

Evolutionary history of sustainable social housing (HIS): A systematic review

Histórico evolutivo das habitações de interesse social (HIS) sustentáveis: uma revisão sistemática

Historia evolutiva de la vivienda social sostenible (HIS): una revisión sistemática

Ana Carolina Ruivo Reis, Programa de Pós-Graduação em Arquitetura, Urbanismo e Paisagismo, Universidade Federal de Santa Maria, Santa Maria, Rio Grande do Sul, Brazil.

E-mail: carolinaruivoarq@gmail.com  <http://orcid.org/0000-0002-1115-1483>

Marcos Alberto Oss Vaghetti, Departamento De Estruturas E Construção Civil, Universidade Federal de Santa Maria, Santa Maria, Rio Grande do Sul, Brazil.

E-mail: marcos.vaghetti@ufsm.br  <https://orcid.org/0000-0001-8702-0482>

Fabiane Vieira Romano, Departamento De Desenho Industrial, Universidade Federal de Santa Maria, Santa Maria, Rio Grande do Sul, Brazil.

E-mail: fabioromano@gmail.com  <https://orcid.org/0000-0001-8249-403X>

How to cite this paper: REIS, A. C. R.; VAGHETTI, M. A. O.; ROMANO, F. V. Evolutionary history of sustainable social housing (HIS): A systematic review. *Cadernos de Pós-Graduação em Arquitetura e Urbanismo*, São Paulo, v. 24, n.2, p. 292-306, 2024.

DOI 10.5935/cadernospos.v24n2p292-306

Submitted: 2024-02-28

Accepted: 2024-08-31



Este artigo está licenciado com uma Licença Creative Commons Atribuição-NãoComercial 4.0 Internacional

Abstract

In Brazil, the development of social housing has been shaped by various factors over time, including historical, social, and political influences, particularly due to the rapid urbanization driven by industrialization in the 20th century. Urgent improvements are needed to address issues related to housing quality, construction technologies, sustainability, and public policies. This study aims to conduct a systematic literature review on the evolution of social housing, with a focus on its integration with sustainability. The review reveals an increase in research on the development of sustainable Social Housing (HIS), with the goal of incorporating solutions and innovations to meet housing demands, drawing from historical events, technological advancements, and changes in public policies related to sustainability.

Keywords: Social Interest Housing; Sustainability; Urbanization.

Resumo

No Brasil, a evolução das habitações de interesse social foi influenciada por diversos fatores ao longo do tempo, incluindo aspectos históricos, sociais e políticos, especialmente devido à rápida urbanização impulsionada pela industrialização no século XX. Melhorias urgentes são necessárias para abordar questões relacionadas à qualidade das habitações, tecnologias de construção, sustentabilidade e políticas públicas. Este estudo busca realizar uma revisão sistemática da literatura sobre a evolução das habitações de interesse social, com foco na integração com a sustentabilidade. Como resultado da revisão sistemática, observa-se um aumento no desenvolvimento de trabalhos sobre a evolução da Habitação de Interesse Social (HIS) sustentável, com o propósito de agregar soluções e inovações às demandas habitacionais, a partir de eventos históricos, avanços tecnológicos e mudanças nas políticas públicas relacionadas à sustentabilidade.

Palavras-chave: Habitação de Interesse Social; Sustentabilidade; Urbanização.

Resumen

En Brasil, la evolución de la vivienda social estuvo influenciada por varios factores a lo largo del tiempo, incluidos aspectos históricos, sociales y políticos, especialmente debido a la rápida urbanización impulsada por la industrialización en el siglo XX. Se necesitan mejoras urgentes para abordar cuestiones relacionadas con la calidad de la vivienda, las tecnologías de construcción, la sostenibilidad y las políticas públicas. Este estudio busca realizar una revisión sistemática de la literatura sobre la evolución de la vivienda social, centrándose en la integración con la sostenibilidad. Como resultado de la revisión sistemática, se incrementa el desarrollo de trabajos sobre la evolución de la



Vivienda Social sustentable (HIS), con el propósito de sumar soluciones e innovaciones a las demandas habitacionales, con base en eventos históricos, avances tecnológicos y cambios en políticas públicas relacionadas con la sostenibilidad.

Palabras clave: Vivienda de Interés Social; Sostenibilidad; Urbanización.

INTRODUCTION

The evolution of social housing (HIS) in Brazil has been shaped by historical, social, and political factors, primarily due to industrialization in the 20th century, which spurred mass urban migration (Freitas, 2021). This rapid urbanization created a large-scale demand for housing and triggered a social issue that still persists: the housing deficit, estimated at 6,215,313 houses in Brazil as of 2022 (FJP, 2024).

The demand for housing often leads to makeshift construction or irregular land occupations, such as hillside settlements, floodplains, and areas near landfills (Oliveira; Manzi, 2020), exposing individuals to vulnerable conditions. When examining urban expansion, it is common to find HIS located far from city centers, with little or no infrastructure, basic sanitation, adequate transportation, commercial services, or other amenities.

The current scenario of extreme weather events and the global scarcity of natural resources (IPCC, 2021) has raised concerns among public authorities and society, highlighting the need for more sustainable, safe, and climate-adaptable construction. The recent increase in heavy rainfall in Rio Grande do Sul, particularly since 2023, has resulted in severe flooding, landslides, property damage, displacement of entire communities, numerous deaths, and significant public health challenges. These events underscore the urgent need to redesign urban settlements in areas with higher social vulnerability.

The construction industry is responsible for a substantial share of global CO₂ emissions (UNEP, 2022), emphasizing the importance of adopting new building models that reduce energy, water, and natural resource consumption, while ensuring air quality and people's well-being. Considering the challenges facing HIS, it is crucial to improve building quality, urban planning, construction technologies, sustainability practices, and public policies, since HIS is essential for providing adequate housing to low-income populations and reducing social inequality (Lemos, 2019).

Growing concerns about population increase and the use of natural resources have spurred interest in sustainable architectural projects that integrate buildings into the local environment (Custódio *et al.*, 2021). To ensure that HIS is truly sustainable,



environmental preservation, and social development must be considered at every stage, from planning to post-construction occupancy, promoting a safe and healthy living environment for families. By analyzing housing production in Brazil, we can identify changes over the years, learning from past mistakes and successes to foster improvements in HIS development. The aim of this study is to examine the historical evolution of social housing and its integration with sustainability through a systematic literature review.

Methodology

This study conducts a systematic literature review on the evolutionary history of HIS and its integration into sustainability. It is characterized as a descriptive-exploratory study. It is descriptive because its goal is to present the key indicators from academic publications in sustainable HIS, and exploratory because it seeks to contribute to the topic through bibliometric research, which will help build an overview of the field, following a defined search protocol (Chart 1).

| Steps | Definitions |
|---------------------------|--|
| Review questions | How did the evolution of social housing typologies occur, and when did concerns about sustainability emerge? |
| Document types | Theses, dissertations, and scientific articles. |
| Search sources | CAPES Journals, Brazilian Digital Library of Theses and Dissertations (BDTD), Google Scholar, SciELO. |
| Search terms | "History," "Social Housing," "Sustainability." |
| Exclusion criteria | Studies that do not address similar functions will be excluded. |
| Language | Portuguese. |
| Time frame | From the 1970s onward. |

Chart 1: Search protocol. Source: Authors.

Search sources include CAPES Journals, the Brazilian Digital Library of Theses and Dissertations (BDTD), Google Scholar, and SciELO (Chart 1). For the development of advanced search strategies – where *and* represents intersection, *or* represents union, and *and not* represents exclusion (Galvão; Ricarte, 2019) – the following connectors were used: "History" *and* "Social Housing" *and* "Sustainability." Articles considered for the systematic review followed criteria of similarity and relevance to the research. The choice of the 1970s as a time frame is justified by the fact that this was when discussions on sustainability began to gain prominence.

For the analysis of the results, graphs were created using Excel, and summary tables were compiled containing the relevant findings from the scientific production on the evolution of HIS in Brazil, based on the systematic review. The discussion will address the evolution of social housing and sustainability, contextualizing the key events that have contributed to the current understanding of these topics.



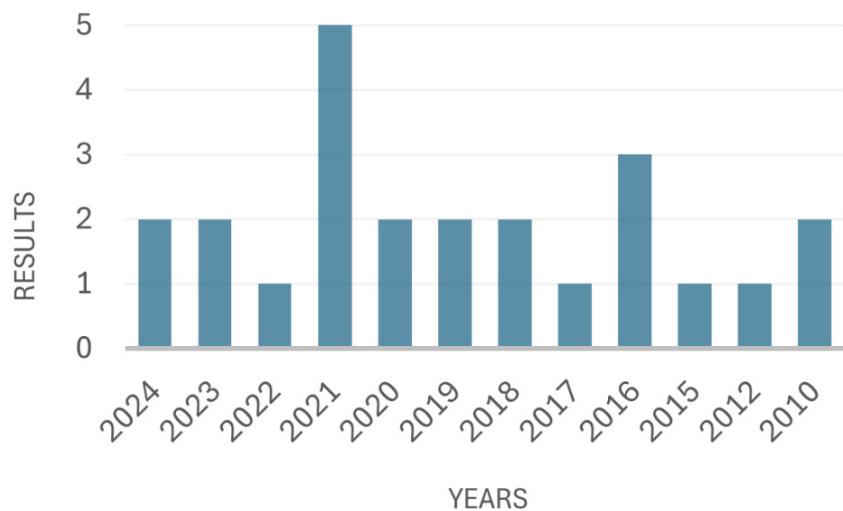
Results

Table 1 provides a summary of the results from the systematic review. The selection of articles was based on the research questions (Chart 1).

| Quantity | CAPES Journals | BDTD | Google Scholar | SciELO |
|------------------------------|----------------|------|----------------|--------|
| Total documents found | 30 | 28 | 39,000 | 5 |
| Documents analyzed | 30 | 28 | 200 | 5 |
| Documents included | 24 | 11 | 34 | 3 |
| Theses | 0 | 2 | 0 | 0 |
| Dissertations | 0 | 9 | 15 | 0 |
| Articles | 24 | 0 | 18 | 3 |

Table 1: Results from the search. Source: Authors.

Graphs 1 to 5 display the results from the searches conducted across the selected research platforms. Considering the search protocol established in this study, the CAPES Journals platform had the largest number of relevant studies, with five articles published in 2021, followed by three publications in 2016 (Graph 1).

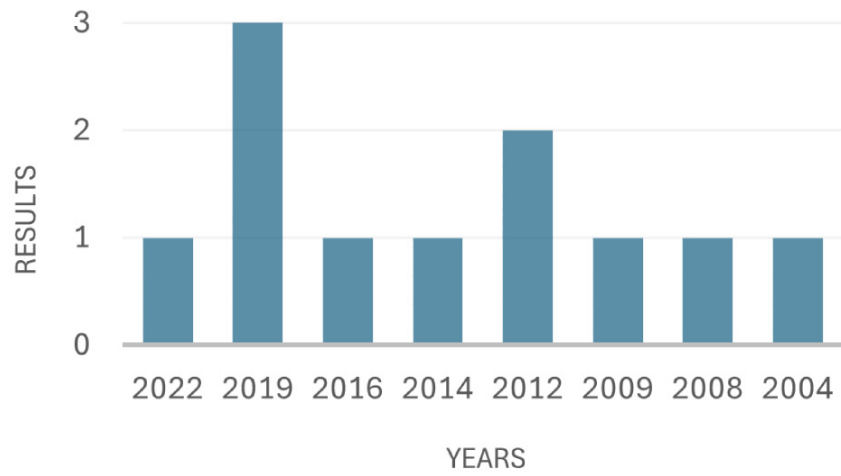


Graph 1: Results from searches on the CAPES Journals platform. Source: Authors.

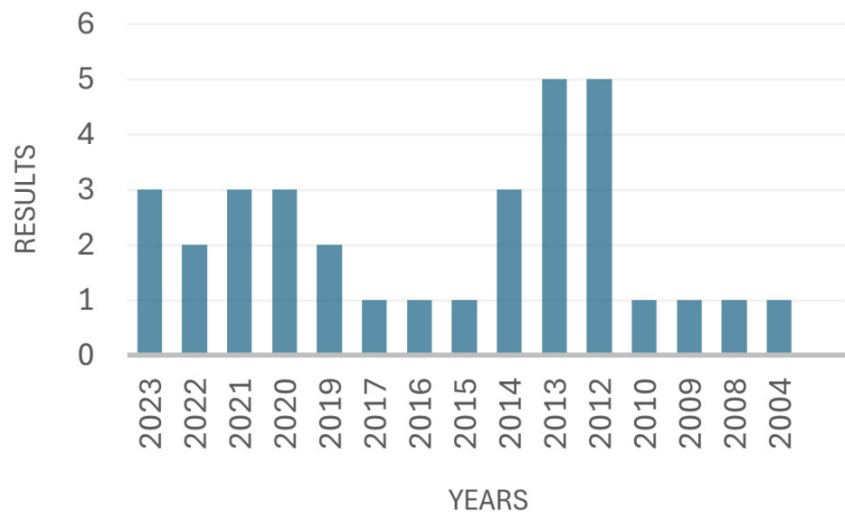
Graph 2 shows the results from searches on the BDTD platform, where the highest number of works was developed in 2019, with two dissertations and one thesis. This was followed by 2012, which saw two dissertations.

Graph 3 presents the number of studies conducted over the years on the Google Scholar platform. The years 2012 and 2013 saw significant progress in research on the history of sustainable social housing, with one dissertation and four articles in 2012, and two dissertations and three articles in 2013.

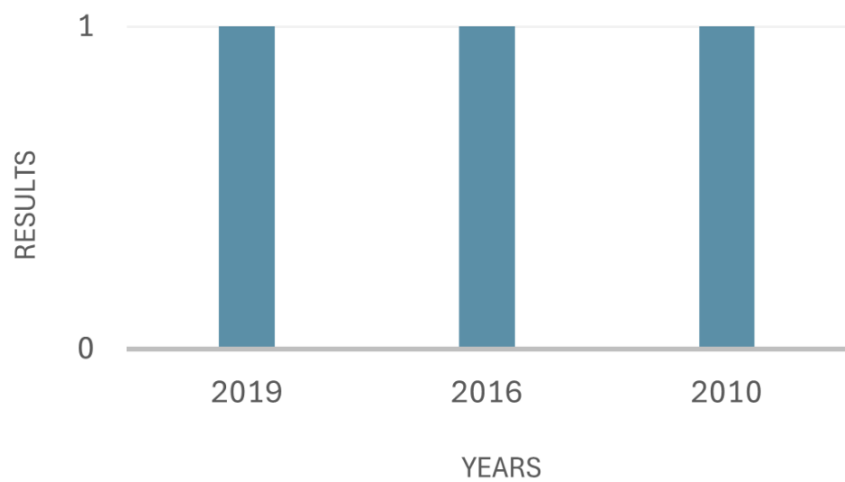




Graph 2: Results from searches on the BDTD platform. Source: Authors.



Graph 3: Results from searches on Google Scholar. Source: Authors.

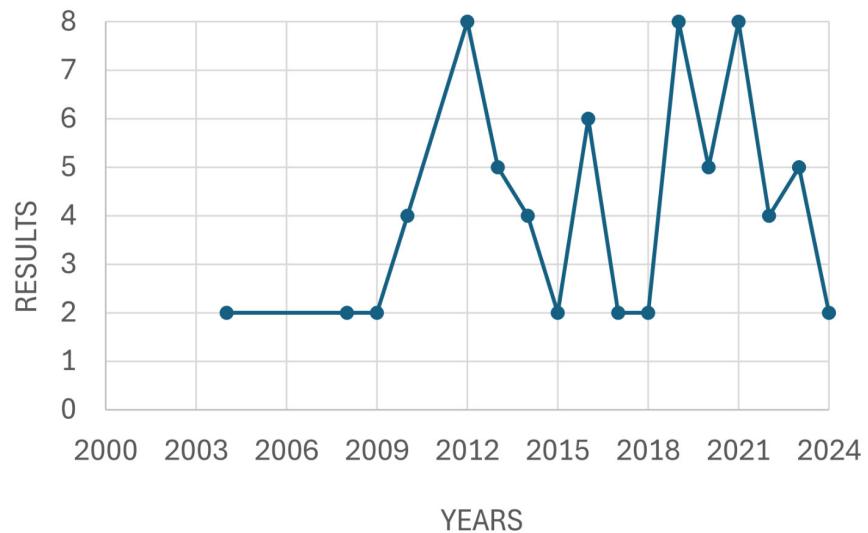


Graph 4: Results from searches on the Scielo platform. Source: Authors.



Graph 4 shows the number of articles published on the SciELO platform, with only one article published in each of the three years displayed.

Graph 5 illustrates the peaks in research development across the search platforms mentioned in Chart 1, with the years 2012, 2018, and 2021 showing the highest activity. The integration of HIS and sustainability themes began in the early 2000s.



Graph 5: Results of the research on sustainable social housing across digital platforms over the years. Source: Authors.

Based on the graphs and the literature review, a summary table (Chart 2) was created to highlight the periods of greatest and least research output as well as possible reasons for these fluctuations.

| Period | Characteristics |
|---|--|
| Initial stability (2000-2009) | This period marked the beginning of discussions on sustainability in HIS, but with few studies on its historical evolution. This could be due to lower awareness and less pressure to integrate sustainable practices. |
| Growth and initial peaks (2010-2013) | A significant increase in research was observed. This growth is likely linked to rising global awareness of climate change. Public policies began to incorporate sustainability aspects, encouraging academic and technical production in this area. |
| Fluctuations and temporary decline (2014-2017) | This phase of fluctuations may be attributed to economic and political instability in various countries, affecting investments and sustainability initiatives. |
| Instability and new decline (2018-2024) | A period of oscillation, possibly driven by the global economic crisis triggered by the Covid-19 pandemic starting in 2020. |

Chart 6: Summary of results. Source: Authors.



Discussion

Historical Evolution of HIS

Understanding the historical evolution of HIS in Brazil is crucial for comprehending the motivations behind and the implementation of housing programs in the country. By examining its trajectory (Figure 1), it is possible to identify the changes needed to improve this type of housing and better address the population's needs. A critical analysis of past issues allows for the generation of knowledge that can support continuous improvement and the promotion of best practices.

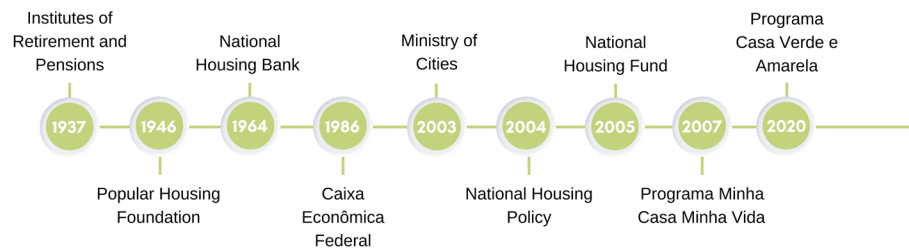


Figure 1: Results on the historical evolution of HIS. Source: Authors.

Over the years, research in the areas of construction and urbanization has highlighted various problems in social housing across Brazil. Issues have been identified related to urban mobility and infrastructure as well as construction defects, such as inadequate ventilation and natural lighting, structural pathologies, low-quality building materials, poor location, and the use of materials with low thermal performance, among others.

The analysis of housing issues in Brazil began around the 1880s, driven by serious public health threats. This arose from the inability of social housing production to keep up with the rapid population growth in cities (Bonduki, 2017). During the Old Republic (1889–1930), state initiatives in the social housing sector were almost nonexistent. In this period, the lack of a housing finance system made renting tenements and other types of housing prevalent (Duarte, 2013; Lemos, 2019; Martins, 2022), despite their often poor living conditions.

The Universal Declaration of Human Rights, proclaimed by the United Nations General Assembly in Paris in 1948, was a landmark document in human rights history. It established, for the first time, the universal protection of human rights, declaring housing as a fundamental right for all citizens (ONU, 1948). This period also saw the creation of the first public institutions aimed at promoting social housing, such as the Institutes of Retirement and Pensions (IAP) in 1937 and the Popular Housing Foundation (FCP) in 1946 (Lemos, 2019; Freitas, 2021).

In the 1960s and 1970s, Brazil experienced a significant wave of rural-to-urban migration, with 56% of the population, estimated at 93.1 million people, residing in

cities (Martine; Camargo, 1984; Grzegorzewski, 2022). The increasing demand for housing led to large-scale construction of replicated housing units. However, this expansion overlooked critical factors such as climate characteristics, urban mobility, local infrastructure, and construction material quality. These are essential elements for ensuring residents' quality of life and the sustainability of the buildings.

In 1964, during the military regime, the National Housing Bank (BNH) was established, enabling large-scale housing construction through collaboration between the public and private sectors as well as long-term financing (Oliveira, 2014). To facilitate the construction and acquisition of homes, especially for low-income populations, the BNH set up the Housing Finance System (SFH).

Over its 22 years of operation, the BNH financed the construction of 4.3 million houses. However, in 1986, the bank was dissolved, and its financing functions were taken over by Caixa Econômica Federal (Oliveira, 2014; Custódio *et al.*, 2021). One of the main criticisms of BNH housing was its peripheral location, a problem that persists to this day.

The way housing is conceived and produced in Brazil has long fallen short of meeting the real needs and demands of its citizens. As a result, people often turn to alternative means to secure housing, such as the creation of favelas, irregular settlements, and self-built homes. The responsibility for providing adequate housing is shared among the federal, state, and municipal governments, including building new homes, improving housing conditions, and ensuring sanitation.

The Federal Constitution of Brazil, promulgated in 1988, represents a significant milestone for social housing in the country. It recognizes the right to adequate housing as a social right, including measures aimed at the most vulnerable groups to ensure access to decent housing with basic infrastructure.

In 2003, the Ministry of Cities was created to implement more effective housing policies, focusing on the poorest segments of the population (Grzegorzewski, 2022). In 2004, the National Housing Policy (PNH) was introduced, managed by the Ministry of Cities, marking the first housing plan since the collapse of the BNH. In 2005, the National Housing Fund (FNH) was established, and from that point on, the National Social Housing System (SNHIS) required states and municipalities to create housing funds, councils, and plans to access federal resources (Freitas, 2021; Grzegorzewski, 2022).

In 2007, the Minha Casa Minha Vida (MCMV) program was launched, aiming to reduce the housing deficit and support economic development (Brasil, 2009). However, similar to the criticisms leveled against the BNH, scholars have highlighted key issues with the MCMV program. These include the distant location of developments from urban centers, construction quality problems, lack of thermal, acoustic, and lighting comfort, and the absence of basic urban infrastructure and services.



In 2020, the Casa Verde e Amarela (CVA) program was launched as a reformation of the Minha Casa Minha Vida (MCMV) program, aiming to benefit a total of 1.6 million low-income families by 2024 (Ministério da Economia, 2020). However, the program has disappointed researchers in the field, as it has failed to improve housing quality or address the issues found in previous housing programs.

Currently, the MCMV program has made strides toward enhancing the sustainability of social housing (Grzegorzewski, 2022). To promote energy and water efficiency, several sustainable features have been introduced, including solar water heaters, water-saving devices, compartments for selective waste collection, individual water consumption meters, and water reuse systems for common areas. Additionally, tree planting has been incorporated into the projects, improving the environmental comfort for residents.

Brazilian social housing developer MRV has also introduced new architectural initiatives that prioritize environmental comfort. These include optimizing material usage and reducing waste, using environmentally friendly materials, focusing on energy efficiency, and managing water use during construction (Grzegorzewski, 2022). Such actions reflect the ongoing progress and growing commitment to sustainability in Brazil's social housing sector, aiming to improve residents' quality of life while reducing the environmental impact of construction.

Historical evolution of environmental discussions

Global concerns over environmental protection and the conservation of natural resources began to gain traction in the early 1970s, following the Stockholm Conference in 1972 (Jorio, 2021; Grzegorzewski, 2022). This was the first major international meeting to bring together representatives from various nations to address environmental issues and explore strategies for preserving the environment. Figure 2 provides a timeline of key events related to sustainable development discussions over the years.

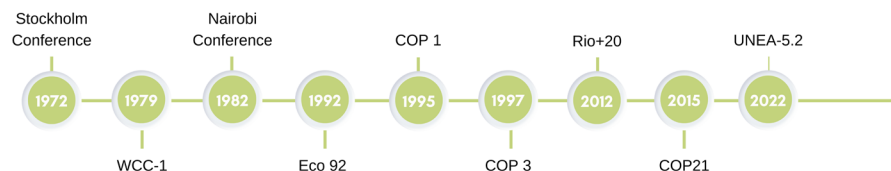


Figure 2: Timeline of key events on sustainability. Source: Authors.

Following the Industrial Revolution, the severe pollution and unprecedented extraction of natural resources became increasingly evident. The construction industry began to rethink its practices to reduce resource consumption, emissions, and waste production. As a result, sustainability and sustainable development became central topics of discussion due to growing concerns about the extent of human-caused environmental damage.

In 1979, the World Climate Conference (WCC-1) was held, marking the first conference dedicated exclusively to climate issues (OMM, 1979; Silva, 2019). In 1987, the term “sustainable development” was introduced by the World Commission on Environment and Development, formed by the United Nations (UN) (FGV, 1991). In Brazil, significant changes began with Eco 92, which impacted various sectors of society, particularly the construction industry. This sector began developing strategies to minimize the environmental impact of its activities.

Since 1995, the Conference of the Parties (COP) has been held regularly, with the aim of implementing concrete measures to combat global warming (Braz *et al.*, 2020). The COP3 in 1997 resulted in the Kyoto Protocol, an international treaty aimed at limiting carbon dioxide (CO₂) emissions into the atmosphere (Braz *et al.*, 2020).

In 2012, the Rio+20 conference took place, focusing on the theme of “Sustainable Development.” As a result, the 2030 Agenda was established, which outlines 17 Sustainable Development Goals (SDGs) (Jorio, 2021; Grzegorzewski 2022). SDG 11 emphasizes the need to provide access to basic infrastructure for all, promoting inclusion of the poorest in urban environments that follow sustainable practices.

In 2015, COP21 resulted in the Paris Agreement, aimed at reducing greenhouse gas (GHG) emissions. The agreement was endorsed by 195 countries, each submitting contributions based on their economic and social capabilities to reduce emissions (Oliveira; Manzi, 2020).

In 2022, the Fifth Session of the United Nations Environment Assembly (UNEA-5.2) was held, focusing on sharing best sustainable practices to help governments rebuild through ecological and sustainable recovery plans following the Covid-19 pandemic (Unep, 2022). During the pandemic, there was a heightened awareness of the importance of sustainable building principles, particularly in terms of energy efficiency, natural ventilation, and lighting.

Chart 7 provides a summary of the evolution of HIS characteristics in Brazil, tracing the shift from a predominantly rural population to an increasingly urban, demanding, and environmentally conscious society after the advent of industrialization in the 1930s.

Historically, HIS in Brazil did not prioritize sustainability. However, with advancements in legislation and increasing environmental awareness, there has been a growing shift toward projects that incorporate sustainable practices. These include the use of more eco-friendly materials, waste management systems, and the enhancement of green spaces. In addition to promoting local biodiversity, these green areas help mitigate the urban heat island effect, contributing to more livable and environmentally friendly urban spaces.



| Period | Key features of sustainable HIS production |
|-----------------|---|
| 1930 to 1937 | <ul style="list-style-type: none"> - Industrialization - Migration - Workers' villages and rental housing |
| 1945 to 1950 | <ul style="list-style-type: none"> - Urbanization - Irregular housing in peripheral areas or squatted land - Low-income housing developments |
| 1964 to 1985 | <ul style="list-style-type: none"> - Environmental events and discussions - Significant housing production - Awareness of urban population growth issues (environmental degradation, urban voids, among others) |
| 1986 to 2003 | <ul style="list-style-type: none"> - Low investment period - Economic crisis and absence of state-defined housing policy - New Constitution - Urban poverty increase and housing deficit - Growth of favelas - Lack of housing financing - Urban reform - Political actions in housing (credit programs and social initiatives) - Investments for all income groups - Socio-spatial segregation |
| 2005 to 2009 | <ul style="list-style-type: none"> - Implementation of the City Statute - Gated communities for middle and upper classes - Increase in housing credit and programs - Environmental discussions |
| 2010 to present | <ul style="list-style-type: none"> - Growing environmental awareness - Sustainability certifications - Performance labeling - New financing lines - Increased scientific output on the integration of HIS and sustainability - New building materials - Access to sustainable technologies (solar energy) |

Chart 7: Evolutionary process of sustainable HIS. Source: Adapted from Balbim and Krause (2014).

FINAL CONSIDERATIONS

HIS in Brazil has evolved to increasingly incorporate sustainable principles, adapting to modern environmental and social demands. However, there remains a long road ahead to ensure this awareness translates into effective practices within the construction industry. With the impact of climate change becoming more evident, the literature emphasizes the importance of accounting for future climate scenarios, further underscoring the need to improve the performance of HIS.

Through the analysis of selected articles, it was possible to identify evidence linking the current housing deficit with the country's historical urbanization process. Researchers play a crucial role in this context, as they can contribute significantly by proposing innovative methods and sustainable solutions to the various challenges associated with social housing. Studies focused on construction



technologies, sustainability, accessible financing policies, and fair regulation of the real estate market can offer viable paths to reducing the housing deficit.

The results highlight peaks in research on the topic in 2012, 2015, and 2018, which may be linked to public policies and specific programs aimed at sustainable housing, as well as advancements in green technologies that have become more widespread and accessible. The development and dissemination of new sustainable technologies and materials may also have contributed to these publication spikes, offering new opportunities and methods for constructing sustainable housing.

REFERENCES

BALBIM, R.; KRAUSE, C. Produção social da moradia: um olhar sobre o planejamento da Habitação de Interesse Social no Brasil. *Revista Brasileira de Estudos Urbanos e Regionais*, [s.l.], v. 16, n. 1, p. 189-189, 2014.

BONDUKI, N. G. *Origens da Habitação Social no Brasil*. 7. ed. São Paulo: Estação Liberdade, 2017.

BRAZ, S. N.; LUCON, F. A. P.; LONGO, R. M. Conferências das Partes (COP's) no Contexto do Desenvolvimento Sustentável: Um Panorama desses Eventos Ambientalistas. *In: II SUSTENTARE e V WIPIS - Workshop Internacional sobre Sustentabilidade, Indicadores e Gestão de Recursos Hídricos, 2020, Campinas. Anais [...]*. Campinas: PUC Campinas, 2020. Available at: <https://even3.blob.core.windows.net/anais/299094.pdf>. Access on: 20 Apr. 2024.

BRASIL. [Constituição (1988)]. *Constituição da República Federativa do Brasil*. Brasília, DF: Presidência da República, [1988]. Available at: https://normas.leg.br/?urn=urn:lex:br:federal:constituicao:1988-10-05;1988#CON1988_05.10.1988/CON1988.asp. Access on: 20 June 2023.

BRASIL. Lei nº 11.977, de 7 de julho de 2009. Dispõe sobre o Programa Minha Casa, Minha Vida – PMCMV e a regularização fundiária de assentamentos localizados em áreas urbanas; altera o Decreto-Lei no 3.365, de 21 de junho de 1941, as Leis nos 4.380, de 21 de agosto de 1964, 6.015, de 31 de dezembro de 1973, 8.036, de 11 de maio de 1990, e 10.257, de 10 de julho de 2001, e a Medida Provisória no 2.197-43, de 24 de agosto de 2001; e dá outras providências. *Diário Oficial da República Federativa do Brasil*. 2009. Brasília, DF, 7 jul. 2009. Available at: http://www.planalto.gov.br/ccivil_03/_ato2007-2010/2009/lei/L11977compilado.htm. Access on: 19 June 2023.

CUSTÓDIO, I. M. *et al.* (org.). Sustentabilidade a partir do uso de selos de certificação ambiental em empreendimentos de Habitação Social. *Revista Científica ANAP Brasil*, [s.l.], v. 14, n. 35, p. 33-47, 2021.



OLIVEIRA, L. A de; MANZI, M. Urbanização de assentamentos precarizados e direito à cidade. *Revista Territorialidades*, Salvador, v. 1, n. 1, p. 7-16, 2020.

DUARTE, M. P. L. O governo Vargas e as primeiras tentativas do Estado na provisão de habitação popular. In: XXVII Simpósio Nacional de História ANPUH, 2013, Natal, RN. *Anais [...]*. São José: Associação Nacional de História. 2013. Available at: https://anpuh.org.br/uploads/anais-simposios/pdf/2019-01/1548875178_37f316300b9c32d1c785c22be30cae21.pdf. Access on: 22 jun. 2023.

FUNDAÇÃO GETULIO VARGAS. *Comissão mundial sobre meio ambiente e desenvolvimento: nosso futuro comum*. Rio de Janeiro: Editora da Fundação Getúlio Vargas, 1991. Available at: https://edisciplinas.usp.br/pluginfile.php/4245128/mod_resource/content/3/Nosso%20Futuro%20Comum.pdf. Access on: 18 June 2023.

FUNDAÇÃO JOÃO PINHEIRO. *Déficit habitacional no Brasil 2022*. Relatório de Déficit Habitacional. Belo Horizonte: Fundação João Pinheiro, 2023. 72 p. Available at: <https://drive.google.com/file/d/13FL-MVsULmFMjkQb1nQsYzO2JVhLQvwz/view>. Access on: 17 June 2024.

FREITAS, G. N. N. Habitações de interesse social no Brasil: a questão qualitativa dos projetos arquitetônicos populares. *Relatórios de Pesquisa*, Brasília, v. 8 n. 1, 2021.

GALVÃO, M. C. B.; RICARTE, I. L. M. Revisão sistemática da literatura: conceituação, produção e publicação. *LOGEION: Filosofia da Informação*. Rio de Janeiro, v. 6, n. 1, p. 57-73, 2019.

GRZEGORZEWSKI, F. C. *Sustentabilidade na habitação de interesse social: um estudo através de cenários*. 2022. 178 f. Dissertação (Mestrado em Arquitetura e Urbanismo) – Programa de Pós-Graduação em Arquitetura e Urbanismo, Escola de Arquitetura e Urbanismo, Universidade Federal Fluminense, Niterói, 2022.

INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE. *Climate Change 2021: the physical science basis*. Contribution of Working Group I to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change. [Masson-Delmotte, V., P. Zhai, A. Pirani, S.L. Connors, C. Péan, S. Berger, N. Caud, Y. Chen, L. Goldfarb, M.I. Gomis, M. Huang, K. Leitzell, E. Lonnoy, J.B.R. Matthews, T.K. Maycock, T. Waterfield, O. Yelekçi, R. Yu, and B. Zhou (eds.)]. *Cambridge University Press*, Cambridge, United Kingdom and New York, NY, USA, 2391 pp. doi: 10.1017/9781009157896.



JORIO, M. L. *Avaliação dos Impactos das Habitações de Interesse Social no Desenvolvimento Sustentável da Cidade do Rio de Janeiro*. 2021. Dissertação (Mestrado em Energias Sustentáveis) – Instituto Superior de Engenharia do Porto, Instituto Politécnico de Porto, Porto, 2021.

LEMOS, P. R. *et al. Habitação de interesse social: qualidade, tecnologia e sustentabilidade*. 2019. Dissertação (Mestrado em Engenharia Civil) – Programa de Pós-Graduação em Engenharia, Universidade Federal de Santa Maria, Santa Maria. Rio Grande do Sul, 2019.

MARTINS, J. R. *Moradia ativa: arquitetura flexível, evolutiva e adaptável na habitação de interesse social multifamiliar*. 2022. 102 f. Trabalho Final de Graduação (Graduação em Arquitetura e Urbanismo) – Faculdade de Arquitetura e Urbanismo, Universidade Federal do Rio de Janeiro, Rio de Janeiro, 2022.

MARTINE, G.; CAMARGO, L. Crescimento e distribuição da população brasileira: tendências recentes. *Revista Brasileira de Estudos de População*, São Paulo, v. 1, n. 1, 1984. Available at: https://www.rebep.org.br/revista/article/view/5/pdf_3. Access on: 12 Aug. 2021

MINISTÉRIO DA ECONOMIA. *Relatório de Avaliação: Programa Minha Casa Minha Vida*. 2020. Available at: <https://www.gov.br/cgu/pt-br/assuntos/noticias/2021/04/cgu-divulga-prestacao-de-contas-do-presidente-da-republica-de-2020/relatorio-de-avaliacao-pmcmv.pdf>. Access on: 20 June 2023

ORGANIZAÇÃO METEOROLÓGICA MUNDIAL (OMM). Conferência Mundial do Clima-1 (WCC-1). *Anais*. 1979. Genebra, Suíça. Available at: https://library.wmo.int/doc_num.php?explnum_id=8346. Access on: 18 June 2023.

OLIVEIRA, V. F. D. Do BNH ao Minha Casa Minha Vida: mudanças e permanências na política habitacional. *Caminhos de geografia, Uberlândia*, v. 15, n. 50, 2014. Available at: <https://seer.ufu.br/index.php/caminhosdegeografia/article/view/22937/14957>. Access on: 19 June 2023.

ORGANIZAÇÃO DAS NAÇÕES UNIDAS. *Declaração Universal dos Direitos Humanos*, 1948. Available at: <https://www.unicef.org/brazil/declaracao-universal-dos-direitos-humanos>. Access on: 12 June 2024.

SILVA, D. M. *As mudanças climáticas e um comparativo entre o protocolo de Quioto e o acordo de Paris*. 2019. Trabalho de Conclusão de Curso (Bacharel em Relações Internacionais), Universidade do Sul de Santa Catarina, Florianópolis, 2019.

UNITED NATIONS ENVIRONMENT PROGRAMME. *UNEA-5.2*. Unep. 2022. Available at: <https://www.unep.org/pt-br/events/unea/unea-52>. Access on: 17 may 2023.

