



NL - DE WAARDE VAN ECOSYSTEMEN ALS MOTOR VAN DE TRANSITIE

EN - ECOSYSTEM VALUE AS THE ENGINE OF TRANSITION

NL - Van samenwerking tot vernieuwing,
rechtvaardigheid en welzijn voor iedereen

EN - From collaboration to regeneration, equity,
and broader wellbeing

Abstract

De overgang naar een circulaire en regeneratieve economie vereist samenwerking tussen organisaties, sectoren en de samenleving. In dit document wordt de term ‘ecosysteemwaarde’ geïntroduceerd als de veelzijdige economische, sociale, ecologische en relationele waarde die ontstaat door goed gestuurde samenwerking. Het biedt een duidelijke definitie en leidende principes waarin regeneratie, eerlijke verdeling en relationeel bestuur centraal staan. Dit document biedt organisaties en beleidsmakers een praktisch kompas voor het ontwerpen en evalueren van ecosystemen die een blijvende en rechtvaardige impact hebben.

The transition to a circular and regenerative economy requires collaboration across organisations, sectors, and society. This white paper introduces ecosystem value as the multiple economic, social, ecological, and relational value created through well-governed collaboration. It presents a clear definition and guiding principles that place regeneration, fair distribution, and relational governance at the centre. The paper offers organisations and policymakers a practical compass for designing and evaluating ecosystems that deliver lasting, equitable impact.

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NL0. Samenvatting

Complexe maatschappelijke uitdagingen zoals de overgang naar een circulaire economie, klimaatadaptatie, de energietransitie, het verlies aan biodiversiteit en sociale ongelijkheid kunnen niet worden opgelost door individuele organisaties die op eigen houtje handelen, noch door de huidige systemen waarin we ons bevinden. Ze vereisen een langdurige samenwerking tussen bedrijven, overheden, het maatschappelijk middenveld, kennisinstellingen en gemeenschappen. Deze samenwerkingsverbanden nemen steeds vaker de vorm aan van ecosystemen: dynamische netwerken van diverse actoren die samenwerken rond gemeenschappelijke doelen. Maar hoewel samenwerking in ecosystemen op grote schaal wordt gepromoot, is er veel minder duidelijkheid over de waarde die dergelijke ecosystemen creëren, voor wie, en onder welke voorwaarden ze bijdragen aan werkelijk regeneratieve en rechtvaardige resultaten. Dit standaarddocument vult die leemte door het concept van ecosysteemwaarde te onderzoeken. Er wordt gekeken naar hoe ecosysteemwaarde momenteel wordt geïnterpreteerd in de bedrijfswereld, in academisch onderzoek en in de publieke en non-profitsector, en deze perspectieven worden samengevat in een samenhangend en praktisch toepasbaar kader. Op basis van theorie en praktijk wordt een duidelijke definitie van ecosysteemwaarde voorgesteld en worden leidende principes uiteengezet voor het ontwerpen, beheren en evalueren van ecosystemen in de context van de transitie naar een circulaire en regeneratieve economie.

EN0. Executive Summary

Complex societal challenges such as the circular transition, climate adaptation, energy transition, biodiversity loss, and social inequality cannot be solved by individual organisations acting alone nor by the current system(s) we are in. Complex challenges require sustained collaboration across businesses, governments, civil society, knowledge institutions, and communities. Increasingly, these collaborations take the form of ecosystems: dynamic networks of diverse actors working together around shared goals. Yet while ecosystem collaboration is widely promoted, there is far less clarity about the value such ecosystems create, for whom, and under what conditions they contribute to genuinely regenerative and equitable outcomes. This white paper addresses that gap by exploring the concept of ecosystem value. It reviews how ecosystem value is currently understood across corporate practice, academic research, and the public and non-profit sectors, and synthesises these perspectives into a coherent and actionable framework. Drawing on theory and practice, it proposes a clear definition of ecosystem value and sets out guiding principles for designing, governing, and evaluating ecosystems in the context of circular and regenerative transitions.

Belangrijkste inzichten

Uit de analyse blijkt dat er op verschillende punten een sterke overeenstemming bestaat tussen de sectoren:

- Ecosystemen genereren waarde die geen enkele organisatie op eigen kracht kan creëren. Deze waarde omvat niet alleen financiële resultaten, maar ook maatschappelijke voordelen, ecologisch herstel, innovatievermogen en institutioneel leren.
- Waarde ontstaat op systeemniveau. Ze vloeit voort uit onderlinge afhankelijkheden, afstemming van rollen en de kwaliteit van de relaties tussen de betrokkenen, en niet uit geïsoleerde optimalisatie.
- Goed bestuur is van cruciaal belang. Zonder duidelijke afstemming, vertrouwen en verantwoordingsplicht is het voor ecosystemen moeilijk om op de lange termijn waarde te behouden.
- De beoordeling moet verder gaan dan financiële indicatoren. Dankzij nieuwe kaders voor meervoudige waarde wordt het steeds beter mogelijk om de gecombineerde economische, sociale en milieuresultaten te beoordelen.

Tegelijkertijd wijst het onderzoek op belangrijke verschillen in focus. Bedrijven leggen doorgaans de nadruk op concurrentievoordeel en klantwaarde, academisch onderzoek richt zich op de eigenschappen die in systemen naar voren komen, en vanuit de publieke sector ligt de nadruk op maatschappelijke resultaten en het algemeen belang op de lange termijn. In dit standaarddocument wordt betoogd dat deze perspectieven elkaar aanvullen

Key insights

The analysis shows strong convergence across sectors on several points:

- Ecosystems generate value that no single organisation can create independently. This value includes not only financial outcomes, but also social benefits, ecological restoration, innovation capacity, and institutional learning.
- Value emerges at system level. It arises from interdependencies, alignment of roles, and the quality of relationships between actors, rather than from isolated optimisation.
- Governance matters. Without explicit coordination, trust, and accountability, ecosystems struggle to sustain value over time.
- Measurement must go beyond financial metrics. New multi-capital frameworks are making it increasingly possible to assess combined economic, social, and environmental outcomes.

At the same time, the review highlights important differences in emphasis. Corporate approaches tend to prioritise competitive advantage and customer value, academic work focuses on emergent system properties, and public-sector perspectives emphasise societal outcomes and long-term public interest. This paper argues that these perspectives are complementary rather than conflicting and that meaningful ecosystem value requires their integration.

in plaats van met elkaar in conflict te zijn, en dat een zinvolle ecosysteemwaarde alleen kan worden gerealiseerd door ze te integreren.

De definitie van ecosysteemwaarde volgens Circular Clarity

Voortbouwend op deze analyse en relevante theoretische grondslagen (waaronder politieke economie, nieuwe bedrijfsmodellen, regeneratieve ecologie, relationeel bestuur en brede welvaart) stelt Circular Clarity de volgende definitie voor:

De toegevoegde waarde die ontstaat wanneer uiteenlopende organisaties, gemeenschappen en individuen op voet van gelijkheid samenwerken om regeneratieve en maatschappelijke doelen te verwezenlijken, waarbij niet alleen waarde wordt gecreëerd, maar deze ook eerlijk wordt verdeeld over het hele ecosysteem en onder toekomstige generaties.

Deze definitie stelt verspreiding, regeneratie en relationele gelijkheid centraal in de waarde van ecosystemen. Ze gaat verder dan modellen die uitsluitend gericht zijn op efficiëntie, groei of innovatie, en beschouwt ecosystemen in plaats daarvan als instrumenten voor brede welvaart, ecologisch herstel en maatschappelijke veerkracht.

Van theorie naar praktijk

In het standaardboek wordt aan de hand van korte casusbeschrijvingen geïllustreerd hoe deze definitie in de praktijk wordt toegepast, waaronder:

- Initiatieven voor marien herstel en het herstel van oesterriffen,

Circular Clarity's definition of ecosystem value

Building on this landscape analysis and relevant theoretical foundations (including political economy, new business models, regenerative ecology, relational governance, and broad prosperity) Circular Clarity proposes the following definition:

Ecosystem value is the multiple value that arises when diverse organisations, communities, and individuals collaborate on an equal footing to achieve regenerative and social goals, whereby value is not only created but also distributed fairly across the entire ecosystem and to future generations.

This definition places distribution, regeneration, and relational equality at the centre of ecosystem value. It moves beyond models that focus solely on efficiency, growth, or innovation, and instead frames ecosystems as vehicles for broad prosperity, ecological restoration, and social resilience.

From theory to practice

The white paper demonstrates how this definition is applied in practice through mini-case snapshots, including:

- Marine restoration and oyster reef recovery initiatives,
- Regional circular ecosystems for materials, energy, and biomass,
- Tangible social impact,

• Regionale circulaire ecosystemen voor materialen, energie en biomassa, • Concrete maatschappelijke impact • Programma's voor ecosysteembeheer en -educatie, • Startups begeleiden bij het verankeren van hun doel door middel van multidisciplinaire ondersteuning vanuit het ecosysteem. In al deze contexten blijkt de waarde van ecosystemen af te hangen van: • Vanaf het begin expliciete erkenning van diverse vormen van waarde, • Bestuursstructuren die zorgen voor een eerlijke verdeling en een langetermijnvisie, • Locatiegericht ontwerp dat is verankerd in specifieke ecologische en sociale contexten, • Voortdurend leren en aanpassingsvermogen, • Maatregelen om de veerkracht te vergroten. Waarom dit belangrijk is voor organisaties en beleidsmakers Voor organisaties betekent ecosysteemwaarde een heroriëntatie van de strategie: van het beschermen van waarde binnen de grenzen van de organisatie naar het creëren van waarde in netwerken. Voor beleidsmakers biedt het een kader om partnerschappen te ontwikkelen en te ondersteunen die resultaten opleveren in het algemeen belang en tegelijkertijd economisch levensvatbaar blijven. Voor beide partijen biedt ecosysteemwaarde een manier om de ambities op het gebied van de circulaire economie af te stemmen op	• Ecosystem governance and learning programmes, • Guiding start-ups to embed purpose through multidisciplinary ecosystem support Across these contexts, ecosystem value is shown to depend on: • Explicit recognition of multiple forms of value from the outset, • Governance structures that safeguard fair distribution and long-term purpose, • Place-based design rooted in specific ecological and social contexts, • Continuous learning and adaptive capacity, • Action towards more resilience. Why this matters for organisations and policymakers For organisations, ecosystem value reframes strategy: from protecting value within organisational boundaries to creating value across networks. For policymakers, it provides a lens to design and support partnerships that deliver public interest outcomes while remaining economically viable. For both, ecosystem value offers a way to align circular economy ambitions with measurable, legitimate, and enduring impact. This white paper concludes that ecosystems are not merely instruments to enable the transition toward a circular
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meetbare, legitieme en duurzame impact. In dit standaardboek wordt geconcludeerd dat ecosystemen niet louter instrumenten zijn om de transitie naar een circulaire en regeneratieve economie mogelijk te maken, maar dat ze een bepalend kenmerk van die transitie zelf vormen. Wanneer ecosystemen doelgericht worden ontworpen en beheerd, maken ze het mogelijk om op grote schaal, diepgaand en duurzaam meervoudige waardecreatie te realiseren – iets wat geen enkele actor zelfstandig zou kunnen bereiken.	and regenerative economy, they are a defining feature of that transition itself. When designed and governed intentionally, ecosystems make it possible to realise multiple value creation at a scale, depth, and durability that no single actor could achieve alone.
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Note to Readers: This document is a living document used by Circular Clarity, the Foundation Stichting Toekomstgericht Nederland (STGNL) and the Ecosystem Circulair Ondernemen (ECO) as a foundational source of how we work. It is also a source for the ecosystem as a tool for how to work within and work together in the ECO. It can be read either in full or in sections based on the desired need. Readers who want to understand how ecosystem value is defined and what distinguishes the Circular Clarity approach should read Sections 3, 4, and 5. Readers who are ready to build or assess an ecosystem and want practical frameworks and principles can go directly to Section 5.5 (Guiding Principles) and Section 6 (Frameworks). Section 7 provides a case study illustrating these principles in practice, and Section 8 summarises implications for organisations and leaders.

1. Introduction: Why Ecosystem Value Matters

No single organisation can solve complex challenges or innovate at scale on its own. This is especially true in the circular economy, where closing material loops and regenerating systems requires coordinated action across many actors. The concept of ecosystem value has emerged to describe the additional value that is created when diverse organisations work together as a network rather than independently. This value is not purely financial. It encompasses economic gains, social benefits, environmental improvements, and the generation of new knowledge and innovation. It is also, at its core, driven by purpose: the belief that a common meaning can drive a common goal and a common mission.

For circular economy initiatives, ecosystem value is foundational. When the right partners are aligned, waste becomes a resource, costs are reduced, and innovation accelerates. EY defines a business ecosystem as a purposeful arrangement between two or more entities to create and share collective value for a common set of customers. The circular economy extends this logic: organisations working within well-designed ecosystems can achieve regenerative outcomes that no single actor could reach alone. The circular economy is often introduced through its technical characteristics — closing loops, reducing waste, extending product lifetimes, and regenerating natural systems. While these elements are essential, they only tell part of the story. At its core, the circular economy is also a value-creating logic.

Unlike linear models, which primarily generate value within individual organisations and externalise social and ecological costs, circular approaches redistribute where and how value is created. Value no longer arises solely from extraction, production, and sales, but from coordination, reuse, regeneration, and long-term stewardship. As a result, circular initiatives generate multiple forms of value simultaneously: economic viability, ecological restoration, social cohesion, learning capacity, and resilience.

However, these values do not all emerge at the same level. Some benefits accrue directly to individual organisations, such as cost savings, innovation, or risk reduction. Others arise between organisations, through collaboration, shared infrastructure, trust, and collective learning. Still others materialise at system level, contributing to broader societal outcomes such as reduced resource dependency, healthier ecosystems, and regional prosperity.

To make sense of these different but interrelated value dynamics, it is helpful to distinguish between three analytical levels of value creation: organisational value, ecosystem value, and system value. This distinction clarifies where value is generated, who benefits, and which

forms of governance and measurement are required to sustain circular and regenerative outcomes over time.

Organisational value	Ecosystem value	System value
Value created within a single organisation, typically measured through financial performance, efficiency, risk reduction, compliance, or innovation outcomes. The unit of analysis is the individual firm or institution.	Value that emerges between organisations through structured collaboration among autonomous actors (e.g. businesses, governments, knowledge institutions, communities). Ecosystem value is relational and multi-dimensional, encompassing economic, social, ecological, and knowledge value, including how benefits are distributed across participants, places, and time.	Value created at the level of entire socio-economic or ecological systems, such as reduced resource dependency, restored ecosystems, social equity, or progress toward sustainability goals. System value reflects cumulative, long-term transformation beyond individual ecosystems or organisations.

In short: organisational value optimises actors, ecosystem value enables collaboration, and system value reflects societal change.

Evidence from the field

The Kalundborg Symbiosis in Denmark demonstrates what ecosystem collaboration can achieve. Partners report annual savings at \$25.5 million, CO₂ emissions cut at 635,000 tonnes, and 3.6 million m³ of water conserved annually.¹ None of these outcomes would be possible for any one organisation acting independently.

A growing body of practice and research reinforces this conclusion. The Doughnut Design for Business framework, developed by the Doughnut Economics Action Lab, argues that businesses must redesign their purpose, networks, governance, ownership, and finance to become regenerative and distributive by design. That transformation is inherently ecosystem-level. Climate-KIC's contribution to the EU Bioeconomy Consultation (2025) similarly demonstrates that systemic, place-based, cross-sectoral collaboration is essential for transitions in areas such as soil health, food systems, and biodiversity. These frameworks point to the same insight: the most significant value is generated at the intersections between organisations, not within any single entity.

Ecosystem value also signals a shift in how success is defined. It moves the focus from narrow shareholder returns or departmental targets to stakeholder value across a whole network. A

¹ [Case Study: Kalundborg Industrial Symbiosis | Council Fire](#)

circular partnership measures success not only in profit, but also in tonnes of waste diverted, jobs created, and trust built between partners. This multi-dimensional value creation is what Circular Clarity terms “multiple value creation”, a concept grounded in the theoretical work of Professor Jan Jonker on new business models and cooperative value creation. Tools such as the Impact-Weighted Accounts Framework (Impact Economy Foundation, 2026) and the Value to Business Framework (KPMG and the Value Balancing Alliance, 2025) now enable organisations to quantify these combined financial, social, and environmental results in a unified and comparable way.

It is also worth noting that ecosystem value is not a static achievement. Paul Hobcraft's Hierarchy of Business Ecosystems (2024) shows how ecosystems evolve through stages of creativity, cooperation, adaptation, and prosperity. Sustained value is the result of ongoing orchestration and renewal. Wharton scholar Rahul Kapoor (2020) makes a related point: organisations must shift from supply-chain thinking to ecosystem thinking, recognising the external actors who co-create value in ways that internal strategies alone cannot replicate.

Because ecosystem value captures such a broad set of benefits, it has attracted the attention of business leaders, policymakers, and academics alike. The sections that follow outline how different communities define and approach it, how Circular Clarity interprets and operationalises it, and how it can be measured in practice. The central argument of this white paper is straightforward: cultivating ecosystem value is a strategic necessity for any organisation that seeks to achieve regenerative, circular outcomes at scale.

A company or project, through ecosystem alignment, sets itself up to enter a new market, define new propositions and start to utilize ecosystem value(s) as a drive to increase social, ecological and financial capital.

2. Methodology

This white paper is based on a qualitative, comparative review and synthesis of existing literature, frameworks, and practitioner perspectives on ecosystem value. Its purpose is not to produce new empirical data, but to clarify how ecosystem value is currently understood across disciplines and sectors, to identify points of convergence and divergence, and to articulate a coherent and actionable definition grounded in both theory and practice.

2.1 Scope and Source Selection

The analysis draws on three main bodies of sources:

1. Corporate and industry frameworks, including: strategy consultancies, industry bodies, and practitioner platforms that focus on business ecosystems, circular economy transitions, and collaborative value creation.
2. Academic and research literature: spanning strategy, organisational theory, political economy, sustainability science, and systems thinking, with particular attention to ecosystem theory, multi-capital value, and governance.
3. Public sector and non-profit frameworks, including: policy-oriented models, collective impact approaches, sustainability measurement infrastructures, and international initiatives related to sustainable development and the circular economy.

Sources were selected based on the following criteria:

- Explicit attention to ecosystems, networks, or multi-actor collaboration (rather than single-firm optimisation). Validated by actions, rather than just theory.
- Relevance to value creation beyond purely financial metrics, including social, ecological, and systemic dimensions. Serving a common goal and purpose.
- Credibility within their respective domains, demonstrated by peer review, institutional backing, or wide practitioner adoption.
- Applicability to circular economy, regenerative development, or societal transition contexts.

The review focuses primarily on sources published between 2004 and 2026, reflecting both foundational ecosystem theory and recent developments in measurement, accounting, and regenerative design.

2.2 Analytical Approach

The literature was analysed using a thematic comparative approach. Rather than evaluating each framework in isolation, sources were coded according to how they define:

- What constitutes value in an ecosystem context.
- Where value is created (individual organisations, networks, places, systems).
- Who benefits from that value (firms, partners, communities, society, future generations).
- How value is governed, distributed, and sustained over time.
- How value is measured or made visible.

This analysis made it possible to identify recurring themes, structural differences, and emerging points of alignment across sectors. Where authors or frameworks approached ecosystem value from different normative or analytical starting points, such as competitive advantage, public interest, or socio-ecological regeneration, these differences were treated as complementary perspectives rather than contradictions.

This white paper draws on foundational research and practice developed by Victoria Tully and Circular Clarity since 2019. That body of work forms the analytical and conceptual core of what is presented here. To support consistency, broaden the literature review, and stress-test our thinking, we also made use of AI tools during the research and writing process, specifically ChatGPT, Claude, and Microsoft Copilot, including their research, writing, and coaching agents. These tools were used as thinking partners and editorial assistants, not as authors. All framing, definitions, positions, and conclusions reflect our own critical analysis and judgment.

2.3 Synthesis and Conceptual Development

The synthesis presented in Sections 3 and 4 integrates insights from the landscape analysis with relevant theoretical foundations. This includes political economy and distributive justice, new business models and multiple value creation, degrowth and post-growth thinking, regenerative ecology, relational and democratic economic models, and broad prosperity frameworks.

- Building on the information above and on Circular Clarity's own experience in ecosystem building and governance, Circular Clarity's definition (Section 5) is grounded in a deliberate position that is unique to ecosystems.
- Observed practice within circular and regenerative initiatives,

- And the practical experience of Circular Clarity and Stichting Toekomstgericht Nederland in designing and guiding ecosystems since 2019.

Where existing theories are extended or interpreted, such as applying political economy insights to ecosystem governance or translating macro-level ecological limits into organisational collaboration, this is done transparently as conceptual application rather than empirical proof.

2.4 Practice-Based Validation

The conceptual framework is informed and stress-tested through practice. Case material from Circular Clarity and STGNL is used illustratively to examine whether the proposed definition can be operationalised, governed, and measured in real-world settings. These cases function as reflective examples, not as statistically generalisable evidence. Purpose based leadership at the core.

2.5 Limitations

This methodology has several limitations. The review is not exhaustive, and the selection of sources reflects a predominantly European and Global North perspective. Many frameworks emphasised are normative or developmental rather than empirically causal, and measurement approaches remain uneven across contexts. Finally, ecosystem value is still an evolving field; terminologies, boundaries, and methods continue to shift.

These limitations are acknowledged explicitly. They do not undermine the central argument of the paper, but they do frame it as a contribution to an ongoing conversation rather than a final or definitive model.

3. Landscape Analysis: How Ecosystem value is defined by others

Ecosystem value is understood and applied differently across sectors. Each brings its own priorities, language, and methods to the concept. This section examines three perspectives: corporate and industry bodies, academic and research institutions, and the public sector and non-profit sphere. A cross-analysis follows. Together, these perspectives provide the context from which Circular Clarity's own definition is drawn. As an organisation that began developing its way of working in 2019, it is important to understand how the outside world approaches this topic before articulating what distinguishes our own position.

While ecosystems are increasingly recognised as a necessary organisational form for addressing complex challenges, this alone does not explain why they matter. Their significance lies in the specific types of value they make possible. Value that cannot be generated, governed, or sustained within individual organisations or linear value chains. Understanding ecosystem value therefore becomes essential for assessing whether collaboration genuinely contributes to circular and regenerative outcomes.

3.1 Corporate and Industry Bodies

In the corporate world, ecosystem value is understood primarily through the lens of competitive advantage and customer outcomes. Industry bodies and consultants define it as the collective business value that a network of companies creates together, for their customers and for themselves.

3.1.1 Collective Value and Shared Rewards

EY describes a business ecosystem as a purposeful arrangement between two or more entities to create and share collective value for a common set of customers. Partners contribute their respective strengths, whether technology, distribution, brand, or financing, to deliver an offering that none could provide independently. The global smartphone ecosystem is a well-known example: hardware manufacturers, application developers, telecommunications providers, and cloud services together offer a seamless experience that multiplies value for every participant. In circular economy terms, the same principle applies when manufacturers, recyclers, logistics companies, and policymakers align to close a material loop.

Value sharing must also be visible. EY's framework distinguishes genuine ecosystem partners from anonymous suppliers by the presence of all contributing brands in the final value proposition. If Brembo brakes are named on a vehicle, Brembo is a partner rather than a hidden vendor. This co-presence signals quality, builds customer trust, and ensures that value flows to all contributors rather than being captured entirely by the lead firm.

3.1.2 Orchestration, Modelling, and Strategy

Industry discussions regularly highlight the role of an orchestrator or platform leader who coordinates the ecosystem, sets standards, and provides the infrastructure that others connect to. Ecosystem modelling is emerging as a distinct strategic capability. Tr3Dent and the Gartner Eight Dimensions framework propose that mapping the network of interacting organisations and their value exchanges should become a standard discipline, enabling leaders to anticipate dependencies, identify leverage points, and design new business models before committing significant resources.

The Umbrex practitioner guide (2025) provides practical steps for ecosystem strategy, covering interdependency mapping, collaboration structuring, and alliance design. Wharton's Rahul Kapoor (2020) adds an important distinction: the micro perspective, which asks who does what internally (the value chain), differs fundamentally from the macro perspective, which asks which external actors co-create the value proposition (the ecosystem). Organisations that conflate the two tend to overestimate their own self-sufficiency and miss significant collaboration opportunities.

3.1.3 Inclusion as a Source of Value

Corporate ecosystem thinking is increasingly recognising diversity and inclusion as drivers of value, not simply as ethical obligations. Prieto and Phipps (2021) argue that inclusive, people-centred ecosystems generate what they term a cooperative advantage: multiplier effects arising from community well-being, supplier diversity, and social regeneration. Homogeneous ecosystems, dominated by large incumbents or a single sector, are more fragile, less innovative, and systematically fail to capture the broader social value that wider participation

would generate. For Circular Clarity, this principle is operational: our ecosystem deliberately includes social enterprises, educational institutions, and community partners alongside corporate and government bodies.

3.2 Academic/Research Institutions

Academic researchers approach ecosystem value through theoretical frameworks including value co-creation, systems theory, and network governance. In the literature, ecosystem value is characterised as an emergent property of coordinated interdependence: something that arises from the structure and quality of relationships within a network rather than from any single actor's capabilities.

3.2.1 Co-Creation, Alignment, and Emergent Value

Ron Adner's widely cited definition (2017) describes an ecosystem as the alignment structure of the multilateral set of partners that need to interact for a focal value proposition to materialise. This is a systems-level insight: value does not reside in any single organisation but arises from the coordinated fit of roles and contributions across the network. If any one partner fails to fulfil its part, whether a recycler in a material loop or a regulator enabling a new standard, the entire value proposition is weakened.

A consistent finding in the research literature is that ecosystems produce what scholars call super-additive value, that is, more than the sum of individual contributions. When organisations collaborate, synergies emerge, ideas develop across partner boundaries, shared resources reduce costs and waste, and one organisation's output becomes another's input. Tate et al. (2019) describe these additional benefits as non-economic rents: environmental and social gains arising from the collective system that no single organisation could generate or account for independently.

3.2.2 Multi-Capital Value and Ecosystem Health

Academic analysis extends the definition of value beyond financial returns to encompass multiple forms of capital: financial, social, natural, and intellectual. Research on circular ecosystems notes that well-coordinated networks retain resource value that would otherwise be lost, collectively achieving sustainability outcomes that individual actors cannot. One literature review concludes that a system-level outcome of ecosystems is to retain the value of resources, products, and materials in the economy, which is a central purpose of circular economy strategy.

Lansiti and Levien (2004) propose three indicators of ecosystem health that remain influential in both academic and applied contexts. Productivity refers to how efficiently the network converts inputs into outputs, measured by aggregate return on investment across members. Robustness refers to resilience: the ability of the network to survive disruption, measured by organisational survival rates relative to industry benchmarks. Niche creation refers to the rate at which new roles, products, and services emerge from the ecosystem, indicating that it continues to learn and adapt. Taken together, these indicators provide a forward-looking picture of whether an ecosystem is likely to generate sustained value over time.

3.2.3 Regenerative and Doughnut-Informed Perspectives

More recent scholarship integrates planetary boundaries thinking into ecosystem analysis. The UC Berkeley Haas Centre for Responsible Business (2024) applies Doughnut Economics at the ecosystem level, defining value through socio-ecological performance: the ability to meet human needs within ecological limits. Their California Doughnut Snapshot uses forty-two indicators across social foundations and ecological ceilings. This framework reveals a critical pattern in many developed contexts: ecosystems may generate strong economic and social value while simultaneously overshooting ecological boundaries. This finding underlines the need for explicitly regenerative (purposeful) design rather than incremental efficiency improvements.

Oxford Said's Mari Sako (2019) contributes a governance taxonomy that identifies three distinct models for ecosystem coordination: reputation-based systems driven by buyer and supplier ratings, third-party regulatory frameworks based on standards and certification, and public-private cooperation through shared institutions. Each model produces different incentive structures and risks. Ecosystem architects can use this taxonomy to diagnose governance mismatches and design more resilient coordination arrangements suited to their specific context.

3.3 Public Sector/NGOs

Public sector and non-profit perspectives on ecosystem value are grounded in societal and environmental impact. Governments, international organisations, and civil society bodies frame ecosystem value in terms of multi-stakeholder partnerships for sustainable development, drawing on the language of shared value and collective impact.

3.3.1 Triple Bottom Line and the Public Interest

For public and civil sector actors, an ecosystem creates value when it delivers on public interest goals: community well-being, environmental protection, and equitable economic growth, alongside financial returns. The United Nations Sustainable Development Goals reflect this logic. SDG 17, Partnerships for the Goals, recognises explicitly that achieving social and environmental targets requires robust ecosystems of diverse partners. Ecosystem value is therefore measured not only by financial performance but by progress on shared development targets, with the beneficiaries including citizens, future generations, and the natural world.

3.3.2 Collective Impact and Shared Value

Kramer and Pfitzer (2016) introduced the concept of an ecosystem of shared value, arguing that companies, governments, NGOs, and communities must collaborate to unlock economic benefits from addressing social challenges. The collective impact model identifies five conditions for successful multi-actor ecosystems: a common agenda, shared measurement, mutually reinforcing activities, continuous communication, and backbone support. When these conditions are in place, a partnership can drive systemic change at a scale that no single actor could achieve. This is the ultimate expression of ecosystem value from a public interest perspective.

The Dutch government's Green Deals programme illustrates this in practice. By bringing companies, NGOs, and public agencies together to remove regulatory barriers to sustainability,

these coalitions generate value that extends far beyond any individual project, including policy innovations and sector-wide shifts in practice. Circular Clarity has engaged with several Green Deal partners and views this model as an important accelerator for the circular economy transition in the Netherlands. The bottleneck in many situations is the lack of knowledge to implement.

3.3.3 Place-Based and Ecological Approaches

Climate-KIC's contribution to the EU Bioeconomy Consultation (2025) shows how public-interest ecosystems are evolving toward place-based, systemic collaboration. Their ten-point framework for bioeconomy transitions emphasises cascading biomass use, soil-centred approaches, and innovation ecosystems rooted in local food, energy, water, and biodiversity interdependencies. For public bodies operating at a regional level, this means designing programmes that integrate ecological indicators, such as soil health and biodiversity indices, with social and economic outcomes. This model is directly relevant to the Netherlands' circular economy agenda and to initiatives such as Green Circles, which is examined in the Case Study.

3.3.4 Measurement, Accountability, and Impact Accounting

Public and non-profit frameworks are increasingly rigorous in measuring the outcomes of multi-stakeholder partnerships. The Impact-Weighted Accounts Framework (Impact Economy Foundation, 2026) provides a structure for compiling integrated accounts that place environmental and social impacts alongside financial flows. This makes it possible to express ecosystem value, including avoided pollution, community health improvements, and educational outcomes, in units that policymakers and investors can compare and aggregate. The Value to Business Framework (KPMG and the Value Balancing Alliance, 2025) similarly enables organisations to translate sustainability-related impacts and dependencies into financial terms through a structured five-step process. Both frameworks are significant because they allow public bodies to make evidence-based investment decisions about ecosystem participation using language that is familiar to private capital.

3.4 Cross-Analysis

Reviewing these three perspectives together reveals both common ground and important differences. It also reveals a clear and encouraging trend toward convergence.

3.4.1 Common Themes

- **Collaboration generates higher value.** All three perspectives agree that by pooling strengths and resources, a network achieves outcomes that no single actor can match. The synergy principle, the idea that the whole exceeds the sum of its parts, is universal across corporate, academic, and public sector thinking.
- **A shared objective is essential.** Whether the goal is a customer value proposition, a focal innovation, or a societal target, successful ecosystems require a clear, shared purpose. Adner's concept of alignment structure, and the collective impact model's requirement for a common agenda, express the same underlying truth.
- **Trust and governance are foundational.** Without trust, transparency, and some form of coordinating structure, partnerships fail. Every perspective, from EY's orchestrator

model to Kramer's backbone support to Sako's governance taxonomy, recognises that relational factors are as important as formal agreements.

- **Value must be understood across multiple dimensions.** From the Doughnut Design for Business to the Impact-Weighted Accounts Framework to collective impact models, every recent framework insists that financial, social, and ecological value must be assessed together rather than in isolation or in trade-off.

3.4.2 Key Differences

- **What counts as value:** Corporate perspectives prioritise financial and market metrics. Academic perspectives foreground emergent network properties and multi-capital holism. Public sector perspectives emphasise social and environmental outcomes and systemic change. These are not contradictions but different emphases reflecting different primary responsibilities.
- **Who benefits:** Corporate perspectives ask how each participating firm benefits. Academic work evaluates the ecosystem as a whole. Public sector perspectives look at benefits to society beyond the direct participants.
- **Time horizon and tangibility:** Businesses typically seek measurable results in the short to medium term. Academic and public sector frameworks are more comfortable with long-term or intangible value, including capacity building, policy influence, and cultural change, which may take years to materialise.
- **Efficiency versus regeneration:** Earlier frameworks, both corporate and academic, tended to frame ecosystem value in terms of efficiency gains. Newer work, including the Doughnut, the IWAF, Climate-KIC, and Circular Clarity's own approach, shifts toward a regenerative framing: not simply doing less harm but actively restoring natural and social capital.

3.4.3 Convergence

Despite these differences, convergence across the three perspectives is accelerating. Businesses are adopting ESG commitments and purpose-driven strategies. Academics are developing multi-capital accounting tools. Public bodies are recognising the importance of economic viability in partnerships. Hobcraft's Hierarchy of Business Ecosystems (2024) captures this well, describing how ecosystems must evolve through four layers, from innovation through business and dynamic adaptation to prosperity, to realise their full potential. Organisations participating at the prosperity layer treat economic, social, and ecological outcomes as mutually reinforcing rather than as competing priorities.

The table below summarises and compares the three perspectives and their relationship to Circular Clarity's approach.

Perspective	Primary Focus	How Value is Measured	Example Sources	Relation to Circular Clarity
Corporate and Industry	Customer and market value; shared profit and innovation; competitive	Joint revenue, cost savings, ROI per partner; innovation	EY; Umbrex (2025); Wharton	We apply collaborative innovation principles, but treat social and ecological outcomes as co-equal goals rather

	advantage through collaboration.	speed; partner satisfaction.	and Kapoor (2020)	than secondary benefits.
Academic and Research	System structure and co-creation; emergent network value; multi-capital outcomes.	Network productivity, innovation rate, ecosystem longevity; multi-capital indicators across economic, social, and natural dimensions.	Adner (2017); Iansiti and Levien (2004); Berkeley Haas (2024)	Our value compass model reflects the academic concept of backbone governance anchored in shared values rather than commercial control.
Public Sector and Non-profit	Triple bottom line and systemic change; solving collective challenges through multi-stakeholder coalitions.	SDG metrics; social return on investment; policy change; IWAF monetised impact; collective impact indicators.	Climate-KIC (2025); IWAF (2026); Kramer and Pfitzer; Dutch Green Deals	This perspective is foundational to our work. Every project is mapped to SDG targets and evaluated on regenerative outcomes alongside financial viability.

4. Theoretical foundations for Ecosystem Value

Ecosystem value does not arise from a single discipline or perspective. It emerges from a convergence of economic, ecological, and organisational schools of thought. This section outlines the theoretical foundations that underpin the necessity and significance of ecosystem value. By combining insights from political economy, regenerative ecology, post-growth thinking, and new forms of organisation, an integrated framework emerges that explains why ecosystems are not only practically valuable but also socially necessary.

Together, the following main schools of thought explain why ecosystem value is more than just a management concept. As such, we base ecosystem value on five pillars: a regenerative ecological foundation; a just economic foundation; a cooperative organisational foundation; a meaningful and relational social foundation; and a broader dimension of well-being that promotes local resilience. Together, these pillars provide a theoretical framework that explains why ecosystems are essential for a circular and just economy, and why Circular Clarity places this approach at the heart of its work.

4.1 Value creation and distribution: political economy and distributive justice

Thomas Piketty's work convincingly demonstrates that, in modern economies, economic value often becomes concentrated among actors who already possess resources, knowledge, and property. The theoretical framework of when the rate of return on capital is structurally higher than economic growth, value automatically shifts towards existing positions of power. For

ecosystems, we argue that cooperation in it of itself does not guarantee that value is distributed fairly. Without explicit governance mechanisms, networks can reproduce, or even reinforce, the same inequalities that characterise the linear economy.

Ecosystem value therefore requires a focus on equitable distribution: who benefits from creation, from innovation, from shared infrastructure, and from collective investment? In this context, ecosystem value only truly emerges when value is not only created but also widely shared, transparently accounted for, and remains accessible to partners who do not possess dominant market power or significant capital.

4.2 Coherence: an integral foundation for ecosystem value

Jan Jonker's theory on New Business Models provides a practical framework for organising collaboration and multiple value creation. Key points directly applicable to ecosystems include: value arises through interaction, not in isolation; stakeholders contribute different forms of capital, whether social, ecological, knowledge, or relational; new forms of governance are needed to organise these contributions fairly; and multiple value creation requires transparency, shared decision-making, and infrastructures supported by the network.

New Business Models brings ecosystems to life by describing how collective action, shared ownership, and new transaction mechanisms, such as reciprocity, joint investments, and circular value flows, form the basis for jointly created value.

4.3 Degrowth and post-growth: value beyond scaling up

The degrowth approach reinforces an ecological perspective by arguing that well-being, innovation, and social quality do not depend on continuous economic expansion. Post-growth economies emphasise relational value, including cooperation, trust, and local vitality; sufficiency over excess; resilience through diversity and interconnectedness; and qualitative progress rather than quantitative expansion.

Ecosystems naturally fit into this logic: their primary strength lies not in scaling up but in interconnectedness, reciprocity, and complementarity. From a post-growth perspective, ecosystem value becomes the driving force behind an economy that is less reliant on extraction and linear optimisation, and more on collaboration, regeneration, and long-term well-being.

4.4 Organizational foundations: New business models and cooperative value creation

While Jason Hickel's work addresses macroeconomic systems rather than organisational ecosystems directly with *Less Is More* he introduces a crucial shift in thinking about value: growth is not the ultimate goal. True progress is defined by well-being within planetary boundaries. This ecological logic forms a core principle of ecosystem value. Ecosystems can only function sustainably when their activities respect both the ecological lower limit of human safety and the upper limit of planetary boundaries. Regeneration, understood as the active restoration of soil, water, biodiversity, and social cohesion, is not optional but a prerequisite for long-term value. Value creation must be decoupled from resource extraction and throughput. The concept of ecosystem value is thus based on a fundamental ecological

principle: value is that which sustains life, ecosystems, and future generations, not that which depletes them.

4.5 Ecological foundations: limits, regeneration and redefining progress

Piketty's analysis, read through an ecological lens, reinforces the argument that systemic inequalities and ecological degradation are not separate problems. Both arise from economic models that prioritise return on capital over regeneration and equitable access. Ecosystems designed around principles of fair distribution and ecological restoration address both challenges simultaneously. This is why Circular Clarity's governance structure, with STGNL acting as a non-profit backbone to reduce risk of value accumulation and redirect returns to social and ecological purposes, is theoretically grounded and not simply a pragmatic choice.

4.6 The Economy of Meaning: value as a contribution to the whole

Kees Klomp introduces the Purpose Economy, also known as the Economy of Meaning, as an economy in which value is not defined by financial results but by the positive contribution to people, nature, and society. This approach explicitly focuses on multiple value creation, precisely the principle that comes to life in ecosystems. Key contributions to ecosystem value from this perspective include: that value equals meaning rather than financial growth; that organisations operate as hubs of social value rather than as isolated production machines; that impact measurement focuses on social added value rather than on financial KPIs; and that ecosystems are viewed as moral fabrics in which the motivation for cooperation is intrinsic.

4.7 Free, Equal & Living Together: Relational Economy and Democratic Value Creation

Damaris Matthijsen focuses on building models of society based on equality, autonomy, and mutual cohesion. Her ideas introduce a relational basis for value creation that is highly relevant to ecosystems. Three core insights emerge: first, that participants' autonomy is a prerequisite for co-creation, because ecosystems do not function when partners are used solely as instruments; second, that equality in decision-making and access to value forms the core of sustainable collaboration, which ties directly to Piketty's distribution lens and Circular Clarity's focus on fair distribution; and third, that value arises from relationships and interactions rather than from transactions or hierarchies.

4.8 A Different Kind of Growth: Broad Prosperity and Multiple Forms of Progress

Harry Hummels and Erik Hilgers make clear that the dominant growth model falls short because it fails to align with social and ecological realities. They advocate for a different kind of growth: measuring progress based on broad prosperity rather than GDP. Key contributions include: broad prosperity as a value framework, in which health, social cohesion, ecological stability, and future-proofing are just as essential as economic indicators; local value creation and regional ecosystems, in which growth must be rooted in

communities rather than in abstract financial systems; and a new legitimacy of organisations, whose value is determined by their contribution to social resilience.

5. Circular Clarity's Definition

The convergence identified across corporate, academic, and public-sector perspectives creates an important foundation, but it does not resolve key normative questions: for whom value is created, how it is distributed, and how long-term ecological and social integrity is safeguarded. Circular Clarity's definition is therefore not presented as a neutral synthesis, but as a deliberate positioning that responds to these unresolved questions.

5.1 Definition

The following definition has been developed by Circular Clarity and Stichting Toekomstgericht Nederland, grounded in the theoretical foundations presented in Section 4 and informed by the landscape analysis in Section 3.

Circular Clarity's Definition of Ecosystem Value

The multiple value that arises when diverse² organisations, communities, and individuals collaborate on an equal footing to achieve regenerative and social goals, whereby value is not only created but also distributed fairly across the entire ecosystem and to future generations.

This definition is built on five principles:

- **Regenerative ecological foundation.** Ecosystems are designed to actively restore nature, soil, water, air, and biodiversity, not merely to protect them.
- **Equitable distribution of value.** Economic value, knowledge, infrastructure, and decision-making are widely shared so that inequality is not reproduced within ecosystems.
- **Cooperative organisational models.** Collaboration is based on reciprocity, openness, and shared responsibility, not on dominance, transactions, or hierarchy.

² Circular Clarity and Stichting Toekomstgericht Nederland welcome collaboration with anyone regardless of background, ethnicity, culture, or language. We also recognise that the concepts of circular economy and ecosystem thinking are often framed within a Western intellectual tradition, and that many communities around the world have long practiced forms of circularity, collective stewardship, and resource sharing that predate these frameworks entirely. Describing their ways of working through our terminology can feel reductive or even inappropriate.

We therefore approach diversity not only as inclusion in the formal sense, but as a genuine commitment to listening before leading. In some contexts this means we begin with education and shared exploration of concepts. In others it means we follow rather than guide, learning from existing community practices rather than introducing new ones. In all cases, we only engage where there is genuine interest and openness, and we do not seek to impose frameworks or language that do not resonate with the people we are working with. Trust is built slowly and on the other person's terms, not ours.

- **Meaningful social value.** Value is defined as a contribution to well-being, community, culture, and future-proofing, not primarily as financial return.
- **Broad prosperity and local resilience.** Ecosystems are situated within specific areas and communities, where they strengthen local vitality, support regional economies, and enhance social cohesion.

5.1.1 How this definition differs from other approaches:

Circular Clarity stands out from the approaches reviewed in Section 3 in four key ways:

- Not just value creation, but also value distribution.** Many ecosystem models focus on innovation, growth, or efficiency. We argue that ecosystem value only arises once the benefits are distributed fairly among partners, communities, and future generations.
- Not just collaboration, but relational equality.** Whilst many ecosystems rely on strategic alliances, Circular Clarity operates based on equality, autonomy, inclusivity, and relational connectedness. This relational foundation is inspired by the economy of meaning, democratic governance, and social resilience.
- Not growth, but regeneration and broad prosperity.** Whilst traditional ecosystems strive for economies of scale, we focus on well-being as complementary to growth, restoration over extraction, and qualitative progress over quantitative expansion.
- Not organisation-focused, but region- and community-focused.** Circular Clarity operates within specific regions, landscapes, and local challenges. Ecosystems must be rooted in a place, both ecologically and socially.

5.1.2 Key concepts

- **Ecosystem value:** The combined ecological, social, economic, cultural, and relational value created through collaboration between various stakeholders, including how that value is distributed.
- **Multiple value creation:** Value that does not serve a single dimension such as profit, but the whole: ecology, society, economy, and culture.
- **Regeneration:** The active restoration of natural and social systems, rather than merely minimising damage.
- **Relational economy:** An economy based on human relationships, trust, mutual support, and equality.
- **Broad prosperity:** Progress measured in terms of well-being, health, social cohesion, ecological stability, and future-proofing.

This definition is not intended as an abstract statement of intent. It directly informs how ecosystems are designed, governed, and evaluated in practice. The following section outlines how Circular Clarity translates this definition into concrete design choices and governance arrangements.

5.2 Translation into Practice

How does this definition manifest itself in the work of Circular Clarity and Stichting Toekomstgericht Nederland?

5.2.1 Our approach

We build ecosystems around societal and ecological issues. Circular Clarity never starts from a product or organisational perspective, but from a regional or systemic issue such as nature restoration, circular raw materials, biodiversity, inequality or regional prosperity. We bring together parties that complement one another in terms of knowledge, influence, resources, and motivation: government bodies, businesses, knowledge institutions, citizens, social entrepreneurs, and nature organisations.

5.2.2 Value is defined in multiple ways from the outset.

Every ecosystem begins with a shared definition of value to which everyone is committed. This covers four dimensions: environmental value, including restoration, biodiversity, and soil health; social value, including equality, employment, and community; economic value, including fair pay and long-term viability; and purpose, meaning contribution to broader social goals.

5.2.3 We operate on the basis of relational governance

Rather than relying on hierarchical or contractual control, we work with shared decision-making, transparent roles, shared risks and rewards, and open communication. This is directly inspired by Matthijsen's framework of Free, Equal and Living Together.

5.2.4 Stichting Toekomstgericht Nederland (STGNL) safeguards the social mission.

STGNL acts as an independent guardian of values and inclusivity, a safeguard for long-term goals, and a mechanism to ensure that value flows back into society. Read through Piketty's analysis of capital accumulation, this implies that ecosystems require explicit safeguards and ensures sustainable cooperation, as Jonker, Matthijsen, and Klomp emphasise.

5.3 How financial, social and environmental goals are balanced:

Circular Clarity uses a multi-dimensional value compass that guides all decisions. On the financial dimension, ecosystems must be economically sound to function sustainably, but profit is never the goal in itself. It is a means to continue delivering social impact. On the social dimension, equal access to value, community engagement and local participation, and investment in human capital and social cohesion are non-negotiable. On the ecological dimension, restoration is the norm, no net-negative projects³ are accepted, and local ecology and landscape guide design.

Balance is maintained by assessing decisions against the following questions: Does this contribute to ecological restoration? Does this strengthen local resilience? Is value distributed

³ In practice, no net-negative means that before any project is accepted into the ecosystem, it is assessed across all five value dimensions: ecological, social, economic, relational, and innovation. A project that scores positively on financial grounds but negatively on ecological or social grounds will not proceed without redesign. This is not a target but a minimum condition of participation.

fairly? Is it financially sustainable in the long term? Is the autonomy and equality of partners guaranteed? An action will only go ahead if it scores positively across multiple criteria.

5.4 How this is reflected in specific projects: Mini-Case Snapshots

The definition of ecosystem value developed in this paper is not abstract. It has been shaped and tested through concrete initiatives in which Circular Clarity and Stichting Toekomstgericht Nederland apply regenerative, distributive, and relational principles in practice. The following mini-cases illustrate how ecosystem value is created, governed, and distributed in different contexts.

5.4.1 Marine Restoration and Oyster Reef Recovery

Context and challenge

Marine ecosystems in the North Sea and Wadden region are degraded due to historic overharvesting, pollution, and habitat loss. Ecological restoration initiatives face structural barriers: fragmented responsibilities, conflicting economic incentives, limited long-term financing, and insufficient alignment between ecological science, entrepreneurship, and governance.

Ecosystem configuration

Marine restoration ecosystems facilitated by Circular Clarity bring together shellfish hatcheries, restoration practitioners, marine ecologists, coastal authorities, entrepreneurs, and knowledge institutions. Each actor contributes a distinct form of capital: ecological knowledge, technical capacity, labour, regulatory access, or long-term stewardship.

Value created

- **Ecological value:** restoration of oyster reefs contributes to improved water quality, biodiversity, and habitat complexity.
- **Economic value:** circular cultivation and restoration models improve biological quality, resilience of supply, and practical viability for long-term investment.
- **Social and knowledge value:** local employment, skills development, shared monitoring systems, and translation of scientific insights into practice.

Value distribution and governance

Value is not extracted by a single lead organisation. Through shared governance arrangements and the involvement of STGNL as mission guardian, value flows back into restoration capacity, ecosystem learning, and regional stakeholders. This ensures that ecological gains are not subordinated to short-term commercial optimisation, and that benefits remain accessible to future restoration efforts.

This case illustrates ecosystem value as regenerative, place-based, and explicitly designed to prevent concentration of benefits.

5.4.2 Regional Circular Ecosystems for Materials, Energy, and Biomass

Context and challenge

Regional circular transitions often stall because projects remain isolated. Individual organisations optimise locally, while systemic value remains unrealised.

Ecosystem configuration

Circular Clarity supports regional ecosystems that connect SMEs, municipalities, knowledge institutions, social enterprises, and financiers around shared regional challenges such as biomass valorisation, circular raw materials, renewable energy, or urban agriculture. Ecosystems are anchored in specific landscapes and communities rather than sectoral value chains.

Value created

- **Environmental value:** reduced resource loss through cascading use, reuse, and local loops.
- **Economic value:** increased regional economic retention, reduced dependency on external inputs, and long-term viability for participating enterprises.
- **Social value:** local employment, inclusion of smaller actors, and stronger regional networks.
- **System value:** infrastructure, standards, and collaboration models that enable further projects to emerge.

Value distribution and governance

From the outset, partners jointly define what constitutes value and how it will be assessed across environmental, social, economic, and purpose dimensions. Governance is relational rather than hierarchical: autonomy is preserved, decision-making is shared, and risks and rewards are collectively acknowledged. STGNL safeguards that value generated at ecosystem level strengthens the region rather than accumulating within individual organisations.

This case demonstrates ecosystem value as broad prosperity: locally rooted, distributive, and system-enabling rather than project-bound.

5.4.3 Ecosystem Governance and Learning Programmes

Context and challenge

Many ecosystem initiatives fail not because of lack of ambition or partners, but due to weak governance: unclear roles, asymmetrical power relations, and absence of shared accountability for long-term outcomes.

Ecosystem configuration

Circular Clarity designs and facilitates ecosystem governance programmes in which partners collectively develop decision-making structures, shared metrics, and learning processes. These programmes often operate alongside concrete projects but focus explicitly on the relational and institutional foundations of collaboration.

Value created

- **Relational value:** trust, transparency, and durable working relationships.
- **Institutional value:** shared governance models, agreements, and decision protocols.
- **Learning value:** collective capability to manage ecosystem risk, measure multiple value creation, and adapt over time.
- **Innovation value:** new ways of organising collaboration that can be transferred to other regions or sectors.

Value distribution and governance

Governance learning is treated as a shared asset rather than proprietary knowledge. By embedding principles of equality, autonomy, and shared responsibility, these programmes prevent dominance by powerful actors and enable smaller or non-commercial partners to participate meaningfully. Value is distributed through access to learning, influence over decision-making, and long-term capacity building.

This case illustrates ecosystem value as relational and democratic: value arises not only from outputs, but from how actors learn to act together.

5.4.4 Synthesis Across Projects

Across these diverse initiatives, a consistent pattern emerges. Ecosystem value is created when:

- Multiple forms of capital, ecological, social, economic, and relational, are recognised from the start.
- Governance explicitly addresses distribution, not only creation.
- Ecosystems are designed around places, communities, and long-term stewardship rather than transactional efficiency.
- A mission-anchored backbone safeguards purpose and prevents value capture.

These projects show that ecosystem value is not an abstract ideal, but a practical design principle. When applied deliberately, it enables regenerative outcomes that no single organisation could realise independently and ensures that the benefits of collaboration are shared across participants, regions, and generations.

5.5 Guiding Principles

The following guiding principles translate Circular Clarity's definition of ecosystem value into actionable design and governance choices. They articulate not only what an ecosystem seeks to achieve, but how collaboration is organised so that regenerative, social, and economic outcomes reinforce rather than undermine one another.

These principles function as shared reference points across projects, partners, and regions. They also provide criteria against which decisions, trade-offs, and ecosystem performance can be evaluated over time.

5.5.1 Regeneration as the Baseline, Not the Ambition

Ecosystem initiatives are designed around regeneration, not mitigation. This means that ecological and social systems are expected to improve through participation in the ecosystem, rather than merely experience reduced harm.

In practice, this principle requires that:

- Ecological thresholds and local conditions (soil, water, biodiversity, marine systems) inform project design from the outset.
- “No net negative” is treated as a minimum requirement, not a success criterion.
- Long-term system health is prioritised over short-term optimisation or compensatory mechanisms.

Regeneration matters because ecosystems that merely slow degradation eventually erode their own foundations. Circular and collaborative systems only remain viable when they actively restore the natural and social capital on which they depend.

5.5.2 Distribution is integral to value creation

Value creation alone does not define ecosystem value. How value is distributed across partners, communities, and time is equally decisive.

Without explicit attention to distribution, ecosystems risk reproducing the same concentration mechanisms found in linear economies: dominant actors capture disproportionate benefits, while smaller or less powerful participants carry risk without corresponding reward.

Applying this principle means:

- Designing governance structures that ensure influence and access are not tied solely to financial power.
- Treating knowledge, infrastructure, learning, and decision-making capacity as shared forms of value.
- Embedding mechanisms that ensure benefits flow back into ecosystems, regions, and future initiatives rather than accumulating within individual organisations.

Distribution matters because ecosystems derive their resilience from diversity and mutual reinforcement. When benefits are shared transparently and fairly, cooperation becomes durable rather than contingent.

5.5.3 Relational Governance Over Hierarchical Control

Circular Clarity ecosystems are governed through relational governance: shared responsibility, transparency, and trust, rather than command-and-control models or purely contractual coordination.

This principle recognises that ecosystems consist of autonomous actors who choose to collaborate. Effective coordination therefore depends less on formal authority and more on legitimacy, mutual accountability, and continuous dialogue.

In practice, relational governance involves:

- Shared definition of goals, values, and success criteria.
- Clear but non-hierarchical roles, with room for adaptation.
- Open communication about risks, constraints, and tensions.

- Decision-making processes that preserve autonomy while enabling collective action.

Relational governance matters because ecosystems fail when partners are treated instrumentally. Value emerges from interaction, learning, and trust—not from compliance alone.

5.5.4 Multiple Value Creation as a Design Requirement

Ecosystem initiatives explicitly define value across multiple dimensions from the outset: ecological, social, economic, relational, and purpose-driven.

Rather than treating non-financial outcomes as side benefits or externalities, ecosystems are designed so that progress in one dimension supports progress in others. Financial viability remains essential, but profit is understood as a means to sustain impact, not as an end in itself.

This principle translates into:

- Shared value definitions and indicators agreed upon by all partners.
- Decision-making that weighs trade-offs across dimensions rather than optimising for a single metric.
- Measurement frameworks that make combined outcomes visible and comparable.

Multiple value creation matters because complex societal challenges cannot be addressed through single-objective systems. Ecosystems create their added value precisely by integrating dimensions that traditional organisational models separate.

5.5.5 Place-Based and Context-Specific Design

Ecosystem value is inherently contextual. Circular Clarity therefore works with ecosystems that are rooted in specific regions, landscapes, and communities.

Rather than scaling identical solutions, ecosystems are designed to respond to local ecological conditions, social structures, economic capacities, and cultural dynamics. This place-based approach strengthens relevance, legitimacy, and long-term stewardship.

Applying this principle means:

- Treating regions and ecosystems as assets to be nurtured, not neutral backdrops.
- Aligning projects with local needs, capabilities, and identities.
- Building partnerships that embed initiatives within existing community and institutional structures.

Place-based design matters because resilience, regeneration, and legitimacy cannot be imported. They emerge through sustained engagement with specific places and the people who inhabit them.

5.5.6 Long-Term Orientation and Intergenerational Responsibility

Ecosystem value unfolds over time. Many of its most significant outcomes e.g. restored ecosystems, trust, institutional learning and social cohesion, cannot be realised within short project cycles.

Circular Clarity therefore designs ecosystems with a long-term horizon, recognising responsibilities toward future participants and generations.

In practice, this involves:

- Avoiding extraction of short-term gains that undermine future capacity.
- Investing in learning, governance, and infrastructure that outlast individual projects.
- Safeguarding mission and values through independent structures such as STGNL.

This principle matters because ecosystems that optimise for immediate returns compromise their own future. Intergenerational responsibility is not a constraint on value creation; it is a condition for its continuity.

5.5.7 Continuous Learning and Adaptive Capacity

Finally, ecosystems are treated as learning systems. Conditions change, relationships evolve, and assumptions must be revisited.

Circular Clarity therefore embeds reflection, monitoring, and adaptation as core practices rather than afterthoughts. Governance arrangements, value definitions, and collaboration models are periodically reassessed in light of experience.

Learning matters because ecosystem value is not fixed. It emerges through experimentation, feedback, and the willingness to adjust course collectively.

5.5.8 Why These Principles Matter

Taken together, these guiding principles ensure that ecosystem value is:

- Regenerative rather than extractive,
- Distributed rather than concentrated,
- Relational rather than transactional,
- Place-based rather than abstract,
- And durable rather than opportunistic.

They distinguish ecosystems as transformative structures rather than coordination tools. In doing so, they provide a stable foundation for Circular Clarity's work and a coherent reference for partners who seek to contribute to regenerative and equitable transitions at scale.

5.5.9 How to Use These Guiding Principles

For partners, policymakers, and ecosystem participants

These guiding principles are intended as practical orientation tools, not abstract ideals. They can be used at different moments in the design, governance, and evaluation of ecosystem initiatives.

When designing an ecosystem

Use the principles as design criteria: clarify upfront what regeneration, multiple value creation, fair distribution, and long-term responsibility mean in the specific context.

Ensure that partners agree not only on shared goals, but also on how value will be created and shared.

Check whether governance arrangements support relational equality rather than dominance by a single actor.

When deciding whether to participate

Assess whether the ecosystem aligns with your organisation's public mandate, sustainability objectives, or long-term strategy.

Ask whether participation strengthens systemic outcomes (ecological, social, regional) rather than only project-level results.

Use the principles to identify risks of value concentration, mission drift, or short-term optimisation.

When governing and steering collaboration

Apply the principles as a compass for decision-making, especially when trade-offs arise between financial, social, and ecological goals.

Revisit them periodically to test whether governance practices still reflect the agreed values.

Use them to maintain legitimacy, trust, and transparency among diverse partners.

When evaluating impact and accountability

Translate the principles into shared indicators across multiple value dimensions.

Combine qualitative learning (trust, collaboration quality, institutional capacity) with quantitative measures (environmental, social, and economic outcomes).

Use the principles to communicate ecosystem value clearly to funders, regulators, and the public.

In short, these principles help partners and policymakers move from individual optimisation to collective stewardship. They provide a common language to design, govern, and evaluate ecosystems that aim to be regenerative, equitable, and future-oriented.

5.5.10 KPI's and frameworks

The following section builds on this foundation by examining how different communities, corporate, academic, and public, have sought to operationalise ecosystem value through concrete measurement frameworks. Section 6 does not present these frameworks as definitive answers, but as complementary approaches that help translate the principles of ecosystem value into practical tools for accountability, learning, and long-term stewardship. This logic culminates in Section 6.4, where Circular Clarity sets out its own compositional measurement approach, showing how selected frameworks can be combined and adapted to make ecosystem value visible without undermining its regenerative, distributive, and relational foundations.⁶ Frameworks: How to Access Ecosystem Value

Measuring ecosystem value is inherently complex because it spans multiple domains and includes outcomes that resist simple quantification. However, systematic assessment is essential. It validates that a network is delivering on its stated objectives, helps direct attention and resources where they are most needed, and builds the accountability that keeps partners engaged over time.

The sub-sections below outline how each stakeholder group approaches measurement and assessment. Circular Clarity's own synthesis framework, presented in Section 5.4, is created drawing on other frameworks and Circular Clarity's own work. No single framework captures ecosystem value fully. Circular Clarity therefore works with a compositional approach.

6.1 Corporate and Industry Bodies

6.1.1 Key Performance Indicators and Partnership Metrics

In the private sector, ecosystem performance is typically evaluated through a strategy-oriented lens, with a focus on how collaboration drives competitive advantage and innovation. Many organisations extend their existing performance frameworks, such as Balanced Scorecards or OKR systems, to include ecosystem-specific indicators. Common examples include partner-generated revenue, time-to-market for co-developed products, partner Net Promoter Score, and intellectual capital created through joint research or shared patents.

AchieveUnite's Partnering Quotient Index attempts to quantify trust and collaboration quality numerically, building on evidence that high-trust teams are measurably more productive and engaged. Many corporate alliances now conduct annual partner surveys that produce an aggregate relationship quality score, tracked over successive years as an indicator of ecosystem health.

6.1.2 Circular Transition Indicators (WBCSD, 2024-2025)

The World Business Council for Sustainable Development's Circular Transition Indicators provide a standardised framework for measuring circular economy performance across industries. Key metrics include the Circulation Rate, which measures the proportion of inputs derived from reused or recycled sources, and the Recovery Rate, which tracks how much waste is productively recovered. The CTI framework is designed for comparability. It enables organisations within an ecosystem to aggregate their individual scores into a network-level circularity picture, identifying where the weakest links in the loop are located. The CTI Academy supports adoption across organisations of all sizes. For Circular Clarity's ecosystem, CTI offers a shared measurement language that all partners can report against, making the circular performance of the network a genuinely trackable and improvable outcome.

6.1.3 Ecosystem Modelling as a Strategic Capability

Tr3Dent and the Gartner Eight Dimensions framework argue that business ecosystem modelling should become a standard strategic discipline. Mapping entities, value exchanges, and interdependencies in a structured way allows organisations to simulate the consequences of partner exits, test alternative collaboration configurations, and identify structural bottlenecks before they materialise. As digital infrastructure matures, these models can increasingly be operationalised in real time, feeding dashboards that track not only output metrics but the structural health of the network itself.

6.1.4 Doughnut Design for Business (DEAL, 2022-2026)

The Doughnut Economics Action Lab's Business and Enterprise framework offers a structured redesign process for organisations seeking to become regenerative and distributive by design. It assesses performance across five dimensions: Purpose, Networks, Governance, Ownership, and Finance. Its No Company Doughnuts tool provides diagnostic visualisations showing how a business's current model measures up against social foundations and ecological ceilings. Applied at the ecosystem level, the framework enables a coalition of partners to assess whether their combined impact meets human needs within planetary limits. This is a significantly more demanding and informative test than purely financial benchmarks, and it

provides Circular Clarity with a practical tool for introducing regenerative thinking to business partners who are new to circular economy concepts.

6.2 Academic/Research Institutions

6.2.1 Systems and Multi-Capital Approaches

Academic literature recommends evaluating ecosystems through holistic, system-level models that assess inputs, outputs, and outcomes across multiple forms of capital. A 2024 systematic review by Statistics Canada identified eight categories of innovation ecosystem indicators: enabling inputs such as human capital, research and development assets, and collaboration density; market inputs including funding and entrepreneurial activity; innovation outputs such as new patents and products; and economic outcomes including employment growth and productivity gains. This input-output-outcome model treats ecosystem value as an emergent result of many interacting factors rather than a single measurable quantity.

6.2.2 Ecosystem Health Metrics

The three health metrics proposed by Iansiti and Levien (2004) remain influential in both academic and applied settings. Productivity assesses how efficiently the network converts inputs into outputs, measured by aggregate return on investment compared to standalone efforts. Robustness assesses resilience: the ability of the network to survive disruption, measured by organisational survival rates relative to industry benchmarks. Niche creation assesses the rate at which new roles, products, and services emerge from the ecosystem, indicating that the network continues to learn and adapt. These metrics shift the frame of analysis from individual firm performance to network-level vitality.

6.2.3 Doughnut Economics at Regional and Ecosystem Scale

The UC Berkeley Haas Centre for Responsible Business (2024) demonstrates how Doughnut Economics can be operationalised as a diagnostic tool at the ecosystem or regional level. The California Doughnut Snapshot uses forty-two indicators across social foundations and ecological ceilings, quantifying both social shortfalls where human needs are unmet and ecological overshoots where resource use or pollution exceeds planetary boundaries. For ecosystems operating within a defined geography, a Doughnut Snapshot provides a powerful baseline and target-setting tool. Circular Clarity sees direct application in the Dutch context: the national circular economy transition can be tracked against a Netherlands Doughnut, with each ecosystem initiative contributing measurably to closing specific gaps.

6.2.4 Governance Taxonomy

Mari Sako (2019) at Oxford Said provides a framework for ecosystem governance that identifies three coordination models: reputation-based systems driven by buyer and supplier ratings, third-party regulatory frameworks based on standards and certification, and public-private cooperation through shared institutions. Each model produces distinct incentive structures and risk profiles. Ecosystem architects can use this taxonomy to diagnose governance mismatches, for instance an ecosystem that relies entirely on reputation-based accountability may be fragile if a key partner's standing is damaged, and to design more resilient coordination arrangements suited to their stakeholder mix.

6.3 Public Sector and Non-profit Frameworks

6.3.1 Impact-Weighted Accounts Framework (Impact Economy Foundation, 2026)

The IWAF provides a structure for compiling impact-weighted accounts that place environmental and social impacts alongside financial flows in a single, integrated statement. For a multi-partner ecosystem, it enables a unified view of total value created or destroyed across all forms of capital: financial profit, natural capital impacts such as avoided emissions and restored soil, human capital impacts such as skills development and employment quality, and social capital impacts such as community cohesion and institutional trust. This makes it possible to answer the question of whether an ecosystem is creating or destroying value for society as a whole, and to do so in a language that is accessible to investors, governments, and the broader public.

6.3.2 Value to Business Framework (KPMG and Value Balancing Alliance, 2025)

The V2B framework addresses sustainability-related financial effects through a structured five-step process: identifying material topics, assessing impacts and dependencies, monetising effects across natural, human, and social capital, integrating findings into financial planning through scenario analysis, and disclosing results through double-materiality reporting. For ecosystems facing EU CSRD compliance obligations, V2B provides a clear path from qualitative sustainability commitments to quantified financial exposure and opportunity.

6.3.3 Climate-KIC Bioeconomy Systemic Framework (2025)

Climate-KIC's ten-point framework for bioeconomy transitions offers design principles for how ecosystems should be structured to generate long-term value. It emphasises cascading biomass use to maximise the productive utility of biological resources across multiple loops, soil-centred approaches that treat soil health as the foundational asset of any bio-based economy, and place-based innovation ecosystems that connect research, enterprise, policy, and community in geographically grounded constellations.

In the social sector, the collective impact model mandates a shared measurement system as one of five conditions for success. All partners agree on key indicators and share data openly. This builds trust, enables shared learning, and ensures that no single actor can selectively report favourable results. The SDG measurement infrastructure provides a ready-made shared language for cross-sector ecosystems, and mapping each initiative to specific SDG targets creates accountability at the network level rather than at the level of individual organisations.

6.3.4 Future-Fit Foundation

The Future-Fit Business Benchmark, developed by the Future-Fit Foundation, provides a science-based framework for assessing whether a business is operating in ways that are environmentally restorative, socially just, and economically inclusive. It is built around two types of goals: Break-Even Goals, which define the minimum standards a business must meet to avoid causing harm to ecological and human systems, and Positive Pursuits, which identify

restorative outcomes any business can choose to contribute to. For ecosystem measurement, the Benchmark is relevant in two ways. First, it provides a shared threshold language: ecosystem partners can assess whether their individual operations meet the Break-Even standard before claiming collective regenerative value. Second, the Positive Pursuits framework maps directly onto ecosystem-level outcomes, particularly around waste elimination, ecosystem restoration, and community health. The Benchmark is open source and freely available, which makes it accessible to smaller partners and social enterprises within an ecosystem rather than only to large organisations with sustainability reporting infrastructure (Future-Fit Foundation).



6.4 Summary

No single framework captures ecosystem value in full. Each of the tools and approaches reviewed in this section addresses a different dimension: some focus on financial and partnership performance, others on circular material flows, ecological thresholds, or the quality of multi-stakeholder collaboration. Circular Clarity therefore works with a compositional approach, drawing on multiple frameworks depending on the context, stage, and partners involved in a given ecosystem initiative. The table below provides a summary of each framework covered in this section, along with the key contribution it makes to assessing ecosystem value.

Framework	Key Contribution to Ecosystem Value Assessment
Impact-Weighted Accounts Framework (IWAF)	Provides a single integrated statement placing environmental and social impacts alongside financial flows, enabling a unified view of total value created or destroyed across all forms of capital.
Value to Business Framework (V2B)	Translates sustainability-related impacts and dependencies into financial terms through a five-step process, supporting

	double-materiality reporting and EU CSRD compliance.
Climate-KIC Bioeconomy Framework	Offers design principles for place-based, systemic ecosystems including cascading biomass use, soil-centred approaches, and geographically grounded innovation constellations.
Collective Impact	Mandates shared measurement systems, open data sharing, and SDG-aligned indicators, creating network-level accountability rather than organisation-level reporting.
Dutch Green Deals	A policy-driven multi-stakeholder model that removes regulatory barriers and enables public-private coalitions to generate value beyond individual project outcomes.
Future-Fit Foundation	Provides a science-based threshold framework built on Break-Even Goals and Positive Pursuits, offering accessible shared standards for environmentally restorative and socially just operations across ecosystem partners of all sizes.
EU CSRD and ESRS	Regulatory reporting standards that require disclosure of value chain and stakeholder impacts, effectively mandating ecosystem-level measurement of Scope 3 emissions, supply chain social performance, and circular economy engagement.
Circular Transition Indicators (CTI)	Standardised metrics including Circulation Rate and Recovery Rate that allow ecosystem partners to aggregate individual scores into a network-level circularity picture, identifying weak links across the loop.
AchieveUnite Partnering Quotient Index (PQi)	Quantifies trust and collaboration quality as measurable indicators of ecosystem health, linked to evidence that high-trust partnerships produce better productivity and engagement outcomes.
Gartner Eight Dimensions and Tr3Dent	Frameworks for business ecosystem modelling that map entities, value exchanges, and interdependencies, enabling simulation of partner exits and identification of structural bottlenecks before they materialise.
DEAL Business and Enterprise (Doughnut Design)	Assesses ecosystem performance across five redesign dimensions: Purpose, Networks, Governance, Ownership, and Finance, testing whether combined partner impact meets human needs within planetary limits.
EY Ecosystem Metrics	Defines business ecosystems as purposeful arrangements for collective customer value, providing practitioner-level indicators

	around joint revenue, innovation speed, partner satisfaction, and shared rewards.
Statistics Canada Systematic Review	Identifies eight categories of innovation ecosystem indicators spanning enabling inputs, market inputs, innovation outputs, and economic outcomes, treating ecosystem value as emergent from multiple interacting factors.
Iansiti and Levien Ecosystem Health Metrics	Proposes three network-level health indicators: Productivity (input-to-output efficiency), Robustness (resilience to disruption), and Niche Creation (rate of new roles and innovations emerging from the ecosystem).
UC Berkeley Haas Doughnut Snapshot	Operationalises Doughnut Economics as a regional diagnostic tool using forty-two indicators across social foundations and ecological ceilings, providing a baseline and target-setting tool for geographically grounded ecosystems.
Oxford Said Governance Taxonomy (Sako)	Identifies three ecosystem coordination models: reputation-based, third-party regulatory, and public-private cooperative, enabling ecosystem architects to diagnose governance mismatches and design more resilient structures.
Adner Alignment Framework	Defines ecosystems as alignment structures requiring all partners to coordinate roles toward a focal value proposition, establishing interdependence and role clarity as prerequisites for ecosystem value to materialise.

6.5 Circular Clarity - A Compositional Measurement Approach

The frameworks reviewed above each illuminate important aspects of ecosystem value, yet none is sufficient on its own. Treating any single framework as definitive risks reproducing the same reductionism that ecosystem approaches seek to overcome.

No single framework reviewed in Sections 6.1–6.3 fully captures ecosystem value as Circular Clarity defines it. Corporate frameworks such as the CTI and Gartner Eight Dimensions excel at operational and circular performance metrics but do not address fair distribution or regenerative outcomes. Academic frameworks such as the Iansiti and Levien health metrics and the Statistics Canada innovation ecosystem indicators offer systems-level insight but are not designed for practical governance in small and medium-sized ecosystems. Public and non-profit frameworks such as the IWAF and V2B provide rigorous multi-capital accounting but require significant data infrastructure that many ecosystem partners, particularly SMEs and civil society organisations, cannot yet provide.

Circular Clarity therefore works with a compositional approach: a curated combination of tools, assembled and adapted for each ecosystem context, that together make ecosystem value

visible across all five dimensions of the Multiple Value Compass: environmental, social, economic, purpose and meaning, and relational value. This compass is ESG-aligned and maps to VSME and CSRD indicators, enabling ecosystem partners to connect their shared impact reporting to regulatory frameworks without duplicating effort.

6.5.1 Circular Clarity's core measurement instruments

The 5 Steps of Circular Entrepreneurship (Reason, Essence, Challenge, People, and Impact) provide the foundational design logic for ecosystems supported by Circular Clarity. From the outset, each step generates value-relevant information:

- Reason anchors the ecosystem in a shared societal purpose;
- Essence clarifies which forms of value are being pursued;
- Challenge identifies the systemic barriers that require collaborative action;
- People maps the contributions and forms of capital that partners bring;
- and Impact defines the indicators and targets against which progress will be assessed.

This sequence ensures that measurement is not retrofitted to an ecosystem after the fact, but is built in from the first design conversation.

The Regenerative Ecosystem Model (REM) translates these design inputs into a governance and value-tracking structure at the ecosystem level. It identifies how value flows between partners, economically, ecologically, socially, and relationally, and makes visible the distribution mechanisms that determine whether value remains accessible to the ecosystem as a whole or concentrates among dominant actors.

The A Sustainable Step Up™ workshop, structured around the R-ladder, provides a practical entry point for SME partners who are early in their circular journey. It enables partners to self-assess their current circularity performance, identify leverage points, and connect their individual trajectories to the shared ecosystem targets.

The VSME Dashboard maps Circular Clarity's five value dimensions to indicators. This enables ecosystem participants to move fluidly between the relational and narrative dimensions of ecosystem value and the standardised reporting language required by EU regulation. It also allows Stichting Toekomstgericht Nederland to monitor whether value is flowing back to communities and ecological systems in line with its mission mandate, using language that investors and policymakers can assess.

6.5.2 A four-layer measurement logic

In practice, Circular Clarity applies measurement across four complementary layers:

- **Design layer:** value definitions, shared goals, and baseline indicators established at ecosystem inception through the 5 Steps process.
- **Operational layer:** ongoing tracking of circular performance (R-ladder indicators), resource flows, and collaborative health (partner engagement, governance quality, relational trust).
- **Impact layer:** multi-capital outcomes assessed against the Meervoudig Waardenkompas, with monetisation support from IWAF and V2B for ecosystems operating under CSRD obligations.

- **System layer:** contribution to broader societal targets, mapped to relevant SDGs, national circular economy policy goals, and where applicable, Dutch Green Deal commitments.

This layered structure reflects a central conviction of Circular Clarity's approach: that ecosystem value cannot be captured in a single number or a single framework. Measurement is itself a governance act. It shapes what partners attend to, what they report, and ultimately what they value. A compositional approach, guided by clear principles rather than a single methodology, is therefore not a limitation but a design choice consistent with the relational and adaptive governance model described throughout this paper.

7. Case Study: Ecosystem Circular Entrepreneurship by STGNL

7.1 Context

Stichting Toekomstgericht Nederland took over the ecosystem from Circular Clarity in 2025, driven by one central question: how do you build an ecosystem in which circular entrepreneurship is not only possible but the norm?

In the early years, the focus was on practical implementation: working with organisations that wanted to operate in a circular way, connecting regional initiatives, and developing methods to measure value in multiple ways. As the network grew, it became clear that isolated projects were not enough. There was a need for an ecosystem that provided structural support, mobilised stakeholders, and ensured long-term value.

The challenge was clear: circular business practices require different forms of collaboration, decision-making, ownership, and valuation, and these do not fit easily within traditional supply chains and market structures. The opportunity was to create an ecosystem in which entrepreneurs are given scope to experiment, social and environmental goals take precedence, value is distributed fairly, and STGNL acts as an independent guardian of mission and values. STGNL has thus become a living example of what an ecosystem for circular entrepreneurship can look like.

7.2 Ecosystem Structure

7.2.1 Partners & Roles

The ecosystem comprises six types of partners, each making their own contribution. Entrepreneurs and SMEs develop circular products and services, and contribute market knowledge, innovative capacity, and a willingness to experiment. Public and regional institutions link policy objectives with practice and create scope for pilots, area-specific projects, and regulatory innovation. Educational and knowledge institutions provide research, tools, and independent insight, and assist in monitoring multiple value creation. Social organisations safeguard inclusion, equality, and local value, and strengthen participation from the community and citizens. Financiers and impact investors support through mission-driven funding and link social objectives to funding logic. Circular Clarity and

STGNL provide ecosystem design, guidance, value measurement, and strategy, while STGNL safeguards the social mission, governance, and redistribution of value.

7.2.2 Governance Structure

The governance model rests on three pillars. First, equal participation: each partner contributes a different form of capital, whether social, environmental, financial, or knowledge-based. Second, relational decision-making based on trust, autonomy, and shared responsibility rather than on hierarchy. Third, value safeguarding via STGNL: the foundation monitors the social direction, prevents value extraction, and ensures that results flow back to the community. This governance architecture prevents value from flowing to a single party, as Piketty's analyses warn, and ensures sustainable cooperation, as Jonker, Matthijsen, and Klomp emphasise.

7.3 Outcomes

The ecosystem generates multiple benefits, evident at four levels.

- **Economic value:** new circular business models, a strengthened local economy, sustainable employment, and reduced reliance on linear supply chains.
- **Ecological value:** restoration of natural systems including soil, water, and biodiversity; reduction in waste and emissions; an increase in circular material use; and projects that work regeneratively rather than through compensation.
- **Social value:** equal access to knowledge, infrastructure, and networks; community building and local engagement; and reducing inequality through fair value distribution.
- **Innovation value:** new forms of collaboration through ecosystem governance; innovative circular solutions; new methodologies for measuring multiple values; and further development of circular entrepreneurship as a discipline.

The ecosystem creates value that goes beyond business results: it revitalises regions, strengthens social relationships, and restores ecology.

Two concrete examples of outcome to share here are:

1. The growth factor of the ecosystem started in 2020 initially by the founders of Circular Clarity and later managed by the independent board of STGNL. Starting with 2 people and now in 2026 it is grown to 15 people. The factor is 7,5.
2. The Circular Clarity acceleration factor is an annual indicator, indicating the success of programs executed at customers. It is calculated with the amount of people you start and finish seen in time. So if you start with 1 person in a program on the 1st of January and you end that year with 20 the acceleration factor is 20.

7.4 Link to Definitions

This case study is a direct illustration of the definitions and principles applied by Circular Clarity. It is regenerative in that projects focus on restoring natural systems. It is equitable in that value is shared through STGNL's governance structure. It is cooperative in that the ecosystem is based on equality and relational connection. It is meaningful in that value is

approached from the perspective of an economy of meaning, following Klomp. It promotes broad prosperity in that local health, well-being, and vitality are explicit goals, following Hummels and Hilgers. It is relational and democratic in that collaboration is based on freedom, equality, and living together, following Matthijsen. This ecosystem demonstrates that circular entrepreneurship can only flourish within a system that is socially, ecologically, and economically forward-looking, and that value is only truly created when it is widely shared.

8.0 Implications for Organisations and Leaders

While the STGNL ecosystem is context-specific, the patterns observed regarding governance, value distribution, and learning, are not unique. They reflect structural dynamics common to many circular and regenerative initiatives. The following implications therefore translate these observed patterns into guidance for organisations and leaders operating in diverse contexts.

Embracing ecosystem value requires changes in strategy, governance, management practice, and organisational culture. The implications below are drawn from the landscape analysis, from established frameworks including the DEAL Business and Enterprise principles, the V2B double-materiality approach, the Climate-KIC bioeconomy design framework, and the Oxford Said governance taxonomy, and from Circular Clarity's own operational experience.

8.1 Embed Ecosystem Thinking in Strategy

Organisations should incorporate ecosystem logic into their corporate strategy explicitly. This means identifying where partnering is not merely advantageous but necessary to achieve circular, regenerative, or social objectives. Some opportunities and risks exist outside an organisation's own boundaries and can only be addressed through collective action. Practically, this could mean setting objectives such as: by a specific year, a defined proportion of product innovations will be co-developed with external partners. Internally, it requires aligning performance indicators with ecosystem outcomes. The DEAL Business and Enterprise framework, with its five redesign dimensions of Purpose, Networks, Governance, Ownership, and Finance, offers a structured template for this strategic shift.

8.2 Develop Collaborative Leadership Skills

Leading within an ecosystem requires a different set of skills from leading a single organisation. It demands the ability to influence and motivate partners who are outside one's direct authority. Trust-building, facilitated negotiation, active listening, and identifying shared gains become core competencies rather than supplementary ones. Wharton's Kapoor (2020) describes this as an ecosystem mindset: actively mapping and managing the external actors on whom one's own value proposition depends. Hobcraft's Hierarchy (2024) adds that effective leadership looks different at each stage of ecosystem development, and leaders benefit from developing fluency across all four stages.

8.3 Adopt Multi-Capital Measurement and Transparent Reporting

The most direct operational implication of the new measurement frameworks reviewed in Section 6 is that leaders must move beyond single-metric success. The V2B Framework (2025) and the IWAF (2026) provide practical tools for doing this. The process involves identifying the social and environmental impacts and dependencies that are material to the ecosystem, quantifying them using agreed methodologies, integrating them into financial planning and risk management, and disclosing the full picture through double-materiality reporting. Under the EU Corporate Sustainability Reporting Directive, organisations will in any case be required to report on broader value-chain impacts that are inherently ecosystem-level. Circular Clarity recommends that every ecosystem initiative maintain a five-dimension scorecard covering Economic, Environmental, Social, Collaborative, and Innovation value.

8.4 Design for Inclusion from the Outset

Prieto and Phipps (2021) demonstrate that inclusive, diverse ecosystems generate cooperative advantage: systematic multiplier effects arising from community well-being, supplier diversity, and social regeneration. Designing for inclusion means recruiting social enterprises, smaller businesses, educational institutions, community organisations, and public bodies into ecosystem initiatives from the design stage rather than adding them later as peripheral stakeholders. It also means structuring governance so that smaller or less powerful voices have genuine influence rather than symbolic representation.

8.5 Invest in Shared Governance and Backbone Support

For multi-organisation initiatives, establishing a governance structure is not optional. It is the mechanism through which ecosystem value is protected and grown over time. This finding is consistent across all three perspectives examined in the landscape analysis. In Circular Clarity's model, this role is fulfilled jointly by Circular Clarity as the active facilitator and by Stichting Toekomstgericht Nederland as the mission-anchored backbone. This governance structure ensures that the ecosystem does not drift toward purely commercial priorities as it scales, and we believe it is replicable and worthy of wider adoption.

8.6 Integrate Place-Based and Ecological Thinking

Climate-KIC's bioeconomy framework (2025) makes a compelling case that the most resilient and value-generating ecosystems are grounded in specific geographies. Soil health, hydrological systems, biodiversity, and local community structures are assets to be stewarded and sources of differentiated value. For organisations operating in the Netherlands, this means treating the Dutch circular economy transition targets as ecosystem-wide objectives, and designing partnership portfolios that contribute to these targets in geographically meaningful ways. The STGNL case study exemplifies this: its value is inseparable from the specific landscapes, communities, and regions in which it operates.

8.7 Commit to the Long Term

Significant ecosystem value, particularly on systemic issues such as circular transition, climate action, or social inclusion, typically materialises over a longer horizon than standard business projects. Leaders must communicate this clearly and secure the organisational

commitment needed to sustain partnerships through early periods of slow progress. Hobcraft's Hierarchy of Ecosystems (2024) provides a useful frame: ecosystems pass through stages of creativity, cooperation, dynamic adaptation, and sustained prosperity. Leaders who understand this developmental arc invest appropriately at each stage.

8.8 Manage Ecosystem Risk Actively

Participation in ecosystems introduces specific risks alongside its well-documented benefits, including partner dependency, intellectual property exposure, and reputational risk arising from the actions of other network members. Leaders should adapt risk management practices to the ecosystem context, diversifying the partner portfolio to avoid single points of failure, establishing clear exit arrangements so that a partner's withdrawal does not destabilise the whole network, and making considered decisions about what knowledge to share openly versus what to protect. Ecosystem modelling tools can support structured stress-testing of the network against simulated shocks.

In summary, leaders must evolve from individual decision-makers to network facilitators, and organisations must shift from protecting value within their own boundaries to creating value across them. As Circular Clarity's guiding principle states: *samen realiseren wij een meervoudige waardecreatie*. Together, we realise multiple value creation. That is not aspiration alone. It is strategy.

9. Conclusion

The analysis presented in this white paper shows that ecosystem value is not an abstract concept but a necessary foundation for an economy that aims to be regenerative, equitable, and future-proof. By bringing together insights from political economy, the purpose economy, degrowth, broad prosperity, relational social models, and new business models, a clear and powerful picture emerges: value does not arise within individual organisations, but in the relationships, interdependencies, and shared responsibilities between them.

In this light, it becomes evident why collaboration in ecosystems is indispensable. Regenerative transitions, circular value chains, nature restoration, and regional resilience simply cannot be achieved within the boundaries of traditional hierarchies or linear chain thinking. Ecosystems provide the context in which multiple value creation can truly flourish: ecological regeneration, social cohesion, economic viability, innovation, and meaning.

Circular Clarity and Stichting Toekomstgericht Nederland demonstrate what this looks like in practice. The ecosystem for circular entrepreneurship shows how partners collaborate from a place of both autonomy and connectedness, united around a shared mission. Through relational governance, multiple value creation, and equitable distribution, a system emerges that not only creates value but redistributes it widely to communities, nature, and the future.

The STGNL case study makes visible that ecosystems not only enable collaboration but fundamentally transform it: making it more equitable, more sustainable, regionally rooted, and driven by values rather than by individual interests. The ecosystem strengthens broad societal prosperity instead of merely economic growth, works toward restoration instead of depletion, and builds shared meaning rather than isolated optimisation.

With this white paper, we lay a common foundation for how we understand ecosystems, how we design them, and how we guide them. It serves as a compass for all who work with Circular Clarity or STGNL, and as an invitation to help build an economy where multiple value creation is central.

Ecosystems are not an instrument of the transition; they are the transition. And only through working together can we move our society, economy, and natural world into a truly future-oriented state.

This conclusion is not presented as a universal law, but as a position grounded in theory, practice, and observed limitations of linear and organisation-centric models.

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Glossary

This glossary provides working definitions of key terms as they are used within this paper. Where concepts originate from broader literature, definitions are adapted to reflect Circular Clarity's ecosystem-based and regenerative perspective.

Regeneration as the baseline. Ecosystems are designed to restore ecological and social systems, not merely reduce harm. Regeneration is a minimum requirement for long-term value.

Value distribution is integral. Ecosystem value only fully emerges when benefits—economic, social, ecological, and knowledge-related—are shared fairly across partners, communities, and future generations.

Relational governance over hierarchy. Effective ecosystems are coordinated through trust, transparency, and shared responsibility rather than command-and-control or purely contractual models.

Multiple value creation by design. Financial, social, ecological, relational, and purpose-driven value are defined together from the outset, with no single dimension optimised at the expense of others.

Place-based and context-specific. Ecosystems are rooted in specific regions and landscapes, responding to local ecological conditions, community needs, and institutional realities.

Long-term and intergenerational orientation. Ecosystem value unfolds over time; governance and investment choices must safeguard future capacity rather than extract short-term gains.

Continuous learning and adaptation. Ecosystems are treated as learning systems, with regular reflection, measurement, and adjustment to remain relevant and resilient.

Ecosystem & Collaboration

Ecosystem orchestration. The intentional coordination of roles, interactions, and value flows within an ecosystem, aimed at aligning diverse actors around shared goals without hierarchical control.

Backbone organisation / backbone support. An independent entity that provides coordination, governance, learning infrastructure, and continuity for an ecosystem, ensuring alignment with shared purpose and long-term outcomes.

Mission-anchored governance. A governance approach in which decision-making structures are explicitly designed to safeguard the ecosystem's social and ecological mission over time, preventing value capture or mission drift.

Ecosystem maturity. The developmental stage of an ecosystem, reflecting its capacity to coordinate actors, generate multiple forms of value, adapt to change, and sustain collaboration over time.

Ecosystem health. The overall vitality and resilience of an ecosystem, including its ability to generate value, withstand disruption, renew itself, and support diversity of roles and participants.

Alignment structure. The configuration of interdependent actors whose coordinated contributions are required for a shared value proposition to materialise (after Adner).

Co-creation. The process through which value is jointly created by multiple actors through interaction, shared learning, and complementary contributions, rather than by any single organisation.

Collective stewardship. Shared responsibility among ecosystem participants for the long-term health of ecological, social, and institutional systems on which the ecosystem depends.

Value & Economy

Multiple value creation. The simultaneous creation of ecological, social, economic, relational, and purpose-driven value, designed so that progress in one dimension reinforces rather than undermines the others.

Organisational value. Value created within a single organisation, typically measured through financial performance, efficiency, risk reduction, or innovation outcomes.

Ecosystem value. Value that emerges between organisations through collaboration, encompassing economic, social, ecological, relational, and knowledge outcomes, including how benefits are distributed across participants, places, and time.

System value. Value created at the level of broader socio-economic or ecological systems, such as reduced resource dependency, restored ecosystems, social equity, or progress toward long-term sustainability goals.

Broad prosperity. A conception of progress that goes beyond economic growth to include well-being, health, social cohesion, ecological stability, and future-proofing.

Distributive value. The way in which value created within an ecosystem is shared among participants, communities, and future generations, rather than concentrated among dominant actors.

Value concentration. The accumulation of benefits, power, or decision-making capacity within a limited number of actors, often undermining collaboration and long-term ecosystem resilience.

Non-economic rents. Social, ecological, or knowledge benefits generated through ecosystem collaboration that cannot be fully captured through financial metrics or market transactions.

Economy of Meaning (Purpose Economy). An economic perspective in which value is defined by positive contribution to people, society, and nature, rather than by financial growth alone.

Governance & Power

Relational governance. A mode of governance based on trust, transparency, shared responsibility, and dialogue, rather than hierarchical authority or purely contractual control.

Democratic value creation. Value creation processes that ensure equitable participation, shared decision-making, and access to benefits for all ecosystem participants.

Equity vs. equality. Equality refers to treating all actors the same; equity recognises different starting positions and capacities, and designs governance to ensure fair outcomes rather than identical inputs.

Value capture. The appropriation of ecosystem-level value by individual actors without corresponding contribution or redistribution, often weakening collective outcomes.

Power asymmetry. Unequal distribution of influence or control among ecosystem participants, which can distort decision-making and undermine collaboration if left unaddressed.

Shared accountability. Collective responsibility for outcomes, learning, and stewardship within an ecosystem, rather than accountability residing solely with individual organisations.

Ecology & Regeneration

Regenerative design. An approach to designing systems that actively restore and enhance ecological and social systems, rather than merely reducing negative impacts.

No-net-negative. A minimum participation condition requiring that ecosystem initiatives do not cause net harm across ecological, social, or relational dimensions; projects failing this threshold must be redesigned.

Planetary boundaries. Scientifically identified ecological limits within which human activity must operate to maintain Earth-system stability.

Ecological ceilings & social foundations. The upper ecological limits and lower social thresholds used in Doughnut-based frameworks to assess whether systems meet human needs without exceeding planetary boundaries.

Place-based design. Designing ecosystems in response to the specific ecological, social, cultural, and institutional context of a region or landscape.

Measurement, Learning & Accountability

Compositional measurement approach. A method of assessing ecosystem value by combining multiple complementary frameworks and indicators, rather than relying on a single universal metric.

Multi-capital accounting. Measurement approaches that assess impacts and dependencies across financial, natural, social, human, and intellectual capital.

Impact monetisation. The translation of social and ecological impacts into monetary terms to support comparability, decision-making, and accountability.

Double materiality. A reporting principle that considers both how sustainability issues affect an organisation or ecosystem financially, and how the organisation or ecosystem affects society and the environment.

Shared measurement system. A set of indicators agreed upon by ecosystem participants to track progress, enable collective learning, and prevent selective reporting.

Learning system. An ecosystem designed to continuously reflect, adapt, and evolve through feedback, monitoring, and shared learning.

System-level indicators. Metrics that capture outcomes beyond individual projects or organisations, reflecting cumulative or structural change at ecosystem or societal level.

Transition & System Change

Circular transition. The shift from linear extractive economic models toward systems that retain, reuse, regenerate, and distribute value within ecological limits.

Systemic transition. A fundamental transformation of structures, incentives, behaviours, and institutions across sectors and scales.

Post-growth / degrowth. Economic perspectives that prioritise well-being, sufficiency, and ecological integrity over continuous expansion of material throughput.

Regenerative economy. An economy designed to restore ecological and social systems while meeting human needs within planetary boundaries.

Institutional learning. The capacity of organisations and ecosystems to embed lessons from practice into rules, norms, and governance structures.

Path dependency. The tendency of existing systems to persist due to historical choices, infrastructures, and incentives, even when better alternatives exist.