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Review

The Synergy of Community, Government, and Circular Economy in Shaping Social Housing Policies

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Abstract: Despite state efforts to enhance affordability, access to adequate housing, deemed a fundamental human right, remains a global challenge. Projections indicate a looming housing deficit affecting 1.6 billion people by 2025, necessitating an integrated approach aligning environmental preservation with housing development. Circular Economy (CE) principles are identified as instrumental in advancing sustainable Social Housing Policies (SHPs). A Systematic Literature Review (SLR) placed best practice documents establishing a positive correlation between CE principles and increased social housing supply. The circularly built environment is recognised for reducing waste, carbon emissions, and resource depletion. However, this research proposes a nuanced perspective, asserting that integrating CE principles addresses housing needs and fosters environmental sustainability, job creation, and economic growth. Crucially, community, government, and the circular economy emerge as pivotal actors in overcoming challenges inherent in SHPs. This study contributes significantly to the discourse on housing policies and sustainability, advocating for an inclusive and environmentally conscious approach to the global housing deficit.

Keywords: social housing; social housing policy; circular economy; best practice

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Citation: Gomide, F.P.d.B.; Bragança, L.; Casagrande Junior, E.F. The Synergy of Community, Government, and Circular Economy in Shaping Social Housing Policies. *Buildings* **2024**, *14*, 1897. https://doi.org/10.3390/buildings14071897

Academic Editor: Ola Eriksson

Received: 15 May 2024
Revised: 5 June 2024
Accepted: 19 June 2024
Published: 21 June 2024

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1. Introduction

Housing policy is a fundamental instrument for addressing the needs of individuals and communities while fostering social equity. This is underscored by the New Urban Agenda's imperative for universal access to secure and affordable housing. This overarching framework encompasses legislative and regulatory facets, program implementation, resource allocation, fiscal policies, and investments in social housing (SH) [1].

Since social housing (SH) is the core concept of this paper, the authors define social housing as affordable housing for low-income families or people with difficulties in finding housing, owned and managed by the government or by non-profit organisations, for leasing or joining the property, based on defined government rules [2,3]. However, challenges such as social inclusion, access to healthy housing conditions, economic improvement and the optimal use of natural resources must be addressed for adequate and permanent social housing.

Concerning public social housing policies, a nuanced distinction exists between housing and social housing policies (SHP), concentrating on affordable housing provision for low-income demographics. This necessitates government intervention, subsidies, and collaborations with private developers to establish and maintain affordable housing units [4]. Local governance is pivotal in tailoring housing strategies to community-specific needs and liaising with higher-level authorities [5]. Local governments play a critical role by providing funding, regulating land use, and collaborating with other stakeholders to increase the supply of social housing [6].

Nations traditionally restrict subsidised SH to disadvantaged groups facing financial constraints in accessing housing under market conditions. Despite states' political obligations to enhance housing access for all, particular European Union (EU) countries and developing nations opt for parallel supplies, facilitated by specialised private investors receiving financial support from governmental entities [7,8].

It is worth noting that these terms' specific definitions and scope may vary between different countries and contexts. The distinction between housing and social housing policy (SHP) may depend on certain regions' particular policies and programs. In this study, the authors understand SHP, based on the Resolution of the European Parliament of 21 January 2021, on ensuring adequate, energy-saving, and healthy housing; combating homelessness and fighting discrimination; promoting an integrated approach to social, public, and affordable housing; and ensuring the safety of legal claims and developing housing markets that promote social inclusion [8].

The prevalence of informal settlements, which provide shelter for approximately 1 billion people, ref. [9] highlights the urgent need for sustainable housing solutions. Recognising the fundamental right to adequate housing, the European Union integrates social policy requirements with employment support, social care adequacy, and the fight against social exclusion [4].

The Sustainable Development Goals (SDGs) are a set of global objectives to address social, economic, and environmental challenges to achieve a more sustainable and equitable future for all. The 17 SDGs further champion housing as an integral facet across seven objectives, particularly SDG 11, focusing on Sustainable Cities and Communities [10].

However, due to the ambiguous nature of sustainable development, the SDGs' uncertain future challenges their successful realisation. Refs. [11,12] suggesting that the future of the SDGs remains uncertain due to the vague and elusive nature of the concept of sustainable development. The lack of a clear-cut definition and the presence of various interpretations may hinder the proper understanding and implementation of the SDGs, posing a challenge to their successful realisation in the future [11,12].

The recognition of social housing policies' intersection with multiple SDGs varies across different countries and regions. In China, India, and Brazil, policy responses to informal settlements are shaped by intergovernmental relations, electoral politics, municipal finance, and civil society capacity [13]. The implementation of SDGs in South American countries is influenced by domestic politics, institutions, and power relations [14]. The COVID-19 pandemic has affected the implementation of SDGs, with a focus on integrating and achieving synergy among goals [15]. The integration of national policies for compact, connected cities is explored in various countries, including China and India [16].

The European Union has implemented various policies to address social challenges like homelessness, migration, ageing populations, and accessibility [8,17]. Approximately 75% of the European Union's buildings are not energy-efficient, which means they require renovation in order to reduce carbon emissions. This is particularly important in the residential sector [7].

China has countered housing challenges by initiating programs, including the Public Rental Housing (PRH) program, which has been in place since 2010 and provides regulated rents for low-middle-income urban households. However, local governments rely on non-governmental financing, leading to a transformative shift in PRH governance and accommodating 37 million people [18].

In India, housing strategies face limitations due to ineffective policies and financing despite diverse, affordable housing and rental initiatives. Delhi, with its 11 million population, grapples with homelessness, particularly among segregated communities and older adults [19,20].

African countries experience significant housing challenges due to rapid urbanisation, which has resulted in ambitious policies such as Ethiopia's mass housing projects and South Africa's recent focus on SH. Slum upgrading, a preferred option in many coun-

tries, is deemed cost-effective, socially acceptable, and more accessible than new housing developments [21,22].

Brazil's extensive SH program, initiated in 2007, has constructed six million housing units over approximately 11 years, evolving with political changes and socioeconomic conditions [23,24]. Scholars call for continuous investment, policy evaluation, and sustainability integration to emphasise environmental sustainability.

After analysing scenarios for global SHPs, searching for best practice solutions is a way forward. The effectiveness of real cases can help find new solutions that can inspire new approaches in SHPs. The concept of 'best practice' emerges, defined as interventions consistently proven effective through rigorous research [25].

Based on [26], the context of SHPs, best practices encompass effective strategies, approaches, and policies aligned with specific topics:

1. Affordable Housing: Increase affordable housing through policies like inclusionary zoning, density bonuses, and public–private partnerships for low to moderate-income families.
2. Housing Affordability: Tackle housing affordability in high-cost areas with rent stabilisation, subsidies, and vouchers for low-income households.
3. Housing Supply: Boost housing construction to meet demand by streamlining licensing, cutting regulatory hurdles, and promoting mixed-use developments.
4. Preventing Homelessness: Implement plans to prevent and address homelessness, including housing support, rapid rehousing, and wrap-around services.
5. Inclusive Housing: Make housing accessible and adaptable for individuals with disabilities by incorporating universal design principles and enforcing accessibility standards.
6. Sustainable Development: Encourage sustainable housing practices, including green building standards, renewable energy integration, and transit-oriented development.
7. Community Engagement: Involve communities and stakeholders in housing policy development through community planning, public consultations, and partnerships with community organisations.

A sustainable approach to addressing SHPs requires integrating environmental preservation with new housing and stock recovery. The Circular Economy (CE) model promotes resource reuse and regeneration. It can reduce waste and carbon emissions, create jobs, and contribute to individual and planetary well-being when applied to the built environment.

The concept of the circular economy is centred on minimising waste and promoting sustainable use of natural resources. It involves designing more durable, reusable, repairable, and recyclable products to keep materials and products in circulation for as long as possible. Two current and practical concepts within this framework include (i) Circular Economy as a Systems Solution Framework, which addresses global challenges such as climate change, biodiversity loss, waste, and pollution, and (ii) Transition to a Circular Economy with Digital Technology, which facilitates the shift to a circular economy by leveraging virtualisation, dematerialisation, transparency, and feedback-driven intelligence. Both concepts underscore the necessity of transitioning to a more sustainable economic model and emphasise the significance of renewable energy, efficient resource utilisation, and the role of technology in enabling a circular economy [27–29].

This concept is gaining traction in both academic and practical spheres [30–32]. However, its implementation faces significant challenges, including consumer behaviour, financing, and skill requirements [16,17].

By incorporating the principles of the CE into SHPs, it is possible to take meaningful steps towards a more sustainable and equitable future. This partnership can be seen in several ways, as outlined [33,34]:

1. Retrofit and sustainable upgrades: Improving resource efficiency and sustainability in renovation involves considering factors like material quality, waste reduction, and overall environmental impact.

2. Balancing needs: Balancing tenant needs and housing budget constraints requires considering tenant preferences during modernisation and ensuring alignment with sustainability practices.
3. Policy integration: National and local integration ensures SH aligns with broader sustainability goals and promotes resource efficiency.
4. Environmental justice and equity: Combatting pollution is crucial, and it prioritises public health, economic development, and equity, especially in disadvantaged communities.
5. Economic and social benefits: Circular business models, emphasising material design, sharing, recycling, and reuse, create jobs, reduce environmental impact, and promote sustainability and equity.

The built environment has recently witnessed research exploring the potential of CE principles. However, the SH sector remains an area that requires further investigation, as emphasised by [33]. This sector presents significant opportunities to establish circular resource flows in the built environment [33].

Studies such as [35,36] have proposed social strategies to address the challenges faced by SH. Moreover, the authors [33,34,37] have highlighted the significance of incorporating CE principles and social innovations into sustainable SHPs and research.

According to [33] study, adopting circular business models demonstrated in best practice case studies is crucial for implementing CE in the sector. Under this trajectory, this study aims to analyse best practice case studies of SHPs that incorporate CE principles and suggest potential solutions that can be adopted.

The principles of the CE play a vital role in promoting sustainable SHPs. To explore this topic, a Systematic Literature Review (SLR) was conducted to investigate how CE concepts are integrated into the best practice of SHPs. The central question driving this research is "How have circular economy principles been incorporated into social housing policies' best practices?". In order to answer this problem, the following related questions were considered:

QP1—What do the selected Social Housing Policies' Best Practices (SHBP) propose about the following topics?

1. Affordable Housing
2. Housing Affordability
3. Housing Supply
4. Preventing homelessness
5. Inclusive housing
6. Sustainable Development
7. Community engagement

QP2—What are the Circular Economy principles incorporated in the selected Social Housing Policies' Best Practices (SHBP) about the following topics?

1. Retrofit and sustainable upgrades.
2. Balancing needs.
3. Policy integration.
4. Environmental Justice and Equity.
5. Economic and social benefits.

The study raises questions about best practices and CE principles. It is structured into three phases: conceptualisation, Systematic Literature Review (SLR), and identification of sustainable housing policies' best practices. The SLR specifically focused on selecting housing and social housing policy documents, excluding considerations beyond the scope of policy space and public programs.

In conclusion, the main objective of this research is to propose a differential approach to the conventional view of SHPs. The challenge entails identifying strategies implemented in SHPs that incorporate principles of CE in practice. This work's crux lies in practical solutions to address the SH crisis grounded in reality rather than relying on top-down

theoretical solutions. The focus is bottom-up learning and knowledge acquisition to discern what works in practice.

2. Materials and Methods

2.1. Literature Review Approach

Conducting Systematic Literature Reviews (SLRs) is essential in collecting evidence that meets specific eligibility requirements to address research questions. SLRs utilise explicit and systematic methods to minimise bias, making them the gold standard in research methodology. Table 1 has a protocol synthesising the systematic literature review process developed in this study.

In addition to mapping, evaluating, and synthesizing existing literature to advance knowledge in a specific field, SLRs also have the capability to identify gaps and stimulate new research directions. These advantages enable researchers to obtain reliable and robust findings that can inform policy-making and decision-making processes. SLRs are therefore valuable tools for generating evidence-based insights.

Table 1. Systematic literature review protocol for this study.

Steps	Stages	Research Aspects
1. Planning	Background to review	Problem: Solve the inefficiency of SHPs based on CE principles. Rationale: CE principles are available to contribute to sustainable SHPs.
	Objectives Statement	Primary objective: Recommend social housing policy strategies based on circular economy principles. Phase 01: Conceptualize housing policies. Conceptualize social housing policies. Point out what is best practice in SHPs. Point out which CE principles are involved with SHPs. Phase 02: Conduct SLR on housing policies and best practice. Phase 03: Based on the SLR results, select only SHPs among housing policies and identify the countries and the themes most cited. Based on the SLR results, select best practices related to SHPs. Based on the selected social housing policies' best practices (SHPBP), identify the actions proposed. Based on the selected SHBP, identify applied CE principles. Sub questions-Questions Problems QP1—What do the selected social housing policies' best practices propose about the following topics? 1. Affordable Housing 2. Housing Affordability 3. Housing Supply 4. Preventing homelessness 5. Inclusive housing 6. Sustainable Development 7. Community engagement QP2—What are the Circular Economy principles incorporated in the selected social housing policies' best practices about the following topics? 1. Retrofit and sustainable upgrades. 2. Balancing needs. 3. Policy integration. 4. Environmental justice and equity. 5. Economic and social benefits.

Table 1. *Cont.*

Steps	Stages	Research Aspects
2. Processing	Criteria for selecting studies	Context: housing policies, social housing policies, circular economy, best practice, social housing, sustainable urban development. Interventions, mechanisms, and outcomes: strategies, theories, practical examples, concepts, principles, guidelines, recommendations. Types of studies: both qualitative and quantitative.
	Search strategy for identification of studies	Databases: ISI Web of Science, Scopus, and ScienceDirect. Timeframe: 2000 to the present time of the study. Keywords: housing policy, social housing policy, best practice Language: English only. Article type: indexed journal papers, conference proceedings, books, book chapters. Grey literature: included
3. Analysis	Eligibility	Inclusion/Exclusion criteria: Journal papers, conferences, proceedings, book chapters, editorials, abstracts. Online full-text availability or obtained by requesting full texts from authors. housing policy, public housing policy, housing estate policy, affordable housing policy, low-income housing policy, social housing policy, circular economy 2000 to time of study. Number of reviewers screening the articles: 3.
	Quality appraisal	The three reviewers assess the quality of papers, and the paper is included when approved by at least two.
4. Extraction and Reporting	Data collection	During this stage, the eligible articles are thoroughly examined and analysed. Additionally, more sources and studies may be included at this point to ensure a comprehensive analysis. The data extraction corresponds to themes, environmental aims, proposals, and countries.
	Results synthesis	Type of synthesis: Interpreting results from bibliographic analysis.

This SLR aims to analyse existing literature to explore how academic contributors and professionals in the SH field have interpreted and applied the concept of CE. While this study acknowledges its limitations, such as relying on search strings, databases, and exclusion criteria, the authors are confident that it offers a comprehensive coverage of the literature.

2.2. Stages of Systematic Review Protocol

2.2.1. Planning

A meticulous and unbiased review protocol was established to fulfil the research objectives. This protocol was crafted following the guidelines provided in the Cochrane Handbook for Systematic Reviews of Interventions, Version 6.4, 2023 [38], to ensure rigorous methodology. It entails a comprehensive explanation and rationale for the review objectives, intended research techniques, study inclusion criteria, and data extraction, processing, and synthesis methods. Adopting an SLR process further bolsters the evidence's authenticity and the outcomes' credibility.

In order to successfully carry out a comprehensive systematic review, it is essential to integrate strong data handling practices, effective project management methods, and trustworthy quality control systems. These components play a pivotal role in guaranteeing the review's comprehensiveness, precision, and dependability. By incorporating these strategies, researchers can confidently navigate the review process and generate outcomes of exceptional quality [38]. The Cochrane Handbook for Systematic Reviews of Interventions, Version 6.4, 2023, served as the methodological guide for this study. Adhering to the established protocol, the initial step in conducting an SLR involved identifying the specific

issues to be investigated and formulating a rationale for the chosen topic, as perceived by the authors. This step laid the foundation for the subsequent stages of the SLR process, ensuring a structured and purposeful approach to the review.

Transitioning to a CE in housing policies involves developing technological solutions and incorporating social value as a critical element. As such, exploring "How have circular economy principles been incorporated into social housing policies' best practices?" is an essential step towards ecologically correct, socially fair, economically viable, and culturally appropriate solutions.

The research period was defined as 2000 to the present study time to ensure a comprehensive review. Only documents written in English were considered. Qualitative and quantitative studies within the scope of HP and CE were included in this review.

2.2.2. Proceedings

According to [39], researchers must have access to high-quality, relevant, accessible, and up-to-date information to ensure a comprehensive review. When conducting systematic reviews, the research period was defined as 2000 to the present study time. To ensure thorough coverage of studies, the researchers utilised information sources from three academic databases: the Web of Science from Clarivate Analytics, ScienceDirect, and Scopus from Elsevier.

Web of Science was selected as the preferred option because it encompasses all indexed journals that have an impact factor calculated in the Journal Citation Report (JCR). ScienceDirect, on the other hand, offered access to a wide range of international multidisciplinary studies. Lastly, Scopus provided extensive coverage of scientific journals, conference proceedings, and books on a global and regional scale. These choices were made based on the unique strengths and coverage areas of each database, ensuring a comprehensive and diverse collection of relevant sources for the review process [39]. The filter applied to the databases was "type of documents", choosing all documents.

2.2.3. Analysis

The research methodology consisted of three distinct phases. Phase 01 aimed to understand the current state of research on housing and social housing policies, the circular economy, and best practices. The most frequently mentioned terms concerning SHP were housing policy, public housing policy, housing estate policy, affordable housing policy, low-income housing policy, and social housing policy.

Moving on to Phase 02, the focus was on conducting a systematic review. Concise inclusion and exclusion criteria for the documents were essential to carry out this process. Adopting the following criteria ensured a comprehensive search: all document types published from 2000 to the date of this research, availability in English, and complete text accessibility.

The search for housing policy/housing policies was combined with the best practice term to create three selection lists from different databases. Phase 02 is framed from Web of Science, 61 from Science Direct, and 532 from Scopus. The resulting 999 documents were processed in Microsoft Excel to eliminate duplicate articles and those without free access to the full text, leaving 960 valid documents. Four additional documents were also identified and cited in the bibliographic references, satisfying the pre-defined criteria for the initial research. The final selection resulted in 964 documents. Phase 02 is framed in Figure 1.

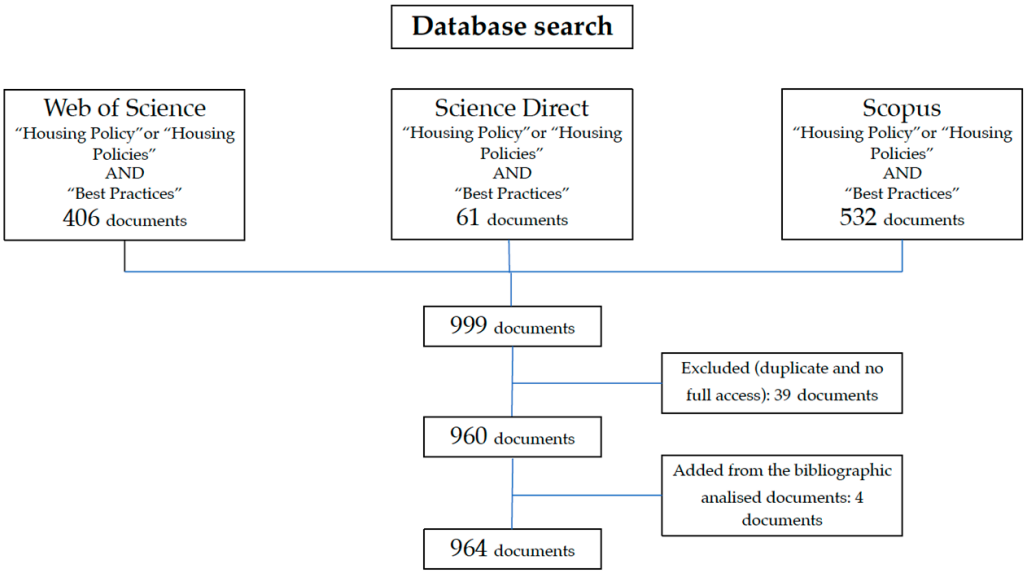

Figure 1. Phase 02—Processing of SLR in the scientific literature (review date: 8 November 2023).

The focus of the research shifted to Phase 03, which involved sifting through 964 documents on Housing Policies. Out of these, 335 were selected concerning SHPs; from that pool, nine were chosen based on best practice studies. In Figure 2, it is possible to see the partial list of the 964 documents on Housing Policies and the partial list of the 335 documents on SHPs. The nine documents on best practices are presented in the full version.

After selecting the nine studies [40–48], they were organised into Results Matrices to facilitate the organisation of the findings. This technique employs a table format that presents research results clearly and concisely. The Results Matrix is particularly useful when dealing with extensive information, as it allows for easy visualisation and organisation of the data [49]. It can also be viewed as an analysis since classifying and selecting information helps identify relationships between the findings [49].

In Results Matrix 1 (see Figure 3), the Excel document listed the nine documents by title and reference in column 1. This matrix addressed QP1, with the seven related topics guiding the search for data within each of the nine documents. Figure 3 is a print of the original Results Matrix 1, in which the authors made complete notes of the analysis.

Results Matrix 2 (see Figure 4) features a list of nine documents identified by title and reference. Figure 4 aimed to address QP2, with the five related topics guiding the search for data within each of the nine documents. Similar to Figure 3, Figure 4 is an illustrative sample of the original table in which the complete notes made by the authors are included.

964 documents

Housing Policies (HP)	Social Housing Policies (SHP)
Australian local government policies on creating a	.
Beyond growth management: A review of the wic	.
Words against injustices: A deep narrative analys	x
Generation Rent' in a Super Homeownership Env	.
If I pay rent, I'm gonna smoke': Insights on the so	.
Spatial anarchy' versus 'spatial apartheid': Rural	x
The Towers of Terror': A Critical Analysis of Erno	.
Freelance isn't free.' Co-working as a critical urba	.
What works' to sustain Indigenous tenancies in A	x
I Felt Safe": The Role of the Rapid Rehousing Prog	x
The Propellers of My Life" The Impact of Domesti	.
Im)mobility at the margins: low-income household	.
3D modeling of discontinuity in the spatial distrib	.
A Citizen Science Approach to Identifying Indoor	.
A Comparative Study of Segregation Patterns in I	x
A comprehensive review of prioritised interventio	.
A Conceptual Framework of Public Participation	.
A deterministic approach for assessing tsunami-in	.
A Grounded Theory of the Influence of Significan	.
A HOUSING REGIME UNCHANGED: THE RISE	.
A Machine Learning Approach to the Residential	.
A Matched Analysis of the Association Between I	.
A meta-analysis of the impact of rail stations on p	.

Print of part of the table, from Excel

335 documents

Social Housing Policies (SHP)	Best Practicies
Words against injustices: A deep narrative analy	.
Spatial anarchy' versus 'spatial apartheid': Rura	.
What works' to sustain Indigenous tenancies in	x
I Felt Safe": The Role of the Rapid Rehousing Pr	.
A Comparative Study of Segregation Patterns in	.
A Mixed-Methods Assessment of Residential Ho	.
A multilevel, multidimensional scale for measur	.
A national study on transportation affordability	x
A review of Critical Project Management Succes	.
A Review on Housing Policy and Practices in M	.
A sharing economy? Unpacking demand and li	.
A tale of three villages: Local housing policies, w	.
Access to Housing and Social Inclusion in a Pos	.
Accommodating China's Floating Population: L	.
Accountability relations in social housing progra	.
Achieving the Basic Sustainable Qualities in Ne	.
Addressing housing deficits from a multi-dimen	.
Addressing the housing challenge: avoiding the	.
Advancing an energy justice perspective of fuel	.
Affordable Futures Past: Rethinking Contempor	.
Affordable Housing as a Method for Informal Se	.
Affordable housing: Policy and practice in India	.
Ageing in place or stuck in place: Preferred care	.
Alternative housing models for precariously hou	.

Print of part of the table, from Excel

9 documents

Social Housing Policies (SHP) AND Best Practicies	Citation	Country
'What works' to sustain Indigenous tenancies in Australia	(Moskos et al., 2022)	Australia
A national study on transportation affordability of HUD housing assistance programs	(Jahan & Hamidi, 2020)	USA
Collaborative Designing of Communities. Helsinki and Zurich Pioneers	(Jorge-Huertas, 2020)	Finland; Austria
Collaborative risk governance in informal urban areas: The case of Wallacedene temporary relocation area	(Zweig, 2017)	South Africa
Struggles for the decommodification of housing: the politics of housing cooperatives in Uruguay and Switzerland	(Duyne Barenstein et al., 2021)	Uruguay; Switzerland
Affordability through design: the role of building costs in collaborative housing	(Brysch & Czischke, 2022)	The Netherlands; Sweden; Finland; Denmark; Germany; Austria; France; Italy; Spain
Why are housing cooperatives successful? Insights from Swiss affordable housing policy	(Balmer & Gerber, 2018)	Swiss; Germany
The Professionalization of a Social Movement: Housing Cooperatives in Uruguay	(Duyne Barenstein & Pfister, 2019)	Uruguay
Cooperative Housing in Germany	(Hölzl & Bernet, 2019)	Germany

Figure 2. Phase 03—Selecting the best practices from Social Housing Policies documents.

Social Housing Policies (SHP) AND Best Practicies		QP1- What do the selected Social Housing Policies' Best Practices actions propose about the following topics?						
Citation	**Police Theme**	**1.Affordable Housing: zoning, density bonuses and public-private partnerships.**	**2.Housing Affordability: rent control, stabilisation, or financial assistance, rent subsidies or housing vouchers.**	**3.Housing Supply: new housing units wiht simplified licensing processes, reducing regulatory barriers and promoting mixed-use development**	**4.Preventing homelessness: housing support programs, rapid rehousing initiatives, and wrap-around services.**	**5.Inclusive housing: accessibility standards.**	**6.Sustainable Development: energy-efficient, green building standards, integration of renewable energy, and promotion of transit-oriented development.**	**7.Community engagement: community planning processes, public consultations and partnerships with community organisations.**
Moskos et al., 2022	Indigenous tenancy support program		Be flexible and holistic, with different types of support provided depending on the	Respond appropriately to an individual tenant's circumstances and support needs; Be				Instigate the will to (i) learn skills to deal with housing finances and (ii) being part of a well-
Jahan & Hamidi, 2020	Housing in transit-oriented developments (TODs)	Use the zoning to optimize the social housing and public transport solutions; Planning for mixed-			Conect public services and social housing		Planning for optmize public transport for the most needed.	
Jorge-Huertas, 2020	Housing cooperatives	Urban centre focused; New regulations regarding zoning, shared spaces and	The governmente provides lease on the city-owned land; Affordable rent and ownership	A hybrid program with ownership ou rent options; Enabling non-profit cooperatives			Car-free community; Passive building; Types of sharedspaces; Clustering of	The commons and self-governance as a sharing concept; Different actors and multi-stakeholders
Zweig, 2017	Collaborative risk governance			The City officials engaged in authorise promised interventions; Facilitating multi-	Animal welfare organisation support; Rat-eradication programme;		New blocks of flush toilets to replace the broken ones; Electricity provision	Community-led housing; Committee formation; Community
Duyne Barenstein et al., 2021	Housing cooperatives	Urban Centre focused; The creation of the Institutos de Asistencia Técnica	The law established a Public Land Bank consisting of plots of land earmarked for housing	Create legitimacy innovative policy instruments; The new policy instruments do not				Dwellers work together at the construction labour.
Brysch & Czischke, 2022	Participatory design			Co-design and self-organisation (needs-based design, in-kind tasks); spatial flexibility; The			Considering product and process as inseparable dimensions of a whole; ; use of	Collaborative design process; Participation in the allocation of specific in-kind tasks;
Balmer & Gerber, 2018	Housing cooperatives	The creation of a zone with specifications concerning non-profit housing	The municipal residential estates rent directly by the department in charge of real estate	Instruments available to local authorities; Based on heritable building rights,				The system allows interest groups and political parties to launch popular referendum
Duyne Barenstein & Pfister, 2019	Housing cooperatives	State support and strong institutional structures;	Financed by a 25-year; Governmental enabling instruments such as	Federal Law sanctioned the creation of housing cooperative federations;				Self-formed mutual help cooperative; Elected committees for management,treasu
Hölzl & Bernet, 2019	Housing cooperatives	Transferetion of existing public or social housing to the cooperative sector; Reserving	Sale of public land; Lease of public land and property; Access to financing: Public lines of	Technical support (municipal technical teams, advisory offices, support to technical non-profit			New cooperative projects through the rehabilitation of existing housing stock	Participation, inclusion and resident empowerment processes

Figure 3. Print of Results Matrix 01.

Social Housing Policies (SHP) AND Best Practicies		QP2 - What are the Circular Economy principles incorporated in the selected Social Housing Policies' Best Practices into the following actions?				
Citation	**Police Theme**	**1.Retrofit and sustainable upgrades: energy efficiency, quality of materials used, waste reduction .**	**2.Balancing needs: between those in need and the budgetary limitations of housing providers**	**3.Policy integration: national and local level.**	**4.Environmental Justice and Equity: Pollution disproportionately affects disadvantaged communities, combat pollution, public health, economic development and equity.**	**5.Economic and social benefits: circular materials jobs.**
Moskos et al., 2022	Indigenous tenancy support program			Partnerships between government departments and Indigenous organisations to co-design policies and programs.	Empowering tenants; Promoting capacitation to have good financial management skills; Incresing health; Incresing	Employing local Indigenous workers; Enabling links with broader service providers to enable wraparound
Jahan & Hamidi, 2020	Housing in transit-oriented developments (TODs)	Energy efficience is amplied by optimazing the transport system.		Integrating cities, housing agencies and public transport providers.	Improving environmental quality; Avoiding poverty concentration and racial segregation; Reducing public transport cost	
Jorge-Huertas, 2020	Housing cooperatives	Using sustainable housing and community design	Offering high variability in tenure and spatial options	An ecological integration in all aspects at private, intermediary, and public levels;	Enabling a multigenerational cohousing; Enabling a mixed income community; Promoting the tenants'	
Zweig, 2017	Collaborative risk governance	Upgrading the sanitation system and waste colection		Integrating actions among official public departments	Promoting risk-reducing interventions; Improving the living conditions; Increasing health	Employing local labours
Duyne Barenstein et al., 2021	Housing cooperatives		The city leasing land to cooperatives for more than 25 years; Mutual aid cooperatives pays the loan with their own labour as a	Cooperative housing is connected tightly to the municipality and the state;	Developing a high level of social cohesion among dwellers	Dwellers paying the loan with their own labour
Brysch & Czischke, 2022	Participatory design	Adopting some environmentally-friendly approaches beeing decided for each dwellers, and half of the projects are	Promoting incremental housing aprouch; Redefinig minimum standards of quality and cost; Conditions for the		Developing a community building and a sense of belonging; The high level of participation in the design phase; Residents	Using self-building construction; hands-on construction contribute
Balmer & Gerber, 2018	Housing cooperatives				Promoting strong legal protection; avoinding gentrification process	
Duyne Barenstein & Pfister, 2019	Housing cooperatives		15% of equity generated through residents' work on construction site insted to provide the usual 15% equity deposit	Protocols of debates and decisions are reported to the ministry of housing		Encouraging residents' work on construction site; hands-on construction contribute
Hölzl & Bernet, 2019	Housing cooperatives	Promotion of new developments and rehabilitation of existing buildings; Promoting regeneration of urban		National, regional and municipal administrations implement public policies and specific programmes	Promoting land, financing and legal recognition for th cooperative housing; Promoting of social cohesion and inclusion of	

Figure 4. Print of Results Matrix 02.

3. Results

3.1. Results from the Systematic Literature Review

This chapter presents data and excerpts contributing to analysing the leading research question. In Phase 02, a selection of 964 documents was narrowed down to 335, focusing specifically on Social Housing Policies (SHPs). These selected documents provided insights into key themes and the geographic distribution of research in SHPs. Figure 5 visually represents the most frequently studied themes in this SLR. In a decrescent order are the most studied themes regarding SHPs: Market control, Homeless people, Social rental housing, General public housing programs review, Health equity, Gentrification, Community-led housing, Ethnic segregation, Secure of tenure, Migrants and Older people.

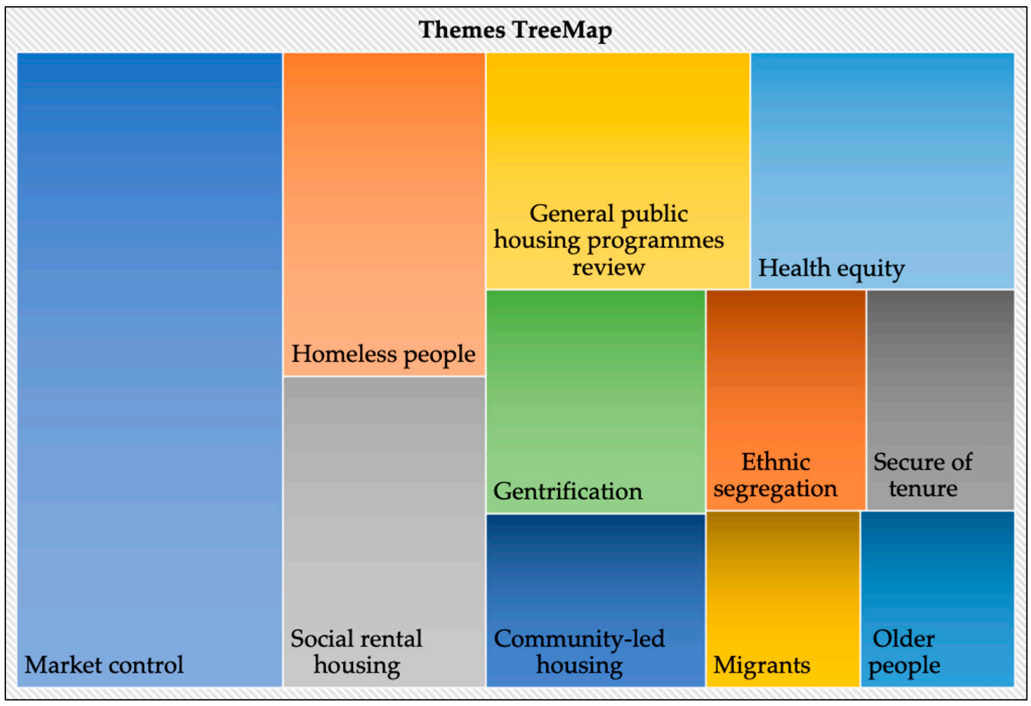

Figure 5. Themes Treemap.

Figure 6 showcases the top 10 countries with the highest research production in this area. Out of the 335 documents analysed, it was found that countries in the European Union produced 32% of the studies in this SLR. The EU nations devote 57% of their studies to the theme of segregation and its causes and implications, including poverty resulting from economic crises, migration, unregulated market control, unchecked gentrification, and ethnic prejudice. China collaborates with 30% of Asia studies, and Brazil represents 40% of the studies in Latin America and the Caribbean. Figure 7 illustrates the production by region.

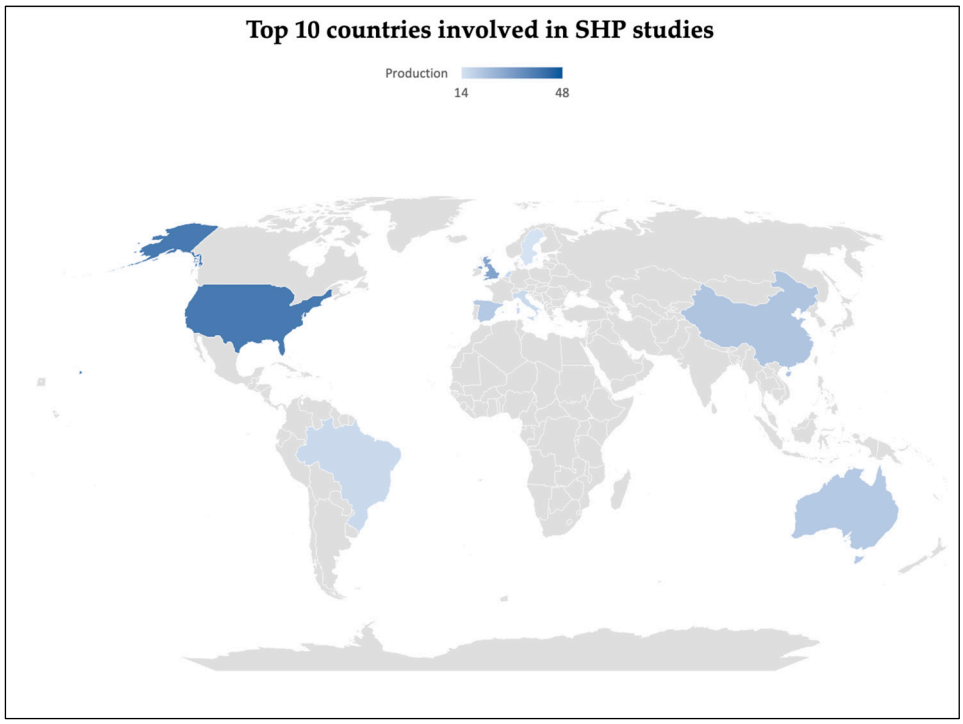

Figure 6. Production by countries.

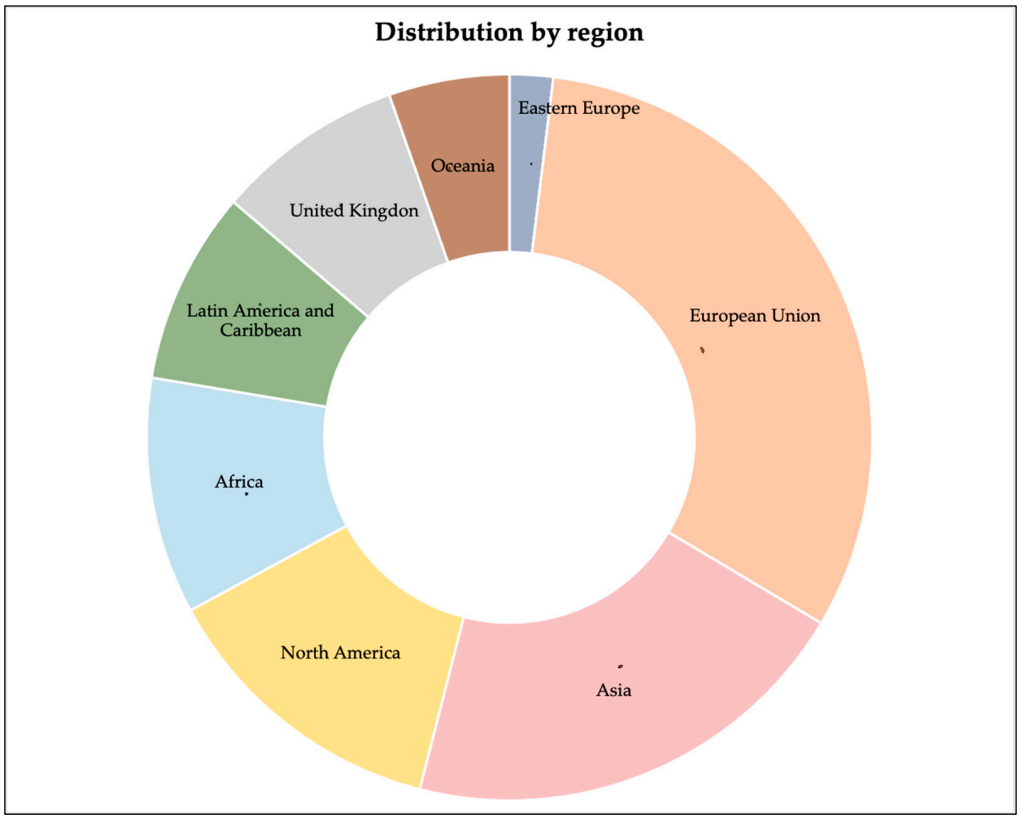

Figure 7. Distribution of Social Housing Policies Studies.

The present study constructed a graph visually representing the relationship between countries and their respective research themes. Figure 8 displays the ten countries in ascending order of the number of publications, each associated with its corresponding research theme. The green gradient on the graph denotes the number of publications from a particular country, with lighter shades indicating fewer publications and darker shades representing higher numbers. The selection of the 16 research themes was based on an ABC curve and encompasses 82% of the total publications analysed in this SLR.

Themes/Country	US	UK	China	Australia	Spain	NL	Brazil	Italy	Sweden	Nigeria
Market control	11	6	3	3	4	8		3	1	1
Homeless	10	5		3	2		1			
Social rental housing		2	3	1	2	4		3	1	1
Health equity	11	4		1						1
Ethnic segregation	3	1			3	2		3	1	
General public housing programmes review		1	3				6			1
Migrants			4			3		1	2	
Decision-making processes			2	1	1				1	5
Post-disaster housing recovery	3		2	2				2		
Gentrification	1		3				1		3	
Energy retrofit		3	1		1	1			1	
PPP				1			2	1	1	1
Older people		1		2					1	1
General Housing Programmes review		1	3							1
Secure of tenure	1		1		1		2			
Community-led housing	1	2		1			1			
Regulation tools	1		1	1			1			1

Figure 8. Conditional graph on colour scales.

3.2. Results from Result Matrix

The preceding section presented the findings of SHP studies and their respective focus areas. During phase 03, a refined selection process was implemented, identifying only those documents that simultaneously are SHP and best practice studies. Subsequently, each of the nine selected documents underwent a detailed analysis to provide answers to QP1 and QP2.

The police themes involved in the selected SHPBP are noted below based on Figures 3 and 4:

- Housing cooperatives (5 times)
- Indigenous tenancy support program (1 time)
- Housing in transit-oriented developments (TODs) (1 time)
- Collaborative risk governance (1 time)
- Participatory design (1 time)

Concerning QP1, the selected SHPBP are mainly related to the following actions based on Figure 3:

1. Affordable Housing (6 times)
2. Housing Affordability (6 times)
3. Housing Supply (8 times)
4. Preventing homelessness (2 times)
5. Inclusive housing (0 time)
6. Sustainable Development (5 times)
7. Community engagement (8 times)

The authors diligently identified differential solutions that deviate from the present state of affairs for each of the seven proposed actions, resulting in Figure 9.

QP1- What do the selected Social Housing Policies' Best Practices actions propose about the following topics?
Differentials (times mentioned)
Government will to **facilitate** the regulations and financial processes (7); **Community-led** housing (8); Household financial **autonomy** in the future (1); **Optimize** public services (1); **Mixed-income** neighbourhoods (2); **Trade-off** loan/labour (1); **Technical Assistance Institute** (2); Public Land **Bank** (1); **Incremental** housing approach (1); Government **protection** of market control (1); Public **Foundation** (1); **Law** of housing cooperative federations (1); **Refurbishment** of the building stock (1)

Figure 9. Results Matrix 01—Synthesis QP1.

Concerning QP2, the circular economy principles that are predominantly linked to the identified best practices of SHPs, as outlined in Figure 4, can be summarised as follows:

1. Retrofit and sustainable upgrades. (5 times)
2. Balancing needs. (4 times)
3. Policy integration. (7 times)
4. Environmental Justice and Equity. (8 times)
5. Economic and social benefits. (5 times)

The authors identified circular economy principles in the recommended measures, resulting in Figure 10.

QP2 - What are the Circular Economy principles incorporated in the selected Social Housing Policies' Best Practices into the following actions?
Differentials (times mentioned)
Favouring local service **connections** (1); Urban **energy-efficiency** (1); Improving **environmental quality** (2); **Sustainable** housing and community **design** (1); Tightly **connection** among the community, local and national level (1); **Hands-on** contributes (3); Higher **energy-efficiency** standards (1); Avoiding **gentrification** process (1); **Refurbishment** of existing buildings (1); **Regeneration** of urban areas deteriorated and abandoned (1)

Figure 10. Results Matrix 02—Synthesis.

4. Discussion

4.1. Findings from the Systematic Literature Review

This chapter initiates the examination of Figures 5 and 6, focusing on the comprehensive analysis of themes prevalent in the systematic literature review (SLR). Over 50% of the scrutinised themes encompass market control, homelessness, social rental housing, health equity, and ethnic segregation, as illustrated in Figure 5. Notably, Figure 5 reveals that approximately 30% of the scrutinised documents explore strategies for regulating

the housing market through legal means. These encompass optimising existing housing, regulating municipalities concerning zoning and land use laws, and providing incentives for mixed-use developments targeting middle and low-income citizens in urban areas.

Furthermore, Figure 5 elucidates additional themes such as renovating deteriorated housing, providing security in vulnerable residential areas, and offering shelter and health services to homeless individuals. The concerns expressed [8,17] align with the SLR results, emphasising themes like homelessness, migrants, older people, and accessibility in policy agendas.

The discourse on market control, especially in capitalist contexts, echoes the concerns articulated by [42,50,51] all converging on exploring alternative solutions to address housing decommodification. Inadequate regulations are identified as a catalyst for the unsustainability of lower-income environments in the centres of capitalist cities, resulting in forced relocations and subsequent gentrification.

The global economic downturn in 2008 not only escalated homelessness rates but also significantly contributed to gentrification, prompting a paradigm shift in housing policies globally [52]. Housing policy failures are recognised as critical contributors to gentrification in regions like North America and Europe [38], exemplified by the neo-liberalization trend in the Netherlands leading to a decline in the social rental sector and spatial concentration of disadvantaged groups [53].

The impact of the global COVID-19 pandemic on housing policies is discerned globally, with Spain experiencing changes in demand and market recovery challenges [54]. Despite governmental efforts to enhance housing affordability since the early 2000s, sustainable solutions remain elusive [55]. Ref. [51] contends that housing policies, anchored in neoliberal affordability statistics since the early 1990s, have perpetuated inflation in house prices, exacerbating the challenges faced by prospective homeowners and rental occupants.

Figure 6 outlines the top ten countries investing significantly in the study of Social Housing Programs (SHPs), emphasising dedication rather than immediate success in implementation. A cross-sectional examination in Figure 7 reinforces the dominance of developed countries in SHP research, aligning with the UNCTADstat Data Center [56] distinction between developing and developed regions, where approximately 70% of the studies are attributed to the latter.

Turning to Figure 8, the focus shifts to China's challenges in fulfilling its recent public housing program, necessitated by the urbanisation strategy. Managing urban–rural population migration and addressing gentrification are prominent concerns, prompting efforts to control the real estate market and improve social transaction housing provision programs [18].

Examining Figure 8 reveals that in the United States, 76% of themes revolve around health equity, market control, and homelessness. The nuanced exploration of health equity underscores the interconnectedness of public health and housing policies, addressing diverse sub-themes such as COVID-19, economic crises, wars, children's health, older people, shanty towns, food insecurity, forced eviction, insecurity of tenure, and climate change.

The United Kingdom grapples with homelessness, prompting policymakers to consider strategies supporting reception programs and empowering homeless individuals. Australia, ranking fourth globally in SHP research, focuses on real estate market control while addressing the needs of diverse populations. Spanish studies accentuate the attention dedicated to housing cooperatives, emphasising project planning, user participation, mixed-social communities, and regulatory support at local and national levels.

In the Netherlands, regulatory efforts aim to prevent the segregation of minorities through financial policies supporting social rental programs. With approximately 60% of studies on public–private partnerships in SH programs, Brazil faces the challenges of insecure tenure and irregular housing. The global housing deficit, projected to impact 1.6 billion people by 2025 [57], disproportionately affects developing countries, including Brazil, Mexico, and Nigeria, which struggle with representation in academic publications.

In Latin America and the Caribbean, where 120 million individuals reside in substandard housing, the need for productive state–market partnerships to address housing access issues is emphasised [58]. Italy's research focuses on ethnic segregation, market control, social rental housing, and post-disaster recovery, highlighting challenges in income and the resultant failure of social rental programs.

Sweden, facing issues of gentrification, lower incomes for social rent residents, and real estate speculation, necessitates government intervention in regulating financial schemes to support lower-income individuals. The limited development of alternative tenure forms in Latin America, notably in Brazil, is attributed to political changes and socioeconomic conditions, necessitating a long-term approach to effectively implementing SHPs.

The study sheds light on Nigeria's extensive research efforts, particularly in addressing homelessness, per the Australian Bureau of Statistics (ABS) definition in 2023 [59]. Many nations express concern about the absence of housing market regulations, which leads to commodification and urban planning issues. Government intervention is proposed to mitigate socio-economic segregation and zoning challenges through financial support. Recent economic crises compound the situation's complexity, creating hurdles in effectively addressing housing concerns.

4.2. Proposed Framework for Integrating Circular Economy in Social Housing

In phase 03, a detailed analysis of nine social housing best practices cases based on selected documents was conducted. These cases were drawn from five continents: Europe, Oceania, North America, Africa, and South America. Although the sample size is not quantitative, it is noteworthy that sustainable housing best practices are being implemented worldwide.

Using Matrix Results 1 as a tool, the authors confirmed that six of the seven topics were defined by [26] effective strategies to promote SHP. The SHPBP's cases were privileged by housing supply and community engagement strategies.

The authors' purpose in preparing Figure 9 was to offer recommendations to deal with SHP issues seen as differentials. Strategies such as the government will facilitate the regulations and financial processes could be accomplished through streamlining licensing processes, reducing regulatory hurdles, and promoting mixed-use developments. Different approaches incorporated community-led housing strategies. The findings showed efforts to empower local communities to address their housing needs by actively participating in developing, owning, and managing homes.

When analysing Figure 10, it was possible to note that the CE principles regarding SHPs, based on [33,34]'s concept, that most appeared were Policy integration and Environmental Justice and Equity. In many ways, these principles were contemplated. The findings, in parallel, go hand in hand with the studied literature, which understands that without integration at the national and local level in SH provision, it is not possible to evolve on SHP issues. The relevance in finding the involvement of the Environmental Justice and Equity principle highlights the intrinsic role of the CE model in promoting sustainable solutions for the SHP's challenges. Differentials noted in the cases bring topics discussed in the study, such as "hands-on" contributions, improving environmental quality, and some approaches that enhance connections between different strategic actors.

Teodoro and Rayos Co (2009) [60] assert that the involvement of communities and their organisations is indispensable for the success of the housing sector. Community-led housing solutions are considered more suitable for addressing the needs and capacities of communities. Nevertheless, more than an exclusive focus on residents and their decision-making power in reconstruction initiatives may be required. However [60], indicates that technical assistance and government support are critical for the long-term viability of the process. The government's role as a facilitator and protector is fundamental to the success of housing initiatives. Its unconditional support and openness to new realities establish local and national governments as critical stakeholders.

Despite the government's crucial role, the regulatory process is often complex and requires more effort. A convergence of Executive and Legislative Powers is typically needed to streamline the process. The intricacy of laws, the overlap of municipal, state, and federal legislation, the different interpretations of the various disciplines, negotiations, and technicians responsible for licensing in the departments, and the legal framework of laws, resolutions, and decrees present significant barriers to the cause [60].

Success in construction and urban development is contingent upon the robust support of public institutions at both national and local levels. To this end, the validation of new regulations, contract agreements, and financing proposals must be accompanied by the active participation of dwellers across all phases of the construction process. The authors of [50,60] explain that this includes their involvement in designing, hiring suppliers, and defining ownership and financing models. When residents themselves become involved in the definition of minimum layout standards, quality of materials, energy efficiency criteria, and the negotiation of agreements between public costs and protections for residents' financial possibilities—such as financing time, instalments, fees, and project management fees, they can preempt the detrimental effects of gentrification, abandonment, and depreciation of built environments. For these purposes, committees must be formed, comprising community and public authority representatives working in partnership. To ensure success, these processes must be apolitical and planned over the long term.

The research conducted by [8] highlights that there is significant variation in housing policies across the EU member states. Given the diverse social and economic contexts worldwide, more than a standard SHP may be required. While various actors such as the United States, United Kingdom, EU, China, and Australia provide guidance, the actual resolution of housing problems remains at the national, regional, or local level.

The findings are supported by [8]'s conclusion that housing policy should be tailored to individual countries' social and economic contexts due to their diversity. When it comes to user-centred solutions, the context of users' experiences is critical in understanding users' needs.

Furthermore, it is essential to consider the role of residents' labour in the incremental construction model, where the house still needs to be delivered finished, and significant work by residents is required to reduce construction costs, making the project feasible. However, to ensure the quality of the built environment and manage the budget effectively, public authorities must provide technical assistance and ensure quality control.

The Sustainable Development Goals (SDGs) provide a framework for addressing the five CE principles for SHPs. These CE principles are interconnected to some specific SDGs, and actions related to Figure 10 are responsible for these achievements. Following are some correlations:

1. Retrofit and sustainable upgrades:

SDG 7: Affordable and Clean Energy; SDG 11: Sustainable Cities and Communities; SDG 12: Responsible Consumption and Production. Some actions, such as Urban energy-efficiency; Higher energy-efficiency standards; Refurbishment of existing buildings; and Regeneration of urban areas that are deteriorated and abandoned.

2. Balancing needs

SDG 1: No Poverty; SDG 3: Good Health and Well-being; SDG 8: Decent Work and Economic Growth; SDG 11: Sustainable Cities and Communities. Some actions include Favouring local service connections; Sustainable housing and community design; and Hands-on contributions.

3. Policy integration

SDG 17: Partnerships for the Goals; SDG 11: Sustainable Cities and Communities; SDG 13: Climate Action. Some actions, such as Favouring local service connections; Tightly connection among community, local and national levels.

4. Environmental Justice and Equity

SDG 10: Reduced Inequalities; SDG 16: Peace, Justice, and Strong Institutions; SDG 5: Gender Equality. Some actions, such as Favouring local service connections; Improving environment quality; and Avoiding the gentrification process.

5. Economic and social benefits

SDG 8: Decent Work and Economic Growth; SDG 1: No Poverty; SDG 3: Good Health and Well-being; SDG 10: Reduced Inequalities. Some actions, such as: Favouring local service connections; Improving environment quality; and Hands-on contributions.

Analysing Figure 8 shows that the USA and the UK have similar interests in sustainable human progress (SHP), particularly regarding market control, homelessness, and health equity, which present challenges related to Sustainable Development Goals (SDGs) 1, 3, 5, and 10.

Meanwhile, European Union (EU) countries face distinct challenges in pursuing sustainable human progress. Reclaiming market control, closely tied to social inequality and economic integration, is multifaceted. These issues are directly linked to SDGs 1, 8, 10, and 11, emphasising the significance of their efforts.

In China, SHP development addresses the significant and ongoing national migration and floating population. While strides have been made in this area, effective planning through the decision-making process is crucial due to the sheer number of migrants. SDGs 11 and 17 are vital in meeting this demand.

Brazil is currently working on developing sustainable housing projects (SHPs) in order to avoid repeating past mistakes. The emphasis is on establishing effective partnerships to tackle the 5.876 million housing deficit and enhance 25 million essential aspects of housing [61], aligning with Sustainable Development Goals (SDGs) 8, 10, 11, and 16.

These are just a few examples of how SDGs are linked to principles of corporate social responsibility, focusing on promoting efficient responses from SHPs. It is important to note that these efforts must recognise SDG 13, as climate change poses an ongoing concern, and efforts to promote adaptation and resilience are delayed.

As the analysis progressed, it became apparent that a SHP proposal based on the CE model requires the involvement of three main actors: the community, the government, and the CE model itself. Each actor contributes essential points that help create the best solution for the case. The CE should be considered an actor since its performance is critical for balancing a sustainable SHP.

Figure 11 in the paper illustrates the tripod relationship between the three actors, highlighting their respective contributions. Based on an SLR of nine documents, the authors suggest an 'Actors Contributions Tripod' to guide SHPs towards a sustainable future.

The authors argue that the community, the government, and the CE model all contribute uniquely to developing sustainable SHPs. By identifying these contributions, the authors believe policymakers can create best practices that address SH's challenges today. The bullets in the bubbles in Figure 11 concisely summarise the most relevant points highlighted in the study.

The study, however, did not include any case study concerning Topic 5—Inclusive building in its analysis, as shown in Figure 3. Although the reason for this omission is not explained, it must be noted that inclusive buildings are a crucial aspect of SHPs. With an ageing population and more advanced technical standards, ensuring accessibility for those with mobility issues is essential to promoting SHPs.

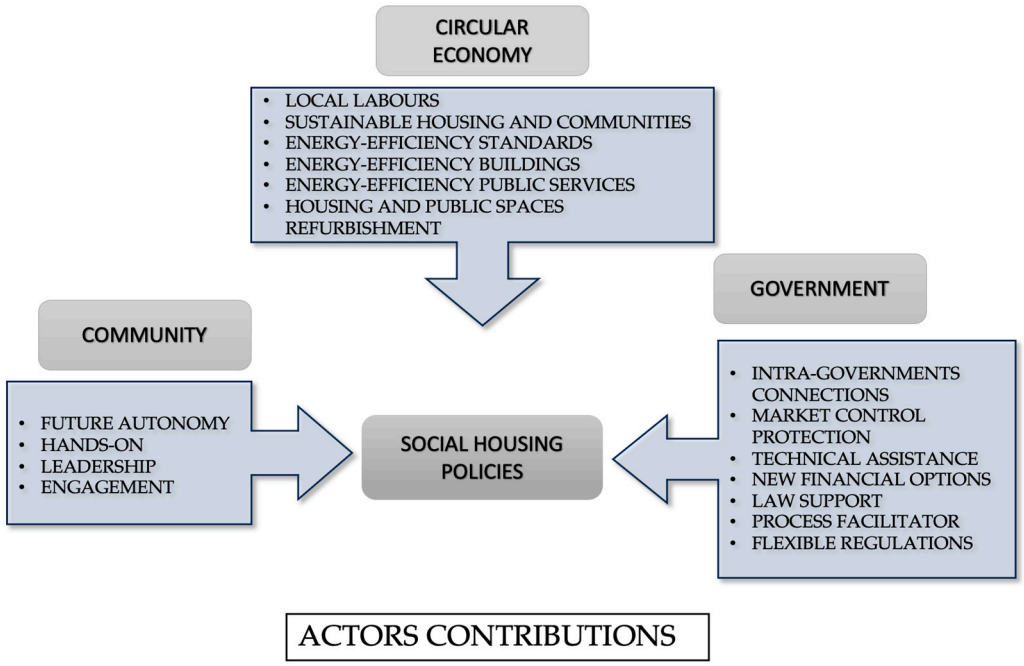

Figure 11. Actors Contributions Tripod.

5. Conclusions

The present study sheds light on the significant role of CE in facilitating sustainability in the built environment. A comprehensive analysis of nine documents demonstrated that CE principles can effectively enhance the supply of SH. The findings underscore the importance of integrating CE practices into SHPs to promote sustainable development. The study was guided by specific objectives, which enabled the authors to address the main research question.

All nine cases, consciously or not, incorporated six of the seven strategies aligned with SHPs that encompass effective strategies, approaches, and policies. The topics that contributed to the success of the selected studies proposed some actions regarding affordable housing, housing affordability, housing supply, preventing homelessness, sustainable development, and community engagement. Regarding these topics, the focus was on community-led housing; government facilitating the regulations and financial processes; mixed-income neighbourhoods; and technical assistance institutes.

The results showed that all nine cases incorporated CE principles into SHPs, such as sustainable upgrades, balancing needs, policy integration, environmental justice and equity, and economic and social benefits. Based on these principles, hands-on contributions and environmental quality improvement were the primary efforts.

The analysis of the SHPBPs in this work highlights the significant interconnection of SDGs 1, 3, 5, 8, 10, 11, 13, 16, and 17, particularly in relation to CE principles and SHPs. It is important to recognise that efforts to promote SHP based on CE principles should consistently prioritise addressing SDG 13, given the urgent nature of climate change. There is an immediate need to expedite adaptation and resilience efforts as people continue to experience the daily impacts of human activities. The SDGs are closely aligned with the principles of corporate social responsibility, aiming to elicit effective responses from SHPs.

In response to the MQP, SHPBP has incorporated CE principles in their propositions by conciliating the contribution of three actors: community, government, and the circular economy.

In this sense, this study encouraged the authors to point out recommendations for the development of SHP based on the 'Actors Contributions Tripod':

Community—Its role is crucial as it facilitates the development of future autonomy, fosters "hands on", cultivates leadership qualities, and stimulates active engagement.

Government—It must guarantee intra-government connections, market control protection, technical assistance, new financial options, law support, processes facilitator and flexible regulations.

Circular Economy—Its purpose is to improve local labour, sustainable housing and communities, energy-efficiency standards, energy-efficient buildings, energy-efficient public services, and refurbish housing and public spaces.

Studies suggest that adopting a CE model can help address SH challenges by combining technical and social innovations, promoting sustainable practices, and using recycled materials in construction [33,34,62]. However, attention to social practices and changes in user behaviour remains limited in CE implementation.

The authors propose exploring the potential for SH organisations to generate circular resource flows, an area that has yet to be largely overlooked in current studies. It is necessary to recognise the role of SH in the CE agenda.

Identifying best practices in SHPs through a scientific assessment of the available literature can be likened to a search for a needle in a haystack. Although a significant amount of material has been generated by various entities such as government departments, civil society organisations, private companies, consultants, and ministries, the grey literature must undergo rigorous scientific methodologies to validate its findings. Such an exercise would significantly contribute to scientific research, integrating CE principles into new production and maintenance policies within the social housing sector.

The authors emphasize that the criteria delineated in the RSL protocol may impose constraints on the scope of research that could have been omitted from this RSL. Despite a robust RSL protocol, documents not encompassed by the selected databases in a language other than English or falling short of the specified cut-off date could be taken into account in future analyses. The search terms in the databases could also be expanded or revised in subsequent studies.

This study forms the cornerstone of the authors' upcoming research endeavours. Their future work is geared towards empirically analysing the impact of interventions in the built environment to gain a comprehensive understanding of local and regional challenges. By leveraging robust scientific assessment methods like Post-Occupancy Evaluation (POE) and prioritising user input on existing built environments, the authors are poised to drive learning and catalyse advancements in developing more effective projects aligned with Circular economic models for social housing policies.

The CE model is considered compatible with the solution to the issue of sustainable housing provision on the planet and is an indispensable actor for the success of this solution.

Author Contributions: Conceptualisation, F.P.d.B.G.; a solution to the issue of sustainable housing provision on the planet and is an indispensable actor in its success, F.P.d.B.G.; validation, F.P.d.B.G., L.B. and E.F.C.J.; formal analysis, F.P.d.B.G., L.B. and E.F.C.J.; investigation, F.P.d.B.G.; data curation, F.P.d.B.G.; writing—original draft preparation, F.P.d.B.G.; writing—review and editing, F.P.d.B.G.; visualisation, F.P.d.B.G.; supervision, L.B. and E.F.C.J. All authors have read and agreed to the published version of the manuscript.

Funding: This work has the financial support of PDSE—Programa de Doutorado Sanduíche no Exterior—88881.846454/2023-01 (Personnel Improvement Coordination of High Level—CAPES), under the Federal University of Technology—Parana (UTFPR), and under the Postgraduate Program in Technology and Society (PPGTE). This work was partly financed by FCT/MCTES through national funds (PIDDAC) under the R&D Unit Institute for Sustainability and Innovation in Structural Engineering (ISISE), under reference UIDB/04029/2020, under the Associate Laboratory Advanced Production and Intelligent Systems ARISE under reference LA/P/0112/2020, under the CYTED Network Circular Economy as a Strategy for a More Sustainable Construction Industry (ECoEICo) under reference 322RT0127, and under the COST Action Implementation of Circular Economy in the Built Environment (CircularB) under reference CA21103.

Data Availability Statement: Not applicable.

Conflicts of Interest: The authors declare no conflicts of interest.

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