arrangements to mobilise collective resources. In particular, collective resources often are mobilized through social contracting and institutional arrangements.

Key words: Collective resources, Resource mobilisation, Governance of resources, Social arrangements, Opportunity exploitation

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<a> INTRODUCTION

Entrepreneurial firms—that is, firms that constantly pursue entrepreneurial opportunities (Miller & Friesen, 1982)—can draw on collective resources (i.e., resources that are governed by a collective) to accumulate the variety of resources they need to pursue an entrepreneurial opportunity (Wigger, 2018)¹. Examples of collective resources are natural resources, such as whales (Lawrence & Phillips, 2004) and crabs (Alvarez, Young, & Woolley, 2015), and resources developed through social interactions in networks, such as new knowledge co-created in a network initiative (Zhang, Jiang, Wu, & Li, 2019) or an open innovation project (Garcia, Wigger, & Hermann, 2019). We refer to collective resources as non-exclusive, meaning that the collective resources an entrepreneurial firm draws on to pursue an opportunity are owned and can be used by other actors simultaneously—at least during part of the resource’s lifespan.

Because collective resources can be owned by a collective, publicly-owned, or are not owned by anyone per se, as it is the case for many natural resources, entrepreneurial firms typically need to mobilise collective resources without ownership transfer (Wigger & Shepherd, 2020). This means that the entrepreneurial firm and other actors can simultaneously use collective resources and social contracting is regarded as a promising avenue for commoning practices (Ostrom, 1990). The non-excludability and non-transferability of collective resources can challenge the mobilisation of the resource by the entrepreneurial firm—that is, resource search, access and transfer (Clough, Fang, Vissa, & Wu, 2019)—and thereby jeopardise the planned entrepreneurial activity or degrade the quality of the resources the entrepreneurial firm depends on for opportunity exploitation, for example when the resources are over- or misused (Alvarez, et al., 2015, Garcia et al., 2019). The absence of ownership transfer concerning collective resources can result in social dilemmas, for example caused by conflicting resource

¹ This chapter summarises and extends the introductory chapter of Wigger’s (2018) doctoral dissertation.

use and interest (Ostrom, 1990) and mobilisation inefficiencies, such as high transaction costs (Coase, 1974; Eggertsson, 1990). In particular, because the lack of enforceability leads to the absent of reassuring sustainable resource use and the accessibility of collective resources needs to constantly be reassessed, which implies that entrepreneurial firms need to establish often costly resource-mobilization arrangements to ensure sustained assess and usage of the collective resources needed to pursue opportunities, such as communing practices and other types of social arrangements (Ostrom, 1990).

Prior research highlights the transfer of resources from resource holder(s) to resources seeker(s) as a key activity of resource mobilisation (Clough et al., 2019; Rawhouser et al., 2017) in order to, for example, alleviate dependence between the entrepreneurial firm and the external environment (Pfeffer & Salancik, 1978) and to build a unique heterogenous resource base (Barney, 1991). Our focus on collective resources provides novel insights into the debate on resource mobilisation without ownership transfer, and it addresses the following question: how do entrepreneurial firms mobilise collective resources for opportunity exploitation?

Prior research discusses the mobilisation of resources without—or at least indirect—ownership exchange to some extent, for example, bootstrapping (Winborg & Landström, 2001), effectuation (Sarasvathy, 2001) and bricolage (Baker & Nelson, 2005). To illustrate, the concept of effectuation regards resources embedded in the social network of the entrepreneur to be mobilisable, meaning that networks can expand the available resource base of the entrepreneurial firm without gaining ownership of these resources (Berends, Jelinek, Reymen, & Stultiëns, 2014). While these studies are examples of resources shared amongst a defined or at least known group of actors, this chapter expands the debate by focusing on resources, such as natural resources, which are owned by a larger collective, the public or have no ownership per se.

We utilize insights from well-established resource theories (i.e., resource-based view [RBV], resource dependence theory [RDT], and new institutional economics [NIE]) to conceptually explore how entrepreneurial firms mobilize collective resources to pursue opportunities and to provide a reconceptualization of the mobilization of collective resources. We have selected these three theories to gain a broad understanding from three idiosyncratic perspectives on the firm and its relation to resources. For example, RDT uses an outside-in perspective, RBV an inside-out perspective, and NIE a transaction perspective on the relationship between firms and resources (Wigger, 2018). In order to further illustrate and exemplify our arguments, we draw on resource mobilization-examples from salmon farmers, which utilize various collective resources as their opportunities often build on natural resources.

By doing so, this chapter contributes to the literature on resource mobilisation for entrepreneurship. The excludability and transferability of resources are often assumed in studies on resource mobilisation for entrepreneurship (e.g., Clough, Fang, Vissa, & Wu, 2019; Rawhouser, Villanueva, & Newbert, 2017). These assumptions are challenged by the nature of collective resources, and this chapter offers a reconceptualisation of mobilising collective resources with a shared governance by taking into account the non-excludability and non-transferability of collective resources. Moreover, this chapter argues that the shared governance of collective resource requires an idiosyncratic resource-mobilisation approach and presents how four types of resource-mobilisation arrangements (i.e., market arrangement, collaborative arrangement, relational arrangement and institutional arrangement) are designed for collective resources.

<a> RESOURCE MOBILISATION FOR OPPORTUNITY EXPLOITATION

Mobilising resources for opportunity exploitation implies the perception that the novel use of the resources is more worthwhile than the current uses of the resources (Holmén,

Magnusson, & McKelvey, 2007; Penrose, 2009/1959). Established firms consist of a resource endowment (Haynie et al., 2009), and the resources needed to exploit an opportunity can be mobilised internally through, for example, reconfiguring, reallocating and recombining internal resources (Desa & Basu, 2013; Penrose, 2009/1959). Often, however, an entrepreneurial firm does not possess all the resources it needs to exploit an opportunity, or the resources are currently unavailable for reallocation. Consequently, entrepreneurial firms also mobilise resources from organisations in the external environment (Pfeffer & Salancik, 2003/1978). This chapter focusses on the mobilisation of external resources for opportunity exploitation.

** Arrangements for Resource Mobilisation**

External resources (hereafter referred to as resources) are typically mobilised through arrangements between firms, other types of organisations and institutions, such as those guiding the use of natural resources (Simsek, Lubatkin, & Floyd, 2003). Arrangements can be contracts as well as socially and institutionally embedded constellations established through interaction between individual and collective actors (Neergaard & Ulhøi, 2006). Hence, arrangements are instruments used to formally and informally govern the mobilisation of resources between different activities throughout the opportunity-development process (Busenitz et al., 2003).

Arrangements come in different forms and can be grouped in different types to transfer and exchange resources. Examples of arrangement types include market arrangements (Eckhardt & Shane, 2003) and collaborative arrangements, such as in the form of inter-organisational arrangements between firms (Drees & Heugens, 2013; Marchington & Vincent, 2004). These arrangements are designed to fit the different motives of the resource holder(s) and resource acquirer(s) as well as the characteristics of the resources, such as ownership and transferability of the resource (Subramani & Venkatraman, 2003).

** Resource Ownership: Excludability, Enforceability and Transferability**

Resources can have different property rights, as they can be owned by a single actor, a collective or have no ownership as such. The ownership of a resource defines its excludability, transferability and enforceability. Tietenberg and Lewis (2009/1984) argue that these three property right characteristics define efficient resource mobilisation. Excludability means that the resource owner should take on the benefits and costs linked to owning and using the resource; transferability means that ownership of the resource can be transferred from one use to another, and enforceability means that resources are secured from involuntary use and damage (Tietenberg & Lewis, 2009/1984).

Common ownership of collective resources, however, often results in restricted transferability, excludability and enforceability. In order for the entrepreneurial firms to be able to mobilise a collective resource, the resource must be transferable to some degree (Franco & Haase, 2013). Resources with a high degree of transferability include, for instance, financial capital. While some resources are transferable in their usage, ownership exchange through resource mobilisation as a firm-to-firm transaction might not be adequate for collective resources, since this type of resource does not have a single owner or a defined group of owners (Tietenberg & Lewis, 2009/1984).

Given the focus of this chapter on collective resources, we are interested in arrangements established by two or more independent actors, who exchange shared resources for mutual benefit or as a control mechanism of collective resource use.

<a> MOBILISATION OF COLLECTIVE RESOURCES FOR ENTREPRENEURSHIP

To learn more about how the mobilisation of collective resources works, this chapter uses resource mobilisation examples from the Norwegian salmon farming industry and insights

from three grand theories on the mobilisation of collective resources. The theories, RBV, RDT, and NIE are used to present how the previously defined types of arrangements (i.e., market arrangements, collaborative arrangements, relational arrangements and institutional arrangements) are designed for collective resource mobilisation.

** Exploring Practices of Collective Resource Mobilisation: Four Examples from the Aquaculture Industry**

This section offers empirical insights into the mobilisation of collective resources from the Norwegian salmon farming industry and is based on secondary data and a larger qualitative study by the authors on the aquaculture industry². The use of examples from the real world in conceptual papers (e.g., Lamers, Van der Duim, & Spaargaren, 2017; Welter, 2011) has proven to be an effective way of to strengthen and illustrate the arguments. Hence, the examples presented below illustrate and exemplify how collective resource can be mobilised for entrepreneurship.

Aquaculture industry is a young but growing industry, which consists of many entrepreneurial firms that innovate to advance production. Moreover, salmon farmers make use of natural resources, such as sea water and production areas and other types of collective resources. Therefore, examples from Norwegian salmon farmers can provide more insight into how collective resources are mobilised.

The aquaculture industry, and especially salmon farming, has received increased international attention due to its potential for value creation based on natural resources (Bjørkan & Eilertsen, 2020). In 2018, the aquaculture industry employed 8200 persons directly and 12000 when including the value chain in Norway. The collective output value was 118 billion

² For more information regarding the data collection, see Larsen, Lauvås, and Sørheim (2021)

NOK (11 billion EUR); the industry has one of the highest value creations per capita (Richardson, Stoud Myhre, Tyholt, & Johansen, 2019). Consequently, the Norwegian government intends to increase the growth of the aquaculture industry (NFD & OED, 2017), and Olafsen, Winther, Olsen, and Skjermo (2012) estimate a fivefold increase in production by 2050.

However, the main obstacle for achieving these goals is the salmon lice, which has negative effects on wild salmon and the quality of the farmed salmon. Since the salmon lice are naturally found in the ocean, the production is affected because the salmon are produced in open cages placed along the Norwegian coastline. If the concentration of salmon lice is too high in the production facilities, the lice may pass on to the wild salmon passing by the production areas. Until the salmon lice issues are solved, the Norwegian government is limiting new salmon licenses and restraining growth in the sector and has introduced various measures to limit the effect of the lice on wild salmon.

<c> Traffic light system for salmon production using institutional arrangements to mobilise collective resources

To limit the negative externalities of salmon lice, the Norwegian government introduced the ‘traffic light system’ in 2017 (Regjeringen, 2017), separating the Norwegian coastline into 13 different production areas for salmon (Ådlandsvik, Asplin, Karlsen, Sandvik, & Svåsand, 2015). Based on surveillance and reports regarding salmon lice, an interdisciplinary group of researchers writes a report, which is then evaluated by the Ministry of Trade, Industry and Fisheries. Depending on the perceived risk of salmon lice on mortality of the wild salmon, the Ministry decides which areas are to be identified as green, yellow and red. The rationale is that aquaculture influence on the environment is decisive for its potential growth.

Consequently, the traffic light system determines which sector gets to maintain, increase or decrease its salmon production (Institute of Marine Research, 2020). In practice, this means that a salmon farmer who does not have any issue with salmon lice could face production restrictions if other farmers in the same area do struggle with lice. The traffic light system is an example of regulating institutions defining the access to and usage of locations for salmon production. It defines whether the natural resources still can be used if salmon farmers get access to new natural resources or if they have to stop using the natural resources for a certain timespan.

<c> Auctions and licenses using market arrangements to mobilise collective resources

In ‘green light’ areas, salmon farmers can buy permits from the government to increase their production. In 2020, for instance, the salmon farmers in the nine green areas were allowed six percent growth in biomass. One percentage point was sold at a fixed price of 156.000 NOK (14.300 EUR) per ton, whereas the remaining five percentage points were auctioned by the Directorate of Fisheries (Regjeringen, 2020). The Norwegian government, thus, decides the value of the natural resources in the form of a defined price per ton of biomass to produce salmon and creates a market-based system to sell and buy natural resources, which no one owns per se. Moreover, buying a permit gives the salmon farmers the right to use the natural resources to produce salmon.

<c> Collective knowledge sharing in networks using collaborative arrangements to mobilise collective resources

From its establishment in the 1970s, the salmon farming industry has been regarded as an open industry, in which knowledge has been shared among the actors regarding how to best produce salmon (Larsen, Lauvås, & Sørheim, 2021). Knowledge related to common challenges are

openly shared between the companies, such as salmon lice or concerns over industry reputation. For example, salmon farmers have created a cluster that researches different areas and then shares the resulting knowledge among the farmers: *'We have established collective R&D projects in the forums on areas that several partners have challenges with, of which participation varies from top management to special expertise ... And knowledge is shared openly on pressing issues in the forums'* (Informant). Salmon farmers collectively create knowledge within the cluster, and this created knowledge is collectively owned by the cluster members, who have established practices about how to use and access this knowledge.

<c> Collaborative smolt production using relational arrangements to mobilise collective resources

The salmon farming industry emphasises biology, and getting the best smolt (young salmon that are ready for entering the sea) is an important part of increasing the salmon production. Since economically sound smolt production requires a large volume of smolt, it is not economic viable for single salmon farmers to own their own smolt facility, unless it is large, listed firm. Regional SMEs have therefore collectively built smolt production facilities that they collectively own, which produce top quality smolt that they can buy from: *'We initiated a smolt production facility, and we needed others to realise it, so we invited other regional actors to collaborate, which then joined to realise and build the facility'* (Informant). Building such collective arrangements also applies for delousing activities. When the lice 'strike', a whole area is often affected, causing the larger firms who own delousing equipment to use it first. Hence, the SMEs have also collaborated in established delousing firms, which are able to serve their facilities when needed.

Because the salmon farmers have licenses for how much salmon they are allowed to have in their facilities, some of them also lend out their production areas if they have excess

capacity (i.e., not using their allowed quota of salmon biomass in the sea). As each ton of salmon is valued around 150.000–200.000 NOK at the time of writhing (Fiskeridirektoratet, 2020), it is beneficial for salmon farmers to utilise the biomass that they have license for: *‘through co-location we can exchange salmon from their [neighbouring firm] localities to ours, or we can have the salmon on their localities... of which we both benefit from’*. Sharing the production area and smolt production is based on trust and social exchange between the salmon farmers.

** Theoretical Insights on the Mobilisation of Collective Resources: Three Resource Perspectives**

The examples above illustrate that collective resources can be mobilised in various ways and highlight peculiarities of mobilising collective resources. To gain a more profound theoretical understanding of mobilising collective resources, we apply three theoretical lenses: RDT (Pfeffer & Salancik, 2003/1978), RBV (Barney, 1991; Penrose, 2009/1959), and NIE (Coase, 1991; North, 1990; Williamson, 1985). These three theories are utilised to reconceptualise the debate on mobilising collective resources. We discuss the insights from each of these theories on resource mobilisation regarding the nature of collective resources. The principal aspects of each theory are summarised in Table 1.

Moreover, Table 1 illustrates that the three theories build on distinct perceptions of the firm and different fundamental issues each of the theory addresses. This means that the relationship between the firm and resources is conceptualized in three different ways. Hence, applying the logics of the three theories builds a broad foundation to conceptualise the mobilization of collective resources. We have selected RDT because of the focus on how entrepreneurial firms survive in the long-term, despite the dependence on collective resource and issues how to sustain the accessibility of these resources. Moreover, RBV was selected because it adds a firm-internal aspect to the debate on how to sustain the resource advantages, and thus the

entrepreneurial opportunity. Finally, transaction costs and property rights are crucial and define resource mobilization efficiency. To address the transaction perspective, we have selected NIE.

Table 1: Theoretical insights on resource mobilisation

| | Resource dependence theory | Resource-based view | New institutional economics |
|--|--|--|---|
| Fundamental issue the theory addresses | Firm survival | Competitive advantage (i.e., outperforming other firms) | Existence of the firms |
| Perception of the firm | Firm as a co-dependent entity | Firm as a bundle of resources | Firm as a nexus of contracts |
| Nature of collective resources | Increases the interdependences between firms benefiting from the resources | Contradicts the logic of internalising critical resources to build a competitive advantage | Increases transaction costs and requires institutions to guide allocation |
| Issues inherent in collective resources | Power imbalance and interdependences | Heterogeneity issues | Market failures inherent in non-excludability |
| Level of resource mobilisation | Meso level | Micro level | Micro level (transaction costs) and macro level (property rights) |
| Motivation for establishing arrangement | Dependences define the arrangements through which resources are mobilised | Creation and internalisation of critical resources to enhance heterogeneity | Institutions provide incentive structures for how resources are mobilised |
| Type of arrangements | Inter-organisational arrangements | Inter-organisational arrangements | Institutional arrangements |

Source: adjusted from Wigger, 2018¹.

<c> **Mobilisation of collective resources and the RDT**

RDT combines theories of the environment of firms in which resources are embedded (e.g., Terreberry, 1968; Yuchtman & Seashore, 1967) and the theory of power to understand the relationship between resource providers in the external environment and resource seekers, such as the entrepreneurial firm (Emerson, 1962). RDT considers resources as exogenous properties before they are eventually acquired by an entrepreneurial firm. Hence, the resources

an entrepreneurial firm depends on to exploit an opportunity are often controlled by actors in the external environment. Casciaro and Piskorski (2005) argue that an entrepreneurial firm's ability to manage resource dependences and overcome constraints is determined by the extent of mutual dependence and power imbalance between the resource provider(s) and the entrepreneurial firm. In this line of thinking, the arrangements entrepreneurial firms establish to mobilise resources are designed to create mutual dependence and address power imbalances in order to alleviate resource dependence (Drees & Heugens, 2013).

Research that draws on RDT primarily studies resources that are excludable and transferable, as RDT argues that the most direct method to alleviate dependence is to gain control through ownership, for example through acquisition (Pfeffer & Salancik, 2003/1978). Hence, ownership is a key element underlying the control of resource dependence. Nevertheless, Pfeffer and Salancik (2003/1978, p. 143 ff.) acknowledge that an entrepreneurial firm is not always able to gain control through ownership transferability, and they argue that there are alternative arrangements to coordinate mutual dependence and power imbalance to deal with and alleviate resource dependence. For example, RDT considers alternative informal and semiformal inter-organisational arrangements, such as collaborative arrangements and relational arrangements that can be established to coordinate the different interests of both the entrepreneurial firms and actors that control the resources (Gulati & Sytch, 2007; Pfeffer & Salancik, 2003/1978). Consequently, resources can be mobilised through both relational contracting and market contracting (Starr & MacMillan, 1990).

Social coordination through collaborative and relational arrangements is a means to create mutual dependences through relational contracting (Pfeffer & Salancik, 2003/1978). Arrangements based on social agreements are driven by social norms and values. Following this line of thinking, exchange relationships between an entrepreneurial firm and actors controlling the desired resources are defined through rules and norms as well as the emergence

and/or development of a relationship (Cropanzano & Mitchell, 2005). Hence, we argue that from a RDT perspective, collaborative and relational arrangements without ownership transferability can be a way to alleviate resource dependence, and they tend to favour the sustainable mobilisation of collective resources. Arrangements that draw on social agreements stabilise resource exchange and the robustness of the relationship as well as reduce uncertainties linked to accessing collective resources (Pfeffer and Salancik, 2003/1978).

<c> **Mobilisation of collective resources and the RBV**

RBV argues that the basis for value creation is valuable and rare resources (Barney, 1991; Sirmon, Hitt, Ireland, & Gilbert, 2011). Firms internalize resources that are difficult to substitute or to copy in order to build an advantage over other firms for a longer time period (Barney, 1991). Therefore, to internalise critical resources is assumed to be a prerequisite to preserve heterogeneity and thus to limit competition (Peteraf, 1993). Rumelt (1997) coined the term ‘isolation mechanism’, which refers to strategies and tactics firms apply to protect their resource bundles from imitation. Property rights of resources are one condition included in the isolation mechanism (Rumelt, 1997). Additionally, Peteraf (1993) stresses that private property rights for resources can cause imperfect mobility, which means that these resources are excluded from resource markets and become less valuable to other firms.

The nature of collective resources thus challenges the assumptions of RBV related to how resources and their characteristics lead to sustained competitive advantage (Lavie, 2006). In particular, RBV’s emphasis on a heterogenous resource base and the imperfect mobility of resources is challenged by the non-excludability and non-transferability of collective resources. Lavie (2006) criticises RBV’s assumption of firms’ independence and extends the theory by arguing that many firms are interconnected and that the interconnectedness includes collective resources, such as network resources. Furthermore, ownership and control of resources are not necessarily a needed condition to achieve a competitive advantage (Lavie, 2006).

Following Penrose's (2009/1959) suggestion of resources' alternative uses, firms can have access to the services of a resource without obtaining the resource itself. Thus, the imitability of collective resources depends more on the relationship between the actors who aim to use the resource and those who control it. Moreover, the same collective resource acquired or accumulated by a single firm can provide different services for another firm, which, as mentioned earlier, contributes to the heterogeneity of firms.

<c> Mobilisation of collective resources and the NIE

NIE assumes that institutions—formal rules and informal restraints that define social, economic and political interaction—constrain economic behaviours and shape human interactions (North, 1990). Institutions guide interactions and define behaviour during transactions (Garud et al., 2007; North, 1990). Thereby, institutions guide resource mobilisation through, for example, incentives that influence exchange relationships. Hence, institutions affect the mobilisation of resources, as they create order, reduce uncertainties in the exchange process and mitigate opportunistic behaviours (Eggertsson, 1990).

Since institutions shape resource mobilisation, firms establish institutional arrangements to change institutions for more favourable resource allocation (Becker & Ostrom, 1995). NIE scholars focus on the role of property rights when allocating resources (Eggertsson, 1990). This chapter uses Eggertsson's (1990) understanding of property rights, which is defined as a method to assign authority to select how resources are used within institutional constraints by particular individuals organised in firms (as one example). The property rights associated with resources consist of the following three rights: the right to use a resource, the right to earn income from the resource and the right to permanently transfer resource ownership to another party.

Collective resources, such as natural resources, are characterised by the non-exclusive privilege to use the resources, which includes such issues as free-riding, externalities and

ineffective resource mobilisation, which can, for example, lead to over-exploitation (Ostrom, 1990). For resources with common ownership or those that are open access, no one holds exclusive rights (Eggertsson, 1990; Cheung, 1970). In this kind of situation, institutions become particularly important because property rights and inherent enforcements are not applicable. Institutional change, such as the establishment of a common fishing ground, can constrain the scope of resource use. However, Ostrom (1990) argues that establishing institutional arrangements to monitor and control resource use can be costly. Thus, the transaction costs connected to the mobilisation of collective resources are likely to be higher for resources with an exclusive ownership structure.

North (1990) argues that when it is costly to mobilise resources, institutions are particularly important. When institutions sub-optimally mobilise collective resources, actors such as firms, other organisations and the state establish institutional arrangements to make more favourable conditions for resource mobilisation. For example, sub-optimal situations can occur when incentive systems fail to prevent over-exploitation (Ostrom, 1990).

Based on the logics from the three different theoretical perspectives, the nature of collective resources influences the mobilisation of these resources for opportunity exploitation. The following issues are revealed when comparing these perspectives: 1) the collective nature of these resources most likely leads to increased interdependences between entrepreneurial firms and other actors; 2) there are challenges linked to how firms draw on collective resources to outperform others; and 3) there will be increased transaction costs for collective resources. Furthermore, mobilisation logics within these perspectives extend arguments based on the assumption of private resource ownership. Starting with this, we now discuss the peculiarities of mobilising collective resources.

<a> FOUR TYPES OF ARRANGEMENTS FOR THE MOBILISATION OF COLLECTIVE RESOURCES FOR ENTREPRENEURSHIP

Drawing on the examples from the salmon farming firms and the theoretical insights from RBV, RDT and NIE, we discuss four arrangements to mobilise collective resources for opportunity exploitation: market arrangements, collaborative arrangements, relational arrangements and institutional arrangements. While these types of arrangements also are used to mobilise exclusive and transferable resources, we argue that for collective resources, these arrangements come with idiosyncratic designs, which take into account the common property rights of collective resources. In particular, we draw on these four examples of collective resource mobilisation to gain novel insights into the particularities of collective resource mobilisation. In Table 2, the four arrangements are presented and described in terms of access of resources, utilisation of resources, transfer of ownership and theoretical insights.

Table 2: Arrangements for the mobilisation of collective resources

| | Market-based arrangements | Collaborative arrangements | Relational arrangements | Institutional arrangements |
|--|----------------------------------|--|---------------------------------|-----------------------------------|
| Examples from the salmon farming industry | Public auctions and licensing | Knowledge created in networks | Joint smolt production | Traffic light system |
| Access of resources | To buy access | Access decided by collaborative partners (e.g., network) | Access through social exchange | Access defined by institutions |
| Utilisation of resources | Sole right to use | Simultaneous usage | Usage comes with social strings | Usage limited by institutions |
| Transfer of ownership | Public - private transfer | Without ownership transfer | Without ownership transfer | Without ownership transfer |
| Theoretical insights | RBV and NIE | RDT | RDT and NIE | NIE |

Source: authors' own illustration.

 Mobilisation of Collective Resources Through Market Arrangements

Market arrangements are arrangements that are defined through, for example, sell-and-buy transactions or through renting and borrowing resources, such as receiving a loan from a bank (Clough et al., 2019). Market arrangements focus on the economic gains of a resource holder and are typically used for resources that have a clearly defined resource holder and instrumental value, such as money. Moreover, resource transfer through market arrangements comes generally with low transaction costs compared to other types of arrangements (Escobal & Cavero, 2012). Typically, when resources are exchanged through market arrangements, the ownership, usership and the resource itself are transferred from the resource holder to the resource seeker. Moreover, market arrangement makes use of market contracts or property right laws, which legally enforce resource users to comply with the defined user and owner right.

A prerequisite for market transaction is that there is a market for the resource that an entrepreneurial venture aims to mobilise to pursue a perceived opportunity. For collective resources, the property rights are not fully allocated, which leads to market failure (Gardner, 1983), and therefore collective resources typically are not exchanged at markets because of the lack of an assigned value to the resource and because they are not owned by a single resource holder (Hahn & Noll, 1981). Hence, to mobilise collective resources, markets need to be created, as the example of licensing and auction has shown.

In our example, the government designed, created and implemented a 'market-based system' to transfer collective resources, particularly to locations to produce salmon through selling permits defining the location and the maximum biomass to produce salmon, amongst other aspects. Using market-like systems to mobilise collective resources demands that there is an institution, such as the government, that has the authority to create such market-based systems that enable the allocation of resources, which prior to the resource mobilisation have been collective resource. Market-like systems have been debated over many years, and are

found to be inefficient and inequal, in particular for more exclusive resources (Gardner, 1983; Peterson & Peterson, 1993).

However, drawing on the insights from RBV, mobilising collective resources through market arrangements gives an entrepreneurial venture the sole usership of the resources, which means that the resources are excludable and therefore can be internalised in the firm's resource pool. Collective resources mobilised through market arrangements allow the entrepreneurial venture to draw on the isolation mechanism, thereby building a competitive advantage on what before the mobilisation process had been collective resources (Barney, 1991; Rumelt, 1997). The examples from our Norwegian salmon farming firms show that production locations are indeed critical for salmon farmers to build a competitive advantage. Market-like systems for collective resources enable entrepreneurial firms to efficiently mobilise resources once they can buy the resources. As the example of permits and auctions has shown, the resources 'for sale' are highly limited and become exclusive given the high price. Moreover, the government defines the condition for the market and the mobilisation of the resources.

** Mobilisation of Collective Resources through Collaborative Arrangements**

Collaborative arrangements are arrangements 'in which collaboration replaces arm's length market exchange to a significant extent' (Bailetti & Callahan, 1993, p. 130). This means that the collaboration partners define the access to as well as the usage of the resources. Such arrangements are often used for technologies (Bailetti & Callahan, 1993) and knowledge (Grant & Baden-Fuller, 1995).

While collaborative arrangements to mobilise exclusive resources often draw on formal contracts (Bailetti & Callahan, 1993), relational contracts become essential for collaborative arrangements for collective resources. Collective resources can be jointly owned by a group of actors, such as a network of firms in the same industry—as we seen in the example of the cluster

for salmon farming firms. For example, the knowledge that the firms collectively create through several projects and initiatives in the cluster is collectively owned by the firms in the cluster. Hence, the collective that owns the resources defines the access to and the usage of them, meaning that the collective designs the arrangement to mobilise the joint resources for individual firms to use. Based on insights from RDT, and as our example also illustrates, collaborative arrangements for collective resources draw on mutual benefits and increased dependence on each other (Casciaro & Piskorski, 2005) instead of formal contracts. As our example shows, the joint knowledge applied by several firms simultaneously provides advantages not only for the single firm but also for the industry. However, free-riding is a commonly seen issue when using collective resources in networks (Garcia et al., 2019). Increased co-dependency of the individual actors in a collective can decrease the incentives of free-riding.

** Mobilisation of Collective Resources through Relational Arrangements**

Relational arrangements through kinship and friendship are regarded as important arrangements to access and acquire necessary resources in entrepreneurship, such as for small business owners and their business founding (Zimmer & Aldrich, 1987), human capital, for example in form of involving family members (Aldrich & Kim, 2007), or early employees of a start-up that will benefit from venture growth (Clough et al., 2019). A relational contract is not legally formalised, as it is the case for market-based contracts, but is instead based on agreements between the two parties. This means that the enforceability and the scope of usage are often not regulated through legally binding contracts but through social ones.

When resources are owned by one actor, relational arrangements draw on dyadic relationships. Collective resources are typically owned by a collective; the public or ownership is not allotted. Thus, relational contracts underpinning this type of arrangements involve multi-

party relationships. Moreover, while kinship and friendship are typically used to mobilise individually owned resources (Aldrich & Kim, 2007; Zimmer & Aldrich, 1987), collective resources are mobilised through social exchange between external actors—in our examples through the collaboration between competing salmon farming firms.

Arrangements become less instrumental when exchange relationships build on joint dependences between entrepreneurial firms and exchange partners (Gulati & Sytch, 2007)—as we see in our example of co-producing smolt. Such multi-party relationships can develop a common understanding of mutual beneficial actions, which creates situations that often lead to mutual dependences between the users of the resources (Casciaro & Piskorski, 2005). Thus, we propose that the mobilisation of collective resources likely favours social agreements over market-based contracts and that maximising total dependence results in actors' jointly aiming for mutual benefits. Furthermore, relational arrangements with other users and/or owners of the collective resource can increase trust if it increases the mutual benefit, thus increasing the mutual dependences between the resource users (Casciaro & Piskorski, 2005). However, if relational arrangements are mismanaged, it could also increase distrust and tensions between the partners.

 Mobilisation of Collective Resources through Institutional Arrangements

In situations in which the status quo in institutions hinders effective resource mobilisation, firms may establish *institutional arrangements* aimed at achieving more favourable resource transactions. These arrangements are socially and institutionally embedded constellations shaped by interactions between resource users and resource owners or/and institutional bodies guiding resource allocation (Neergaard & Ulhøi, 2006). Institutional arrangements generally come with high transaction costs (Escobal & Caverro, 2012), as the institutions define how the resources are accessed and used.

While institutional arrangements are often inefficient to mobilise exclusive resources and markets and individual contracts often fail to address the shared governance of collective resources effectively, institutions can be efficient alternatives to govern collective resources (Ostrom, 1990). Using collective resources leads to autonomy challenges, and institutions can define the scope of action within which resource use is accepted. Institutions, such as regulations, can define the use of common property resources (North, 1990), act as legal safeguards and provide sanctions (Eggertsson, 1990). Furthermore, institutions can provide mutually beneficial incentives, which decrease uncertainties related to collective inaction. This is exemplified through our example of the traffic light system, of which both access to increase the salmon production is defined by institutions, as well as limiting the production in the case of environmental concerns related to salmon lice affecting the wild salmon. By this, the institution uses both the ‘carrot and the stick’, inducing the behaviour necessary to keep the salmon lice down in the 13 production areas.

Institutional arrangements that entrepreneurial firms draw on to mobilise collective resources typically come with higher transaction costs than market exchange (North, 1990, Eggertsson, 1990). Moreover, entrepreneurial firms that mobilise collective resources face uncertainties, they do not encounter, at least not to the same extent, when mobilising more exclusive resources. For instance, extant research has pointed out free-riding issues when resources are created in networks (West & Gallagher, 2006) and instances of inefficient natural resource allocation (Ostrom, 1990). We argue that these issues become even more salient when entrepreneurial firms plan to use collective resources over longer periods, which in turn justifies the use of social and institutional arrangements. To sum up, we propose that arrangements to mobilise collective resources need more creative designs than for resources with individual ownership. Moreover, we suggest that social and institutional dimensions of resource-mobilisation arrangements become particularly important for mobilising collective resources.

<a> CONCLUSION

In this chapter, we argue that particularities of collective resources, such as their low degree of excludability, transferability and enforceability, determine how entrepreneurial firms mobilise resources. While resource mobilisation in the current literature is defined as the activities of searching, creating, accessing and transferring resources (Clough et al., 2019), we argue that collective resources are often mobilised without ownership transfer. To mobilise collective resources, entrepreneurial firms draw more on social aspects, such as trust and co-dependency, than on formal contracts—at least for collaborative and relational arrangements. For collective resources, a market-based system must first be implemented before collective resources can be mobilised through market arrangements—making market-based arrangement less efficient for collective resources than privately owned ones. In turn, we argue that institutional arrangements are more effective for mobilising collective resources than for resources with a clearly defined ownership. Hence, we suggest that resource mobilisation logics based on the assumption that the resources can be transferred and have a clearly defined ownership structure need to be reconceptualised for collective resources, which we turn to now.

We suggest that when entrepreneurial firms draw on collective resources to pursue opportunities, resource dependence is managed through created co-dependences between the actors with stakes in the collective resources instead of ownership control. These arguments build on those of, for example, Gulati and Sytch (2007), who claim that scholars need to distinguish between inter-dependences and joint dependences to understand resource dependence. Vestrum and Rasmussen (2013) also argue for establishing mutual dependences between community ventures and local resource owners. These studies suggest applying the logic of social embeddedness to understand resource dependence rather than focusing exclusively on dependence advantages and power imbalances. We add to this research by

arguing that co-dependency motivates resource users to minimise mobilisation inefficiencies collectively and through social arrangements the entrepreneurial firm can access collective resource by engaging in dependency relations.

Furthermore, entrepreneurial firms establish arrangements that enable them able to mobilise resources that are otherwise not accessible for other firms—at least not accessible at the same cost (Lavie, 2006). In particular, unique relationships facilitate the inimitability of collective resources (Lavie, 2006), which are non-accessible for actors without these relationships. To illustrate, resources that local farming firms collectively build and share, such as smolt production, might not be accessible for firms that do not have the same social relationships with these organisations. Moreover, when collective resources are created and become mutually beneficial for the firms inside the network, spillover rents arise, and the network is likely to become interested in limiting external access to these network resources.

Lastly, given that collective resources often cannot be allocated through ownership exchange, entrepreneurial firms that use collective resources depend on institutions defining how collective resources are accessed and used. Institutions that define the access and usage of resources are key aspects of NIE (e.g., Cleaver, 2000; Ostrom, 2015/1990). We expand on this debate by arguing that institutional arrangements shape the scope of action for entrepreneurial firms mobilising collective resources, which in turn increases their legitimacy and autonomy as long as they follow relevant norms, practices and regulations. In particular, institutional arrangements can be efficient for mobilising collective resources, as they provide guidance about how and when resources can be accessed and used.

While our reconceptualisation has important implications for mobilising collective resources, it also opens several avenues for future research on collective resources in entrepreneurship. Further theoretical development is needed to create a common framework of collective resources that incorporates the idiosyncratic elements of this type of resource,

including that they are indivisible, non-excludable, non-transferable and non-enforceable. Such development is needed to enhance the knowledge creation of collective resources.

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