

Review

Sustainable Local Development: Consolidated Framework for Cross-Sectoral Cooperation via a Systematic Approach

Freddy Marín-González ¹, Sharmila Rani Moganadas ^{2,*}, Ana Judith Paredes-Chacín ³, Sook Fern Yeo ^{2,4}
and Subhacini Subramaniam ²

¹ Department of Humanities, Universidad de la Costa, Barranquilla 080002, Colombia; fmarin1@cuc.edu.co

² Faculty of Business, Multimedia University, Melaka 75450, Malaysia; yeo.sook.fern@mmu.edu.my (S.F.Y.); subhacini@mmu.edu.my (S.S.)

³ Department of Administration and Finance, Universidad Autónoma de Occidente, Cali 760030, Colombia; ajparedes@uao.edu.co

⁴ Department of Business Administration, Daffodil International University, Dhaka 1207, Bangladesh

* Correspondence: sharmila.rani@mmu.edu.my; Tel.: +60-66-810-400

Abstract: Cross-sectoral cooperation (CSC) has gained recognition as the key to achieving sustainable development goals within a locality. However, existing studies focused on sustainable local development (SLD) initiatives resulting from CSC remain sparse. This article aims to review the CSC–SLD literature, using the Preferred Reporting Items for Systematic Review and Meta-Analyses (PRISMA) method. Research questions were constructed using the PICOC (population, intervention, comparison, outcomes, and context) structure. The identification of scientific works occurred through the search of relevant keywords, which resulted in a final set of 38 peer-reviewed manuscripts, from 1994 to 2021. First, the main driving forces for adopting CSC, to achieve SLD, which are dispersed at multiple levels, were captured and contextualised into the micro-, meso-, macro- and mega-framework. Second, salient aspects addressed in the literature for effective CSC implementation were identified and classified into approaches, governance, structure, key actors, psychological and social aspects, and experiences themes. This resulted in a consolidated guiding principles framework for implementing CSC, to pursue SLD. Additionally, the use of theories in different aspects of CSC–SLD initiatives was discussed. This study informs the practitioners, policy-makers, and researchers the fundamentals that need to be considered when planning, designing, and implementing effective CSC interventions for SLD.

Keywords: cross-sectoral cooperation; sustainable local development; mutual aid; endogenous resources; bioregionalism; cognitive diversity; seismic shift; bracing capital



Citation: Marín-González, F.; Moganadas, S.R.; Paredes-Chacín, A.J.; Yeo, S.F.; Subramaniam, S. Sustainable Local Development: Consolidated Framework for Cross-Sectoral Cooperation via a Systematic Approach. *Sustainability* **2022**, *14*, 6601. <https://doi.org/10.3390/su14116601>

Academic Editors: José M. Aguilar-Parra and Jesús-Nicasio García-Sánchez

Received: 30 April 2022

Accepted: 23 May 2022

Published: 27 May 2022

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1. Introduction

Development is, usually, associated with the quantitative measures undertaken by nations to generate economic growth. In fact, it is common for countries or regions worldwide to rank their performance based on their Gross Domestic Product (GDP) growth, a prominent economic indicator [1,2]. Correspondingly, Mensah and Ricart Casadevall [3] described four theories that situate economy at the core of the development concept: *modernisation theory*, *dependency theory*, *world systems theory*, and the *globalisation theory*. Major criticism has been raised against such conception of development, due to its characteristic that infringes and ignores the social and environmental variables [4]. For example, according to Hoselitz [5], the main problem in economic growth theory that occurs as a result of attributing socio-structural and cultural factors to economic variables, is determining the mechanisms by which an underdeveloped country's social structure changes and takes on the characteristics of an economically advanced country. Such a statement divulges the critical role and shift endured by the socio-cultural aspect of a nation in attaining economic growth.

Concerning the environmental factor, the authors of *Limits to Growth* in 1972 highlighted the alarming rate of natural resources depletion caused by the exponential economic growth [6]. Due to the perturbing state of diminishing natural resources, the 1987 Brundtland report urged for economic strategies that would not harm the environment or compromise the welfare of future generations [6]. This marked the advent of the *sustainable development* (termed as SD, hereafter) notion that rests at the confluence of economic, social, and environmental dimensions. Nevertheless, Gupta and Vegelin [7] argued that SD requires a deep commitment to inclusive development, which indorses social and environmental development, but questions the need for continuous economic growth in a business-as-usual paradigm. The authors ascertained that the global community should be willing to develop legally binding rules, within which the economic growth is achieved, in order for it to contribute to SD. This certainly requires commitment and expertise from diverse parties across nations, such as scholars, professionals, businesses, educational institutions, etc.

Still, a recent study by Mwebesa et al. [8] showed that individuals and organisations associate economic growth as synonymous with development, although a broad view of development transcends this perspective and addresses other dimensions that entail conceptual, epistemological, and instrumental complexity in their studies. For example, some scholars perceive development as a social condition of a nation, which entails a multidimensional, societal, and participatory process, which seeks to improve the quality of life of all members of society through sociocultural and political transformation, sustainable consumption of natural resources, and sustained economic growth [6,9–11]. Hence, the economic tenet remains relevant in the concept of development, but it should be considerate of and complemented with social and environmental progress, owing to their co-dependent and indivisible disposition [2,3]. Concurrently, attaining development, which embodies SD, implies major changes in human capacity, attitude, social, legal, and political structures [4,6,7,12].

Yet, some scholars cautioned against the use of a generalised approach in pursuing SD, due to the unique set of development challenges and problems encountered by each country, based on its distinct economic system and its culture, social, and political structures [13–15]. This beckons the need for custom-made strategies that are contextualised from the economic, social, and environmental growth of a particular region, based on the use of its endogenous resources to localise SDGs [12,16]. Such a standpoint, indeed, has paved the pathway to a *sustainable local development* (termed as SLD, hereafter) praxis that is encouraged by various global policies, namely Agenda 21, Millennium Development Goals, and the current 2030 Agenda [17,18].

According to Hornby [19], the term “local” means belonging to or connected with the particular place or area. However, Sekuła [20] argued that the understanding of “local” is not merely limited to a given area or specific space, but should take into account the local arrangement that are characterised by the history of the area and its social, economic, cultural, and geographical idiosyncrasies. As cited by Korenik in [20] (p.59), local includes the territory “with diversified land area, characterised by economic, social, cultural, and political homogeneity and a common, broadly understood identity”. This identity denotes cultural relations as well as similar behaviours, attitudes, interests, habits, and activities that create strong bonds within the local community [20].

Thus, in defining “local development”, [20] presumed two criteria that should be treated as complementary: (1) from the viewpoint of the local community and its needs and (2) from the viewpoint of the changes taking place within the local arrangement. In other words, the former criterion focuses on the locals who benefit from the development, and the latter represents the effects of the changes caused by the development within a locality. Milán-García et al. [21] pointed to the use of endogenous resources of a specific territory as the most characteristic element of local development that improves the well-being and quality of life of its population.

Sekuła [20], however, forewarned that “in order to trigger permanent, irreversible dynamics of development, the local scale has to have an appropriate, critical mass expressed

by an appropriate concentration of institutions, number of persons participating in the local community's life, and all necessary relations among them and between them and the outside", as cited by Pietrzyk in [20] (p.60). Hence, we reckon that these insights by [20] can be directly attributed to SLD, which calls for cooperation of local communities, local authorities, individuals, for-profit and non-profit organisations, etc. Such a call for SLD is echoed by [21], who argued that SLD is an aspect of local development with an emphasis on sustainability process, in which the local government should take up the leading role.

Due to the lack of further clarification in the aforementioned statement by Pietrzyk in [20], we infer that the last term, "outside", is hinting at the significant (if not inevitable) involvement of national, regional, and global levels in implementing SLD. Numerous economic, environmental, and social equity policies traverse between global, regional, and local scales, thus, impose direct (or indirect) influence on local development. A notable example of this is the ongoing 2030 UN SDGs that have been and will be spurring sustainability transformation through committed partakers across multiple scales. However, Randhir [22] affirmed that pursuing major SD shifts at the local level entails resilience and transformative properties that are built through cooperation between global, national, regional, and local scales.

In spite of the persistent and recurring claim for local involvement in SD by international organisations, such as the United Nations (UN) and Organisation for Economic Co-operation and Development (OECD) [14,23,24], Ref. [21] found that previous research on SD from a bibliometric viewpoint, had omitted the local dimension in the concept of SD. Furthermore, the notion SLD per se lacks a direct recognition [21] and, thus, renders a significant lacuna in the existing SD scholarship.

Nevertheless, in conjunction with SLD, various measures, such as Voluntary National Reviews (VNRs) and Local 2030, have been undertaken by the United Nations to support, accelerate, and monitor the progress of countries, in addressing the challenges articulated in the UN SDGs [23,24], particularly SDG 11—sustainable cities and communities. Even so, some scholars are still skeptical about their (e.g.VNRs and Local 2030) potential to systematically pursue the UN SDGs that are about to end in less than a decade [25]. This may point to the fact that, while the three interlinked SD domains (environment, society, and economy) are well-known and immensely acknowledged at the global and local levels, the mechanisms on how to sustainably develop these three domains remain underexplored [18]. This warrants the focus on "tools to analyse existing situations and identify obstacles that hinder societal change and construct models to overcome obstacles and transform reality to be conducive to development" [6] (p.113). According to Stiglitz [26], development processes for local sustainability should involve every aspect of society and engage the efforts of everyone, which include markets, governments, NGOs, cooperatives, and not-for-profit institutions. Hence, we consider development for local sustainability entails processes with clear measures to improve, enrich, empower, and engage local community, to work collectively toward economic, environmental, and societal progress.

The previous literature has brought to light some issues related to the development processes for SLD. The analysis by Meyer et al. [23] showed that processes undertaken by some countries, with regards to SDGs achievement reporting, often remain missing or misunderstood in their VNRs. Oosterhof [24] revealed the absence of a holistic approach in the localisation processes of SDGs across countries and, thus, raised the need for institutional mechanism that promotes government and inter-sectoral integration. The case study of Timor-Leste, by Jain et al. [27], demonstrated the impasse of the SDGs localisation process caused by lack of strategies and resources, such as governance, funds, and vision that support multi-stakeholder relationships. Krantz and Gustafsson [25], who explored SDGs localisation in a Swedish municipal organisation, showed that structure, leadership and coordination, flexibility, etc., as well as the operationalisation of the SDGs into the management systems and budgets, are important determinants to the development process.

More specifically, some scholars substantiate on the major role of *cross-sectoral cooperation* (termed as CSC, hereafter) in driving SLD [8,25,28,29]. In a similar vein, this article

deals with CSC as a central theme for SLD. Given that this process is considered key for the implementation of SD, different variables associated with development are directly or indirectly influenced (e.g., governance) [27].

The preceding assertion becomes clear when considering the broader public administration and governance literature, which argues that a lack of policy integration, coherence, and coordination across multiple sectors may impede the implementation of any form of collaboration aimed at mitigating SD issues [30–33]. With respect to the implementation, however, several authors put forward their concerns as well as acumens to overcome potential setbacks.

Research findings by Jordan and Lenschow [31], within the environmental policy integration (EPI) sphere, indicate that the political commitment to EPI is widespread, but deep disagreement enfolds its actual implementation, particularly in determining what level of attention (or principled priority) to give to environmental protection in the sectors [31] (p.156). Thus, the authors urged the need to identify *what* facilitates and *what* impedes EPI within and across different levels of governance. Tosun and Lang [30] (p.562) outlined the design of instruments that are vital for policy integration, such as inter-departmental plans, task forces, regulatory impact assessment, mission statements, interactions guidelines, etc., but still conveyed a need to expand studies on substantive instruments. Kim et al. [32] proposed an updated model of Institutional Collective Action (ICA) framework, to collectively overcome collaboration risk and other transaction costs, in addressing complex policy issues. Using the Institutional Complexity Trap, Bolognesi et al. [33] posed caveats concerning the negative impact of integrating numerous policies, which may result in non-coordinated policy interactions, and, subsequently, prevent further integration.

This said, much of the preceding literature coincides with that of an interest and commitment in inter-sectoral collaboration for SD, which should be deeply engrained in the political leadership of a nation to propel SLD efforts forward. This, in turn, requires a restructuring of government systems that create interdependence and coordination between actors, scales, and SD, representing various sectors and domains [22]. Moreover, ensuring continuous interaction and co-existence without friction among the CSC properties entails an obligation to meticulously creating and integrating enabling policies.

In fact, CSC solutions and actions are constantly sought after to address specific local sustainability challenges, such as climate change [34]. In addition, there is a growing call for individual countries to develop CSC interventions that fit the local context and circumstances [17]. However, existent evidence shows that the process is “not an easy task”, as deeper understanding of its structures and measures is needed, if there is to be improved implementation [35].

Mutual emphasis on adopting and sustaining a development process built on CSC exists among scholars. CSC constitutes interdisciplinary, multi-stakeholder, and multi-scalar relationships that are crucial for unleashing the convergence and integration of knowledge between multiple domains/areas to drive SLD. However, the existing literature has paid very little attention on spelling out the key drivers of such a process, outlining the operating procedures for CSC to localise SDGs and presenting lessons learned from previous CSC practices in achieving SLD. Such inquiry seems exigent, to reinforce the mobilisation of all the available resources, knowledge, skills, and expertise required, to address the systemic and pressing issues as envisaged in the 2030 Agenda [36,37]. Furthermore, discounting such understandings may inflict risks of wasting resources, reinventing the wheel, and maintaining the flaws of past practices that may hinder the ongoing and future CSC interventions. This paper, therefore, contributes by collating and consolidating these insights into a coherent framework that can guide the formation and implementation of CSC initiatives to pursue SLD. The aim of this research is, therefore, to (i) identify the driving forces of CSC for SLD at multiple levels and (ii) develop a conceptual framework

comprising guiding principles and experiences for CSC to achieve SLD. We do so by carrying out a systematic literature review (SLR) in the field of CSC–SLD research. The starting point of this review was the formulation of research questions, based on the PICOC structure advocated by Petticrew and Roberts [38] as presented in Table 1.

Table 1. Research questions design based on PICOC structure.

Population (P)	Sustainable Local Development (SLD)	
Intervention (I)	Cross-sectoral cooperation (CSC)	
Comparison (C)	None	RQ1: Why is CSC considered or adopted for SLD?
Outcomes (O)	Mapping, framework, and suggestions based on synthesised evidence, to guide CSC research and practice in SLD	RQ2: How to implement an effective CSC for SLD?
Context (C)	Studies using CSC approaches for SLD	

This article is structured as follows: the Section 2 discusses the procedures that founded the SLR. The Section 3 presents the ensuing insight, and combines relevant themes that have been captured into guiding framework; the Section 4 interprets the significant findings and explains any new findings that emerged from the review; and the Section 5 presents the conclusive ideas that are organised in correspondence with the objectives and the implications for future research.

2. Materials and Methods

This review was performed in accordance to the PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) guidelines [39]. A review protocol was developed, as presented in Supplementary Materials File S1, describing the article selection criteria, search strategy, data extraction, and data analysis procedures. The primary focus of this systematic literature search was to identify publications that discuss the factors on *why* and *how* CSC is used in SLD [38].

Subsequently, a comprehensive desktop search was conducted, focusing on the deployment of CSC in SLD context. The researchers of this study recognise the importance of selecting multiple databases for better coverage. However, the process of screening and excluding the irrelevant studies can be very time consuming and highly labour intensive [40,41]. Due to the presence of such constraints in this study, we carried out a prior examination of commonly used and most relevant databases, to provide an efficient search of studies for this review. We found out that Web of Science (WoS) and Scopus are considered as the most reliable sources of bibliographic data, compared to other free (e.g., Google Scholar) and relatively new (e.g., Dimensions) databases [42,43].

Despite the fact that both WoS and Scopus are subscription-based, multidisciplinary, and selective databases, Burnham [44] and Prancutė [43], who extensively compared WoS and Scopus, agree that both databases complement each other, and, in some respects, Scopus is even better than WoS. For example, all Scopus content is integrated and equally accessible, with a greater amount of unique sources not covered by WoS [43]. Furthermore, Scopus was found to be indexing more non-journal sources, such as books, book-chapters, reference books, monographs, conference materials, and trade publications [43], which are equally essential for SLRs [38], and Scopus was shown to provide better representation of geographical and regional coverage compared to WoS [43,44]. Likewise, recent evaluation by Gusenbauer et al. [42] recognised Scopus as one of the principal search systems (out of 28 academic search systems) that meets the necessary performance requirements for systematic reviews. Considering these factors, we have decided on carrying out our review on the Scopus database from the Elsevier platform.

In answering how many studies are to be included in a SLR, Booth [45] proposed a preferred number of between 6 and 14 articles, to seek a balance. On another note, Kraus et al. [46] stated that scholars have conflicting opinions in determining the number of studies to be included in a review, which ranges from several hundreds to a few dozen. The authors then, suggested that, depending on the maturity of the research field, SLRs can follow different aims. In immature fields, the number of relevant articles is limited and more dispersed, thus, these fields call for review articles to work on general understanding as well as strongly focus on synthesising the foundations and providing valuable insights [46]. Additionally, the types of studies being sought should significantly depend on the guiding review question(s) as well as the inclusion/exclusion criteria [38,40,46,47].

To the best of the researchers' knowledge, there is no single literature review describing CSC–SLD adoption to date. Taking into account the aforementioned insights by [46], we reckon that the integration of CSC and SLD is emerging research, and, therefore, we aim to summarise existent evidence, identify gaps in current research, and present a guiding framework for positioning research endeavours and supporting practice [38,47] around the CSC–SLD research field. In pursuit of these, we relied on CSC and SLD as central categories, to formulate our review questions and inclusion/exclusion criteria, which serve as a gateway to determining the types of studies that need to be identified through Scopus. As a result, a considerable number of manuscripts ($n = 100$) was generated, and we proceeded with the scientific rigour of PRISMA methodology.

We have also incorporated Egger et al.'s recommendation, as cited in [38], to minimise publication and other location biases, by conducting thorough quality assessments of selected articles (see Supplementary Materials File S2) that should take precedence over extensive literature searches and translation of articles. The full search string and terms, with the number of articles after exclusion and date retrieved, are listed in Table 2. The following keywords were used to search for relevant articles: "local sustainability", "sustainable local development", "cross-sectoral", and "collaboration". The search was completed using the synonyms and derivatives of keywords, such as "intersectorality", "multistakeholder", or "partnership". These keywords were then entered in the "T/A/K" section.

Table 2. Search strategy.

Search Databases	Search String and Terms	Number of Articles (after Exclusion)	Date Retrieved
SCOPUS	Main searching terms: TITLE-ABS-KEY(("local sustainability" OR "sustainable local development") AND ("cross-sectoral" OR "multisectoral" OR "intersector*" OR "multistakeholder" OR "collaborat*" OR "partnership" OR "cooperation" OR "allianc*")) AND (LIMIT-TO (LANGUAGE,"English"))	96	7 March 2021

The initial search generated 100 documents with various formats. Articles, review papers, conference proceedings, and book chapters were included [40]. Four non-English articles were excluded at the initial stage. Subsequently, the titles, abstracts, keywords, authors' names and affiliations, journal names, and years of publication of the identified records were exported into an MS Excel spreadsheet. Two inclusion criteria were employed: (i) the manuscript should indicate CSC interventions in SLD, hence, articles geared toward other settings (e.g., healthcare, fisheries, botanic, systems development, supply chain management, risk management) were excluded, and (ii) the manuscript should either be listed in Web of Science, CiteScore, or SCImago ranks. Papers that highly correspond to the research questions are included, regardless of their journal ranking/score [40]. The details of the selection strategy, which include the identification, screening, inclusion, and exclusion of manuscripts, are presented using a PRISMA flow diagram [39], as seen in Figure 1.

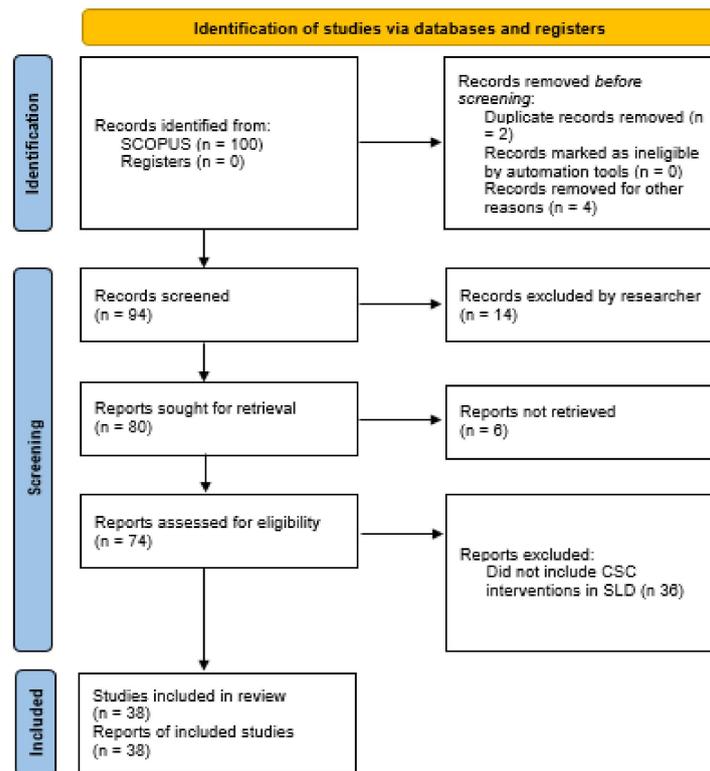


Figure 1. PRISMA 2020 flow diagram of the manuscript selection process [39,48].

At the identification stage, it was noted that 2 out of 96 articles were duplicated records, and these were, accordingly, discarded. Subsequently, at the screening stage where titles, abstracts, and keywords of the remaining articles were reviewed, 14 articles were excluded because the titles, keywords, and abstracts were not related to CSC in SLD. During the full-text review, six documents were further identified as non-accessible upon searching various repositories (e.g., Google Scholar, university online databases, and full-text requests through <https://www.researchgate.net/> (accessed on 25 May 2021); these were, also, excluded. The final phase of screening involved reviewers independently performing an eligibility assessment for 74 full texts; 36 documents were excluded as they did not meet the inclusion criteria. Following this screening, 38 open access articles were included and analysed in this review.

According to Jones and Gatrell [49], it is essential to have interdisciplinary and heterogeneity within a reviewing team, to overcome potential bias. Hence, two experts in the areas of SLD, epistemology, and interdisciplinary research, one expert in service innovation, and two research apprentices in SD were included in the reviewing team of this study. To ensure the quality control of the review process, the full-text assessment was conducted in three steps, adapting the phases and tools employed by [50–53]. Detailed explanation of the quality assessment is provided in Supplementary Materials File S2.

3. Results

3.1. Study Descriptors

The year of publication for the reviewed articles ranged from 1994 to 2021 (see Figure 2). The year with most studies that entered our search is 2019. A relevant increase is evident in the number of published studies from 2018–2020. The authors, alongside the sources of publication, are correspondingly numbered, as presented in Table 3. Amongst the publication sources, *Local Environment* had the largest number of papers (four), followed by three papers from both the *Journal of Cleaner Production* and *Sustainability (Switzerland)*.

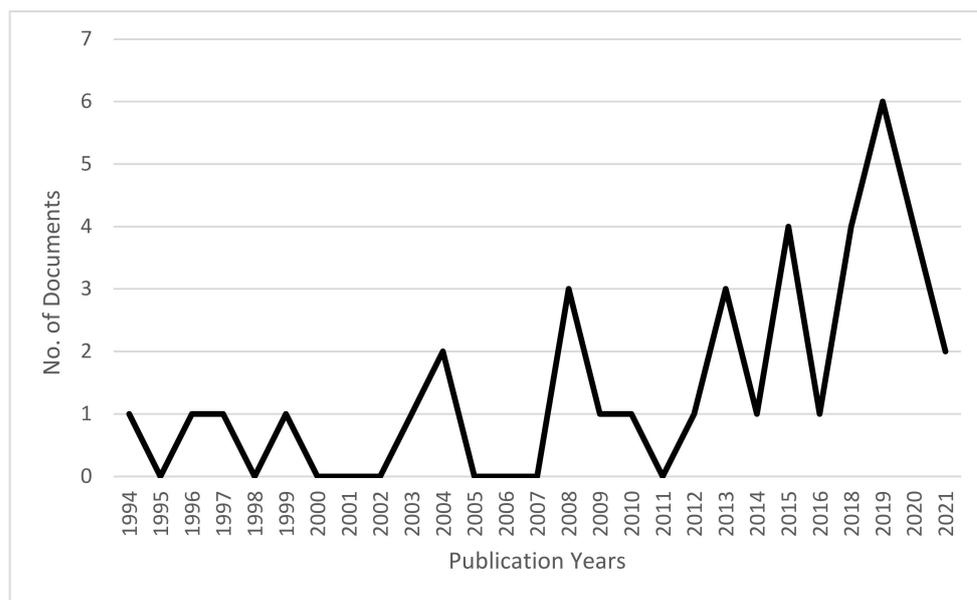


Figure 2. Publication years.

Table 3. Sources of selected manuscripts on CSC in SLD.

Authors	Source of Manuscript
[16]	Sustainability (Switzerland)
[18]	One Earth
[54]	Local Environment
[55]	Futures
[56]	Journal of Practice Teaching and Learning
[57]	Ambio
[58]	Geomatics and Environmental Engineering
[59]	Trames
[60]	Kybernetes
[61]	Local Environment
[62]	Resources Policy
[63]	Sustainability (Switzerland)
[64]	Annals of the New York Academy of Sciences
[65]	Public Administration and Development
[66]	World Sustainability Series
[67]	Public Works Management and Policy
[68]	Journal of Environmental Planning and Management
[69]	Sustainability (Switzerland)
[70]	Progress in Planning
[71]	Journal of Cleaner Production
[72]	Local Environment
[73]	Revue de Geographie Alpine
[74]	International Journal of Public Administration

Table 3. Cont.

Authors	Source of Manuscript
[75]	Journal of Cleaner Production
[76]	Paddy and Water Environment
[77]	Geoforum
[78]	International Journal of Sustainability in Higher Education
[79]	Energy Efficiency
[80]	Planning Practice and Research
[81]	Management of Environmental Quality
[82]	International Multidisciplinary Scientific GeoConference Surveying Geology and Mining Ecology Management, SGEM
[83]	Geographical Journal
[84]	Journal of Public and Nonprofit Affairs
[85]	IOP Conference Series: Earth and Environmental Science
[86]	Sustainability Science
[87]	Local Environment
[88]	Journal of Cleaner Production
[89]	European Planning Studies

3.2. Study Characteristics

Our review revealed that the terms used for CSC–SLD interventions vary significantly across all 38 papers, which include *community-based network*, *local sustainability stakeholders ecosystem*, *Machizukuri (community planning)*, etc. In terms of the study population, the western context, in particular, the United Kingdom (hereafter, termed as UK), the United States (hereafter, termed as US), and Italy is, by far, the most prevalent, which comprised 79% (30 papers). Only 8% (three papers) of the literature focused on the Asian population, which includes Japan [70], Mongolia [58], and Taiwan [76].

Two qualitative studies (5%) analysed and reported initiatives of a mixed population that combined several western and Asian countries [64,71]. Another 8% (three papers) of the studies that are based on the conceptual and systematic analyses, used theoretical documents [16], SDGs, and recent trends in the literature [18] as well as a network paradigm [88], as the population. A large amount of the selected literature, adopted a case study method (45%), followed by interviews and surveys/questionnaires (29%, respectively).

In total, 32 out of 38 papers (84.21%) in this review are qualitative-based. We also found that most of the sampled publications used a combination approach, where interviews and surveys were used together or integrated with other methods, such as workshops, focus group discussions, and document analysis. For example, the use of case study, semi-structured interviews, focus group discussions, and workshops was evident in [57], which investigated the influences of multi-level governance on the transformative capacity of local sustainability initiatives in Stockholm, Sweden. Four studies employed action research to understand the prospects of either a proposed [55,73,86] or an existing [79] CSC framework in a specific region, determining areas of improvement in that setting. In a case study, Quest et al. [78] used methods such as workshop, paired discussion, and generation of pictorial outputs to articulate the future vision and mission of a partnership formed to achieve a sustainable food city. A photovoice methodology that uses camera was adopted in [86] (p.1072), to “strengthen children’s understanding of, and connections to today’s sustainability challenges and invoke their democratic imaginations about a more sustainable tomorrow through present-day projects”.

Four quantitative studies (10.53%) used a survey to present and test a conceptual model of SD governance [67], examine the scope of the collaborative networks formed by US cities around climate and energy sustainability issues [68], measure the sustainability plans and local government sustainability actions [72], and investigate governance barriers to SLD in Poland [81]. Two studies (5.26%) used both qualitative and quantitative methods. These include surveys, interviews, document analysis, and regression analysis to investigate the impact of social capital accumulation on sustainability achievement [70] and case study, fieldwork, and social network analysis, to examine the effects of demonstrations and their implications for a better quality of place-making for SLD [76].

A detailed overview of the characteristics, which include intervention, study population, study design, and primary outcomes of each publication reviewed, is presented in the Table in Supplementary Materials File S3, according to the guidelines from [38]. We examine and conceptualise these results in more detail in the following sections, based on the predetermined research questions.

3.3. RQ1: Why Is CSC Considered or Adopted for SLD?

3.3.1. Main Driving Forces of CSC for SLD

Our findings revealed that there are 29 driving forces for CSC interventions in SLD. *Stock of endogenous capacities/knowledge source, co-creation, and sharing* were the most reported driving forces in the literature (nine papers, 24%), indicating how local people with detailed context and sustainability knowledge collaborate to address environmental, economic and social problems at their territories [55]. For example, Yasu city in Japan excelled in SD projects, such as ‘Buying and Selling without Increasing Waste’, due to the existence of active collaboration that stemmed from the dissemination of local knowledge between its community [70]. Nevertheless, some studies posed caveats against the absence of appropriate and transparent strategies that can impede the effective use of local knowledge for SLD [54,85]., Marín-González et al. [16], Kusakabe [70] and Törnå et al. [85] affirmed that CSC interventions should develop systematic mechanisms, which allow for the co-creation and sharing of knowledge through internal social processes (e.g., dialogues, knowledge network) between diverse stakeholders of a particular region (i.e., government, businesses, community, universities, etc.)

Agenda 21/Local Agenda (LA) 21 or the *Rio de Janeiro Summit 1992* was identified as one of the initial influencing factors for CSC in eight papers (21%) in the literature. This finding was expected because Agenda/LA21, a product of the Rio de Janeiro Summit 1992, was one of the earliest action plans that specifically emphasised the need to cultivate local sustainability through local policies, partnerships, and community participation. The influx of changes following the onset of Agenda 21 were evident in the reviewed articles. For example, local governing processes’ shift towards participatory, dynamic, and modern approaches, the growing formation of sustainability-led partnerships, and the establishment of sustainable cities [54,61,64,70,80,87]. Despite the improved environmental conditions in some regions, the transformations imposed challenges in terms of resistance to change to a new governance system, lack of commitment in partnerships, unclear direction, and support for officials to carry out the initiatives, etc. [61,80,87].

The *2030 UN SDGs* were identified as prominent drivers in six publications (15%). According to Burmaa and Baasanjav [58], the UN SDGs have shifted attention away from efforts of collaboration and cooperation to policy integration. This circumstance, thus, drives the need to develop new institutional arrangements that allow horizontal coordination between different ministries and between departments to materialise the SDGs [58]. Dzhengiz [63] illustrated how the utility industry with different business models and value frames deliver SDGs within a locality. Higher education institutions (hereafter, termed as HEIs) across the globe strive to pursue SDGs through local collaborations [60,66,71], however, Leal Filho et al. [71] asserted that in order to do so, the members of the HEIs require sufficient awareness on SDGs. *Rural and local development, local sustainability ecosystem, and inner area development* were identified in four publications (11%). These forces are pivotal to develop a locality or a specific area,

which Battaglia et al. [55] ascribed to the *bioregionalism theory* that encourages SD efforts in areas characterised by exclusive natural peculiarities (e.g., inner and mineral-resource rich areas).

Table 4 presents the main forces that contribute to CSC interventions for SLD, as discovered in the analyses. The frequency of each force mentioned in the literature is indicated in the last column (Total) of the table. Following this, our analysis recognised the importance and the lack of approaches that seek to categorise these driving forces. Hence, acclimating a micro-, meso-, macro-, and mega-framework [90,91], we contextualised the 29 driving forces that emanate from different levels of stakeholders across the literature, as depicted in Figure 3.

Table 4. The driving forces of CSC for SLD.

No.	Driving Forces	Publication	Total
1.	Stock of endogenous capacities/knowledge source, co-creation, and sharing	[16,55,57,59,67,70,76,78,86]	9
2.	Agenda 21/Local Agenda (LA) 21 and Rio de Janeiro Summit 1992	[16,54,61,64,70,80,81,87]	8
3.	2030 UN SDGs	[18,58,60,63,66,71]	6
4.	Rural and local development, local sustainability ecosystem, or inner-area development	[55,58,59,82]	4
5.	Form sustainable communities, cities, or urban development projects	[56,64,85]	3
6.	Formal or mandated stakeholder engagement and participation by the government (i.e., policy, act)	[58,67,81]	3
7.	Social capital accumulation/networks	[16,54,70]	3
8.	Funding (i.e., national grant)	[54,57,71]	3
9.	Change agents	[56,71,86]	3
10.	Larger and well-known organisations/cities (i.e., public universities)	[57,70,74]	3
11.	Informal initiative or volunteerism	[70,80,83]	3
12.	Capacity/community building for sustainable development	[59,70,78]	3
13.	Address the poor quality of life of residents due to the impact of industry (i.e., mining)	[58,62]	2
14.	Local socioeconomic and demographic context	[67,76]	2
15.	Climate protection and energy conservation	[68,79]	2
16.	Sustainability transition	[75,79]	2
17.	Territorial cohesion	[55,89]	2
18.	Decentralised national system and cooperation	[57,65]	2
19.	European Commission 2011/EU legislation	[71,73]	2
20.	UN-HABITAT and UNEP	[64]	1
21.	Agenda for a reformed cohesion policy	[55]	1
22.	Shared strategic plan	[69]	1
23.	Organisational value frames	[63]	1
24.	Social equity	[72]	1
25.	Top-ranked cities	[74]	1
26.	Campaign (i.e., anti-dam campaign)	[76]	1
27.	Utility furniture scheme	[77]	1
28.	Nature conservation strategy	[80]	1
29.	Policy entrepreneurship	[84]	1

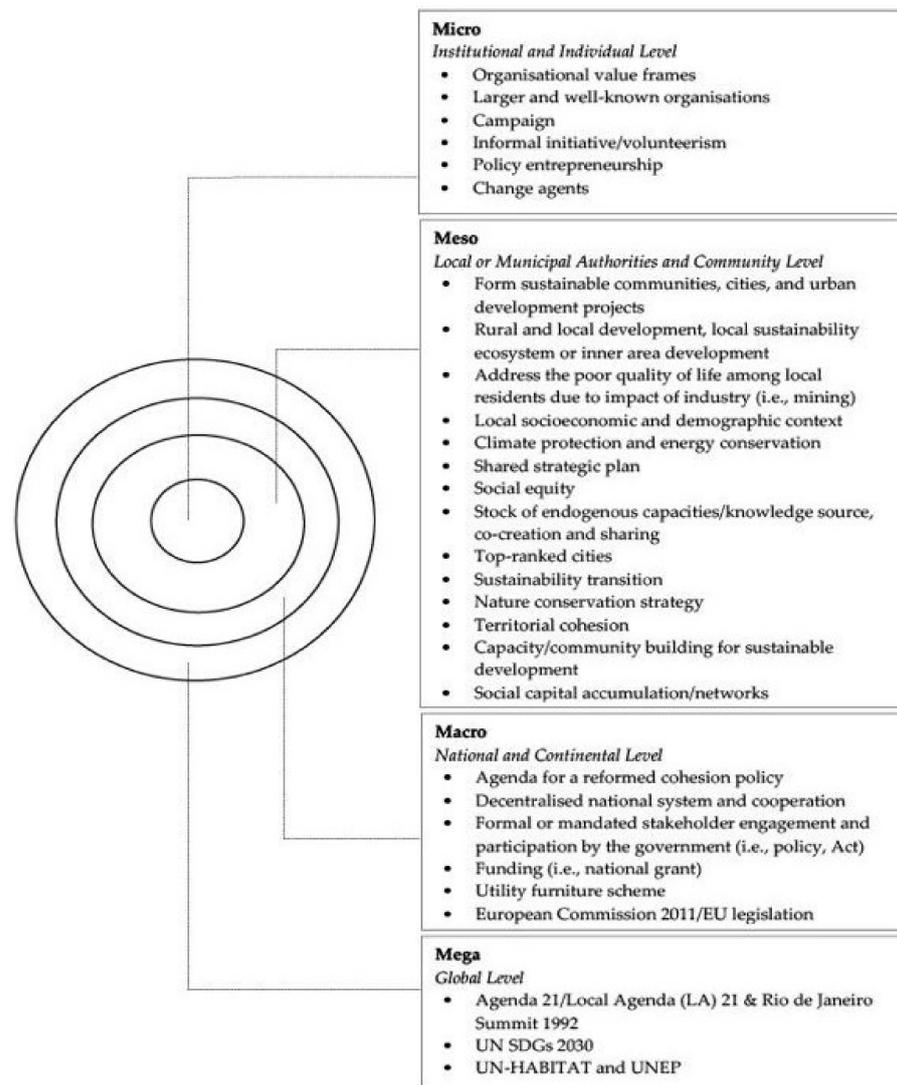


Figure 3. Own source. Contextual mapping of main driving forces of CSC for SLD. The figure represents initiatives that emerge from institutions, individuals, local/municipal authorities, community, national, continental, and global levels, to influence CSC interventions for SLD.

3.3.2. The Contextual Mapping of the Main Driving Forces of CSC for SLD

Based on Table 4, six *institutional and individual forces* have been identified and categorised, under the micro level of analysis. While, the meso-context records fourteen *local/municipal authorities and community forces*. The macro-context contains six *national and continental forces*. Additionally, three *global forces* were categorised under the mega-level. The different levels of analysis are further depicted in Figure 3.

1. The micro-context

The characteristics, interests, and actions of institutions/organisations and individuals that are at the micro-level of a society influence the collective efforts within a locality in addressing economic, environmental, and social problems [16,57,58,63]. For example, the study of Mosier [74] indicated that larger public universities tend to have stronger relationships with the city councils that they collaborate with, and this makes it more likely that such cities will achieve their overall environmental sustainability goals. Likewise, local sustainability initiatives that are linked to larger and well-established non-profit organisations (termed as NGOs, hereafter) have been shown to have a more significant impact [57]. Hence, the size and reputation of an institution or organisation seem to influence the relationship, within a CSC and its SLD goal attainment.

Another micro-level determinant for CSC is the divergent organisational value frames, where companies with different value frames (such as social, business, and paradoxical) interpret sustainability issues and collaborate with external partners (i.e., government, universities, etc.) based on “perceived similarities of organisational values that guide sustainability interpretations” [63] (p. 3). For example, the study by Dzhengiz [63] found that utility companies, with a social frame that aims to preserve nature and sustain human life, frequently collaborate with city councils and community organisations. On the other hand, utilities with a business case frame demonstrated SD commitments for branding, image, and profitability, and such organisations tend to collaborate more with business organisations [63]. Furthermore, campaigns that strengthen organisational and individual relationships, through informal networks (such as the 1992 anti-dam campaign in Meinung, Taiwan) [76] and individual volunteerism in local sustainability initiatives [57,74], were found to be crucial in enhancing and building institutional capacity for local sustainability.

Similarly, Swann [84] presented the initiative of a policy entrepreneur who collaborated with local government, businesses, and community organisations, to implement an innovative neighbourhood energy competition that resulted in community-wide energy savings and greenhouse gas (GHG) reductions. To achieve this, the policy entrepreneur and other non-governmental members contributed in building grassroots support within the community, while the government entity supported, abundantly, with technical capacity and policy expertise, to put ideas into action [84]. Blake [56] demonstrated how developing a multidimensional understanding of SD among university students can train them to become change agents for SD in their community, whereas Trott et al. [86] proposed a methodological framework for youth-led actions that ingrain tenets such as learning, collaborating, and acting on sustainability challenges at their locality.

2. The meso-context

The SLD processes and interactions that occur within the meso-scale constitute both local governments and the community because they are best informed about local conditions and needs [62,70]. Due to their close proximity with the locale, administrative powers, and the authority delegated from the central government, local governments and municipalities are accountable for building sustainable cities and communities, developing inner-urban areas, addressing and enhancing quality of life, and ensuring territorial cohesion [64,85,89]. In the study of Kusakabe [70], the different roles played by the local governments of Japan across three different cities in espousing SLD were evident. The Yasu city government played a *facilitator state* role by creating an effective environment for citizen-led (or bottom-up) initiatives, whilst the Takashima government used a *corporatist-type relationship* that emphasises local government-led (or top-down) approach, and the Kyoto city authorities embraced both top-down and bottom-up approaches in implementing SLD. The findings indicated that the facilitator approach was well-accepted by the communities and, hence, contributed to better SD performance compared to the top-down approach [70].

Even so, it is essential for local authorities to identify and convene key persons and organisations, who are able to work collectively in devising rules, strategies, and monitoring measures that encourage participation for SLD [67,69,70]. For example, the findings of Mosier [74] showed that local governments of cities sought technical expertise from the HEIs within the state or region to develop their sustainability plans and train their workforce on jobs related to environmental sustainability. In return, the HEIs enrolled their students for an SD-based internship programme with local government departments [74]. In Chile, private companies that formed strategic alliances with the local governments to address territorial development plans and issues, contributed funds, human resources, training, and infrastructure, in exchange for recognition as a development agent within the community [62]. However, the study by Leal Filho et al. [71] found that cooperation between HEIs was more prevalent compared with local authorities and businesses. Hence, the motivation, transaction and exchange processes between various stakeholders that form a cooperative network should be deliberated.

Furthermore, efforts built on mutual commitment, responsibility, reciprocal altruism, and common goals between the local governments and communities are shown to have impacts on the creation and accumulation of social capital that are necessary for SLD [70]. It comprises “traits of social organisation, such as networks, norms and trust that facilitate action and cooperation of mutual benefit” [16] (p. 7). This notion, in part, is epitomised in a model developed by [16].

3. The macro-context

Forces from the macro-context represent continental factors, central government policies, and nationwide regulatory systems that mandate a national- or continent-level sustainability agenda. Battaglia et al. [55] developed a new territorial planning model, following the introduction of “An Agenda for Reformed Cohesion Policy” report by the Italian government, in line with the European cohesion policy, to resolve inner-area development issues through territorial cohesion and reduced disparities. Burmaa and Baasanjav [58] conveyed a need to make SDGs a priority at the central government level (e.g., the president or the prime minister’s office), which can take a formal coordinating role to steer and support SD initiatives. Sobol [81] stated that Poland has enacted the “Act on Public Benefit Activity and Volunteer Work”, which enforces local authorities to cooperate with NGOs to drive SLD.

A decentralised approach, alongside continuous support from national leaders, in terms of providing financial resources, timely and pertinent information, participatory procedures, and translating SDGs at local levels, were cited to encourage acceptance and engagement from local governments, communities (meso-level), individuals and organisations (micro-level) [54,57,61]. Such macro-level commitments determine cognizance of shared SD goals as well as reduced public inertia and inactivity among citizens at all levels and, thus, direct them toward SLD [57,66,81].

Pinch and Reimer [77] concentrated on the “British wartime Utility furniture scheme” that was driven by a “need to eliminate waste” (p.93); wherein, the use and consumption of scarce natural resources are managed based on social need and welfare, by the national state, which acts as the organising agent. Further, the authors argued on assimilating *pragmatic centralism* in practice, which involved “a cross-sector response, with multiple participants, organised by a state at a national level but also working through localised routines and procedures” [77] (p.91).

The European Commission 2011 demarcated a practical guide for HEIs within the continent to contribute to regional development, by joining forces with local authorities and communities [71]. Four key areas through which HEIs can mobilise their resources for the benefit of regional development were presented in the guide [92]: (a) translating research into comprehensible forms for the public and private sectors, through consultancy services, innovation vouchers, knowledge transfer partnerships, science parks, and research and technology centres; (b) building entrepreneurial culture through graduate enterprise, university staff spin outs, network and cluster development, encouraging intellectual property development, and international linkages; (c) developing regional human capital through skills development programmes, staff and student-mobility programmes, and talent attraction and retention; and (d) engaging in community development and place-making, through student volunteering and community work, widening student participation and cultural development.

4. The mega-context

The mega-context involves international forces that are mostly related to global SD action plans and proclamations. For example, upon committing to the Local Agenda (LA) 21, the Australian government shifted to governance systems that encompass neoliberal agenda for SD, setting forth pathways for greening consumption and production, balancing individual and collective interests, and community consultations through partnership formations across the country [54]. Whereas, the UK launched four environment cities, to

champion the role of partnership so that other cities can learn and draw inspirations from them [61].

Studies demonstrate local partnership was well conceived at the conception level, but proffered pitfalls in practice. This is due to traditional and factional local governance that are not open to community participation, a lack of criteria for quality partnerships, absence of consensus between members, heavy workload and time constraints for local officials, etc. [54,61,87], which indicate an oversight on detailed prescription and support by LA21, at the management and implementation stages [61,87]. Recognising the importance of utility companies in delivering various UN SDGs, such as climate action (SDG 13), affordable and clean energy (SDG 7), etc., Dzhengiz [63] examined the relationship between organisational values of utilities and the configuration of their alliance portfolios in interpreting and addressing sustainability issues.

On another note, a local peatland restoration programme in Indonesia, successfully contributed to poverty eradication (SDG 1), and improved public health (SDG 3), climate change mitigation (SDG 13), sustainable use of territorial ecosystems (SDG 15), and partnerships for SD (SDG 17) [18]. These were achieved through genuine engagement between community and local officials, trust building, co-learning, and effective local monitoring systems. According to [18], it is necessary to operationalise collaborative efforts and co-learning between the scientists and stakeholders of a locality, via a transdisciplinary approach, which combines participatory and computational modelling techniques.

The United Nations Human Settlements Programme (UN-HABITAT) and the United Nations Environment Programme (UNEP) jointly initiated the Sustainable Cities Programme (termed as SCP, hereafter) [64]. The purpose is to strengthen local capacities for environmental planning and management (EPM), through a cross-sectoral and participatory process, by replicating local-level best practices onto a national scale, facilitating city-to-city exchanges and technical cooperation, and applying specialised expertise and synthesised experience in awareness building and policy formulation. Examples of participating countries that provided funding support include Denmark, Japan, the Netherlands, Italy, France, and the UK, which have led to notable achievements, such as systematic documentation of EPM experiences and lessons learned, however, SCPs evaluations called for several improvements (e.g., to target pro-poor and gender-responsive action plans and strengthen the local–national relationships) [64].

3.4. RQ2: How to Implement an Effective CSC for SLD?

Our review discovered that the current literature is largely focused on either conceptualising or operationalising CSC in SLD, with an inadequate concentration on measuring the effectiveness of CSC interventions. Adapting the insights by Petticrew and Roberts [38], we clarify that most articles in this study (34 out of 38 are qualitative-based) provide detailed information about the processes, such as why CSC worked as it did (or did not work), but lack robust and quantitative information about whether the CSC interventions worked for solving a particular sustainability issue within a locality. Such an observation is, typically, ascribed to qualitative studies because they are more focused towards expounding meanings of interventions and behaviours [38].

3.4.1. Effectiveness of CSC in SLD

Although all 38 articles in our study considered the potential influence of CSC in SLD, only a few (11 papers, 28.95%) addressed how CSC strategies contribute to tangible sustainability solutions. For example, the study by Armstrong and Stratford [54] demonstrated that partnership has spawned creative solutions from members and council officers, to address economic, social, and environmental challenges experienced within the locality, such as the construction of Tahune Forest Airwalk, which boosted the economic performance and social well-being of Geveston community. According to Kusakabe [70], social capital accumulation achieved through citizen participation in city development projects has led to greater sustainability progress. Liao et al. [72] noted that communities with greater inter-

departmental coordination and collaboration enact more social equity policies (e.g., equal access to public services, resources, and benefits), whereas regional-based collaborations only coordinate more environmental protection initiatives (e.g., regulating buildings and land use).

Community-led climate change initiatives in a UK sub-region achieved a measurable reduction in carbon emissions, cycling projects, and planting of fruit trees in the county [79]. Findings by Peng [76] illustrated that an anti-dam campaign, which arose from the collaboration between local residents and external networks in Meinung, was able to increase the institutional capacity for governance, setting forth a trajectory for win-win policy adoption for future water resources management and overall local sustainability. According to Stojanovic and Barker [83], coastal partnerships that are built on environmental principles achieved economic (e.g., sustainable harvesting of high-quality shell-fish and coastal tourism), societal (e.g., sustainable cockle fisheries and cultural heritage development) and environmental (e.g., more environmentally sensitive windfarm development and beach cleaning) improvements. Swann [84] described community-wide energy savings and greenhouse gas (GHG) reductions, reaped from an innovative neighbourhood energy competition, through cooperation between a policy entrepreneur, local government, and community.

Several studies illustrated the effectiveness of CSC involving educational institutions, such as schools and universities. Findings by Blake [56] showed that collaborations, between community development projects and a university, offer ways through social work to practice learning (e.g., training students to become sustainability change agents) that can take forward the local sustainability agenda. HEIs's collaboration with local communities, as discussed in [74], revealed evidence of direct improvement in carbon management and energy efficiency, revitalisation of an economically impoverished area in San Antonio, establishment of the Texas Sustainable Energy Institute to generate funding for greening infrastructure, fostering of electric transportation, etc.

Another piece of research, by Quest et al. [78], showed that collaboration between university researchers and local community, comprising food security and food poverty practitioners, local business owners, restaurateurs, hotel managers, community garden organisers, and residents, has enabled the development of a sustainable food city partnership, which aspires a long-term transition towards a more sustainable food system. Based on the responses obtained from the youths (ages between 8–14) that participated in the research by Trott et al. [86], it is evident that young people are capable of creating social and environmental actions for local sustainability, which are facilitated by a transdisciplinary learning and collaborative model, integrating art and science.

Exceptions drew attention to the indicators that should be considered in measuring CSC effectiveness. Hands and Anderson [66] put forward that current measurement of collaborative partnerships in the HEI sector are nuanced in other areas, such as comparative league tables and key performance indicators, but they lack assessments on engagement with the global, social, and environmental issues of 'public good' (p. 267). A conceptual model for governing cross-sectoral collaboration, which is presented and tested by Hawkins and Wang (67), raised the need to specifically measure the tension between environmental protection and economic development goals of a locality. A critical appraisal by Darlow and Newby [61] showed that demonstrating the existence of a partnership appeared to be more important among authorities, rather than making it work for sustainability over the long-term. Devenin [62] noted that, when evaluating CSCs that involve extractive industries, such as mining, which typically portrays a weak sustainability (e.g., perceived as destructive to the environment), different weightages should be assigned to the economic, social, and environmental impacts, to generate greater relativity on the subject.

3.4.2. Guiding Principles of CSC to Achieve SLD

While the 38 publications reviewed are different in their specific purpose, they all have discussion on a number of salient insights in common, which we combine here

into five guiding principles and experiences for a consolidated CSC–SLD implementation framework. Specifically, these guiding principles and experiences refer to the practical details of implementing CSC in the context of SLD. We examine these findings in more detail in the following sections, based on data included in Supplementary Materials File S3. We, then, combine the principles and experiences into a consolidated framework, as depicted in Figure 4, to serve as a guide and lessons learned for CSC–SLD practices.

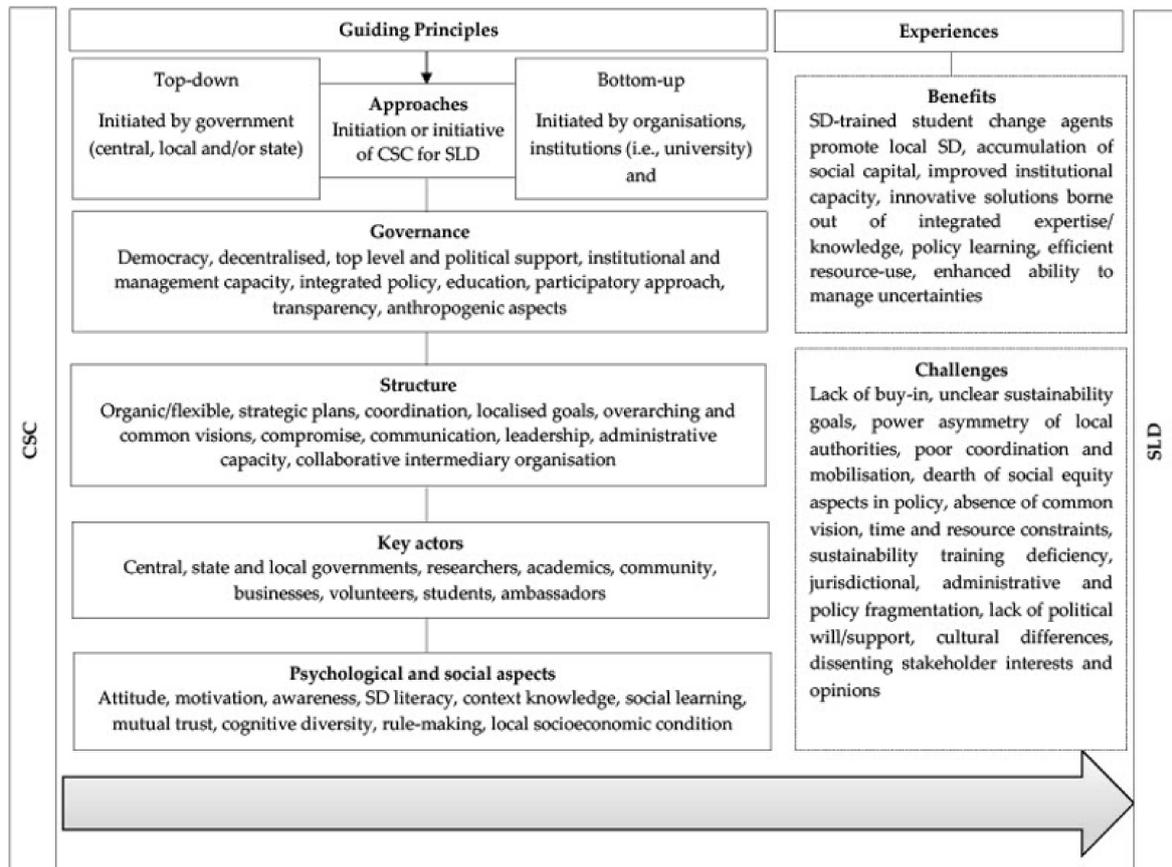


Figure 4. Own source. CSC–SLD guiding principles and experiences framework. The figure represents a guide and lessons learned, with regards to effective CSC implementation to pursue SLD.

1. Approaches

The approaches theme covers *top-down* and *bottom-up* strategies to implement CSC for SLD. In total, 14 publications explicitly mentioned either one or both approaches. Out of these, only four provide concrete examples of the complementary relationship between top-down and bottom-up strategies, which is vital for the formation of CSC for SLD. For example, in Stepankova and Kristianova [82], state governments made top-down decisions in coordinating, administrating, and executing geoparks establishment in Slovakia, which aimed to trigger behavioural changes amongst citizens, while non-governmental stakeholders, such as civic organisations and entrepreneurs, relayed bottom-up initiatives via collaboration, to influence public awareness and determine successful existence and management of geoparks. Trott et al. [86] (pp.1079–1080) proposed a methodological framework for collaborative sustainability action, which encompasses a “transdisciplinary learning system as a top-down process, to introduce the sustainability problem (‘what is?’) and establish a sense of shared understanding around present-day and projected future sustainability, and participatory process as bottom-up approach, to enable full and active participation of young people in making sense of sustainability challenges (‘what if?’) on their own terms in local settings”.

Likewise, Ioppolo et al. [69] proposed a framework for a strategic plan for the Nebrodi area in Italy, implying top-down identification of development priorities by the municipalities and bottom-up opinions and information from the local community. According to Selman and Wragg [80], the implementation of Biodiversity Action Plan (BAP) in the UK required top-down strategies from the government, to direct action plans that appertain to wildlife habitats and species, and bottom-up actions from a local network, made up of public, private, and voluntary organisations as well as experts and lay individuals, to prepare, publicise, and implement those plans.

Several scholars regarded a bottom-up approach as more influential and imperative in driving SLD, compared to top-down [70,83,84]. Moallemi et al. [18] urged increasing systematic investigation of the role of bottom-up, to meet the 2030 targets of UN SDGs, as it is currently underexplored. However, Peng [76] pointed out that building a blueprint for bottom-up governance can be difficult, when communication problems exist.

2. Governance

Governance comprises national and local government systems as well as policies that enable CSC for SLD. In total, 24 publications contribute to this principle, and only a few provide details about what should comprise the governance system for SLD. For example, studies stress on democratic [54,87], decentralised [65], transparent/open [75], and participatory approaches [55,59,81,83], which constantly seek the input, feedback, and experience of localities, to improve future processes and strategies. Armstrong and Stratford [54] (p.554), however, urged the need to “articulate and materialise a range of mechanisms to open, flatten, and radicalise system of government and practices of governance to better reflect principles of sustainability and engender their more radical praxis”.

The findings of Borgström [57] and Kusakabe [70] showed that governance modes require increased flexibility, to have different effects on local sustainability initiatives. However, Borgström [57] raised a caveat on the nonexistence of a blueprint, to guide how members interact and engage effectively for SLD initiatives. Institutional and management capacity [69,70,76], alongside political support [18,61,84,87], are integral for the governance of CSC. Peng [76] described institutional capacity as knowledge, relational resources, and mobilisation capacity, with regard to local economic, environmental, and social domains that must be evaluated regularly. Whereas, Kusakabe [70] defined institutional capacity as human, organisational, learning, knowledge, and leadership aptitude. Stojanovic and Barker [83] stressed on assessing how governance aligns and conforms to environmental management principles.

Wallner and Narodoslowsky [88] (p.167) focused on the inclusion of anthropogenic aspects into policies, wherein “anthropogenic material flows must not exceed local assimilation capacities, should be smaller than natural fluctuations in geogenic flows, and must not alter the quality and quantity of global material cycles”. Liao et al. [72] proposed to embed social equity measures into national policies, such as housing options for people with disabilities, Internet access for all, etc., through a formalised public participation that promotes cross-sectoral collaboration. Blake [56] and Trott et al. [86] urged the integration of relevant and localised SD goals and issues into the education system, to encourage educators and students to develop solutions.

3. Structure

In total, 24 articles contribute to this domain. Although there is no consensus on the configuration of structure for CSC that facilitates SLD, several features arise as integral to its planning and implementation. For example, organic/flexible structure that is tuned to local needs was cited as necessary for CSC strategies to work [57,61]. Strategic plans and actions of CSC should be developed, based on the overarching SD objectives, common visions, and localised goals shared by various stakeholders [55,65,74,78]. Conversely, Ioppolo et al. [69] focused on a *compromise approach* that solicits members of a network to strive to conciliate individual and diverging interests. The findings of Armstrong and Stratford [54] demonstrated that inclusion of different stakeholders into a partnership in

Australia developed a new-found capacity to creatively respond to the economic, social, and environmental challenges. Borgström [57] showed that absence of a clear strategy has resulted in an abundance of financial and social capital resources loss. Additionally, Hands and Anderson [66] raised the need to translate and explain the link of SDGs to the daily operations of all members, to make their relevance clear.

Central or vertical coordination framework from the national and local governments seems crucial for policy enforcement and resources allocation [58,82,87]. Horizontal coordination between different ministries and governmental departments is important for clarity of responsibility, sharing of expertise of specialised departments, and effective and efficient decision-making [58]. The results of Hawkins et al. [68] showed greater *administrative capacity* (in the forms of staff capacity, budget, and dedicated sustainability department) enables local officials to create and expand meaningful interactions, within collaborative networks around sustainability and climate. It is, also, evident that leadership, which builds trust among members, encourages innovative thinking, develops human resource growth, and acts with integrity, is a core determinant to the success of CSC for SLD [56,59,71]. One commonality that was identified across the studies was the emphasis on the public sector to take on the *leading role* in implementing CSC for SLD. The outcome of Devenin [62] proves that the leadership of a single private company with a strong influence caused power imbalances, uncertainty, and weak institutionalisation, and reduced communities' trust in Chile, thus proclaiming the need for the public sector to lead.

The significance of a *mediating role* in CSC for the success of SLD projects was evident. The role, which was referred to as collaborative intermediary organisation, point of contact, and bracing social capital network, was found to be typically represented by individuals and private organisations as well as forums, workshops, and roundtables [62,69,70,73,79,87]. These studies attest that arrangement of such role seems pivotal to lead and manage collaborative efforts within a network, regulate participant asymmetries, connect members within and across networks through effective communication, advise and assist with any SLD initiatives, and resolve conflicts.

4. Key actors

Nearly all studies mentioned the importance of diverse stakeholders' involvement in CSC, often citing the need for a better understanding of *how* and *why* a certain cohort of actors interact with SLD initiatives. Generally, central/federal governments make decisions involving SD, which are then broken down into tasks performed by state and local governments [73,82]. It follows that governments, directly, influence the endorsement of CSC in developing local sustainability [54]. In order to keep a governmental SLD agenda on track, it was palpable that the commitment and expertise of research organisations and academics in HEIs were frequently sought after [71,74]. HEIs support municipalities in developing strategic SLD plans and mobilise the expertise required, for sustainable capacity building among diverse stakeholders [59,66,69]. Indeed, the involvement of HEIs, either in precipitating CSC formations or sustainability initiatives, were manifested in 20 out of 38 publications, mainly through research, teaching, curriculum development, workshops, outreach programs, and industrial and governmental collaborations.

The involvement of businesses in SLD efforts were, commonly, linked to advancing their own interests, such as improving their public image, value creation, and risk reduction [58,62,63]. Besides influencing policy-making [72], businesses provide various aids in materialising and expediting CSC actions, through funding, resources, infrastructure, training, campaigns, etc. [61,62,76]. Volunteers and NGOs appeared as one of the essential CSC alliances, as they support or instigate SLD initiatives [65,79,81] and are capable of contributing to greater SLD impacts [57,70].

Students and youths were regarded as potential *change agents*, to promote SD within a locale, thus, universities and schools were urged to incorporate SD that is aligned with local settings in courses and assignments to expose and train their students [56,86]. Correspondingly, Quest et al. [78] averred the necessity for sustainability champions and ambassadors to encourage local populations to take part in sustainability efforts. Moreover, a need to

identify the intersection between different stakeholders' interests and assess the impact of their initiatives was raised, so as to optimise the interests of all members within the CSC, in accomplishing their social obligations and responsibilities [58,62].

5. Psychological and social aspects

Psychological and social aspects of CSC that eventuate in SLD were identified in 22 articles. Whilst studies exhibit instilling such aspects can be difficult, their prominence in maximising learning and synergy between actors, which creates an environment for constructive relationships and cooperation, was confirmed. For example, Peng [76] asserted the need for close relationships between intellectuals, residents of different generations, locals, natives, and outside people, for better place making. Psychological factors, which include goodwill, courage, motivation, interest, and commitment, determine the acceptance and success rates of CSC interventions for SLD, within a community [61,64,89]. For example, [70] found that Yasu city citizens were motivated to participate in the Basic Environment Plan projects due to (1) the opportunity to socialise with others and (2) the sense of achievement or mission for the community. Quest et al. [78] (p.1265) called for a "seismic shift", which include a fundamental change in attitude, behaviour, and culture through education and awareness, which underpins a transition toward sustainability. Hands and Anderson [66] expressed the need to consider the influence of social norms and social pressures, in encouraging engagement and communication concerning SDGs. Similarly, Kusakabe [70] conveyed the need for collaborative rule-making, for citizen participation between local government and citizens. Hawkins and Wang [67] as well as Burmaa and Baasanjav [58] drew attention to local socioeconomic context as an important factor to be considered, when developing SLD policies and initiatives.

SD literacy and contextual knowledge serve as precursors to CSC actions [54,55]. In this vein, Marín-González et al. [16] stressed the importance of cognitive capital, which refers to the production, circulation, and application of relevant knowledge for SLD that leads to continuous improvements in practices and processes, which, subsequently, strengthens social capital. Correspondingly, the findings of Kusakabe [70] demonstrated that an increased level of citizen participation with detailed SD and local knowledge significantly contributed to the accumulation of social capital within the community and, thus, accelerated the SLD progress. Dzhengiz [63] revealed the influence of *cognitive homophily* among utility companies in Great Britain, which often led them to select and cooperate with others who have similar organisational values toward SD priorities and interpretation. For example, utilities with a business-case value frame, wherein the focus was on financial outcomes and corporate survival, collaborated mostly with other business organisations, whereas utilities with a social value frame, dedicated to community support and poverty alleviation, frequently cooperated with city councils and community organisations [63].

The results of Armstrong and Stratford [54] illustrated that the differences of values between members of a partnership caused some members to feel unwelcome, stop attending meetings, and form divisive groups. Hawkins and Wang [67] showed that cities with greater democratic votes from residents were progressive in environmental governance, indicating how different local contexts and values influence the way communities adjust to possible conflicts between environmental, economic, and social goals. Gauging cognitive homophily, hence, is necessary to understand the disposition of different entities that collaborate for SLD. However, according to Dzhengiz [63], understanding the degree of acceptance toward *cognitive diversity* among CSC members is equally important and a staple for a CSC to function effectively.

6. Experiences

In terms of experiences, there is general distinction in the reviewed literature between (1) benefits reaped from implementing CSC to achieve SLD and (2) challenges encountered in CSC execution. Eight publications provided key themes associated with the benefits. These include generation of innovative solutions [54,85], improved institutional capacity [76], students with increased capability and passion becoming SD change agents [56,86],

strengthened EPM processes, development of knowledge management and outreach information services [64], and accumulation of social capital [70].

On the other hand, 17 articles demonstrated the challenges of CSCs, which could potentially inhibit SLD achievement. Common examples cited include lack of willingness, trust, and connection among local authorities and communities to collaborate [54,57,58], financial, time, and human resources constraints [57,62,78,79], and lack of communication [70,80]. Lack of coordination, incentives, interest, and disciplinary silos were prevalent in HEIs [71]. Power relations between national and local governments [73,87], organisational and individual inertias [66,81,84], and unclear SD goals or indicators at a global level [18] were highlighted as impeding factors too.

3.4.3. Use of Theories in Different Aspects of CSC in Achieving SLD

Our review found that the use of different theories/models provides rich insights into orchestrating various aspects of CSC to achieve SLD. Since our focus is on the use of pre-existing theories that provide a theoretical lens for the research carried out, we only include papers that make explicit use of such theories, excluding papers that develop their own theory via propositions, etc., and/or make implied use of theory [93]. We classified the applications of the theories into six themes.

1. SLD translation and transformation

Three studies employed theories to examine partnerships for local sustainability, centred on translation and transformation. Acclimatising the approach by Davies [94], who used *actor network theory (ANT)*, [54] examined a multi-sector partnership for sustainable communities in Geeveston, Australia. They described the stages in the theory in some detail, clarifying that key actors of a partnership should first define or frame a problem (problematisation) and seek alliances and form networks (interessement); lead actors should consolidate networks and embed set of relationships to operate within the partnership (enrolment), and a live process should constantly evolve as members oscillate in action and inaction within the partnership, increasing capacities and desire for change [54] (p. 550).

Thereafter, these concepts were deciphered into specific issues in the findings of the paper. For example, the authors confirmed the occurrence of the problematisation stage, when the members of Geeveston accepted the partnership and, subsequently, were enrolled and mobilised for a common purpose. They further presented evidence of some members, who maintained an active presence in the partnership and showed a desire to work together, to be crucial in enrolling and mobilising other members, stabilising and promoting more durable and balanced forms of SD practice.

Using ANT, Selman and Wragg [80] portrayed the formation of a small informal conservation forum network in Oxfordshire, UK, which was originally driven by the personal interest and commitment of the county's council and residents. Subsequently, more massive and multifarious networks were established, due the pervasion of international (i.e., Agenda 21) and national (i.e., Biodiversity Action Plan) policies. As a result, some of the members of the initial network were rapidly re-enrolled in other very inclusive and politically astute sustainability networks, where the authors cautioned on the plausible negative impacts, such as little room for dissent, ambiguous purpose, direction, and commitment, which may lead to the destabilisation and disillusionment of members. Although the theory was explained at the starting point of the paper, we found little description of its relevance in the findings section.

Building on a *transition management* stance, Nevens et al. [75] developed Urban Transition Labs (UTLs) to examine the transition of SD processes in five European cities. Five distinct phases were introduced and operationalised within the UTL setting: a process design and system analysis, problem structuring and envisioning, back casting, determining major pathways, and agenda-setting, experimenting, and monitoring and evaluation. The assumption is that the UTL approach can be used to address issues pertinent to "how to coordinate, bring together and influence actors and their activities in such a way that they reinforce each other to an extent that they can compete with dominant actors and

practices" [75] (p. 114). This allows for a deep comprehension of the knowledge and practices developed along with the cooperation to achieve SLD. The authors, further, accentuated several prerequisites for designing and implementing UTL, such as a high degree of empowerment, selecting genuine frontrunners, adequate financial support, considering failure of the experiment as part of the process, etc.

2. Stakeholder engagement

Two studies demonstrated how theories can be applied to support stakeholder engagement. Converging the *social network analysis (SNA)* and *stakeholder theory* via participatory mapping, Cottafava and Corazza [60] proposed a general methodology to co-design the sustainability ecosystem at the local scale. First, the authors identified an ontological map of the sustainability topics network and, next, they designed a local sustainability stakeholders' ecosystem. The findings point out that the centrality analysis can be used to identify and quantitatively assess the SD topics and the importance and quality of an organisation within a stakeholders' ecosystem. Peng [76] used SNA to measure the change of density and range of an informal network structure, after the execution of an anti-dam campaign, which resulted in an enlarged network structure that contributed to an increased institutional capacity for governance in Meinung town, Taiwan.

3. Governance and policy development

Three studies discussed using specific theories to develop SLD policies. Liao et al. [72] used a *distributive justice model* to create measures of social equity policy and a *procedural justice model* to assess processes for community engagement. According to the analysis, "plans and organisational capacity are important for SLD, but what differentiates municipalities that engage in more social equity is procedural justice, which include formal citizen engagement through a citizen task force, cross agency collaboration, and explicit links to economic development actors—notably municipal ownership of utilities and pressure from local businesses" [72] (p.1206).

Ref. Swann [84] used the *collaboration formation and development framework*, which embodies the *institutional collective action (ICA) framework*, to develop a concept map of cross-sectoral collaboration for bottom-up sustainability innovation policy in Tallahassee, USA, through a neighbourhood energy competition. A detailed explanation of the framework, which integrates four streams, was given. They are the problem stream (i.e., climate change), the policy/solution stream (i.e., ordinance and voluntary agreements that promote sustainable behaviour), the political, social, and economic (PSE) streams that offer a conducive context (i.e., public values, social milieu, and economic conditions) for sustainability policy innovation to take place, and the organisational stream, which involves awareness-raising efforts from the non-governmental organisations, such as businesses and civic groups, and technical capacity from the government.

The author incorporated the role of a policy entrepreneur into the four streams to construct integrative leadership and sponsorship for the cross-sector collaboration policy. However, based on the findings, the author warned against relying heavily on policy entrepreneurs to organise efforts for SD issues, as this may impose vulnerability when they leave the team and move on to new endeavours [84]. The analysis, also, revealed that the local government (at the time of the competition) was not prepared to step into the policy entrepreneur's role and mobilise grassroots support.

Building on the *collaborative and participatory mechanisms* literature for planning and implementation, supported by research streams that suggest *policy support network* can improve the local capacity to undertake policy changes, Hawkins and Wang [67] (p. 8) developed a conceptual model of SD governance. An in-depth discussion of the constructs of the model was presented, which include administrative and management capacity, citizen participation, and a local and external support network, within the context of SD. The authors, then, tested the extent to which local officials of US cities utilised the elements of the model in their SD efforts and measured to what extent cities were depending on policy support network to improve their capacity to manage SD initiatives [67].

4. SLD programme/project implementation

Two studies presented theories that can guide and support CSC to configure SLD projects or initiatives. Battaglia et al. [55] applied the Sagor's [95] *collaborative action research method*, to develop a new territorial planning model for an Italian inner area, focused on local stakeholder engagement. Following the seven steps proposed by the theory: selecting a focus, clarifying theories, identifying research questions, collecting data, analysing data, reporting results, and taking informed action, the authors outlined a method for improving/refining local strategies for SD. The analysis showed that the integrated management of local resources could serve as a tool to reduce the socio-economic marginality of inner areas.

Devenin [62] proposed a collaborative community development model for Antofagasta, Chile, which was built on the *collaborative governance framework*, centred on building public goods through concerted action of multiple actors that are led by the public sector. The important features of the framework that were applied to the model include a projects portfolio, which must be broadly agreed upon by most of the stakeholders and must be based on previous local development plans, the joint action of several companies working together, and the development of territorial vision as well as long-term and sustainable impact goals.

5. Creation and management of territorial networks

Two articles presented concepts of *network theories* that enable an effective regional/territorial CSC development for SLD. Wallner and Narodoslowsky [88] linked sustainability to the complexity of a regional network and, thus, affirmed the need to change the intensity, speed, and comprehensiveness of internal and external interactions, as well as the connectedness of the regional network. This aims to attain SLD through effective communication activities, which include the exchange of matter, energy, information, culture, capital, and people, within the regional network and with the environment.

To pursue this, Wallner and Narodoslowsky [88] proposed the combined use of cleaner production, industrial ecology, and network-paradigm approaches, focused on communication activities and cooperation at different hierarchical levels (i.e., from inter-firm to inter-regional levels), as well as information and matter-flow networks.

Cannarella and Piccioni [59] described the architecture and dynamics of territorial networks that foster stable and long-term systematic collaborations for SLD. Elucidating the network articulation, components, and principles that comprise context, agents, goals, inputs, actions, results, products, and impacts, [59] urged a focus on technical and human aspects of territorial networks, simultaneously, to produce positive impacts.

6. Leveraging collaborative networks

Three articles addressed theories that are important in leveraging collaborative networks for SLD. In Kusakabe [70], the presence of and the need to distinguish the three types of capital that make-up *social capital network* was demonstrated in the implementation of SLD in Japan. The author highlighted the prevalence of bonding capital that refers to the common norms and strong identification, which occur within a restricted local territory, such as community-welfare organisations, and, bridging capital that typically emerges from NPOs that have theme-based aims (e.g., environmental groups), which usually traverse a local boundary, through the dissemination of useful expertise and information.

Kusakabe [70] mentioned that both bonding and bridging capital networks, often, worked towards similar goals, but in silos, highlighting the need for a mechanism that can address the complementarity of both networks to achieve better SLD performance. Thus, the role of *bracing capital*, which was usually held by individuals, government officials, LA21 representatives, forums, and projects, was proven necessary to connect and strengthen the links between bonding and bridging capitals that exist across sectors within a locality [70].

On another note, Marín-González et al. [16] combined the concepts of SLD, social capital, intersectorality, networks, and interdisciplinary and transdisciplinary knowledge,

to build a *network for knowledge exchange* between various sectors (e.g., government, universities, etc.) for SLD. In the analytical theoretical system section of the paper, the authors provided detailed explanation of the separate constructs (e.g., interdisciplinary knowledge, social capital, etc.), resulting in formation of conceptual frameworks summarised in figures.

Clear discussion and conclusion were then drawn on, regarding how the antecedents of these constructs could be integrated into and operationalised as a knowledge network for sustainability, accompanied by a figure comprising knowledge of local development processes that are leveraged by the relationships of the activity sectors [16]. Hawkins et al. [68] used the *institutional collective action (ICA) framework* to examine the scope of the collaborative networks, formed by US cities to address issues of climate and energy sustainability. The analysis showed that greater city administrative capacity and community stakeholder support engaged a larger number of partners, who collaborated to address climate and energy issues. In an attempt to update the existing ICA framework, a recent study by [32] clarified and repositioned the framework for wider applicability, by highlighting its key concepts, conceptual relationships, and assumptions, as well as its limitations and applications in fragmented governance and across diverse contexts, plus its research prospects.

4. Discussion

Our review corroborates CSC as one of the main catalysts to pursue SLD. Nonetheless, we identified two main gaps with regard to the development and implementation of CSCs. First, the reviewed literature does not take into account identifying the driving forces at different levels, when forming CSCs and executing relevant initiatives for SLD. Second, a framework representing the guiding principles and experiences, which could serve as a guideline and lessons learned for CSC implementation, is lacking. We discuss four implications in this section that can address the aforementioned gaps and form concerted solutions for SLD through CSC:

4.1. Identify and Understand the Impacts of Different Driving Forces

Our review confirms that CSC efforts should focus on leveraging local resources and the knowledge of key actors, due to its potential to influence SLD. This is in line with the theory of *endogenous growth*, which posits that investing in human capital, innovation, and knowledge within a territory will contribute to SD [96]. Local knowledge comprises experiences, skills, and insights of people within a local population that are inflected by factors such as gender, occupation, social status, etc. [21,97], thus, transpires as one of the best available sources to impart the strengths and weaknesses of a region.

Pooling these distinct sets of knowledge would help in developing solutions for local sustainability issues and maintaining SLD over time [54,57]. However, concentration on local knowledge and development might lead to fragmented and siloed approaches towards addressing SD issues [17] and, to some extent, may imperceptibly cause adverse impacts to other regions or countries [98]. Hence, the findings of this review concur with [98], which affirmed the importance of developing proper and fair mechanisms for CSC to attain SLD.

Global SD policies, mainly Agenda 21 and UN SDGs, emerged as prominent drivers of CSC too. However, it was evident that the lack of an explicit operating framework for action from Agenda 21 has led countries to act based on their own interpretations in executing SLD [99]. Although the UN SDGs sought to bring about development through cooperation [58], the recent literature put forth concerns in its achievement, due to its slow and uneven progress and the declining capacity of nations to continue with relevant efforts under the conditions of the COVID-19 pandemic, which has affected the entire world [100,101]. In spite of this, [100] asserted that UN SDGs are the only “way out of the crisis” (p.8), which can be attained through concerted efforts and cooperation between governments, businesses, society and other sectors. To pursue this, countries must commit to collect and disaggregate timely data and statistics for areas that are most in need of

attention [100] as well as develop localised measures and policies based on common global principles [101].

Remarkably, the Millennium Development Goals (hereafter, termed as MDGs), demarcated by the UN in 2000, did not emerge as one of the forces within this review, even though they were regarded as “the world’s central reference point for development cooperation” [100] (p.3). This may be due to MDGs’ slow, inadequate, and uneven progress across countries [102], caused by lack of buy-in from countries [27], poor governance, and constraints in the formulation process, structure, content, and implementation [102,103].

The rural- or inner-development forces were identified as one of the important drivers too. In line with [55], [104] attributed this phenomenon to bioregionalism, which refers to a “social movement which strives to recover a sense of place and a sense of community by revitalising ecologically sustainable and culturally diverse societies in the context of their local geographical areas or bioregion (p.13)”.

4.2. Recognise the Interdependencies of Forces from Different Levels and Strengthen Their Complementarities and Cooperation Processes

We reckon contextualising the driving forces of CSC for SLD that emerge from different levels, as illustrated in Figure 3, is imperative. It provides a basis for: (1) informing different ways that multiple stakeholders use to prompt changes toward SD, and how actions at each level affect others [105]; (2) examining the nexus and interactions between stakeholders at different level in their efforts to drive SLD [106,107]; (3) understanding the information flows between different levels that allow the construction of knowledge and creation of networks [16]; and (4) identifying measurement indicators for SD efforts at all levels [105].

Hence, delving deeper into the aforementioned aspects, through the lens of a micro-, meso-, macro-, and mega-framework, may lead to the understanding of interdependencies that occur across different levels and identification of approaches that can strengthen their complementarities and cooperation processes ([16,105]. Our analysis concurs with [105], which inferred that forces within a micro-context, which stem from individuals and institutions, denote bottom-up actions that operationalise and affect other level indicators, such as meso- and macro-levels. Likewise, [106,107] claim that a micro-context manifests a sense of dependence and comprises grassroots initiatives, which do not extend a limited locality or a specific project, but are useful as pilot projects that provide a “vision and a map” for macro-level initiatives [106] (p. 6). Taken together, micro-context forces have the potential to be aggregated to the macro-level [105]. However, the study by [108] on the circular economy, revealed that micro-level actions lack capacity in document progress and developing common measurement standards. This calls for enhanced support and cooperation from other levels, such as the local government, as depicted in the study of [84].

We affirm that it is important to specify the interactions as well as the divergent and convergent factors that dynamise or inhibit the cooperation relationships across sectors, such as academic, business, government, etc., within the meso-context (local/municipal authorities and community), as it functions as the underlying structural and value-formation mechanism between the micro- and macro-scales [109]. However, Reid et al. [110] identified that the meso-level has received little attention in the research landscape. In [110], meso-level forces were observed as highly important in driving pro-environmental behaviour, as they act as a mediator, generator, and propagator to instigate behavioural changes; hence, it is advocated for them to be pursued for relevant policymaking. In the context of the macro-level (national- and continental-level), the analysis confirms that primary application of these forces is in the governance, policy development, and horizontal coordination for SLD, which manifests elements of power and domination that are in line with [106].

Given the unique economic systems and political settings of countries/continents, there is a clear need to understand how power relations, ownership, and resources from the macro-scale are distributed to different levels, in particular the meso-level, to act on their own terms in addressing different SDGs. According to Wallner and Narodoslowsky [88], deepening the understanding of the complexity of a regional network will, subsequently,

pave appropriate ways to adjust the intensity, speed, and connectedness, as well as the internal and external interactions, of the regional network, towards attaining SLD. Finally, we infer that when planning and managing local agenda at the mega-level (global-level), it is of the utmost importance to consider the local profiles and development priorities, especially in terms of cultures, economies, and potentialities, as their significant differences affect the real possibilities of development. In addition, Kim et al. [32] proposed an updated version of the ICA framework, comprising an institutional perspective as well as comparative and behavioural orientations, which is most useful for understanding meso- and macro-level collective-action problems.

4.3. CSC–SLD Guiding Principles and Experiences Framework as Reference and Lesson Learned

Based on our analysis of the guiding principles, we argue that the participation mechanisms of organised communities (local actors, families, civil society) for SLD should prioritise the complementary roles of the top-down and bottom-up approaches. That is, how local governments generate participation strategies in line with the development agendas, as well as how local people organise themselves to participate and establish their own development priorities. The understanding of SD requires an interdisciplinary approach, due the dynamics of the territories (problems, needs, and phenomena), thus, it cannot be explained from a single perspective. It requires different disciplines to contribute concepts, methodologies, and epistemological ways to understand the object of knowledge. Consequently, interdisciplinary spaces that emerge are strengthened through the creation of networks and the identification of multiple nodes and clusters. The emergence of an interdisciplinary perspective for understanding SD supposes the creation of conceptual isomorphism and dialogic relationships between the intervening sectors [16]. Indeed, several articles reviewed in this study articulated efforts in forming such networks at the school and university levels, with the intention to expose students and youths as change agents and sustainability champions/ambassadors, who interact with society to contribute to SLD transformation [56,78,86]. This coincides with [111] (p. 213), which advocates that educational management should foster a symbolic relationship between the school and its environment that, subsequently, contributes to societal transformation.

Governance processes are essential to spearhead SLD and our review confirms that. Numerous features have been presented to be important for effective SLD governance: transparency, decentralisation, flexibility, etc. However, the preponderance of studies that postulate different governance models, but do not address their long-term implementation, indicates that little attention has been paid to ensuring the permanence and feasibility of such governance over time. Hence, a comprehensive participatory governance model, focused on identifying and evaluating relevant stakeholders along with capacity building during the whole lifecycle, which can be adapted to different laws (e.g., ones that restrict citizen participation), should be considered [112].

Most of the articles in this review focus on HEIs, wherein the government–HEI–industry relationship was prominent in carrying out sustainability initiatives at a local level. Through research and other activities, HEIs provide both basic and applied knowledge, to be incorporated into the production and policymaking processes of industries and governments. Yet, we found little evidence of a discussion about clear national policies that enforce the involvement of HEIs in SLD, which indicates the need for more governmental support. For example, at the global level, the Times Higher Education Impact Ranking published a full report assessing the impact of HEIs against the UN SDGs in 2021 [113]; however, studies and reports examining similar impact assessment across HEIs at local level are meagre. Furthermore, although some of the articles highlight the role of NGOs in SLD (e.g., [81]), most do not provide explicit details of to what extent NGOs have been able to advance SD discourse. In fact, [114] expressed that it is difficult to carry out such an assessment and raised the need to, first, study how influential NGOs are in pursuing SD.

It was noted in this review that cooperation entails shifts in the psychological and social aspects of stakeholders, which are geared toward achieving SLD. This agrees with

Kropotkin and Reclus, who advocated that “sustainable human/environment relations could only be initiated through social transformation and fundamental changes in human values . . . , supported by a progressive sense of place, greater human interaction and the centrality of love” [115] (p.29). Kropotkin, via the *theory of mutual aid*, further argued that people are, naturally, very sociable and have tended to share, care and cooperate with each other, since the early times of humankind [115]. Referring to this, we presume that too much focus on centralised power and hierarchies in communities may undermine the omnipresent self-organisation of humans to cooperate in the basis of reciprocal altruism, thus causing them to be detached in different factions. Indeed, such problems were evident in reviewed articles [54,80].

A combination of positive (i.e., benefits) and negative experiences (i.e., challenges), associated with executing CSCs for SLD, was derived from the review. In fact, we observed more challenges such as a lack of buy-in, trust, interest, etc., which could potentially thwart SLD aspiration, but discussions about how to deal with them, to ensure long-term member engagement, were scant. We recognise engendering cooperation between members of multi-scalar and multisector is difficult, and that it can be overburdened by unclear SD goals at the national and global levels. However, putting cooperative behaviours at the centre of CSC, we opine for a regular review of experiences, which encompasses members’ intellectual, affective, and practical characteristics, materials, and social environment, as their transactional relations [116] pertaining to CSC can serve as lessons learned that should be taken into account in future actions. Drawing insights from the increasing employee-experience literature [117,118], we suggest incorporating a similar experience check throughout the lifecycle of all CSC members at each stage, to understand their different needs and interests, unearth problems or challenges that cause frustration, and gauge their interaction with each other.

In particular, our results show that attempts and methods to measure the effectiveness or impact of CSC, in the context of perceptible and quantifiable SD solutions, remain nascent and, thus, offer a clear window of opportunity for further exploration. In parallel with this, Wehn et al. [50] expressed that actual changes resulting from citizen science interventions are often assumed, ignored, or speculated about, and this led the authors to develop a framework consisting of guiding principles for citizen-science-impact assessment.

4.4. Building and Applying Relevant Theories to Aid Effective CSC–SLD Implementation

According to Seuring et al. [119], exploration on the use of theory in SLRs is essential to present the theoretical development within a research domain, but such analysis is dearth in the existing SLRs. Considering this, we examined the use of relevant theories across the articles reviewed in this study. We observed that the CSC–SLD research lacks the application of theory within its domain, with roots in cooperation and development theories, per se, indicating the need for *theory building* [119]. Hence, the studies included in this review have a tendency to borrow constructs taken up from other theoretical disciplines, to add value to our understanding of various aspects of the CSC–SLD phenomenon, which is defined by [119] as *theory extension*. Zorzini et al. [93] argued that such an approach, which the authors classified as *theory expansion*, is the strongest use of theory, as it makes a powerful contribution in helping to understand a phenomenon and offers sources for managerial implications.

In our review, [55], clearly, mentioned at the starting point that they transposed the Sagor [95] model from the educational context to develop an SLD implementation pathway for an Italian alpine region. The application and detailed explanation of the model was evident throughout the study, particularly in the analysis section. Additionally, the use of *theory suggesting and explanation*, which usually is present alongside *theory extension* ([93], was, also, evident in the review. One example of this is [72], which used distributional justice and procedural justice lenses to assess community engagement processes that the authors affirmed as important for SLD. Backed by a comprehensive explanation of the regression models and conclusions drawn through empirical analysis, [72] offered a

new understanding of SLD policies and governance and, thus, provided a trajectory for further research [93]. Examples of the aforementioned use of theory were also identified in [59,62,68,70,75,76].

Alternatively, [16] combined the concepts of SLD, social capital, intersectorality, etc., to construct a knowledge-exchange-network framework for SLD, through an abductive method, which yields *theory modification* [119]. Other similar studies identified in the review include [60,67,84,88]. Another use of theory identified in the review is *theory matching*, which adds external validity to the research findings of a paper, as it shows a high level of consistency between the findings of the study and the theory applied [93]. The study by [54] serves as one example, where the authors used ANT to assess the translation of partnership towards SLD. The authors, further, elaborated their findings according to the individual constructs of ANT, to describe members' perceptions within the partnership. The analysis by [80], which employed ANT, is another example; however, this study lacks application of the theory in the findings section.

Additionally, we observed that articles, which provide in-depth explanations for the choice of theories they used (e.g., in the introduction or theoretical framework section) and further expand their application to the research findings, provide a rich understanding and validation concerning CSC–SLD adoption, which concurs with the findings of [93].

5. Conclusions

This article, systematically, reviewed studies on CSC in SLD through the PRISMA approach, the resulting insights of which offer a reference point for a consolidated CSC–SLD implementation framework and a contextual mapping of the driving forces. The motivation behind such outcomes is to overcome the dispersion of guiding principles, stimuli, and gaps in managing the miscellany of CSC operations to eventuate and operationalise SLD.

From the review, 29 driving forces of CSC for SLD were identified and discussed in the context of micro-, meso-, macro-, and mega-scales, portraying their complementarities and interactions in engendering and pursuing SD initiatives. The most widely reported driving forces are the stock of endogenous capacities/knowledge sources, co-creation and sharing, Agenda 21/Local Agenda (LA) 21/Rio de Janeiro Summit 1992, and 2030 UN SDGs. Thereafter, five guiding principles–approaches, governance, structure, key actors, psychological and social aspects, and experiences, garnered from the review, were integrated into a framework to provide direction and lessons learned for effective CSC implementation. The presence of sparse studies in the field for measuring the effectiveness of CSC in SLD was highlighted. Additionally, the use of different theories and models by the reviewed articles, to coordinate various aspects of CSC to pursue SLD, were classified and discussed across six themes. These include SLD translation and transformation, stakeholder engagement, governance and policy development, SLD programme/project implementation, creation and management of territorial networks, and leveraging collaborative networks. Taken together, these results can align the SLD goals and CSC initiatives by pulling together the primary resources and coordinating actions.

The findings of this study substantially contribute to the existing but limited knowledge on CSC in SLD. First, the results inform practitioners and policy-makers of the important strategies that need to be considered, when planning and developing CSC policies/frameworks for SLD. Further, they provide in-depth insights into the theories/models that can be used to guide and augment CSC interventions to achieve SLD. Finally, the outcomes represent a starting point for future empirical research investigations. It is suggested that the framework of CSC–SLD will be adopted and empirically tested in different continents, countries, regions, and localities that are susceptible to inter-sectoral cooperation networks at local, national, and, even, international levels, to ascertain any similarities and differences.

The articles reviewed in this study stem from diverse disciplines, populations, and research approaches, yet, despite the heterogeneity, they contribute to the amalgamation of distinct perspectives of CSC that works as an instrument to drive SLD. The compilation,

comparison, and combination of relevant indicators into several themes were undertaken in a careful manner.

However, this study has some inherent limitations, which affect the generalisability of the research findings. The limited number of papers identified and selected for further analysis may not provide a comprehensive representation of some areas of the globe. Hence, we suggest that future reviews addressing this topic may include other databases, to find more sources of diversity. This notwithstanding, the findings are still useful for future reference and studies, as our aim is to highlight and summarise the key CSC principles and forces that are relevant in SLD implementation. Given the fact that the 2030 UN SDGs targets will expire in less than a decade, and the recent surge in calls for local efforts to pursue SDGs, we hope that this study can aid in developing and accelerating solution pathways that integrate CSC and SLD in epistemology, methodology, policy, and practice.

Supplementary Materials: The following supporting information can be downloaded at: <https://www.mdpi.com/article/10.3390/su14116601/s1>.

Author Contributions: This article is the outcome of a team investigation. The methodology, review for adjustments, writing, application management, and tasks supervision was the responsibility of F.M.-G.; the research, conceptualisation, writing, and layout was carried out by S.R.M.; the methodology and findings review, final revision and financing management was carried out by A.J.P.-C.; the adjustment to the journal's standards and revision was conducted by S.F.Y.; and the final editing and translation was developed by S.S. All authors were involved in the quality assessment of the review. All authors have read and agreed to the published version of the manuscript.

Funding: This research received no external funding.

Institutional Review Board Statement: Not applicable.

Informed Consent Statement: Not applicable.

Data Availability Statement: Not applicable.

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

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