

# Exploring the Future of Social Economy in the Financial Sector: Sustainable Finance and Credit Cooperatives

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**ABSTRACT:** The growing urgency of global sustainability challenges, intensified by climate disasters and socio-economic disruptions, highlights the need for financial systems that integrate ethical principles and societal goals. Credit cooperatives and ethical financial institutions are emerging as key players in aligning financial activities with the Sustainable Development Goals (SDGs). Existing literature explores sustainable finance methodologies, innovative regulatory frameworks, and financial instruments like impact investing. However, the potential of credit cooperatives and digital finance in fostering sustainable development remains under-explored. This study analyses the intersection of sustainable finance and credit cooperatives, emphasising their role in advancing resilience, inclusivity, and sustainability within financial ecosystems. Using a qualitative approach, the study reviews recent literature, policies, and case studies to identify trends, challenges, and opportunities in social finance and credit cooperatives. It evaluates regulatory innovations, digital finance advancements, and innovative financial instruments to propose actionable recommendations to policy makers and practitioners. The objective is to provide insights into how sustainable finance models and credit cooperatives can bridge the gap between financial and social impact while fostering public policies that promote equity and innovation. Sustainable finance offers transformative potential for addressing global challenges. Credit cooperatives and technological advancements like blockchain and adaptive regulations can drive financial inclusion and sustainability. Future research should focus on empirical validation, hybrid financial instruments, and standardised impact metrics to enhance the scalability and effectiveness of sustainable finance initiatives.

**KEYWORDS:** Blockchains, credit cooperatives, innovative financial instruments, regulations, social impact, sustainable finance.

**ECONLIT DESCRIPTORS:** G21, Q01, O35, E61, L31, G32.

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**RESUMEN:** La creciente urgencia de los desafíos globales de sostenibilidad, intensificada por los desastres climáticos y las disrupciones socioeconómicas, resalta la necesidad de sistemas financieros que integren principios éticos y objetivos sociales. Las cooperativas de crédito y las instituciones financieras éticas están surgiendo como actores clave en la alineación de las actividades financieras con los Objetivos de Desarrollo Sostenible (ODS). La literatura existente explora metodologías de finanzas sostenibles, marcos regulatorios innovadores e instrumentos financieros como la inversión de impacto. Sin embargo, el potencial de las cooperativas de crédito y las finanzas digitales para fomentar el desarrollo sostenible sigue siendo poco explorado. Este estudio busca analizar la intersección entre las finanzas sostenibles y las cooperativas de crédito, enfatizando su papel en la promoción de la resiliencia, la inclusión y la sostenibilidad dentro de los ecosistemas financieros. Utilizando un enfoque cualitativo, el estudio revisa literatura reciente, políticas y estudios de caso para identificar tendencias, desafíos y oportunidades en las finanzas sociales y las cooperativas de crédito. Evalúa innovaciones regulatorias, avances en finanzas digitales e instrumentos financieros innovadores para proponer recomendaciones prácticas. El objetivo es proporcionar perspectivas sobre cómo las cooperativas de crédito y los modelos de finanzas sostenibles pueden cerrar la brecha entre el impacto financiero y social, al tiempo que fomentan políticas públicas que promuevan la equidad y la innovación. Las finanzas sostenibles ofrecen un potencial transformador para abordar los desafíos globales. Las cooperativas de crédito, junto con los avances tecnológicos como blockchain y regulaciones adaptativas, pueden impulsar la inclusión financiera y la sostenibilidad. La investigación futura debe centrarse en la validación empírica, los instrumentos financieros híbridos y las métricas de impacto estandarizadas para mejorar la escalabilidad y efectividad de las iniciativas de finanzas sostenibles.

**PALABRAS CLAVE:** Blockchain, cooperativas de crédito, instrumentos financieros innovadores, reglamentación, impacto social, finanza sostenible.

# Resumen amplio

## Explorando el Futuro de la Economía Social en el Sector Financiero: Finanzas Sostenibles y Cooperativas de Crédito

### Objetivos

La creciente urgencia que plantean los desafíos de sostenibilidad a nivel global, acentuada por los desastres climáticos y las disrupciones socioeconómicas, subraya la necesidad crítica de sistemas financieros que integren principios de sostenibilidad y objetivos sociales. En este contexto, las finanzas sostenibles y las cooperativas de crédito se posicionan como actores clave.

El presente estudio se propone analizar la intersección entre las finanzas sostenibles y las cooperativas de crédito, enfatizando su papel en el fomento de la resiliencia, la inclusión y la sostenibilidad dentro de los ecosistemas financieros. Ante la urgencia de los retos globales en sostenibilidad y la creciente necesidad de modelos financieros con impacto social y ambiental positivo, el trabajo explora cómo las instituciones de economía social pueden complementar e incluso transformar los sistemas financieros tradicionales. Se busca identificar tendencias emergentes, marcos regulatorios innovadores y herramientas financieras híbridas y digitales que permitan alinear el rendimiento financiero con metas sociales.

### Metodología

La investigación adopta un enfoque cualitativo, basado en una revisión exploratoria de literatura científica reciente, documentos de políticas públicas y estudios de caso. Esta metodología permite identificar los desarrollos más relevantes en el campo emergente de las finanzas sostenibles y de la economía social. Aunque no se trata de una revisión sistemática, el criterio de selección prioriza la relevancia temática y la contribución conceptual a la intersección entre innovación financiera, inclusión social, sostenibilidad y las herramientas digitales como blockchain y tokens de impacto social.

### Resultados e implicaciones

Los hallazgos de este estudio revelan una serie de resultados e implicaciones significativas, destacando la emergencia de innovaciones regulatorias, que incluyen sandboxes regulatorios sociales, los cuales permiten la experimentación controlada de productos financieros innovadores; nuevas formas jurídicas híbridas como las “Benefit Corporations” y las Sociedades de Interés Colectivo (BIC), que posibilitan a las organizaciones perseguir simultáneamente objetivos económicos y sociales; y garantías públicas especializadas, que reducen el riesgo para los inversores y facilitan el acceso al capital para empresas sociales. En el ámbito de los instru-

mentos financieros sostenibles, se enfatiza la Inversión Socialmente Responsable (ISR), con especial atención a la inversión de impacto y la relevancia de los bonos sociales, verdes y sostenibles, junto con las microfinanzas y la filantropía de riesgo, como herramientas vitales para el desarrollo social. Las cooperativas de crédito y los bancos cooperativos son identificados como actores distintivos y subexplorados, cuya estructura mutualista y gobernanza comunitaria los posicionan como vehículos naturales para impulsar la inclusión financiera y la resiliencia en el sector. Además, se exploran las finanzas híbridas, que combinan capital público, privado y filantrópico para abordar desafíos sociales complejos, incluyendo los Bonos de Impacto Social (BIS) y el cuasi-capital con préstamos participativos, instrumentos flexibles que apoyan inversiones a largo plazo sin comprometer la misión. Finalmente, el estudio profundiza en las finanzas digitales sociales, destacando el potencial de la tecnología blockchain y los Tokens de Impacto Social (SITs) para mejorar la transparencia, la democratización de la inversión y el acceso al capital, a pesar de los desafíos regulatorios y la brecha de alfabetización digital.

## 4. Conclusión y Valor Original

Este estudio proporciona una visión novedosa de cómo las cooperativas de crédito, respaldadas por condiciones regulatorias adecuadas y el acceso a herramientas innovadoras, pueden desempeñar un papel transformador en la alineación de las prácticas financieras con los objetivos sociales y ambientales. La investigación ofrece una alternativa viable a los modelos financieros convencionales, destacando la importancia de la misión y la comunidad en el sector financiero.

El valor de este trabajo radica en su análisis multidimensional, que integra los desarrollos recientes en regulación, instrumentos financieros e innovación digital en el contexto de la economía social y las cooperativas de crédito. Al examinar los sandboxes regulatorios, las formas jurídicas híbridas, las garantías públicas, los bonos de impacto social, el cuasi-capital, los préstamos participativos y, en particular, el potencial de blockchain y los tokens de impacto social, el estudio ofrece una visión integral y prospectiva. Se destaca cómo la innovación financiera puede reforzar el papel de la economía social en la construcción de ecosistemas financieros más inclusivos, resilientes y sostenibles.

A pesar de sus limitaciones, al no ser una revisión sistemática de la literatura, el estudio sienta las bases para una investigación más robusta y una formulación de políticas informada en este ámbito en evolución. Sugiere que la validación empírica, la exploración de instrumentos financieros híbridos y la estandarización de métricas de impacto son cruciales para mejorar la escalabilidad y efectividad de las iniciativas de finanzas sostenibles.

# 1. Introduction

The increasing urgency of sustainability challenges, amplified by the frequency of climate disasters and socio-economic shocks, such as the COVID-19 pandemic, has highlighted the social economy's critical role in shaping the financial sector's future. Sustainable finance has emerged as an important framework to direct financial resources towards achieving the Sustainable Development Goals (SDGs) and aligning economic activity with broader societal goals. Moreover, the integration of ethical principles into traditional financial practices not only seeks to generate economic benefits but also aspires to address social and environmental challenges through business models that promote inclusion and community development.

Within this context, credit cooperatives and ethical financial institutions have become key players, leveraging their community-oriented financial practices to support financial inclusion and sustainable development. Despite the growing recognition of these practices, an urgent need exists to further explore how these institutions can offer effective alternatives to conventional financing methods, particularly considering the ongoing economic and ecological uncertainty. Consequently, current literature reflects an emerging niche investigating the influence of social finance in creating a more just and resilient financial system.

This article provides an exploratory literature review of recent academic and policy developments at the intersection of sustainable finance, social innovation, and credit cooperatives. Rather than offering an exhaustive or systematic review, our goal is to highlight promising trends, tools, and institutional mechanisms that could help reshape the role of social economy actors in the financial sector. The methodology consists of a qualitative content analysis of selected scholarly works, policy reports, and case studies that represent the most relevant contributions in this emerging field. This review does not aim to be exhaustive. Instead, it offers a perspective on potential research directions and conceptual frameworks that may support innovation in social financing and inform effective policy development.

This paper contributes to the ongoing discussion on sustainable finance and the social economy by offering a multi-dimensional analysis aligned with recent regulations, financial instruments, and digital innovation developments. First, it examines how innovative regulatory frameworks, such as regulatory sandboxes, hybrid legal forms, and specialised public guarantees, are being used to support the integration of social economy actors into the broader financial system. These frameworks play a critical role in enabling experimentation, balancing innovation with public interest, and creating an environment conducive to the growth of sustainable finance. Second, the study offers a comprehensive review of financial instruments used to generate social impact, including social bonds, green bonds, impact investing tools, and participatory securities. Particular attention is paid to their applicability within credit cooperatives and their role in promoting financial inclusion and community development. Finally, the paper explores the transformative potential of digital and decentralised finance, focusing on how blockchain technologies and social impact tokens can enhance transparency, stakeholder participation, and access to capital for social enterprises. By bridging these dimensions, the paper advances our understanding of how regulatory and financial innovation

can reinforce the role of the social economy in building more inclusive, resilient, and sustainable financial ecosystems.

The remainder of the paper is organised as follows. Section 2 outlines the regulatory landscape and its evolution in response to technological and social trends. Section 3 reviews key instruments in sustainable finance. Section 4 presents emerging hybrid and digital instruments. Section 5 discusses avenues for future research, and Section 6 concludes by reflecting on the paper's findings and limitations.

## 2. Innovative regulatory frameworks

Emerging trends are reshaping the social economy enterprises' financing landscape. These include blended financing, which leverages philanthropic or public capital to attract commercial investments in high-impact projects, and sustainable financing that integrates Environmental, Social, and Governance (ESG) considerations into financial decisions (Mani, 2024). Financial Technology (FinTech) and Artificial Intelligence (AI) are also creating new sustainable financing opportunities for the Third Sector through adapted regulatory frameworks and public guarantees (Gómez Álvarez, 2023). These innovations are essential to the future of the social economy's future in the financial sector, particularly in adapting to digital technologies, sustainable finance, and new cooperative models (Tsindeliani et al., 2021). According to the IFRS Foundation (2024), these frameworks must balance innovation promotion with consumer protection, establish social and environmental impact metrics, manage emerging risks like greenwashing and data protection, and facilitate cross-border cooperation while maintaining regulatory coherence to avoid excessive compliance costs. Decentralised finance (DeFi) introduces unique regulatory challenges requiring clear guidelines to legitimise DeFi projects while ensuring consumer protection and financial stability (Bodo & de Filippi, 2024). As value chains become decentralised, less regulated areas become reconcentrated, suggesting that regulation should focus on these areas for effective oversight. Proposals include "embedded regulation" in DeFi design, mandatory code audits, and automated regulatory requirements in smart contracts (Park, 2023).

Regarding FinTech development, research shows a complex relationship with banking risk. Initially, FinTech can exacerbate risks, but this relationship follows an inverted U-shaped pattern, with risks decreasing as FinTech matures (Ni et al., 2023). Allen (2023) identifies three regulatory approaches for FinTech: accommodation, domestication, and confrontation. While adaptive regulation typically involves adjusting to technological and market changes, the author criticises the accommodation approach for its insufficient safeguards, instead suggesting a more proactive and precautionary "domestication" to protect public interests better. Finally, anti-money laundering (AML) regulations must evolve alongside FinTech growth. Successful frameworks require clear regulatory environments, transparent processes, and public-private sector collaboration while maintaining market integrity through a hierarchical approach (Kirimhan, 2023).

In the case of cooperatives and social organisations, regulation requires robust frameworks that consider the sector's unique characteristics and the relationship of some institutions, such as social firms, with social services (Lahat et al., 2020). This suggests the need for specialised regulatory approaches that can balance innovation with public protection while accommodating the distinct nature of social enterprises.

This calls for tailored mechanisms that accommodate the distinct identity of these entities while safeguarding the public interest. To this end, three regulatory innovations have emerged as particularly significant: (i) regulatory sandboxes, which allow for controlled experimentation with financial models; (ii) hybrid legal forms, which enable entities to pursue both social and economic goals; and (iii) specialised public guarantees, which lower investor risk and enhance access to capital.

Together, these innovations are forming a more adaptive and inclusive regulatory ecosystem supporting social economy transformation.

## 2.1. Social regulatory sandbox in finance

Regulatory sandboxes, controlled environments for testing innovative products and services, have emerged as crucial tools for fostering innovation in social finance and the social economy, particularly in addressing challenges faced by social economy enterprises and sustainable finance initiatives. Originally developed in the FinTech sector, they now operate in both developed and developing countries, facilitating innovation by allowing companies to navigate complex regulatory landscapes with reduced burdens (Ahern, 2021). The sandbox model has expanded beyond finance into sectors such as healthcare and transportation, demonstrating its versatility in addressing disruptive innovations (Tsai et al., 2019), while innovation hubs incorporating sandbox elements may provide a more stable framework for fostering FinTech ecosystems (Buckley et al., 2019).

Social interactions within sandboxes produce mixed effects. On the one hand, they promote regulatory knowledge, improve risk management, and enhance participants' legitimacy. On the other hand, they may introduce trust gaps or lead to competitive distortions by giving participating firms privileged market access (Alaassar et al., 2020; Knight & Mitchell, 2020). Some critics, like Brown and Piroška (2021), argue that sandboxes may inadvertently facilitate "risk washing" rather than effective oversight, potentially accelerating the transition to market-based financial systems and contributing to social stratification.

In this vein, Ahern (2021) advocates for a coordinated response to regulatory sandboxes, highlighting their potential while addressing key challenges, such as regulatory lag in adapting to rapid technological evolution, regulatory friction hampering cross-border operations, fragmented regulatory frameworks creating confusion; resource allocation between short-term sandbox implementation and long-term regulatory development; member state resistance to harmonised approaches; and the need for supervisory authorities to adapt to new market realities.

These complexities underscore the importance of designing sandboxes that not only permit innovation but also uphold transparency, inclusivity, and social outcomes.

## 2.2. New hybrid legal forms

The global emergence of hybrid legal forms marks an important shift in how legal systems accommodate organisations combining financial and social missions. Traditional legal frameworks, designed for either profit or non-profit purposes, have proven inadequate for modern entities that seek to blend commercial success with positive societal impact. New legal forms such as Benefit Corporations (BCorp) have emerged to better integrate corporate methods with social missions.

BCorp, primarily a US legal structure recognised in most states, is more commonly known as Benefit and Collective Interest Companies (BIC) in Latin American countries (such as Colombia, Ecuador, Peru, Uruguay or Panamá) and Spain or “Sociétés à Mission” in France; Società Benefit in Italy. These legally authorised commercial enterprises can distribute profits while ensuring that their economic and commercial activities are subordinated to their statutory mission of generating positive economic, social, and environmental impacts. BIC companies are commercial entities that obtain their “BIC” status through legal recognition by the State, with each country having the legislative freedom to define the legal framework governing these companies and the public institutions responsible for their supervision and promotion (Montiel-Vargas, 2022; Villalobos & Correa, 2025). At the European level, the diversity of the landscape, integrating different approaches to BCorp, suggests to some authors, such as Ventura (2023), the need for a single European model for dual-purpose companies.

New Zealand’s case further illustrates this global trend with proposals for an “Impact Company” that combines limited company characteristics with specific requirements for ensuring social mission compliance, including dividend distribution limits and expanded director obligations (Anderson, 2022).

Regarding financing mechanisms, social entrepreneurs can operate efficiently by combining grants with various forms of investment capital, progressing from initial grants to venture capital through hybrid instruments (Martin, 2015). This trend extends to hybrid financing in thin capitalisation situations, particularly relevant in multinational contexts (Klostermann, 2007).

Looking forward, blended financing arrangements are expected to increase with a growing emphasis on standardisation and transparency (UBS Optimus Foundation, 2024). This financing approach leverages philanthropic or public capital to catalyse commercial investments in high-impact social and environmental projects, representing a significant evolution in how hybrid organisations access capital. Such legal and financial hybridity lays the groundwork for participatory securities and quasi-equity instruments explored in Section 4, particularly when adapted to the mission-driven nature of credit cooperatives.

## 2.3. Specialised public guarantees

Specialised Public Guarantees in the fields of social finance refer to government-provided protection measures that enhance legitimacy and encourage investment in social enterprises.

They offer tax relief and financing guarantees, promoting public-private partnerships for social impact (Lehner & Nicholls, 2017).

These government-backed guarantees support the funding of social or cooperative projects, reducing investor risk. They are crucial for the creation and sustainability of cooperatives and other Third Sector entities. These guarantees, such as those provided by Reciprocal Guarantee Societies (SGR), can alleviate the challenges faced in obtaining bank credits, enabling sustainable entrepreneurial initiatives to thrive (Sepúlveda-Molina et al., 2021).

Additionally, it is essential to implement public policies tailored to the specific needs of groups such as women in the social economy and to foster a more equitable environment through training and advisory services (Bastida et al., 2024).

## 3. Sustainable Finance

### 3.1. Socially responsible investment

Socially Responsible Investment (SRI) combines financial returns with social and environmental issues through various methodologies. According to Del Giudice (2019), SRI methodologies are generally divided into ex-ante and ex-post approaches. On the one hand, ex-ante strategies include exclusion-based screening, norms-based screening, the Best-in-Class approach, and ESG integration, which targets harmful industries, adopts filters based on international standards in terms of environment and human rights, promotes ESG leaders, and incorporates ESG factors into financial analysis, respectively. On the other hand, ex-post strategies, in contrast, involve thematic investments and engagement practices, such as monitoring sustainability-focused projects and the influence on corporate practices through shareholder action, respectively. Impact investing connects both stages of the investment process: it identifies high-impact projects before investing and ensures measurable outcomes after the investment is made. These methodologies allow asset managers to align financial goals with sustainability and ethical objectives.

Given that impact investing is characterised by the highest growth rate, we have chosen to focus on it. The Global Impact Investing Network (2019) defines impact investing as “investments made with the intention to generate positive, measurable social and environmental impact alongside a financial return.” Its key characteristics include the intention to generate positive, measurable social and environmental impact alongside a financial return, which may range from below-market to market-rate depending on the investor’s goals, diverse financial instruments ranging from debt to equity, and a commitment to impact measurement and transparency.

Regarding debt, impact investing instruments are social impact bonds and lending-based crowdfunding for the embryonic phase of the investment process, microfinance and social or green or sustainable bonds for the first development phase. Regarding equity, impact investing

instruments are equity-based crowdfunding for the embryonic phase and venture philanthropy for the first development phase.

While the following paragraph is dedicated to the most innovative financial instruments used in the early stages, now we focus on the tools typically chosen during the development phase.

When considering debt, we begin with microfinance, one of the earliest social impact investments. Originally designed to support social business in developing countries, microfinance targets the “base of the pyramid,”<sup>1</sup> unbankable but creditworthy individuals. The financial crisis later facilitated its expansion into developed countries hit by the downturn (Saeed, 2014). Even though microfinance has many different definitions, this term is usually used to indicate a set of financial services (such as credit, savings, and insurance) offered to promote financial inclusion among individuals living in poverty or facing social and economic vulnerability. It broadly comprises two categories: (i) productive microcredit, which supports micro-entrepreneurship and self-employment, and (ii) social microcredit, which helps vulnerable individuals access basic goods and services during times of temporary financial difficulty.

Social, green, and sustainable bonds represent another significant component of the impact investing landscape. Social bonds channel capital toward high-impact social projects and offer investors the option to prioritise general-interest objectives (for example, the implementation of initiatives able to create value for society) alongside financial returns (for example, a return consistent with the risk perceived by investors according to Markowitz (1952)). Social bonds can be issued using two different models: the first one allocates a portion of the amount collected to social projects as a donation, announced pre-issuance and made after the placement, while the second directs all raised capital toward financing social entrepreneurship initiatives. Both models require strong partnerships between the issuer, which is usually a bank and has a strong relationship with the community, and credible, impact-oriented organisations with stable cash flows and recognised efficiency.

On the other hand, green bonds have the same characteristics as traditional bonds (listed or unlisted). However, their issuance is linked to projects that generate a positive environmental impact, such as energy efficiency, renewable energy, sustainable use of land, and circular economic solutions. They have experienced extraordinary growth rates since 2007, when the European Investment Bank (EIB) issued the first green bond. The growing attention of all the main development banks, such as the EIB, the World Bank and the Asian Development Bank, on environmental sustainability is one of the reasons for the growth of green bonds, although, since 2013, even single corporations have issued them (Flammer, 2021). Although there is no universal standard for certifying green bonds, despite the need for transparency, integrity, consistency, and comparability, three primary frameworks offer guidance: the Green Bond Principles (GBPs) by the International Capital Market Association (ICMA), the Climate Bond Standards (CBSs) by the Climate Bonds Initiative, and the EU Green Bond Standards (EU GBSS). While the first two are voluntary, the EU standard imposes binding rules for eligibility and compliance. Sustainable bonds are a combination of social and green bonds we have just de-

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1. This term refers to the segment of the global population living on less than \$2.50 per day.

scribed, as they offer the opportunity to combine financial objectives with those of social and environmental sustainability.

When we pass from the debt side to the equity side, we focus on venture philanthropy, a series of initiatives aiming to build stronger social organisations by providing them with financial and non-financial support to increase their social impact. Its central vehicle, the so-called social impact fund, aims to generate social impact regardless of the category of financial products it invests in. It usually offers three types of capital: financial, intellectual, and social. While the first capital can be represented by non-repayable funds, loans, or instruments similar to equity, the second and third are a set of non-financial services and networks of potential investors provided to beneficiary organisations for the investment period, respectively. In social impact funds, the latter two capitals are more prominent than traditional funds, emphasising long-term ties with non-financial partners, knowledge creation, and performance measurement.

In general, the financial performance of sustainable investments remains debated. Some studies (Bauer et al., 2005; Flammer, 2015) find no clear link between ESG mandates and superior funds' performance. On the contrary, others suggest that sustainability-linked funds may offer greater resilience during crises (Das, 2018) and exhibit lower risk due to higher ESG ratings (Nofsinger & Varma, 2014; Becchetti et al., 2015; Henke et al., 2016).

The literature has shown similar results if we move from mutual funds to single corporations. In general, if we focus on firms and consider value creation through sustainability in the long term from a financial point of view, it is necessary to consider both cash flows and riskiness. In general, environmental and social sustainability generates investments, thanks to which the firm expects future benefits<sup>2</sup>. The impact of environmental and social dimensions on cash flows is uncertain as they generate certain costs against uncertain benefits, such as improved production efficiency, market positioning, and sales, thanks to a better reputation. In contrast, the issuers characterised by high ESG ratings appear less risky, that is, less characterised by lower volatility in price trends. In particular, high-ESG rating firms seem to have lower specific exposure to ESG risks (Sassen et al., 2016), justified by the reduction in fraudulent conduct against consumers, greater attention to the production chain and, in general, lower exposure to litigation. The same firms also have a lower exposure to systematic risk, which is justified by the greater ability of companies to absorb and manage shocks of a systemic nature. The higher resilience of these firms decreases equity beta, which, in turn, implies a reduction in the cost of equity capital and, therefore, in the after-tax weighted average cost of capital that is the correct discount to use in the discounted cash flow model. In other words, sustainability acts more as a mechanism for risk reduction and long-term resilience than short-term financial gain.

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2. *A good corporate governance system does not share the same materiality as the previous two factors: it does not require investments but often explains the other two sustainability factors.*

## 3.2. The cooperative world

Following the discussion on SRI methodologies and impact-oriented financial instruments, it is essential to consider the role of financial institutions that are structurally and missionally aligned with social and environmental objectives. Among these, credit cooperatives and cooperative banks represent a distinctive and underexplored actor in the landscape of sustainable finance. Their organisational models, grounded in mutualism and community-based governance, make them natural vehicles for advancing financial inclusion and long-term social impact.

Traditional financial cooperatives play a significant role in the financial systems of many countries worldwide, and they operate across a wide variety of legal and regulatory frameworks (McKillop et al., 2020). The category of financial cooperatives is broad and composed of many types of intermediaries such as cooperative banks, savings and credit cooperatives, credit unions (or *caisses populaires*), and *Shinkin* banks. Although structurally diverse, they share core values: prioritising member welfare, reinvesting profits into community development, and pursuing stability over profit maximisation.

Their role is especially prominent in providing access to capital for small and medium-sized enterprises (SMEs), households, and social enterprises, often in underserved or economically marginalised regions. Empirical evidence supports their contributions: Cooperative banks tend to maintain higher loan-to-asset ratios and show greater resilience during financial crises compared to commercial banks (Becchetti et al., 2016; Ramcharan et al., 2016). Their engagement in local economies enables them to leverage soft information, support relationship lending, and reduce credit exclusion.

Geographically, cooperative financial systems are highly heterogeneous. In Europe, for instance, two primary organisational forms prevail: networked systems of independent small banks and integrated groups with centralised functions. Both models contribute to regional development, though their governance and risk-sharing mechanisms differ (Beccalli et al., 2023). These cooperative frameworks often play a stabilising role in less dynamic regions, as demonstrated by studies from France (Sfar & Ben Ouda, 2016) and Spain (Carchano et al., 2021), where cooperative banks have supported credit access and economic activity in low-growth areas.

During periods of systemic stress, such as the 2008 financial crisis, cooperative banks were among the few institutions that continued lending to local economies, reinforcing their countercyclical capacity (Ramcharan et al., 2016). This institutional resilience is closely tied to their governance structure, prioritising long-term member benefits over short-term profitability. Moreover, cooperatives have shown the potential to support climate action and territorial cohesion through mechanisms like interterritorial cooperative funds and revolving funds for cross-border regions (Wasser et al., 2020). However, research on these innovations remains limited and case-based, underscoring the need for further empirical inquiry into how cooperative finance can be scaled to address broader sustainability challenges. Furthermore, as digital innovation reshapes financial service delivery, credit cooperatives are well-positioned to inte-

grate inclusive digital tools into their operations. Studies show that digital finance, delivered via mobile and online platforms, can enhance efficiency, reduce costs, and expand financial access to previously underserved populations (Ozili, 2021). Cooperatives' community-based structure offers a compelling alternative to purely commercial digital finance models, particularly when supported by policies that promote equitable access and digital literacy.

In this context, credit cooperatives serve not only as traditional financial actors but also as experimental spaces for blended and hybrid financial instruments that align economic returns with long-term social missions. These innovative tools, discussed in the following section, include participatory loans, subordinated debt, and social bonds tailored to cooperative values and needs.

## 4. Innovative financial instruments: hybrid finance for social impact

Hybrid finance represents a strategic approach that combines public, private and philanthropic capital and creates a collaborative framework to address complex societal challenges. The multistakeholder model enables sharing risks, resources and rewards across stakeholders. Combining instruments such as equity and debt with innovative tools such as impact investing, hybrid finance aims to balance financial return with positive social and environmental outcomes. This paradigm not only increases capital flow into the social sector but also fosters cross-sector cooperation and accountability (Arena et al., 2016; Dahbi et al., 2024).

The Social Impact Bonds (SIB) is a prominent example within this domain. Introduced in the UK in 2010, SIBs are performance-based instruments that attract private capital to fund public services. Investors are repaid by public authorities only if the predefined social outcomes are achieved. Indeed, SIBs have gained substantial interest due to their potential to mitigate public sector risks and enhance the effectiveness of social programs such as homelessness, education, and recidivism (Mahomed, 2021). Despite their growing popularity, the empirical evidence of SIBs' impact is still debated. While many case studies suggest that SIBs foster innovation and encourage outcome-based orientation, the overall empirical evidence is limited. Most research in the field relies on qualitative or mixed-method approaches, often based on small-scale pilot projects (Edmiston & Nicholls, 2018; Fraser et al., 2018). This limits the generalizability of findings and raises concerns about the scalability and replicability of the model. Furthermore, the evaluation mechanisms themselves are frequently complex, expensive and prone to methodological bias, raising concerns about transparency and replicability (Fox & Morris, 2021).

Moreover, SIBs raise deeper questions about the role of finance in social service delivery. Scholars such as Maier and Meyer (2017) have argued that SIBs can unintentionally prioritise investor returns over social outcomes, leading to the financialisation of social issues. This dynamic creates tensions between financial logic and social goals, especially when private investors influence project design and implementation significantly. Such arguments may lead

to mission drift, where projects are tailored to measurable outcomes that satisfy investors but do not necessarily address the root cause of social problems (Pandey et al., 2018). Additionally, complex governance structures and multistakeholders' contracts can create bureaucratic burdens, especially in resource-constrained settings (Fraser et al., 2020).

Due to these structural and philosophical constraints, credit cooperatives have not played a prominent role in SIB financing. Their mission-driven nature, emphasis on member participation, and focus on financial inclusion are often better aligned with other hybrid instruments that emphasise flexibility, autonomy, and long-term impact.

One such alternative is quasi-equity, which encompasses instruments like subordinated debt and participatory loans. These tools blend debt and equity features, offering flexible capital that supports long-term investments without compromising mission integrity and are particularly suitable for social enterprises and cooperatives (Handford, 2005). Moreover, these instruments push to operate with more result-oriented strategies to generate a high social impact.

During the COVID-19 crisis, quasi-equity played a stabilising role by helping businesses sustain operations during economic uncertainty and recovery phases (European Commission, 2022; EIB, 2023). A notable case is the Rabobank Member Certificates, subordinated loans issued by the Dutch credit cooperative Rabobank between 2000 and 2005. These certificates strengthened the bank's capital base while enhancing member engagement, as they offered both financial returns and limited governance rights (Groeneveld, 2016; Poli, 2019). Today, they are listed as Rabobank Certificates on Euronext Amsterdam (Groeneveld, 2016). While this model has proven successful, it also brings challenges, such as governance challenges, particularly around balancing democratic participation with investor expectations and diverse cooperative structures (Chaddad & Cook, 2004).

Another promising tool is the Prêt Participatif or participatory loans, which offer both financial and governance rights to lenders. These loans reinforce cooperative values by involving stakeholders in decision-making and risk-sharing (Limonta, 2022). Participatory loans have enabled cooperative banks to fund SMEs and social projects in underserved or niche markets, supporting economic inclusion while maintaining autonomy. However, they are not without risks, such as regulatory uncertainties, potential over-indebtedness, and dependence on external advisors, which can inhibit their effectiveness.

An illustrative case is the Sardinian Fund for the Development of the Cooperative System, launched in response to the 2008 financial crisis. The fund successfully improved credit access for over 100 cooperatives in sectors such as tourism, renewable energy, and social services sectors (Podda, 2024). Yet, it also exposed structural weaknesses, such as over-reliance on external consultancy and inconsistent institutional support. These limitations emphasise the need for capacity building within cooperatives to ensure that hybrid financial tools reinforce, and not replace, autonomous governance and mission focus.

Taken together, these examples underscore the adaptability of hybrid finance to cooperative models. When properly designed, these instruments can enhance financial resilience while preserving mission integrity and participatory governance. Moreover, these hybrid instru-

ments reflect a growing consensus that finance must evolve to accommodate broader social objectives. As noted by Geobey et al. (2012), social finance has emerged as a distinct pillar aimed at mobilising capital for innovation. Moreover, Moore et al. (2012) argue that scaling social impact requires financing tools that match the unique characteristics of social enterprises, including long-term commitment, accountability, and community engagement.

As financial innovation continues to evolve, digital tools now offer a new generation of hybrid instruments, which are explored in the following section.

## 4.1. Social digital finance: Blockchain “for good” and social impact tokens

The intersection of finance, digital technology, and social impact has opened a new frontier in social innovation. This emerging field, known as Social Digital Finance (SDF), applies decentralised technologies to funding models that prioritise environmental and social objectives. Blockchain’s core features, such as transparency, immutability, decentralisation, and democratisation, make it especially attractive for a financial ecosystem focused on trust, accountability and inclusivity (Lumineau et al., 2021; Mahomed, 2021; Sansone et al., 2023). Blockchain can help reduce the reliance on intermediaries, enabling peer-to-peer transactions that are more efficient and cost-effective. It can also provide auditable, real-time data to stakeholders, allowing better monitoring and evaluation of social impact. This aligns well with cooperative principles of transparency and collective decision-making (de Villiers et al., 2021). Yet, despite this promise, the academic focus has remained largely on blockchain’s role in supply chains or data security, leaving its applications in social innovation relatively underexplored (Sansone, 2023; Semenzin, 2023).

Drawing on this gap, Sansone (2023) highlights four key advantages of blockchain for social ventures: (i) enhanced credibility through secure transactions, (ii) improved accountability via transparency, (iii) decentralised control that empowers stakeholders, and (iv) better access to services and information for marginalised groups. These benefits align closely with the ambitions of the Sustainable Development Goals (SDGs) and cooperative participatory governance.

One of the most innovative developments of blockchain in social finance is the emergence of Social Impact Tokens (SITs). These digital assets are issued to represent engagement in or support a social project. SITs can be designed as rewards, governance tools, or exchangeable currency within a specific ecosystem. By doing so, they create a tangible link between social behaviour and economic value, reinforcing long-term participation and stakeholder loyalty (Mahomed, 2021; Domenicale et al., 2024). SITs are particularly relevant to social enterprises and credit cooperatives seeking to deepen their community roots while expanding access to capital. Their programmable nature allows them to be embedded with ethical rules, enabling automatic rewards for sustainable behaviour or penalising undesirable actions. Moreover, by enabling fractional ownership or participation, SITs can democratise investment and decision-making in ways that traditional finance cannot (Viano et al., 2022; Domenicale et al.,

2024). Risman et al. (2021) further underscores the role of digital payment systems in facilitating investments in social initiatives, especially in underserved regions. Evidence from early initiatives illustrates the potential of SITs. For instance, the Plastic Bank initiative encourages people in countries such as the Philippines, Indonesia, Brazil, Egypt, and Thailand to collect plastic waste in exchange for digital tokens. These tokens, stored in a digital wallet, can be redeemed for essentials such as food, water, or education, creating a circular economy that supports both environmental and social goals (Mahomed, 2021). Similarly, local projects such as CommonsHood demonstrate how SITs can be tailored to regional development. By enabling communities to issue and use their own tokens for tourism and civic engagement, these platforms foster cooperation among local actors, from citizens and businesses to associations and institutions, while reinforcing participatory governance (Sansone, 2023; Domenicale et al., 2024).

These examples show that SITs are not just technical tools, but they represent a shift toward cooperative and values-driven finance. Despite their promise, SITs face implementation challenges. These include regulatory uncertainty, digital literacy gaps, technical complexity, and concerns around equitable access (Christ & Helliard, 2021; Calandra et al., 2022). In addition, as Zhao et al. (2023) note, the success of token-based fundraising tools depends significantly on the visibility and authenticity of a project's social mission. If these elements are addressed, SITs could become a transformative force in social digital finance and an effective vehicle for achieving the SDGs.

## 5. Future research avenues

This study points out several areas for future research to deepen the understanding and application of sustainable finance in the social economy. One critical avenue lies in exploring the transformative role of technology in mutual funds, particularly digital mutual funds leveraging blockchain, AI, and digital platforms. These tools enhance operational efficiency, predictive capabilities, and transparency in fund management, yet their application raises questions about investor protection, ethical practices, and data security. Investigating the effects of digital disintermediation on governance and relationships within these funds would be valuable.

Advancing social impact measurement also remains a priority. Future research should focus on developing robust metrics to assess financial and social returns, addressing challenges such as finding monetary proxies for non-market goods. Pricing models, such as incorporating a “gamma” score for socio-economic impacts, could enhance decision-making frameworks. Improving data collection and transparency in social finance is essential for resource allocation and outcome monitoring.

Empirical research into hybrid financial instruments, such as SIBs and participatory securities, offers further opportunities. Investigating credit cooperatives' integration into these frameworks could leverage their community-based expertise. Additionally, research into participatory securities' effects on cooperative governance, member engagement, and financial

health would help refine their use. Exploring innovative governance models and FinTech's role in managing these tools will enrich understanding.

Social impact tokens represent an exciting area of research with significant potential for achieving financial and social objectives. Studies should investigate their design, focusing on ecosystems that prioritise equity and sustainability while addressing risks like speculative behaviours. Research into regulatory strategies for social tokens, particularly balancing innovation with safeguards, is crucial. However, challenges such as regulatory uncertainties, speculative risks, and technical barriers must be addressed to fully exploit their potential in achieving social and economic goals. The lack of standardisation and speculative behaviour may undermine their social objectives, while the technical complexity of token-based systems often necessitates specialised expertise. Moreover, there are significant limitations, such as the risk of unequal access to technology among community members, the need for substantial initial investments from public actors, and concerns about usability, ownership, and privacy.

By addressing these gaps, future research can advance innovative financial solutions, foster inclusivity, and support the development of equitable and sustainable financial ecosystems.

## 6. Conclusions

This paper explores the current state and future directions of the social economy within the financial sectors, focusing on the intersection of sustainable finance and credit cooperatives. By addressing the conceptual foundations of sustainable finance, analysing regulatory innovations, and examining financial instruments for social impact, the study provides a new understanding of how credit cooperatives can serve as important actors in fostering resilience, sustainability and inclusivity in finance. This approach seeks to offer viable alternatives to conventional financial models.

While the main contributions have already been outlined, this conclusion reflects on the broader implications of the findings and their relevance for future research and practice. The analysis suggests that credit cooperatives, supported by appropriate regulatory conditions and access to innovative tools, could play a transformative role in aligning financial practices with social and environmental goals. However, the extent and scalability of this role remain subjects for further investigation.

It is important to acknowledge the primary limitation of this paper. The study does not aim to be a systematic literature review and does not follow a formal methodological protocol. As such, the selection of sources was guided by thematic relevance rather than strict criteria, and the findings should be considered interpretive and indicative rather than comprehensive or conclusive. Additionally, while the focus on credit cooperatives offers valuable insights, the findings may not be universally applicable to other financial entities. These limitations underscore the need for further empirical research, particularly case studies and primary data collection, to validate and expand upon the insights presented here.

Despite these constraints, the paper aims to contribute to a better understanding of current dynamics in the field of sustainable and social finance. By identifying relevant themes and raising questions for future inquiry, it provides a foundation for more robust research and informed policymaking in this evolving domain.

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