

Business models for regenerating the Commons: A typology of value creation, capture, and distribution across property rights regimes

Abstract

This paper addresses the paradox that despite significant corporate investment in sustainability, ecosystems essential for business viability such as forests, water, and biodiversity continue to degrade. We examine how firms can regenerate natural common goods when property rights are fragmented or contested. We develop a conceptual typology of regenerative business models grounded in Sikor and Lestrelin (2017) revised property rights conceptual schema. By disaggregating use, control, and authoritative rights, we theorize how rights configurations condition firms' business models and their capacity for value creation, capture, and distribution. The typology identifies seven ideal-type models ranging from firm-led regeneration to intermediary and governance-based roles, each linked to distinct value logics. The framework provides managers with a diagnostic tool to select viable regenerative strategies under different rights regimes, helping them align profitability with commons regeneration. We extend business model and sustainability scholarship by integrating locus of governance authority and degree of integration of property rights into theorizing about regeneration, offering actionable guidance for managers confronting this unsolved problem.

Keywords: Regenerative Business Models, Natural Common Goods, value creation, Value Capture, value distribution, Governance

1.0 Introduction

"The economy is a wholly owned subsidiary of the environment, not the other way around."
— Nelson. G., et al (2002)

Firms worldwide are making significant investments in sustainability initiatives to restore, protect and improve natural common goods, yet the degradation of these natural common goods which are critical to business survival such as forests, freshwater systems, soils, and biodiversity continues unabated (Bansal et al., 2024; Whiteman et al., 2013; Williams et al., 2024). This paradox, where there is co-existence of growing sustainability efforts with accelerating ecological decline, highlights a deeper institutional blind spot; while firms seek to address natural common goods degradation through corporate sustainability (regenerative) strategies, we argue that they often underestimate the role of natural resources property rights in fundamentally conditioning what forms of regeneration are viable. These natural common goods (which are natural resources that are rival in consumption and difficult to exclude others from use), create governance challenges that conventional corporate sustainability efforts have largely overlooked (Cohen & Winn, 2007; Gerber et al., 2020; Ostrom, 1990, 1999b). Consequently, many of the prevailing assumptions underlying management scholarship, especially those emphasizing incremental efficiency improvements, struggle to explain how firms can regenerate the ecological foundations of their long-term viability.

While management scholarship has articulated how firms can reduce ecological harm through such strategies as pollution prevention, clean technologies, and product stewardship (Hart, 1995; Hart et al., 2003; Hart & Dowell, 2011). These strategies have advanced the sustainability agenda by showing how ecological considerations can be integrated into competitive advantage. Lately, research on regenerative business has shown that firms transcend harm reduction to actively regenerate ecosystems and enhance socio-ecological resilience (Albareda & Branzei, 2024; Feger & Mermet, 2022; Hahn & Tampe, 2021; Muñoz & Branzei, 2021) Konietzko et al., 2023). Regenerative business model refers to a business model which aims at restoring and improving both natural ecosystems and communities through promoting co-creative partnerships with nature to regenerate global social-ecological systems (Hahn & Tampe, 2021; Konietzko et al., 2023). This literature stream has been crucial in shifting attention from minimizing negative impacts to co-creating ecological and social value, positioning firms not only as economic actors but also as ecological stewards. Building on these literature advances, an important opportunity remains to develop a framework on how natural resources property rights regimes condition the viability of different regenerative business models and how these business models shape firms' capacity to create, capture, and distribute value.

For managers, this oversight translates into a practical and unresolved dilemma. We argue that firms are increasingly expected by regulators, investors, and consumers not only operate sustainably but engage in genuine regeneration of natural commons. Yet they lack clarity on which regenerative business models are institutionally viable under particular governance arrangements. This dilemma is especially acute in natural common goods-dependent sectors such as agriculture, forestry, fisheries, water, and food processing, where property rights are frequently fragmented, contested, or incomplete (Fennell, 2011; Ostrom, 1990, 1999, 2002; Sikor et al., 2017). In these settings, managers must navigate overlapping property rights that determine both their legitimacy to act and their ability to capture value from regeneration. Without such clarity, firms risk overinvesting in strategies that cannot be sustained or underinvesting in opportunities where regeneration could simultaneously deliver ecological renewal and long-term economic value.

Sikor and Lestrelin (2017) revised natural resources property rights framework (RNRPRF) provides a powerful lens to address this issue. It conceptualizes rights as bundles comprising Use rights (entitlements to derive benefits), Control rights (authority to manage, monitor, and exclude), and Authoritative rights (the power to define and allocate other rights) (Sikor et al., 2017; Ostrom, 1990). Applying RNRPRF to regenerative business enables us to theorize how different rights configurations, shaped by presence or absence of these property rights, determine not only what business models are feasible but also how these models shape firms' value logics of creation, capture, and distribution. The specific configuration of property rights firm commands, conditions the regenerative business models available to it, which in turn shape its value logics of creation, capture, and distribution. These institutional conditions fundamentally shape whether regenerative strategies are embedded within firms, diffused across supply chains, or governed through external actors. Against this backdrop, our theorizing is directed by two interconnected questions: Which regenerative business models are viable under various property rights configurations, and how do these business models influence firm's value creation, capture, and distribution?

To answer these two questions, this study employed a conceptual, theory-building design to develop a typology of regenerative business models for natural common goods. Conceptual approaches are appropriate when existing research lacks integrative theory and requires new frameworks to guide empirical inquiry (Jaakkola, 2020). We follow the logic of typology-based theorizing (Doty & Glick, 1994; Meyer, Tsui & Hinings, 1993), where ideal types serve as

theoretical constructs that illuminate the causal configurations linking institutions and firm strategies.

Our methodology consists of three interrelated steps, firstly is the integrative literature Synthesis, where we systematically draw on three research streams which are: regenerative business, business model value logics (value creation, capture, and distribution), and property rights and commons governance. Synthesizing these allows us to clarify the constructs central to regenerative organizing. Secondly, principle-based construct bridging. Guided by natural resources property rights theory (Sikor et al., 2017; Ostrom, 1990), we identify Use, Control, and Authoritative rights as the institutional conditions shaping how firms interact with natural common goods. We then bridge these governance constructs with business model theory, specifying their implications for value creation, capture, and distribution. In this step, we operationalize the typology's underlying dimensions. Lastly, typology development and propositional theorizing using configurational logic (Furnari, 2014; Fiss, 2011), we derive ideal-type regenerative business models. Each type reflects distinct configuration of rights and governance relationships. For each model, we formulate propositions linking rights configurations to value logic, thereby meeting the criteria of theory, thus, constructs, specified relationships, falsifiability (Doty & Glick, 1994). These propositions enable future empirical testing and comparative analysis.

This paper makes a conceptual contribution by developing a property rights-based typology of regenerative business models. The typology identifies ideal-type business models that reflect distinct rights configurations, each linked to specific value logics. For each type, we articulate propositions connecting property rights structures to governance and value logic outcomes. In doing so, we extend business model theory by embedding it in the institutional governance of natural commons, and we contribute to regenerative business scholarship by clarifying the institutional conditions under which firms can regenerate ecological systems. Beyond its theoretical contribution, the typology provides managers with a tool for diagnosing which regenerative strategies are institutionally viable, and for aligning ecological responsibility with long-term business viability. By connecting property rights theory with business model design, this paper seeks to enrich both scholarly debate and managerial practice, advancing a more nuanced understanding of how firms can meaningfully engage in natural common goods regeneration. The rest of the paper is organized as follows; Section II presents theoretical background, Section III presents Typologies of regenerative business models based on business

ownership and control of natural common goods and their respect value capture strategies, section iv discussion and section v conclusions and areas of further research.

2.0 THEORETICAL BACKGROUND

The theoretical progression from corporate sustainability to regenerative organizing represents a fundamental shift in the unit of analysis, thus from the firm minimizing its negative externalities to the firm actively enhancing the resilience of the Socio-Ecological System (SES) (Bansal & Song, 2017; Whiteman, Walker, & Perego, 2013). This shift necessitates extending organizational-level theories to frameworks that account for the embeddedness of economic activity within biological limits (Starik & Rands, 1995; Winn & Pogutz, 2013). While the introduction situates regenerative organizing as a distinct phenomenon, this section examines the property rights mechanisms required to operationalize it in the face of the contested boundaries of the Commons. To achieve that, we integrate three streams of literature, which are the process theory of regenerative organizing (Hahn & Tampe, 2021; Muñoz & Branzei, 2021), the activity system perspective on business models (Amit & Zott, 2001; Massa, Tucci, & Afuah, 2017), and property rights theory (Barzel, 1997; Sikor & Lestrelin, 2017).

2.1 Regenerative Organizing: Returning to systemic roots

An eco-efficiency paradigm, characterized by instrumental harm reduction, has predominantly influenced the existing literature on corporate sustainability (Dyllick & Hockerts, 2002; Hart, 1995). Systems thinking originally grounded early scholarship on corporate sustainability (Gladwin, Kennelly, & Krause, 1995; Starik & Rands, 1995), but it has markedly departed from this prevalence. Hahn and Tampe (2020) argued that the discipline has significantly forfeited its initial systems-oriented zest, veering towards a business case rationale that emphasizes organizational sustainability over systemic vitality (Bansal, 2005; Russo & Fouts, 1997).

Regenerative organizing corrects this drift by grounding its logic in Complex Adaptive Systems (CAS) theory (Folke et al., 2010). It rejects the prevailing instrumental perspective that views ecosystems solely as inputs for production (Purser, Park, & Montuori, 1995). Instead, it views the firm as mutually embedded in the SES (Marcus, Kurucz, & Colbert, 2010), implying that organizational success is contingent upon the enhancement of SES resilience, the capacity of the system to absorb shocks and maintain integrity (DesJardine, Bansal, & Yang, 2019; Linnenluecke & Griffiths, 2010). As a result, regenerative strategies are thought to be outside-in rather than inside-out. This is because they come from the needs of the specific place to support life, not from the organization's ability to make more profit (Winn & Kirchgeorg, 2005; Slawinski et al., 2021). This theoretical grounding highlights a critical governance paradox: while the science of regeneration necessitates deep, place-based intervention (Cross et al., 2011), the economics of the firm often favor standardized, scalable control, a tension that is fundamentally mediated by the business model.

2.2 Business Models: A Typology of Value Creation, Capture, and Distribution

In understanding how firms manage this tension, we adopt the activity system perspective, which defines a business model as the specific architectural blueprint of interdependent activities that transcends the focal firm (Amit & Zott, 2001; Snihur & Eisenhardt, 2022). Prior definitions of a business model concentrated on revenue mechanisms and economic rationale (Magretta, 2002; Mahadevan, 2000; Morris, Schindehutte, & Allen, 2005; Shafer, Smith, & Linder, 2005). We adopt Teece (2010) and Zott et al. (2011) in viewing the business model as the distinct logic of value creation, capture, and distribution.

However, in a regenerative organizing context, value creation, capture, and distribution take on distinct theoretical properties that challenge standard value logic assumptions (Bansal & Song, 2017; Hahn & Tampe, 2021; Muñoz & Cohen, 2017). In contrast to the traditional business model, which prioritizes customer utility, in regenerative contexts, the focus of value creation is on generating use value, the specific quality or utility of a resource as perceived by its users (Lepak, Smith, & Taylor, 2007)—for the SES itself. We decouple use value from exchange value, the monetary amount realized during exchange (Lepak et al., 2007). Unlike the conventional business strategy, which often assumes that value creation occurs when the value is viably exchanged in a market (Pitelis, 2009), regenerative strategies (see Hahn and Tampe, 2021) involve regenerating ecological goods (soil carbon, groundwater, or biodiversity), which have high use value for SES resilience while largely lacking immediate exchange value (Hahn & Tampe, 2021; Muñoz & Cohen, 2017). Secondly, the decoupling of use and exchange values renders it more difficult to capture value, which refers to the method utilized by the firm to transform use value into exchange value (Coff, 1999; Lepak et al., 2007). In the context of Commons, which is the main product of regeneration, value capture is obstructed by its susceptibility to value slippage—the inability to prevent free-riders from reaping the benefits of value created (Lepak et al., 2007; Foss & Foss, 2005). Therefore, we argue that in the context of regeneration, the firm's ability to internalize value created through property rights rather than pricing power determines value capture. Finally, value distribution shifts from being a residual concern to a constitutive element of the business model (Santos, 2012; De Cuyper et al., 2024). Since firms operate within a system and sometimes use resources that they do not fully own or control, it is theorized that designing mechanisms to distribute value back to various stakeholders is necessary for securing the social license to operate, which is required for long-term viability (Scherer & Palazzo, 2011; Brammer, Jackson, & Matten, 2012).

2.3 Property Rights as Strategic Capabilities

The ability to configure these value logics is not limitless, as it is strictly bounded by the firm's legal and institutional standing. Standard strategy literature often assumes the firm has clear decision rights over its resources (Kim & Mahoney, 2005; Teece, 2010). However, in the context of regenerative organizing—where resources such as water, forests, and biodiversity are shared or rivalrous—the assumption of a firm's control is insufficient (Ostrom, 1990; Hardin, 1968).

To operationalize this constraint, we draw on natural resource's property rights theory. Foss and Foss (2005) extend the resource-based view by arguing that property rights are critical

strategic capabilities that determine transaction costs. They argue that high costs in defining and enforcing rights frequently lead to value loss (Demsetz, 1967; Libecap, 1989; Barzel, 1997). To analyze the nuances of the Commons, we adopt Sikor and Lestrelin's (2017) revised schema, which builds on Schlager and Ostrom (1992) to disaggregate natural resources property rights into three distinct bundles. First, use rights grant the actor(s) the ability to get benefits directly or indirectly from the resources—such as harvesting timber or paying for ecosystem services—effectively providing the *right to operate* (Agrawal & Ostrom, 2001; Sikor & Lestrelin, 2017). Second, control rights, which grant the rightholder power over the natural resources for management decisions, monitoring, and exclusion, represent the *right to strategize* (Ostrom, 2003; Sikor & Lestrelin, 2017). Finally, authoritative rights confer the power to define authority and authorize transfers, thereby constituting the right to govern the rules of the game (North, 1990; Schlager & Ostrom, 1992; Sikor & Lestrelin, 2017). This granular distinction is crucial because rights in natural resources are mostly bundled differently across actors (Besley & Ghatak, 2001; McKnight, 2019); hence, we argue that a firm's chosen business model is a direct function of the specific rights bundle it possesses.

2.4 Institutional Governance and the Commons

When the necessary rights for regeneration are missing or fragmented, firms effectively operate within institutional voids (Mair & Marti, 2009; Khanna & Palepu, 1997). In this context, the firm is strategically handicapped as it can neither rely on market mechanisms (pricing) because the resource is often non-excludable nor on hierarchy (fiat) because it lacks the full bundle of rights required to enforce regenerative practices.

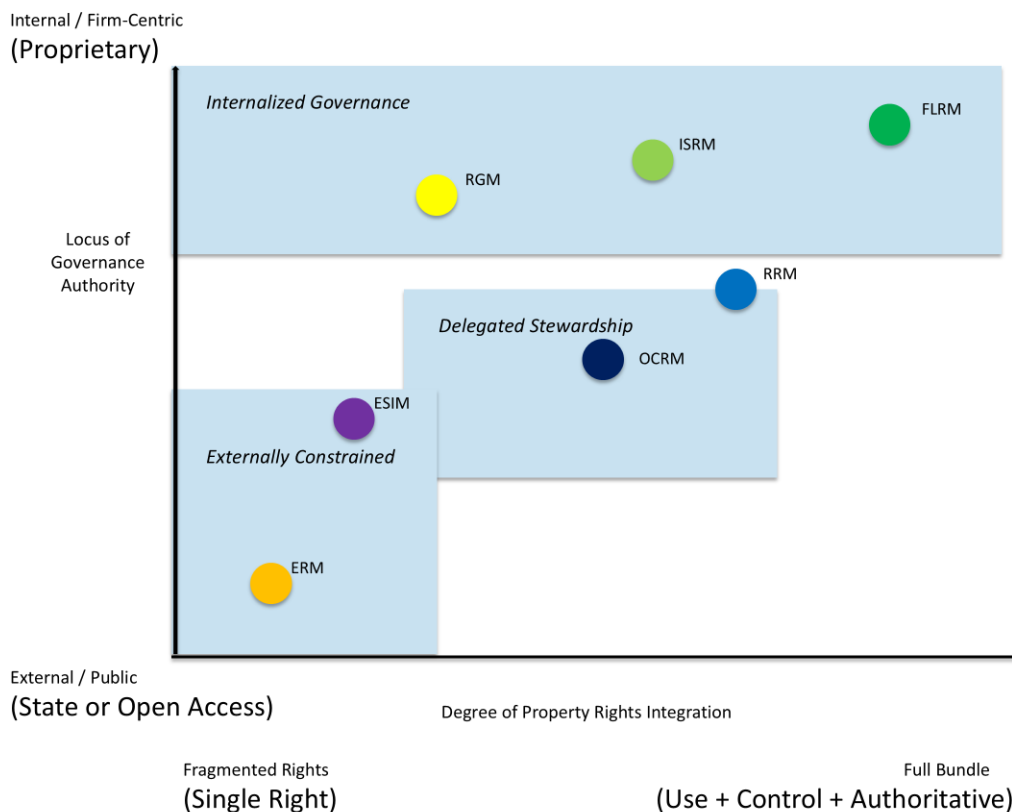
To bridge this gap, scholarship suggests that firms must step beyond their traditional economic boundaries. Based on the work of Scherer and Palazzo (2011), we propose that these gaps require a transition toward political CSR, a process in which firms transform from purely market entities to collaboratively co-creating the game's rules (Matten & Crane, 2005; Scherer & Palazzo, 2007).

We extend this political perspective to the ecological sphere to explain how firms operate with fragmented rights bundles. We contend that although regenerative ventures typically possess use rights (the license to operate), they often lack control and authoritative rights (the power to exclude others or establish constitutional rules). In the absence of these higher-order rights, the efficacy of regenerative business models is contingent upon institutional governance mechanisms—substitutes for legal ownership such as constructing shared institutional logics (Ansari, Wijen, & Gray, 2013; Thornton, Ocasio, & Lounsbury, 2012) or engaging in multi-stakeholder collaboration (Hardy & Phillips, 1998; Ferraro, Etzion, & Gehman, 2015). However, putting these mechanisms into place presents a unique strategic challenge: the firm must deal with institutional complexity, which means finding a way to balance the different logics of the market and the community (Greenwood et al., 2011; Besharov & Smith, 2014). Therefore, our typology reconceptualizes the business model is not merely as an economic engine, but as a governance solution to the problem of fragmented property rights within the context of the Commons.

4. STRATEGIC DIMENSIONS OF REGENERATIVE BUSINESS MODELS

The design of regenerative business models necessitates a fundamental departure from conventional strategic logic. Traditional business models are based on clear ownership and getting the most out of exchange value. Regenerative models, on the other hand, often work in the contested areas of the commons, where property rights are often broken or missing (Snihur & Bocken, 2022; George et al., 2021). We argue that the strategic decisions confronting regenerative entrepreneurs are not chiefly concerned with customer segmentation or revenue streams, but rather with obtaining the requisite rights to rehabilitate the Socio-Ecological System (SES) and legitimizing their interventions (Lüdeke-Freund, Carroux, & Joyce, 2018). To navigate these constraints, we identify two specific business model choices that serve as the constitutive dimensions of our typology: (1) the degree of property rights integration and (2) the locus of governance authority (see Figure 4.1).

Figure: Regenerative Business Model Typology



4.1 Degree of Property Rights Integration

The first choice, the degree of property rights integration, results from the theoretical constraints identified in modern property rights theory (Foss & Foss, 2005; Sikor & Lestrelin, 2017). In the context of the Commons, firms usually lack the full ownership assumed in standard strategy literature. Instead, entrepreneurs must make a strategic choice regarding the extent to which they hold a complete bundle of rights—specifically, use, control, and

authoritative rights—over the resources they seek to regenerate. On one end of the spectrum, ventures may operate with fragmented rights, possessing only the right to access or withdraw resources (use rights) but lacking the legal authority to exclude others or define management rules (McKnight & Linnenluecke, 2016; Agrawal & Ostrom, 2001). In this configuration, the business model is structurally vulnerable to value slippage, as the firm generates use value for the system that it cannot fully capture or protect (Barzel, 1997; Slawinski et al., 2021). On the other end, ventures may secure a full bundle, effectively internalizing the commons by holding use, control, and authoritative rights. This arrangement allows them to unilaterally design the regenerative intervention, exclude free riders, and authorize transfers (Bridoux & Stoelhorst, 2022; Luo & Kaul, 2019), thereby mimicking private ownership and granting the firm high strategic autonomy to align ecological restoration with value capture (Dean & McMullen, 2007).

4.2 Locus of Governance Authority

The second business model option we examine is based on the institutional notion of governance authority (Mair & Marti, 2009; Brammer, Jackson, & Matten, 2012). The extant literature on strategy has assumed that firms operate within stable regulatory frameworks where the state effectively enforces the natural resources rules (Scherer & Palazzo, 2011; Gilbert, Rasche, & Waddock, 2011). This assumption, however, ignores institutional voids, situations where control over resources is unclear, divided, or completely missing, which are critical for shared resources (Doh et al., 2017; George et al., 2012). Based on institutional theory, governance isn't just about government rules but also includes the various ways that different groups create and enforce shared guidelines (Ostrom, 2010; Albareda & Sison, 2020). In the regenerative business model context, we distinguish between firms that rely on external legitimacy and those that internalize the legislative power to fill institutional voids (Ansari, Wijen, & Gray, 2013; Patala, Albareda, & Halme, 2022). This difference shows a key choice for regenerative firms: they need to decide if they will abide by the current rules or create their own rules to help restore the ecosystem (Luo & Kaul, 2019; Dentoni et al., 2018). Therefore, a key component of a firm's regenerative business model is the locus where decision-making authority resides.

Firms deliberately choose the locus of this authority to legitimize their interventions. As shown in figure 4.1, on one end of the spectrum, firms operate within an external locus, where the authority to define the rules governing the regenerated resource resides outside the firm, implying that the governance rules are defined by the state or community norms (Mena & Palazzo, 2012; Reinecke & Ansari, 2016). These firms usually do not make rules for regeneration; instead, they follow or negotiate with them. This situation suggests that these firms can't independently modify the established rules (Hahn et al., 2014; York et al., 2016). On the other end of the spectrum, firms operate within an internal locus, where the focal firm sets the rules for how to manage regenerated resources. These firms make their own rules about how to manage regenerated resources, helping to address institutional voids using their standards, corporate codes, or exclusive contracts (Scherer & Palazzo, 2007; Bridoux & Stoelhorst, 2022). By taking on this political role, these firms use their strategic goals and

expert knowledge to gain legitimacy, which gives them the freedom to serve as the main stewards of the (regenerated) resource (George et al., 2012; Scherer, Rasche, & Palazzo, 2013).

4.0 A TYPOLOGY FOR REGENERATIVE BUSINESS

The two strategic business model choices together give rise to different configurations of regenerative ventures, based on which we propose seven ideal types. We classify them into three clusters: internalized governance models (Firm-Led, Institutional Stewardship, Regenerative Governance), delegated stewardship models (Operational Control, Ecological Service Intermediary), and Externally Constrained Models (Regulated Regenerative, Extractive Regeneration). Table 4.1 provides an overview of these seven types and the business model configurations that characterize them.

Table 4.1 showing regenerative business model typologies for natural common goods

Typology	Authoritative rights	Use rights	Control rights	Governance structure	Regenerative focus	Value creation approach	Value capture strategy	Value distribution
Firm-Led Regenerative Model (FLRM)	✓	✓	✓	Corporate-led	Land, Water, Biodiversity	Internalized regeneration through proprietary standards, operational integration	Ecosystem service monetization, product bundling, and strategic preemption	Firm-led with selective community partnerships
Institutional Stewardship Regenerative Model (ISRM)	✓	✗	✓	Multi-stakeholder (Govt, NGOs, Firms)	Land, Forests, Ecosystem Services	Indirect regeneration via supplier codes, certifications, and procurement policies	Partaking in suppliers' ecological value via certification, ESG signaling, and relational contracts	Firm-coordinated benefits distributed via standards and compliance
Regulated Regenerative Model (RRM)	✓	✓	✗	Corporate-led with regulatory oversight	Supply Chains, Circular Economy	Compliance with external ecological mandates and certification frameworks	Institutional positioning through standard-setting, certification lock-in, and regulatory preemption	Rule-driven redistribution to upstream actors via regulatory compliance and partnerships
Operational Control Regenerative Model (OCRM)	✗	✓	✓	Formalized polycentric with delegated control	Degraded or leased land systems	Performance-based restoration under concession or leasehold	Performance contracts, PES, carbon markets, with isolating mechanisms for value slippage reduction	Co-governed allocation embedded in contract terms and stakeholder participation
Ecological Service Intermediary Model (ESIM)	✗	✗	✓	Delegated (by firms, Govt or NGOs)	Degraded resource systems	Coordinated service provision for site-level regeneration and monitoring	Procedural indispensability via ecological data, monitoring tools, and embedded coordination	Ecological co-benefits shared based on normative legitimacy and procedural inclusion
Extractive Regeneration Model (ERM)	✗	✓	✗	Open access or externally controlled	Natural ecosystems with weak governance	Extraction under use rights with limited or no regeneration involvement	Exchange value from raw resource extraction under quotas or informal access	Value accrues to firms; ecological benefits (if any) managed/distributed by external control actors

Regenerative Governance Model (RGM)	✓	✗	✗	Governance intermediaries (e.g., certifiers, ESG platforms)	Cross-ecosystem performance tracking	Definition of regenerative standards and access criteria; governance tools and assurance	Monetization of certification, risk modeling, ESG scoring; reputational trust and procedural embedment	Rule-based procedural access; selective inclusion for under-resourced stakeholders via free trials etc.
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Key: ✓ = Present ✗ = Absent

4.1 The Firm-Led Regenerative Model (FLRM)

This is the business centric-governance regenerative business model through which firm(s) assume sovereign stewardship over natural common goods by collectively holding and exercising Authoritative, Control, and Use rights. By collectively holding and exercising these rights it enables the firm to define ecological goals, implement regenerative interventions, and internalize both ecological and economic benefits of ecosystem regeneration (restore, preserve and. This model challenges polycentric models which characterizes commons management where decision making regarding authority, control and use of the natural common resources is spread among various stakeholders such community members, government, firms and civil societies. Within FLRM the firm centralizes regenerative decision-making and institutionalizes regeneration as a core organizational function rather than a peripheral as corporate social responsibility or compensatory initiative as a legal requirement for operation or accessing markets. Firm(s) operating under FLRM uses Authoritative rights mainly right to definition to establish proprietary environmental standards (for biodiversity and ecosystem, input and material use, soil and land health, and water management) and allocative right to allocate roles and responsibilities regarding regenerative internally. Control rights are used for designing, implementing, management and monitoring regenerative practices. Holding and exercising of use rights enables the firm to draw on the direct outputs such as enriched soil, clean water, native biomass, and indirect services such as carbon sequestration, biodiversity credits, hydrological regulation eco-tourism of the regenerated ecosystems.

FLRM relies on internalization as its governing mechanism. Firms often use FLRM to lower the costs of negotiating access to regenerated resources (Foss & Foss, 2005; Bridoux & Stoelhorst, 2022; Williamson, 2010). By securing a full bundle of property rights, the focal firm internalizes regenerative externalities (improved soil health translating into higher yields), hence converting them directly into private benefits (Schlager & Ostrom, 1992; Dean & McMullen, 2007; Luo & Kaul, 2019). FLRM is therefore favored in situations characterized by significant excludability (e.g., in private land tenure), where the risks of free riding are minimal, allowing the focal firm to prioritize financial returns over social legitimacy.

Using White Oak Pastures and ACCO as cases, FLRM can be internal driven and external driven. Internal driven FLRM might be the result of the following factors; (i) Philosophical shift in operation practices from environmental destructive practices to environmental friendly practices, (ii) Desire for environmental stewardship due to weak environment regulations (iii) operation efficiency and innovation ecological risk management and resilience (iv) Strategic vision for sustainability as regeneration is embedded into firm's corporate strategy, bearing the significance of environmental stewardship for long-term business viability and (v) Economic diversification as regenerative practices leads to the production of new goods such as organic

products or a new businesses such as eco-tourism. External drivers are (i) market demand for sustainable products (ii) Regulatory and certification incentives which give the firm market, ESG reporting and financing opportunities (iii) Environmental degradation in a specific region indicating the need to adopt regenerative practices mainly environmental restorative practices. When the FLRM is internally driven, firms treat ecological assets as productive resources such as fertile land, reforested landscapes, or biodiverse rangelands that support production while when FLRM is externally driven the ecological assets are treated as symbolic capital, such as environmental certifications, ESG ratings, or reputational legitimacy derived from visible ecological leadership. This dual valuation enables firm(s) to embed environmental regeneration both into its operational infrastructure and its institutional identity and strategic positioning.

4.1.1 Implications on Value Creation, Capture, and Distribution

4.1.1.1 Value Creation

Within the FLRM, the firm(s) create both use and exchange. We define use value (see Lepak, 2007; Chesbrough et al., 2018) in this context as outcomes of the ecological enhancement of biophysical systems produced by firm's intentional regenerative interventions such as improved soil structure and fertility, carbon sinks, restored water cycles and biodiversity improvement which are useful to the focal firm and its stakeholders. These outcomes are useful through increasing land and biodiversity productivity, ESG reporting, buffer climate risk, and stabilizing ecosystem services critical to firm operations and community resilience to climatic shocks. Exchange value, by contrast, entails marketable outcomes of deployment of natural common goods such as organic food, carbon credits, training and ecological services produced by firm's intentional regenerative interventions and can be exchanged for money (See Ambrosini & Bowman, 2000; Lepak et al., 2007; Chesbrough et al., 2018). Consistent with Chesbrough et al. (2018), this value creation includes *value realization*, where the use value where the regenerative outcomes can be used in the firm internal processes to improve firm performance, and *value provision*, where exchange value such as goods and services from regenerating natural common goods are offered to markets.

However, within FLRM for the firm to create both use and exchange value, the individual and collective effects of Authoritative, Control and Use rights play a role. Authoritative rights allow firms to define standards and ecological goals governing use and access to the natural commons, control rights enable the firm to operationalize, monitor, and enforcing the standards and the goals and exclude third party actions such pollution or illegal extraction of benefits of the regenerative activities and exercise of the use rights incentivize the firm to create value as it enables it to benefit. Collectively, these rights empower the firm to regenerate the natural common goods, significantly internalizing the benefits from the regenerative activities. For instance, a vertically integrated paper company holding and exercising all rights, might exercise Authoritative rights through setting forest regeneration targets, Control rights by monitoring tree replanting, enforcing no-harvest zones and excluding third parties from harvesting trees and use rights by benefiting from restored water and timber yields. Together, these rights enable the focal firm to control regeneration outcomes, internalize regeneration benefits, and create value through resource recovery and exchange value through certified products, carbon credits and ESG-linked financing. Possession of the full rights bundle allows

firms to convert regenerative natural common goods into values which can be both inputs and outputs that contribute to diversification, product and process innovation, differentiation, financing, market entry and legitimacy, hence turning ecological regeneration into a repeatable and strategic organizational capability. In view of this, we formulate the following proposition:

Proposition 1a

Firm with FLRM, creates value through regeneration of natural common goods into productive and institutional assets, through exercising of Authoritative rights, the firm defines regenerative standards, Control rights to operationalize them, and Use rights to appropriate biophysical improvements into strategic inputs for firm resilience and socio-ecological embeddedness.

4.1.1.2 Value Capture

Value capture in FLRM is anchored in the firm's capacity to convert natural common good(s) regeneration into sustained economic and ecological value through a deliberately structured, rights-based governance system. This process includes monetizing regenerative goods (water, food, fibre, and timber) and valuing ecosystem services such as carbon sequestration, groundwater purification, and biodiversity restoration. However, many ecosystem services are intangible and difficult to commodify, hence rendering them prone to *value slippage*, where value generated by the firm (ecological service) is appropriated by the third party (Lepak et al., 2007). To address value slippage, FLRM firms deploy eco-certifications, sustainability-linked finance, payments for ecosystem services (PES), and resource circularity hence enabling value capture through revenues, cost efficiencies, premium pricing, and institutional legitimacy. Building on Bacq and Aguilera's (2021) framing of value capture as a governance process, we identify *Institutional enclosure*, *Strategic Preemption*, *Vertical integration* and *Product Bundling* as means that facilitate firm's ability to capture and preserve regenerative value within FLRM. We argue that these logics depends on firm's holding and exercising of use, control, and authoritative rights over natural resources.

Institutional enclosure refers to securing exclusive access to ecological assets (e.g., land, timber, water flows) through exclusive governance arrangements (Costello et al., 2014). By exercising Authoritative (right to allocation), Use and Control rights (especially exclusion rights which defines who has use rights and transaction rights which is the right to handle activities required for the realization of benefits such as logging) (Sikor et al., 2017), firms can retain both ecological and economic values internally while limiting spillovers to free riders such as competitors or external actors. These enclosures allow the firm to capture value through selling products such as water, timber or fish, Regulatory leverage as institutional enclosure increases the firm's eligibility for subsidies, PES schemes, green financing or carbon markets which are contingent on verified control and building infrastructure to monitor, verify and monetize ecosystem functions. For instance, White Oak Pastures exercises full ownership over its 3,200 acres farm in Georgia, USA. The firm defines its own carbon and biodiversity thresholds, prohibits synthetic inputs use, and controls land use through rotational grazing and ecosystem zoning. These rights allow the farm to limit value slippage and protect regenerative outcomes for its benefit such as material circularity and receiving various awards in environmental stewardship which improves their brand image.

Product Bundling refers to a seller's approach to offering multiple products as a combined package to maximize revenue, particularly when products are vertically differentiated (i.e., one product is universally perceived as higher quality than another) and resources are capacity constrained (Banciu et al., 2010). Drawing on bundling theory (Banciu et al., 2010), we argue that within FLRM, *Product Bundling* is when the firm integrates ecological and economic value into one product with the aim of selling non-marketable output such as biodiversity improvement, or access ecological markets which requires a bundle of services such as carbon markets. We argue that Product bundling enable the firm to capture value due to two ways; (i) Multidimensional monetization as product bundling such as ecological product plus services allow firm to capture value mainly from the services as products are sold with stories, certifications, impact metrics, and stakeholder benefits, which appeal to consumers hence consumers pay the premium prices for the product while bundling of services such as carbon sequestration, biodiversity improvement and ground water purification allows the firm to access carbon markets requiring a bundle of services such as that coordinated by VERRA. (ii) Market segmentation as bundled offerings appeal to diverse market segments, increases willingness to pay and improving capture across the demand curve. For instance, AACo bundles its premium beef with positive climate impact and biodiversity improvement hence capturing value through price premiums. However, we argue that product bundling requires the firm to orchestrate the flow of economic, ecological, and social values into integrated and defensible offerings. This is possible when the firm holds and exercises Authoritative, Use and Control rights. Use rights enables the firm to extract regenerative goods and claim ecosystem service benefits. Authoritative and Control rights allow the firm to configure these resources into bundles (products plus services plus co-benefits), determine usage regimes, and manage interactions across domains such as combining carbon credits with organic product and indigenous partnerships.

Drawing on (Hart, 1995), in context of FLRM we define *Strategic pre-emption* as early and deliberate positioning of firms to shape emerging ecological, regulatory, and market environments. Instead of capturing immediate value, focal firm influences how future value flows from regenerating natural common goods are defined, accessed, and exchanged. *Strategic Pre-emption* helps the firm to build competitive advantage through gaining exclusive access to customers, shaping institutional norms, rules or standards, which in turn raise barriers to entry for latecomers thereby capturing value as prices of the products sold are high due to less competition (Hart, 1995, Lepak et al., 2007; Chesbrough et al., 2018). In FLRM, we argue that firm(s) capture value though; (i) Setting the rules of the industry as early action enables the firm to influence market and regulatory standards hence increasing entry costs for followers, (ii) Building early capabilities (e.g., ESG accounting) thereby Locks in future access as such the firm gains preferential access to green capital and markets and (iii) Builds reputational advantage as pioneering regenerative practices gains consumer loyalty, stakeholder trust, and media visibility, which translate into premium pricing. However, for this to happen Authoritative and Control rights allow the firm(s) to direct the formation of these standards and rules, while Use rights ensure they benefit from participation. AACo's early investment in digital carbon accounting and biodiversity reporting for instance, helps it in capturing value from its regenerative efforts on land and biodiversity through accessing ESG-

linked finance, market for environment friendly beef and preferred supplier status ahead of formal regulation and competition, illustrating *Strategic Pre-emption*. In view of this, we formulate the following proposition:

Proposition 1b

Proposition 1b: The FLRM optimizes value capture by utilizing rights-based control systems, institutional enclosure, strategic preemption, and product bundling, to secure regenerative outputs; this approach reduces value slippage, allowing the focal firm to transform ecological performance into economic rents, reputational capital, and regulatory benefits.

4.1.1.3 Value Distribution

Since FLRM is a business centric business model, value distribution within FLRM is governed through legal and organization rights that reflect organizational intent such as corporate social responsibility (CSR) rather than participatory deliberation. Though common goods regeneration generates positive externalities such as purified ground water or pollinators, Firms choose how to share the economic value captured through various means CSR while keeping full control of the value. Authoritative (Allocation) and control (transaction, and exclusion) rights helps the firm to define who engages, accesses, or benefits from regenerative outputs. These mechanisms reflect Bacq and Aguilera's (2021) observation of value distribution in responsible innovation which often serves organizational goals rather than stakeholder inclusion. Therefore, value distribution in FLRM aims to reinforce the firm's autonomy, protect reputational capital, and initiate or maintain sustainability discourses. At AACo, value distribution is embedded in their broader "Thriving Communities" pillar, which includes structured partnerships with First Nations communities and targeted rural support programs. Furthermore, it supports community resilience through sponsorships of regional charities by choosing partnerships, which fit with its values and regional presence. However, timing, form, and scope of these initiatives remain determined by AACo's internal sustainability and governance frameworks. In view of this, we formulate the following proposition:

Proposition 1c

Firm with FLRM distributes value through organizationally curated spillovers such as philanthropic engagement, ecosystem service partnerships, or ESG-linked reporting which are outlined as strategic extensions of focal firm's legitimacy narratives and not as participatory processes of commons governance.

4.2 Institutional Stewardship Regenerative Model (ISRM)

The second type we call the Institutional Stewardship Regenerative Model (ISRM). These ventures operate by holding authoritative and control rights while notably lacking use rights over natural common goods (Pagell & Wu, 2009). Through holding control and authoritative rights, the firm focuses on regenerating natural resources and not benefiting directly from the resource extraction but by guiding and working with upstream firms, often suppliers (farmers or timber growers), who have the rights to use the resources (land, water, and forests). Through authoritative rights, the firm defines who has access to economic benefits and under what

conditions, particularly by embedding regenerative criteria within procurement standards and supplier codes (Grimm, Hofstetter, & Sarkis, 2014). Control rights enable the firms to indirectly manage and monitor ecological outcomes by setting environmental standards for suppliers and ensuring they follow them through audits, certifications, and sustainability protocols (Reinecke, Manning, & Von Hagen, 2012).

The governing mechanism of the ISRM is a supply chain enclosure. Firms adopt this configuration when the transaction costs associated with acquiring use rights through direct ownership are prohibitively high (Gereffi et al., 2005), driven by the fragmented nature of the resource base, such as the presence of numerous small-scale farmers as suppliers (Barrett et al., 2012). Instead of pursuing ownership, the focal firm uses its monopsony power to impose regenerative standards as a prerequisite for market access for its suppliers (Gereffi et al., 2005). Broken-up supply chains, such as those in the cocoa and coffee industries, work best for this model. In ISRM, governance without government allows the firms to get value from ecological improvements (Sikor et al., 2017) while avoiding the fixed costs and risks associated with land tenure (see Williamson, 2008).

To illustrate, consider Mars Inc., which implements regenerative practices in its cocoa supply chain using only authoritative and control rights (Mars Incorporated, 2018). Mars establishes regenerative standards, conducts compliance audits, and endorses supplier certification programs (such as Rainforest Alliance) that producer networks enforce. However, the firm cannot directly benefit from the regenerated natural common good by harvesting or selling derived services because it lacks use rights, limiting its incentive for further regeneration investment (see Bitzer & Glasbergen, 2015). Firms within the ISRM operate within broader multi-stakeholder governance systems, in contrast to the FLRM, which internalizes value through direct enclosure (see Dentoni, Bitzer, & Schouten, 2018). They contribute to regeneration through institutional coordination—coordinating a distributed network of institutions and producers (Brammer, Jackson, & Matten, 2012)—and co-regulation, leveraging their market position to establish normative parameters for the supply chain (Scherer & Palazzo, 2011).

4.2.1 Implications on Value Creation, Capture, and Distribution

4.2.1.1 Value creation

In the ISRM, value creation is not derived from the direct use (extraction or derived services) of natural common goods but from the firm's ability to shape and enforce ecological regenerative across its network. Holding Authoritative rights, especially allocation rights, enable the firm(s) to allocate responsibilities, and definition rights enable the firm to define the environmental standards which collectively influence regenerative practices across the firm's supply chain. These standards among others might include soil health benchmarks, biodiversity conservation targets or zero deforestation commitments, whereas the responsibilities might include delegating implementation to suppliers or assigning compliance oversight to certification bodies. Control rights such as right in managing such as supplier training, right to monitoring such as agroecological performance through audits and right to enforcing compliance through certification on adherence to regenerative criteria or conditioning

procurement contracts. Together, these rights allow firms to act as an orchestrator which aligns stakeholders towards common ecological goals.

Due to lack of Use rights, in ISRM firm produces use value (Lepak, 2007) such as improved soil health, biodiversity or watershed management, risk reduction, resilience which are embedded into its commercial governance, but does not produce exchange value (see Lepak et al,2007) as lack of use rights prevents the firm from monetizing the regenerative output from the regenerating natural common goods such as PES or timber. However, value creation in ISRM is achieved through structured interdependence, institutional legitimacy and relational coordination. This approach supports four drivers for value creation (Amit & Zott, 2001) (i) Efficiency, by reducing transaction and oversight costs (ii) Complementarities, by aligning regeneration with business operations (iii) Lock-in, through long-term supplier relationships or contracts (iv) Novelty, by innovative ecological governance. Mars Inc. for instance, illustrates this in its cocoa supply chain by setting regenerative standards, supporting agroforestry and partnering Rainforest Alliance for certification. These activities enable Mars Inc. to create ecological value (biodiversity, soil, water), social value (farmer knowledge, resilience), and operational value (traceability, risk reduction), reinforcing Mars's role as a regeneration actor. In view of this, we formulate the following proposition:

Proposition 2a: *In the ISRM, a firm creates value by institutionalizing regenerative practices across supply chains, where it leverages its authoritative and control rights to generate benefits (resilience and risk reduction) by ensuring that suppliers meet the firm's ecological standards, which helps offset the firm's inability to create exchange value from the regenerated resource(s).*

4.2.1.2 Value Capture

Within ISRM, the focal firm captures value from its regeneration facilitating roles through regenerative governance enabled by authoritative rights (by setting regenerative standards and assign responsibilities) and control rights (through enforcement and oversight). As lack of use rights limit the firm's ability to create exchange value crucial for focal firm's direct monetization ecological goods and services, we argue that focal firm captures value through the leverage of both use and exchange values (see Lepak et al, 2007 and Ambrosini & Bowman, 2000) created by focal firm's suppliers which implement of regenerative activities. This approach is called value partaking, which occurs when the focal firm appropriates the share of value that another actor within its network has created (Chesbrough et al. ,2018). In the case of ISRM, focal firm captures value by embedding itself in the supply system that validates and governs regenerative practices, consequently using the suppliers' resources such as improved soil fertility, biodiversity, forestry, improved watershed management and organic foods for its strategic gains such as improved supply chain resilience, market differentiation and reputation improvement. In turn these strategic gains might enable the focal firm to access premium prices, ESG partnerships and financing and environmentally sensitive markets. Mars Inc for instance embeds regenerative criteria in its Cocoa procurement standards and works with third party certifications such as Rainforest Alliance to ensure traceability and credibility of its supplies thereby capturing value from the outcomes of supplier driven environmental

improvements through ESG aligned partnership and financial instruments, reliable sourcing and improved reputation in sustainability conscious markets.

However, firm's ability to capture value relies on its ability to prevent other market actors such as suppliers or competitors from capturing significant portion of the value (Lepak et al, 2007). This can be done through increasing the bargaining power towards its suppliers and adopting isolating mechanisms against its competitors. In the context of ISRM, the focal firm achieves higher bargaining power through relational contracts with its suppliers which fixes the price and limits the suppliers' ability to raise the prices. As for the competitors, the relational contracts between the firm and its suppliers limit the number of suppliers at the disposal of competitors which could be leveraged to capture value through value partaking (see Chesbrough et al. ,2018).

Proposition 2b: *Without use rights, the ability of the ISRM firm to capture value is positively influenced by the strength of isolating mechanisms (relational contracts and certifications) employed by the focal firm that enforce value partaking; these mechanisms enable the focal firm to appropriate supplier-driven ecological outcomes, including ESG credibility and resilience, by minimizing value leakage to competitors.*

3.2.1.3 Value Distribution

Value distribution in ISRM is intentionally shared but still governed through firm-defined protocols. Both Authoritative and Control rights shape how value is distributed among actors within the firm's sphere of influence. With allocation (authoritative) and exclusion (Control) rights, the firm determines which suppliers participate in its supply chain, under what regenerative conditions and with what form of support. With Control rights such as transaction and monitoring, help the firm in governing how the economic value in the form of price premiums, technical assistance, capacity building and infrastructure investments are distributed to suppliers while certifiers get financial support to incentivize compliance. These benefits, while broadly dispersed, are coordinated by the firm. For instance, Mars Inc. uses allocation and exclusion rights to determine which Cocoa producer participates in the supply chain, under what sustainability conditions such as involved in agroforestry, and what form of support such training or free tree seedlings will require. Through transaction and monitoring rights, Mars governs how benefits such as training, price premiums and free tree seedlings are distributed to cocoa farmers who meet regenerative criteria.

However, in the absence of use rights, Mars does not directly share ecological benefits such as harvesting trees, instead assumes the role of a gatekeeper and distributor of opportunities thereby facilitating farmers' access to relational benefits while shaping rewards and logic of inclusion. As Lavie (2006) suggests, firms that hold relational control without use access may prioritize the appropriation of partner-based rents while minimizing outbound spillover. Thus, distribution in ISRM reflects a strategy of collective legitimacy, but with clear boundaries around who governs the value chain and under what conditions. In view of this, we formulate the following proposition:

Proposition 2c: *Value distribution in the ISRM follows a mechanism of conditional gatekeeping; the firm utilizes authoritative and control rights to establish strict inclusion criteria, ensuring that firm-coordinated support (price premiums and training) is restricted to compliant suppliers, thereby securing strategic legitimacy while avoiding the transaction costs of participatory governance.*

4.3 The Regulated Regenerative Model (RRM)

The Regulated Regenerative Model (RRM) is defined as a business model configuration in which the firm holds use and authority rights but lacks control rights over natural common goods (see Sikor et al., 2017). RRM usually emerges in sectors that are highly regulated such as forestry, water utilities (see Feger & Mermet, 2020), or certified organic agriculture, where firms rely on natural resources for inputs or legitimacy but operate under strict external governance frameworks, which dictate how regenerative outcomes should be achieved.

The FLRM is different from the RRM because the firm directly manages the natural resource. The RRM, on the other hand, uses a compliance-based access system, where adherence to external rules is necessary to use the resource(s) (Bansal, 2005). By holding use rights, the firm is entitled to access ecological goods (e.g., harvesting timber or water) and derive indirect benefits (reputation, ESG financing). However, the absence of control rights means the firm cannot unilaterally determine access rules or monitoring protocols; these are held by external regulators or certification bodies (Reinecke, Manning, & Von Hagen, 2012). Rather, the firm utilizes its authoritative rights to influence governance upstream, for instance, by participating in standard-setting bodies, engaging in policy advocacy, or shaping corporate sustainability governance, thereby maintaining its license to operate without bearing the full transaction costs of direct resource management (Scherer & Palazzo, 2011).

A convergence of internal strategic shifts and external institutional pressures drives the adoption of the RRM. Internally firms switch to RRM not just to follow the rules, but also to realign their strategy so that sustainability as regeneration becomes a key skill for managing risk and improving operational efficiency (Hart, 1995). This transition reflects a change in philosophy from extraction to stewardship, embedded directly into business strategy to ensure long-term resource security (Eccles, Ioannou, & Serafeim, 2014). Externally, the RRM model is driven by the need to follow regulations and the market demand for improved access to ESG financing (Cheng, Ioannou, & Serafeim, 2014). The RRM enables the firm to transform regulatory constraints into a competitive advantage by demonstrating superior environmental stewardship to the market.

4.3.1.1 Value Creation in the RRM Model

Since the firm(s) does not hold control rights which constraints the firm being directly involved into regeneration, the firm creates use value (Biodiversity protection, water conservation and protection, forest cover) only as exchange value is owned by the holders of the control rights such as suppliers (see Sikor et al, 2017; Lepak, 2007; Chesbrough et al., 2018). Within RRM, firm(s) create value by aligning operational and sourcing practices with externally mandated ecological standards related to natural common goods (see Unilever, 2025). These externally

mandated ecological standards might include deforestation-free supply rules, water-use efficiency mandates, biodiversity protection clauses, and regenerative sourcing criteria required by public regulators or certification schemes.

Though the firm accesses commons-based inputs such as palm oil, timber, or water under formal Use rights, directly regenerate these resources. Value is therefore created by ensuring conformance with externally mandated criteria that grant or preserve access to regulated commons. This includes, for instance, implementing traceability systems, requiring suppliers to meet deforestation-free standards, or adapting procurement protocols to comply with environmental laws such as land use and biodiversity laws. Through this operation alignment, the firm reduces operation and regulatory risk, maintains its license to operate, access markets and financing opportunities, and enhances its legitimacy with regulators, investors, and sustainability sensitive consumers.

Unilever's approach to sustainable palm oil provides an example. Unilever sources palm oil from landscapes that include forests and biodiversity corridors governed by external actors. By implementing traceability and requiring suppliers to meet Roundtable on Sustainable Palm Oil (RSPO) and deforestation-free standards, Unilever creates value through market legitimacy and resilient supply chains without direct regeneration of natural common goods such as managing land use, biodiversity improvement or forest restoration and preservation. In view of this, we formulate the following proposition:

Proposition 3a: *In the RRM, the creation of legitimacy-based use value (risk reduction, license to operate) is positively determined by the degree of operational alignment with externally mandated ecological standards; a lack of alignment results in higher regulatory transaction costs and loss of market access, regardless of the firm's internal regenerative intent.*

4.3.1.2 Value Capture

Unlike in FLRM, where firms capture value by monetizing ecological products and services, firms operating under the RRM capture value indirectly from ecological use value (see Lepak, 2007) generated through regeneration. We argue that this occurs by turning compliance with regulatory or certification frameworks into market legitimacy, cost efficiencies, and access to ESG-aligned financial instruments such as sustainability-linked loans, and ESG-themed investment funds. Furthermore, firms with RRM gain preferential access to sustainable procurement schemes, benefiting from reduced reputational risk, alignment with emerging legal standards (EU Deforestation Regulation), and increased appeal to ESG-conscious buyers.

However, lacking exchange value and control rights over regenerated commons exposes RRM firms to value slippage (see Lepak et al., 2007; Chesbrough et al., 2018). To address value slippage, firms deploy institutional isolating mechanisms such as standards shaping and pre-emption, certification lock-in, and regulatory alignment as entry barrier to secure competitive advantage and retain exchange value.

Standards shaping and pre-emption encompasses co-developing regeneration standards (e.g., deforestation-free sourcing) through authoritative rights thereby allowing firms to adopt early and alignment with emerging industry regenerative norms. This positions the firm(s) as rule-

maker rather than rule-takers hence establishing technical and reputational benchmarks that latecomers struggle to meet (Barney, 1995). Unilever's leadership in shaping Roundtable on Sustainable Palm Oil (RSPO) standards as the result of operating in palm oil industry with RRM illustrates this strategy's power in ESG-sensitive markets.

Certification lock-in refers to structuring of procurement around certified suppliers (e.g., RSPO-certified mills). This creates embedded supplier ecosystems that are difficult to replicate quickly, especially in contexts requiring smallholder inclusion or training.

Regulatory alignment as an entry barrier arises when early compliance with complex regulations raises cost and capability thresholds for competitors. Full compliance with regulations like the EU Deforestation Regulation for example, requires legal infrastructure and procedural sophistication beyond the reach of many smaller firms. Proactive alignment enables firms to build trust with regulators and ESG-screened investors while securing long-term contracts with institutional buyers. For instance, Unilever's verified compliance ensures continued access to EU and U.S. procurement markets. These mechanisms, grounded in institutional positioning rather than resource ownership, allow firms to appropriate exchange value while contributing to natural common goods regeneration. In view of this, we formulate the following proposition:

Proposition 3b: *The RRM firm's capacity to capture exchange value is positively mediated by its ability to enforce institutional isolating mechanisms (standards preemption and regulatory lock-in); these mechanisms raise compliance barriers for competitors, allowing the focal firm to secure differential access to ESG-aligned capital and premium markets.*

4.3.1.3 Value Distribution

In RRM, we argue that value distribution is structured by institutional compliance mechanisms rather than firm discretion. Regenerative outcomes such as forest restoration and preservation, biodiversity gains, or improved land stewardship are distributed to communities and ecosystems. The role of the firm in this is to enable these outcomes through complying with standards and co-investing in regenerative efforts.

Remarkably, firms may contribute to value redistribution upstream, particularly through partnerships with local actors (see Feger and Mermet, 2020). In Unilever's palm oil supply chain, for instance, Unilever supports over 34,000 smallholders with training and technical support, helping 14,000 farmers achieve RSPO certification. Furthermore, it also offers premium pricing for certified production thereby channeling economic value to Palm farmers who align with externally defined regenerative practices (Unilever, 2025). However, these redistributive actions are required to ensure compliance and traceability but also reinforce inclusive access to regenerative value. Thus, value is shared through regulated and certified pathways, not firm-led governance. In view of this, we formulate the following proposition:

Proposition 3c: *Value distribution in the RRM is determined by mandated intermediation, where the volume of economic benefits (premiums, technical support) transferred to upstream actors is positively correlated with the strictness of external compliance requirements, rather than the firm's discretionary governance choices.*

4.4 The Operational Control Regenerative Model (OCRM)

We define the Operational Control Regenerative Model (OCRM) as a business configuration of delegated stewardship, where the firm holds use and control rights over natural common goods via long-term mechanisms such as leases or concessions but explicitly lacks authoritative rights (definition and allocation), which remain with sovereign actors (Sikor et al., 2017). This model is different from the FLRM because the firm acts as a custodian instead of a resource owner. It does this within a strict principal-agent structure, where public authorities (the principal) delegate the firm (the agent) the responsibility of ecological regeneration (Villani, Greco, & Phillips, 2017; Feger & Mermet, 2020). In this arrangement, the firm takes on the operational risks of regeneration in return for commercial utilization rights, while the state maintains ultimate authority to define the rules of access and exclusion (Feger & Mermet, 2017). This separation of operational control from institutional authority is the defining characteristic that categorizes OCRM as a form of decentralized environmental governance rather than privatization (Agrawal & Ribot, 1999).

The OCRM uses a contractual tenure security to solve the investment problem. Because the firm doesn't own the regenerated resource, it needs strong contracts to encourage long-term regenerative investments (see Besley, 1995; Feger & Mermet, 2020). While the firm cannot define allocation policies, it exercises high operational control rights and autonomy to decide how to implement technical regeneration measures, such as afforestation techniques or wetland engineering (Feger & Mermet, 2020). Performance-based contracts regulate value capture, enabling the firm to obtain use values like enhanced water quality. The firm also receives exchange values, such as timber and carbon credits, which are contingent upon fulfilling ecological performance criteria established by the state (Kivleniece & Quelin, 2011; Feger & Mermet, 2020). This process creates a hybrid institutional logic in which the company provides public goods (restored ecosystems) as payment for its private right to harvest and sell the resource. The organization effectively internalizes environmental externalities through contract design (Jay, 2013).

The complementarity of deficits between public and private actors drives the emergence of OCRM (see Rangan et al., 2006). Externally, sovereign entities (state or local governments) often possess authoritative rights while lacking either financial resources or technical expertise, which is vital in regenerating degraded natural resources (commons). Simultaneously, they outsource these services to private entities (focal firms), which can manage complex ecological projects through concessions (Delmas & Toffel, 2008). Firms leverage OCRM internally so they can access natural resources for their operations without having to buy them. They sign leases to get the resources they need to keep their supply chains strong. Better Globe Forestry, for instance, works this way in Kenya, where they have long-term leases on degraded land to plant trees. This arrangement gives them commercial exchange value (timber) and achieves the government's requirement for regenerating ecology (Better Globe, 2025). Similarly, SUEZ leverages concession agreements to manage water systems in France, gaining revenue from service fees while operating within public-sector governance boundaries to maintain legitimacy (Feger & Mermet, 2020).

4.4.1.1 Value Creation

Within OCRM both use and exchange values are created. Use value (biodiversity improvement, improved soil structure and fertility, improved surface and ground water) results from a firm's ability to regenerate natural common goods by exercising control rights. Exchange value (PES revenue, timber, use revenue, eco-tourism revenue) is derived through the exercise of use rights (Sikor et al, 2017).

By exercising control rights, firm(s) operationalizes regeneration through implementing ecological practices, monitoring results, and managing field-level interventions. Control rights enable firm(s) to restore degraded ecosystems by executing technical interventions such as reforestation, biodiversity enhancement, or watershed rehabilitation (see Feger & Mermert, 2020). While exercising Use rights allow firms to benefit from ecological outputs like accessing PES revenues, timber, improved ecological or soil services. For instance, exercising both Use and Control rights on the leased land, Better Globe Forestry (Kenya) implements, monitor and manages regenerative activities on the degraded land through re-afforestation which provide Timber, sequester carbon, improves biodiversity or regenerate the soils which benefit both the firm and surrounding communities. Thus, Control and Use rights configurations shape how the firm contributes to and benefits from regenerative activities respectively.

However, unlike FLRM, OCRM firms operate within boundaries defined by others and do not control access regimes or define ecological rules. This absence of authoritative rights means that firm(s) cannot exclude third parties or redesign governance frameworks. Subsequently, in line with Lepak et al. (2007), creating value (Use and exchange) in OCRM relies on whether the firm's ecological interventions are perceived as novel and appropriate by beneficiaries, users, and market actors who assess the usefulness of ecological outcomes relative to alternatives and contextual needs. While firm(s) meet these expectations through credible ecological delivery and alignment with stakeholder values, value is realized both in terms of internal benefits (use value) and marketable outputs (exchange value). In view of this, we formulate the following proposition:

Proposition 4a: *Firm(s) in the OCRM create value through delegated operational control; by implementing technical regenerative interventions that align with stakeholder-defined appropriateness criteria, the firm generates both use value (ecosystem function) and exchange value (marketable commodities), the success of which is contingent on credible performance delivery under externally governed mandates.*

4.4.1.2 Value Capture

Value capture in OCRM is shaped by the firm's capacity to convert ecological regeneration into sustained economic and symbolic returns through the delegated exercise of Control and Use rights. Control rights provide the authority to implement and manage ecological practices. Use rights enable firms to access outputs like timber or carbon credits thereby monetizing the ecological functionality generated. Better Globe Forestry, for instance, regenerates degraded land through afforestation and captures timber revenues, while SUEZ delivers ecological services under municipal concessions, capturing value through performance-based payment (Feger & Mermet, 2020). However, firms under OCRM lack Authoritative rights which lead to

partial or zero exercise of right to exclusion (Control right), in turn limits their ability to fully internalize value and exposes them to *value slippage*, where both Use and Exchange of regeneration may be captured by other actors unless isolating mechanisms are put in place (Lepak et al., 2007).

In the context of OCRM, three isolating mechanisms that reduce value slippage and support value capture can be identified; (i) *Contractual insulation* where the long-term leasehold or concessionary contracts provide formal, time-bound access to ecological assets. These contracts limit firm's exposure to institutional uncertainty and create protected operational space serving as legal and temporal isolating mechanisms (Zobel & Hagedoorn, 2020; Feger & Mermet, 2020). (ii) *Performance-based monetization* is whereby ecological outcomes from regenerating natural common goods are converted into revenue via such means as PES, carbon markets, or ESG based financing. These revenues depend on third-party certification to establish credibility. However, the certification schemes act as gatekeepers, imposing technical and financial requirements that create entry barriers. As Davies and Doherty (2019) show, certifications favor firm(s) that can navigate standardized regimes and consolidating value capture while excluding local actors from shaping or benefiting from ecological legitimacy. (iii) *Relational Legitimacy* is where the sustained trust among sovereign authorities, civil society, and communities enables firms to access future contracts, secure renewal opportunities, and maintain role continuity in regeneration ecosystems (see Feger & Mermert, 2020; De Cuyper et al., 2024). Relational legitimacy acts as a socially embedded isolating mechanism, supporting the firm's long-term participation in externally governed regimes. In view of this, we formulate the following proposition:

Proposition 4b: *Lacking authoritative rights, the OCRM firm secures value capture through specific isolating mechanisms, contractual insulation (temporal exclusivity), and relational legitimacy (trust with sovereigns). These mechanisms negatively affect value slippage, allowing the firm to monetize ecological outcomes and sustain participation despite the absence of permanent exclusion rights.*

4.4.1.3 Value Distribution

Since OCRM is a delegated business model, value distribution in OCRM operates through co-designed governance mechanisms that deliberately constrain firm discretion. Unlike FLRM, OCRM embeds allocation processes within externally mandated frameworks established by institutional actors and local stakeholders, formalized through concession contracts (see Feger & Mermet, 2020) or leasehold. The absence of Authoritative rights means firm(s) cannot unilaterally exclude stakeholders from appropriating the value or alter governance structures, reinforcing the need for participatory and pre-negotiated allocation regimes. Following Bacq and Aguilera's (2021) stakeholder governance model, OCRM value distribution rests on two interlocking principles; (i) *normative legitimacy*, wherein communities and other ecological stewards such as NGOs are recognized as stakeholders based on moral standing rather than transactional input and (ii) *deliberation informed rights*, wherein value flows through participatory mechanisms rather than unilateral focal firm decisions.

Value distribution in OCRM is operationalized through three mechanisms (i) *Embedded equity structures* which formalize revenue sharing and capacity building commitments for enfranchised stakeholders who materially contribute to regenerative processes (see Feger & Mermet, 2020). We argue that these structures reflect reciprocal entitlements grounded in both utilitarian contribution and fairness-based obligation. (ii) *Participatory Monitoring* which empowers stakeholders such as communities, local councils and community groups to shape value flows via audits, and feedback platforms, ensuring adaptive legitimacy through continuous dialogue and negotiated oversight (see Feger & Mermet, 2020). (iii) *Ecological co-benefit spillovers* which extend mission-driven rights to entitled stakeholders, especially to those with normative legitimacy irrespective of strategic utility such as communities benefiting from biodiversity restoration or watershed regeneration. This approach reframes value distribution as a matter of ecological justice and co-responsibility. It upholds the firm's embeddedness in socio-ecological systems and operationalizes fairness through structured, inclusive governance rather than power-based bargaining. In view of this, we formulate the following proposition:

Proposition 4c: *Value distribution in the OCRM is determined by participatory allocation regimes rather than firm discretion; distribution flows are structured by embedded equity and normative legitimacy, where stakeholder entitlements are institutionalized through co-governance mechanisms (such as participatory monitoring) to ensure adaptive legitimacy.*

4.5 The Ecological Service Intermediary Model (ESIM)

We define the Ecological Service Intermediary Model (ESIM) as a service-based configuration of delegated governance whereby the focal firm holds and exercises control rights, specifically management and monitoring, to regenerate natural resources (natural common goods) while lacking both use rights and authoritative rights (Sikor et al., 2017). The ESIM firm, on the other hand, is only a specialized middleman. Private groups like corporate consortia, supply chain aggregators, or environmental NGOs hire the ESIM firm to do ecological regeneration for them (Feger & Mermet, 2020). In ESIM, the firm is an agent of execution, possessing the technical capability to manage ecological systems but holding no claim over the resulting ecosystem goods (use value) or the institutional power to define access rules (authoritative value) (Layder et al., 2025).

Within ESIM, the focal firm leverages a system of specialized intermediation to solve collective action problems. The clients often face ecological transaction costs; they lack the specialized knowledge to restore complex ecosystems or the neutrality required to coordinate fragmented stakeholders (Dyer & Singh, 1998). The ESIM firm addresses this gap by using knowledge-based assets (scientific knowledge and restoration technology) to get measurable ecological results (Grant, 1996). The ESIM firm decouples its business model from resource extraction because it only possesses control rights. Rather, fee-for-service contracts or outcome-based payments govern the value capture. The focal firm generates revenue by using its process knowledge, not by selling natural products (timber, organic foods, or water). This arrangement in turn makes the focal firm serve as an ecological contractor that takes care of the operational complexity of regeneration for its clients (Vatn, 2010).

Institutional voids and risk mitigation logic drive the emergence of ESIM. This model emerges externally in contexts where public environmental authorities are ineffective or nonexistent, resulting in a governance vacuum that private entities must occupy to safeguard their supply chains (Mair & Marti, 2009). Clients hire ESIM firms to reduce the risks to their operations and reputation from environmental damage, without taking on the responsibility of owning the land or biodiversity themselves. For example, Biodiversify Ltd. (UK) exemplifies this model, designing and managing science-based biodiversity strategies for corporate clients. They can manage ecological interventions, but they don't own the land or biodiversity. Their value comes only from the information and operational services they offer to clients who are afraid of taking risks (Biodiversify, 2025). The firm can scale its impact across multiple landscapes using this approach, free from the capital costs associated with acquiring property rights, leveraging a business model design centered on efficiency and novelty (Amit & Zott, 2001).

4.5.1 Implications on Value Creation, Capture, and Distribution

4.5.1.1 Value Creation

Value creation within the ESIM arises from the firm's capacity to coordinate site-level ecological regeneration through governance-based interventions. The firm's activities generate both use and exchange value. Use value emerges from such ecological improvements as restored habitats or improved ecosystem function that support climate adaptation, biodiversity targets, and operational resilience for landholding organizations. Exchange value emerges from the creation of such ecological services as biodiversity metrics, nature-based risk assessments, or compliance-ready documentation used by clients to meet either market-based or regulatory sustainability requirements (see Lepak et al., 2007; Chesbrough et al., 2018).

In line with Chesbrough et al. (2018), this value creation involves both value provision where services and tools are offered to support nature-positive site transformation and value realization where regenerative outcomes improve the ecological performance of the client's operations. However, unlike FLRM, within ESIM the focal firm does not hold use rights, consequently, cannot appropriate the ecological value it produces. The firm's role is to structure the technical, procedural, and governance conditions under which others benefit from natural common goods regeneration.

We argue that value creation in ESIM is anchored in the firm's exercise of control rights especially management, exclusion and monitoring rights. Management rights allow firm(s) to assess ecological baselines, design bespoke regenerative management plans, and operationalize site-level interventions. Exclusion rights allow the firm to define access, implementation standards, and collaboration criteria while monitoring rights support ecological tracking and verification through customized tools and long-term evaluation protocols (see Feger & Mermet, 2020). For instance, a firm may guide a landowner or lessee through habitat creation, oversee implementation, and measure outcomes against biodiversity performance indicators. By aligning fragmented ecological efforts with site-specific governance systems, the firm produces ecological value while embedding regeneration into business operations. Though unable to use or sell the outcomes directly due to lack of Use rights, the firm institutionalizes

the means through which other organizations realize and sustain ecological performance. In view of this, we formulate the following proposition:

Proposition 5a: *In the ESIM, specialized intermediation drives value creation. The firm uses knowledge-based assets (like technical monitoring and restoration design) to lower ecological transaction costs for clients, which creates use and exchange value for third parties without the firm needing to own resource use rights.*

4.5.1.2 Value capture

Value capture within the ESIM is structurally constrained, as firms do not hold Use or transaction rights over natural common goods and therefore cannot directly monetize the ecological outcomes they coordinate. Unlike FLRM firms, which internalize benefits through control over regenerative outputs, ESIM firms operate on behalf of others typically landowners, firms, or NGOs and rely on indirect revenue models such as consultancy fees, biodiversity assessments, monitoring contracts, or project-based facilitation funding. Consequently, the firm's ability to retain value from its regenerative contributions is precarious and subject to value slippage (see Lepak et al., 2007).

We argue that in response to value slippage, firm(s) in ESIM deploy non-proprietary but defensible isolating mechanisms that reduce value slippage. Three core mechanisms which might be used are (i) *data asymmetry and verification control*, where firms retain exclusive access to ecological baselines, monitoring infrastructure, and performance validation hence reinforcing client dependence on their interpretation. (ii) *procedural standardization*, where the firm develop site-level frameworks, planning tools, and protocols that become embedded in client operations and are difficult to replicate without the firm continued involvement. (iii) *institutional embeddedness*, where firm is positioned as implementation or verification partner in funded regeneration programs thereby enhancing legitimacy and recurring involvement. These mechanisms do not generate extractive rents but establish procedural indispensability, a form of value capture rooted in governance rather than resource control (see Santos & Eisenhardt, 2005). ESIM firm(s) retain value through perceived neutrality, technical credibility, and the capacity to align diverse actors around verifiable ecological outcomes, making them essential to regeneration without holding proprietary rights (Feger & Mermet, 2020). In view of this, we formulate the following proposition:

Proposition 5b: *The ESIM firm captures value by using knowledge-based methods, such as data asymmetry and procedural lock-in; these methods make it hard for clients to switch to other providers, helping the firm earn service fees and build a good reputation even though it doesn't own the natural resource.*

4.5.1.3 Value Distribution

Since ESIM is a client centered business model, we argue that value distribution occurs through deliberative governance mechanisms as opposed to firm-led discretion. Without authoritative Use and transaction rights, firm(s) in ESIM cannot unilaterally determine beneficiaries from ecological outcomes from regeneration efforts. Consequently, value flows through *normative legitimacy* (Phillips, 2003) rather than formal participation. Stakeholders like downstream

communities or NGOs for instance, may receive benefits such as biodiversity restoration or watershed protection not through transactional input, but through their ecological interdependence and moral standing. These entitlements reflect *distributive fairness* (Bridoux & Stoelhorst, 2014) by admitting the differentiated exposure, vulnerability, and long-term stewardship roles of these actors.

This mechanism views value distribution as a matter of ecological justice, where benefits are acknowledged as shared and non-excludable outcomes of regeneration. Firms in ESIM facilitate rather than allocate value, operating as conveners within socio-ecological systems. We argue that through ecological reporting, dialogue, and recognition-based inclusion, value is either distributed to those who depend on or are affected by ecosystem recovery. ESIM through this value distribution enables focal firm to build legitimacy, align with sustainability norms, and uphold equity in a multi-actor environmental governance regime. In view of this, we formulate the following proposition:

Proposition 5c: *Value distribution in the ESIM is mediated by deliberative governance; because the firm's business model relies on perceived neutrality to function as an intermediary, it allocates ecological co-benefits based on normative stakeholder legitimacy rather than transactional power, ensuring the long-term stability of the governance regime.*

4.6 The Regenerative Governance Model (RGM)

The Regenerative Governance Model (RGM) is a business-centric governance regenerative business model through which firm(s) influence the regeneration of natural common goods by exclusively holding and exercising Authoritative rights (Sikor et al., 2017). We argue that these rights specifically the right to definition and right to allocation grant firm(s) the ability to define sustainability standards and performance thresholds, and to assign implementation legitimacy to other actors. Unlike in FLRM or OCRM, where firms exercise Control and Use rights to directly implement and benefit from regeneration, firms in RGM do not manage ecosystems (Control) or appropriate ecological outputs (Use). Instead, they operate as procedural gatekeepers, structuring how other actors engage in regeneration through rules, protocols, and certification frameworks (Satelligence, 2025; Preferred by nature, 2025).

Firms operating within RGM do not perform regeneration directly but shape how it is recognized, measured, and accessed by other businesses. They institutionalize regeneration not through ecological intervention but by establishing governance logic through sustainability criteria, risk thresholds, and eligibility frameworks through which regeneration becomes clear and legitimate. By exercising definition rights, the firm(s) create proprietary environmental standards or evaluation frameworks (e.g., deforestation risk models, biodiversity impact indicators). By exercising allocation rights, they determine which stakeholders such as producers, communities, or suppliers qualify for participation in regenerative markets or ESG-linked initiatives.

Similar to ESIM, RGM is also externally driven and emerges primarily in contexts where institutional actors such as brands, financiers, or regulatory bodies require validated

performance data or compliance frameworks to substantiate regenerative commitments (Satelligence, 2025; Preferred by nature, 2025). Within RGM focal firm(s) provide the infrastructures of recognition which enable others to demonstrate alignment with environmental standards without implementing the regeneration interventions. Their function is particularly significant in global supply chains, where deforestation-free sourcing, climate risk screening, or biodiversity performance often rely on credible third-party verification (see Satelligence, 2025; Preferred by nature, 2025).

4.6.1 Implications on Value Creation, Capture, and Distribution

4.6.1.1 Value Creation

In RGM firm(s) create value by designing the governance intelligence and performance infrastructures (systems, tools, or standards) that enable ecological regeneration to be identified, verified, and integrated into institutional, market, and operational decision-making systems. Exercising definition rights enables the firm(s) to establish what qualifies as acceptable regenerative efforts often through proprietary indicators, remote sensing algorithms, sustainability dashboards, or risk scoring models tailored to clients' compliance, procurement, (see Satelligence, 2025; Preferred by nature, 2025) or ESG goals. By exercising allocation rights, the firm(s) determine which actors such as suppliers, project developers, or landholders are eligible for inclusion in regenerative supply chains, performance claims, or financial mechanisms.

Regenerative value creation in RGM is thus indirect. It operates upstream of ecological intervention, enabling regeneration to be made legible, auditable, and translatable into actionable metrics across fragmented, multi-actor systems. In this way, RGM firms deliver Exchange value by providing clients with the data, frameworks, and assurance necessary to meet institutional or market standards, and Use value by enabling environmental actors to align regenerative activity with strategic objectives (Chesbrough, 2018).

Drawing on Lepak et al. (2007), this form of value creation hinges on the firm's ability to make ecological data meaningful and credible to various actors transforming environmental phenomena into such recognizable value objects as deforestation free zones, biodiversity performance indicators, or supply chain eligibility statuses. While RGM firms do not produce ecological change directly, they generate the evaluative and governance conditions under which regeneration becomes visible, investable, and enforceable. In view of this, we formulate the following proposition:

Proposition 6a:

Value creation in RGM is achieved by exercising Authoritative rights to define ecological performance and allocate legitimacy. This in turn allows the focal firm to enable other actors to act within regenerative systems.

4.6.1.2 Value Capture

In RGM, firm(s) capture value by monetizing ESG scoring, certification, or risk classification services that help clients meet sustainability requirements, access cheap ecological liked

financing, and access regenerative markets rather than through direct control or use of regenerated natural common goods. To ensure continued value capture and preserving their strategic role in regenerative systems several isolating mechanisms are employed by the focal firm to reduce value slippage (see Lepak et al., 2007). These include: (i) *proprietary frameworks*, such as audit protocols and risk models; (ii) *reputational trust* that is earned through reliable governance and third-party credibility, and (iii) *systemic embedding*, where the focal firm's tools become integral to ESG compliance, procurement, or reporting systems of its client(s).

Drawing on Hartmann et al. (2016) show that firms that rely on information and governance assets can capture value by becoming indispensable validators or interpreters within broader ecosystems. However, RGM firm(s) do this by structuring how others gain access to legitimacy and benefit from regenerative value chains. In view of this, we formulate the following proposition:

Proposition 6b

Firms in RGM capture value by monetizing governance intelligence through proprietary tools, reputational trust, and procedural indispensability without holding control and use rights over natural common goods.

4.6.1.3 Value Distribution

In RGM, value distribution does not occur through direct financial transfers or control over natural common goods. Instead, we argue that it is mediated through *inclusion mechanisms* that govern access to evaluative services such as ESG scoring, certification, or risk classification. These services are typically available to paying clients, but by exercising *authoritative rights* focal firm(s) retain the ability to define participation thresholds thereby determining who gains recognition as a regenerative actor.

As a means of broadening service access, focal firm(s) may use *selective inclusion mechanisms* such as free trials (Satelligence, 2025) or tiered offerings to support ecologically aligned but under resourced stakeholders. This reflects a *stakeholder-oriented view of value appropriation* (Barney, 2018) as procedural access and not material redistribution, becoming the primary mode of inclusion.

Satelligence, which operates under RGM for instance, sells deforestation risk insights to Agro-processors such as Unilever or Nestlé but also offers *free trials*. These trials provide procedural access to ESG credibility which in turn enables users to initiate their participation in regenerative markets that would otherwise remain inaccessible. Therefore, in RGM, value is distributed through *rule-setting and recognition*, not direct sharing of economic outputs.

Proposition 6c

Within RGM, firm(s) distribute some value by selectively granting free access to evaluative services through rule based. As these services are monetized, firms may selectively extend procedural access to potential clients. leveraging this rule-based inclusion, firms embed

fairness and broaden participation in regenerative systems without redistributing material resources.

4.7 The Extractive Regeneration Model (ERM)

We define ERM as a regeneration-framed business model through which firm(s) derive benefits from natural common goods by holding only *Use rights* (see Sikor et al. 2017). These include rights to obtain direct benefits (products, services) or in some cases indirect benefits (reputational value, market access) from shared ecosystems such as forests, waterways, fisheries, and wetlands. ERM typically operates in contexts where the commons are owned or governed by public authorities, customary institutions, or community organizations. The focal firm(s) do not hold *Control rights* and *Authoritative rights* and are thus structurally excluded from decision-making regarding how commons are governed or regenerated.

ERM commonly applies to firm(s) that access natural resources under open-access or community-governed conditions, such as commercial fisher operating in state-owned waters or small enterprises using forest products from community or government land. In such cases, regeneration may be a condition for continued access, but firms are not empowered to implement ecological regeneration (Sikor et al, 2017). Rather, regeneration is externally designed and governed by control-right holders such as public agencies. Though firms may be involved in decision-making processes regarding regeneration or governance of the natural common good, they hold the weakest positional authority, which in turn their influence is limited relative to rights holders with formal control or authoritative rights.

Recent perspectives on regenerative fisheries (Loring, 2023) reinforce this structural weakness. Small-scale fisheries often function within broader socioecological systems that are either coerced or impoverished, rather than regenerative. Though regeneration is supported locally for example, through community closures, rotational harvest, or traditional ecological knowledge external forces such as market pressures, declining biodiversity, and institutional rigidity frequently prevent true regenerative capacity from emerging. Such systems as structurally brittle, vulnerable to ecological simplification, and dependent on continual external inputs to maintain output rather than fostering bottom-up resilience or self-organization. This places ERM firms in systems that may claim regeneration but functionally mirror coercive dynamics.

Since Use rights do not include the right to exclude others or to manage resource conditions, ERM often functions under a de facto open-access regime. Several firms may access and benefit from the same commons, and the firm cannot ensure that its regenerative efforts (if any) are ecologically sustained or that value generated through regenerated efforts is distributed fairly. Without embedded governance mechanisms and with weak institutional flexibility or diversity, the model is vulnerable to free-riding, ecological degradation, and long-term overuse leading to tragedy of commons (See Harding, 1969; Ostrom et al, 2009; Sikor & Lund, 2009).

4.7.1.1 Value Creation in the ERM Model

Within ERM, we argue that firm(s) create value by exercising direct use rights (see Sikor et al, 2017) to natural common goods such as forests or fisheries. The direct right entitles firm(s) to

benefit directly from ecological resources without managing or transforming them. Thus, value is created through the utilization of existing ecological qualities, which firms convert into exchange value by selling raw or processed goods such as timber (Sikor et al, 2017) or fish. The ecological conditions enabling this value are shaped either by natural processes or by the actions of control-right holders and not the focal firm.

Despite ERM firms(s) lack Control rights as such it can neither initiate nor lead regenerative activities, instead the firm often operate under use standards such as harvesting seasons, allowable quotas, or method restrictions set by public authorities or governance bodies. By adhering to these standards, firms may indirectly support the maintenance of regenerative capacity, but without actively enhancing it. Consequently, value creation in the ERM model is extractive, ecologically dependent, and institutionally constrained, oriented toward economic use rather than ecological renewal (Sikor et al, 2017; Hahn and Tampe, 2020). In view of this, we formulate the following proposition.

Proposition 7a

Firm(s) in ERM create value by extracting ecological goods under direct use rights while depending on existing regenerative conditions they neither manage nor produce.

4.7.1.2 Value Capture

In the ERM, firm(s) capture value by converting ecological goods obtained through direct Use rights into economic returns via market exchange. This *exchange value* which is what Chesbrough (2018) called value partaking arises from harvesting and selling natural products such as timber or fish under favorable ecological conditions, which the firm does not actively manage or regenerate (Sikor et al., 2017).

Since the firm lack Control rights, its ability to capture value is shaped by external governance mechanisms, for instance state-granted concessions and regulatory limits. Unlike internal governance models such as FLRM where the firm put in place isolating mechanisms for sustained value capture, in ERM isolating mechanisms which arise from institutional arrangements such as exclusive favorable access agreements, licenses, or quotas might provide the firm with a temporary competitive advantage to the firm.

However, these isolating mechanisms are relational and contingent as they rely on continued compliance with natural common goods use standards and on the actions of Authoritative and Control rights holders to maintain the productive state of the resource. Therefore, we argue that the ability of the firm to capture value is mediated and constrained by actors (Authoritative and Control rights holders) outside its control. In view of this, we formulate the following proposition.

Proposition 7b

Firm(s) within ERM capture value by converting ecological goods into marketable outputs under institutional arrangements that limit competition but depend on external actors to sustain resource conditions.

4.7.1.3 Value Distribution

In the ERM, the distribution of value is shaped by the firm's dependence on public or collective governance of natural resources. Given that firm(s) with an ERM do not hold Control rights and consequently, do not participate in regenerative activities hence regenerative benefits such as improved ecosystem health or future ecological resilience are distributed to other actors, such as local communities, public agencies, or society at large (see Sikor et al, 2017).

The firm's role in distributing value is minimal and indirect. The focal firm might either contribute financially or through compliance with natural resource extraction rules, but neither does it allocate regenerative value nor determine how benefits from ecological restoration are shared. Instead, value is distributed through governance systems that regulate access and define responsibilities for stewardship.

This arrangement creates an asymmetry as the firm captures exchange value from the ecological goods, while non-market ecological benefits accrue to those who hold and exercise control and Authoritative rights such as public agencies or communities (Sikor et al, 2017). Therefore, value distribution in the ERM demonstrates a clear separation between restoration and extraction. In view of this, we formulate the following proposition.

Proposition 7c

within ERM, value is distributed asymmetrically as firm(s) extract and benefit from ecological goods, while regenerative benefits accrue to external actors (communities, public agencies) responsible for maintaining or restoring the resource.

5.0 Discussion

5.1 Contributions to Theory and Practice

This conceptual paper advances understanding of regenerative business by developing a governance-centered typology grounded in rights-based access to natural common goods. While organizational scholarship has increasingly engaged with environmental sustainability and its strategic implications (Hart, 1995; Hart & Dowell, 2011; Whiteman et al, 2012; Hahn & Tampe, 2021), the institutional foundations of regeneration, especially in contexts where natural resources are governed as common goods remain underexplored. Furthermore, business model innovation literature has traditionally emphasized firm-centric capabilities, technological efficiency, and stakeholder engagement. However, in situations characterized by among others polycentric governance, overlapping claims, and contested authority over natural common goods, these approaches fall short of explaining how and under what institutional conditions businesses can meaningfully engage in ecological regeneration (Ostrom, 1990; Sikor et al., 2017; Slawinski et al, 2019; Feger & Mermet, 2020).

Based on how firms use three interconnected property rights; Use, Control and Authoritative, this paper creates a typology of regenerative business models. We argue that this offers a structured foundation for theorizing how firms engage with natural common goods. Drawing on extended property rights theory (Schlager & Ostrom, 1992; Sikor et al., 2017), we conceptualize these rights as the institutional infrastructure that shapes a firm's capacity to

contribute to, benefit from, and claim legitimacy in regeneration of natural common goods. In contrast to models that assume full private ownership or direct operational control, we argue that regeneration often occurs through governance arrangements in which firms are embedded as partial actors as either facilitators, stewards, or validators and whose regenerative potential is shaped by the rights they hold and the relationships they negotiate.

The resulting typology identifies seven regenerative business models, ranging from firm-led regenerative model (FLRM), where firms exercise full rights over ecological assets, to intermediary (ESIM) and governance-based roles (RGM), where firms lack full rights over natural common goods but structure rules and standards through which regeneration becomes legible, fundable, or certifiable. Each model articulates a different configuration of rights, governance mechanisms, and actor relationships. This enables a theoretically grounded understanding of how businesses enact regeneration not only as operational strategy, but as institutionally mediated participation in complex socio-ecological systems.

This typology contributes to theory in several ways. Firstly, it introduces a rights-based governance framework to the study of business models, thereby extending business model theory to account for institutional embeddedness, political asymmetries, and multi-actor coordination (Massa & Tucci, 2017; Teece, 2010). Second, it deepens regenerative business scholarship by showing that regeneration is not a uniform logic of value creation, but a diverse set of institutional roles distributed across sectors, actors, and governance contexts (Muñoz & Branzei, 2021; Hahn & Tampe, 2021; Feger & Mermet, 2020). Third, it clarifies how firms create value not only via proprietary ecological restoration, but also by facilitating or structuring regenerative efforts through partnerships, certifications, and procedural infrastructures especially where use or control rights are absent.

Additionally, the typology advances understanding of value capture and value distribution in regenerative contexts. In models where firms possess use and control rights (e.g., FLRM), value is created and monetized through biophysical outcomes and ecosystem services, with distribution mechanisms largely at the firm's discretion. In models where firms lack use rights (e.g., ISRM, ESIM), value capture occurs through procedural indispensability, reputational authority, and indirect leverage of suppliers' or clients' regenerative activities (Chesbrough et al., 2018). Distribution, in turn, is shaped by firm-curated CSR practices, negotiated partnerships, or governance mandates thereby raising important questions about fairness, legitimacy, and the political economy of regeneration (Bacq & Aguilera, 2021; Albareda & Branzei, 2024).

From a practical perspective, we argue that the typology offers a heuristic for evaluating the credibility, strategic viability, and governance alignment of regenerative business models. It supports managers and policymakers in identifying whether firms operate under the institutional conditions required to substantively participate in regeneration, or whether regenerative claims risk remaining symbolic or misaligned. In doing so, it helps distinguish between business models that materially invest in regeneration and those that operate at arm's length, validating or coordinating action through indirect governance mechanisms. This distinction is particularly important considering growing concerns around regeneration-

washing, wherein firm(s) appropriate regenerative narratives without ecological responsibility or governance legitimacy (Muñoz & Branzei, 2021; Vlasov, 2019).

More broadly, this paper contributes to emerging efforts to embed business strategy and organization theory within the logics of socio-ecological systems. By theorizing regeneration as an outcome of rights-based positioning and relational governance entanglements, we move beyond firm-centric views of environmental responsibility. We argue that regeneration should be understood as a co-produced process, moderated on how firms are authorized to act, how they align with multi-scalar institutions, and how ecological value is negotiated across diverse stakeholders (Ostrom, 1999; Gerber et al., 2020; Slawinski et al., 2021; Arjaliès & Banerjee, 2024).

This study gives a governance-focused conceptual model that shows how corporate roles are different when it comes to regenerating natural common goods. Its contribution to theory shows that regenerative business is not a fixed category or universal ideal, but a contextually dependent and politically situated organizational form. This lays the groundwork for more study into how regeneration is not only put into practice but also legitimated, distributed, and contested in complex environmental governance systems.

5.2 Directions for Future Research

Though the propositions in this paper illustrate how the business models affect regenerative business value creation, capture and distribution potential and how this in turn affects viability of firm(s) in regenerating natural common goods. Building on the conceptual foundation laid in this typology, we identify four main avenues for future research that are crucial for developing, testing, and embedding regenerative business models in diverse ecological and institutional scenarios.

Firstly, pressing research priority lies in the development of robust ecological accounting frameworks that can support the negotiation, traceability, and verification of regenerative outcomes. As emphasized in the business models for ecosystem management literature (Feger & Mermet, 2020; Russell et al., 2017), the credibility and legitimacy of regenerative models hinge on the ability of the firm to produce, share, and validate ecological performance data. Therefore, future work should further advance site-specific ecological indicators, shared accounting protocols, and valuation approaches that link regenerative interventions to measurable improvements in ecosystem functions which include biodiversity, water regulation, soil quality, or carbon sequestration. Such frameworks will be indispensable for models like FLRM and OCRM, where firms claim ecological performance internally, as well as for ESIM and RGM, where third-party validation enables external use.

Secondly, empirical study is needed to test and refine the proposed models across sectors (forestry, fisheries, rangelands), geographical contexts (global South vs. North), and ecological regimes (closed vs. open access systems). Additionally, various configurations of natural resources rights, stakeholders, and institutional maturity may favor some models over others. For example, FLRM may be more viable in settings with clear land tenure and high private authority, while ESIM or RGM may emerge in fragmented or contested commons. Therefore,

comparative case studies can investigate how firm(s) select, adapt, or combine regenerative business models, and which nature resources rights configurations are most effective at driving durable natural common goods regeneration.

As noted in shifting toward business models that explicitly center ecosystem regeneration requires not only technical innovation but also transformation in firm-level governance and decision-making structures (Feger & Mermet, 2020). Future research should investigate how regenerative models intersect with corporate governance reforms such as inclusive stakeholder participation, mission redefinition, ESG-linked finance, and alternative forms of ownership or control. Specifically, business models such as RRM, ESIM, and ECPM may require firms to develop new capabilities in inter-organizational coordination, legitimacy-building, and rights-sharing.

Finally, the enabling conditions for regenerative models are often shaped by external institutions such as public regulators, certification bodies, financial actors, and civil society organizations. In view of this, future studies could explore how policy instruments (Payments for Ecosystem Services, biodiversity credits, restoration mandates), institutional innovations (landscape governance boards, watershed partnerships), and collaborative platforms co-evolve with the deployment of regenerative business models. Furthermore, such research would also support an emerging “governance for regeneration” agenda, clarifying how business, state, and civil society roles can be aligned and contested in the pursuit of ecological restoration.

These future research directions show that we need more interdisciplinary, empirically based, and politically aware work on regenerative business models that is based on real-world ecological conditions and shaped by institutional experimentation.

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