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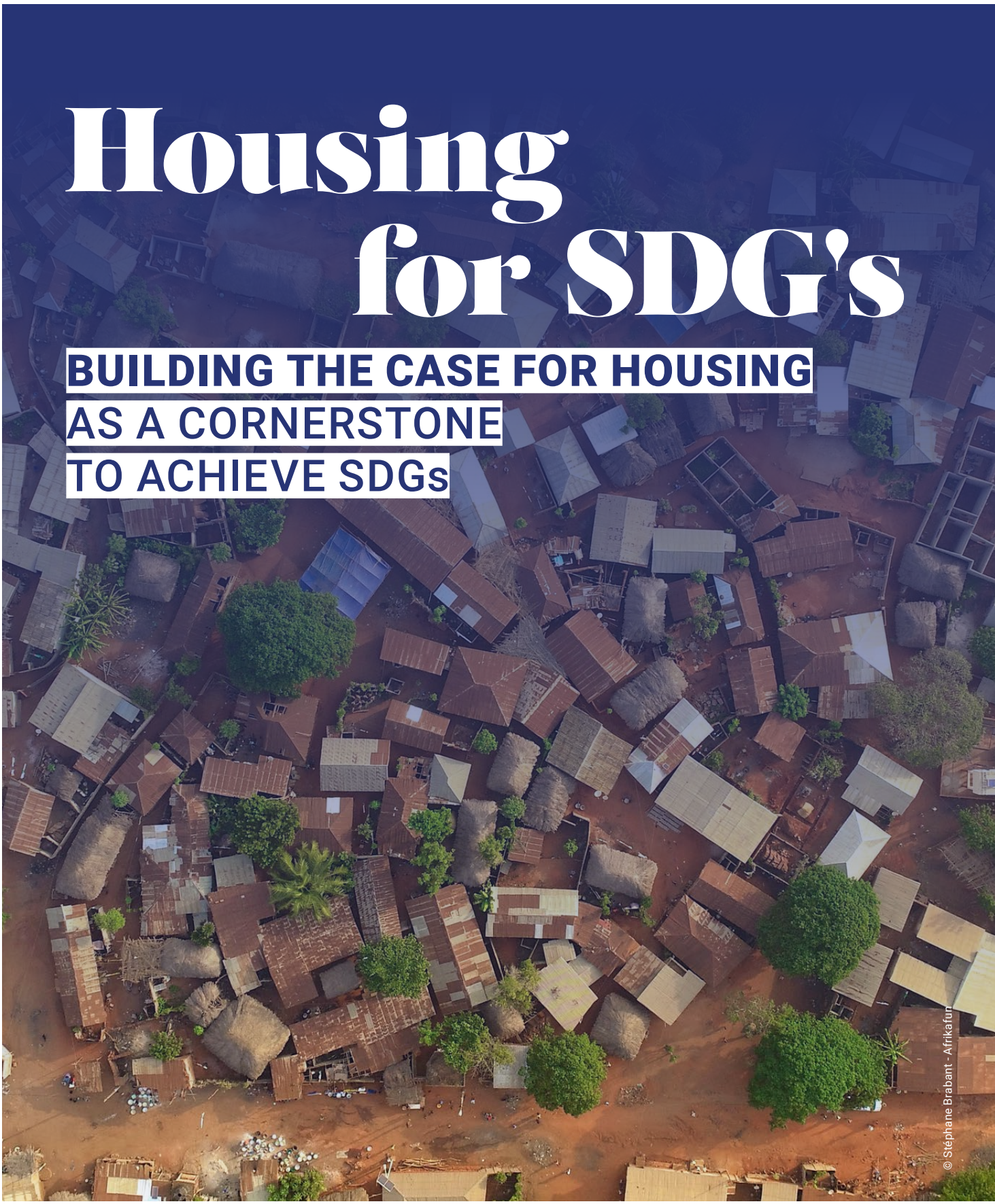
Housing for SDG's

BUILDING THE CASE FOR HOUSING AS A CORNERSTONE TO ACHIEVE SDGs



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SHI
SUSTAINABLE
HOUSING INITIATIVE

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AFD created the SHI facility to support access to affordable and sustainable housing in the Global South. While many countries have set ambitious targets for housing supply, few programs have managed to secure sufficient funding and are actually implemented. As a matter of fact, public housing policies often require additional preparation support for sustainable regulatory and financial frameworks to be developed, to unlock funds and to achieve successful implementation.

In this context, SHI aims to provide to both local and national public authorities the needed expertise to strengthen public policies and operational levers to foster sustainable and affordable housing supply.

The SHI is also committed to strengthening sectoral dialogue between public, private and community stakeholders, and to advocating sustainable housing as a stimulus for overall development.

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SUMMARY


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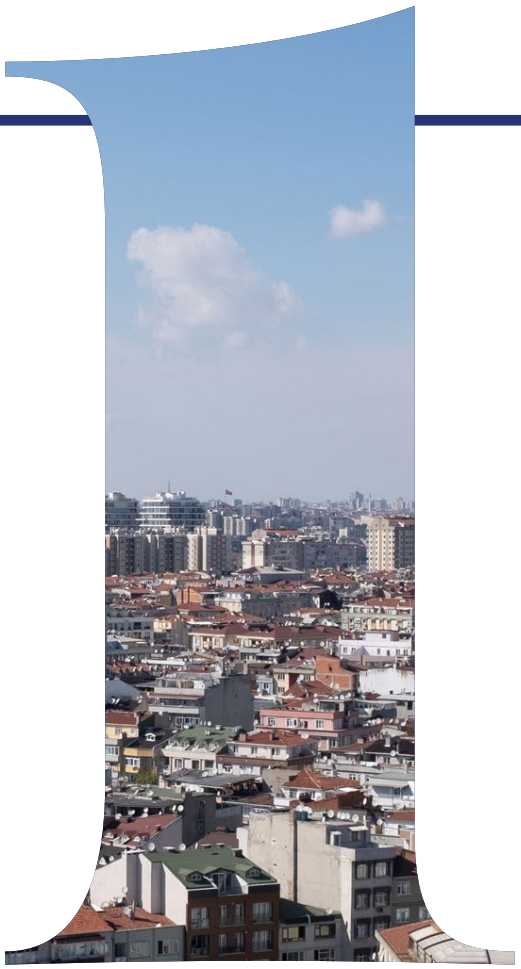

INTRODUCTION

The consolidation of a case for affordable and sustainable housing as a focus for action to achieve the Sustainable Development Goals (see **Appendix 2** for a presentation of the SDGs) is based on **a definition** (1.1) and identification of the main issues related to affordable and sustainable housing (1.2) in order to respond to **the problem** identified at the start of the study (1.3).

1.1. Definitions

The term "*sustainable housing*" has been defined in scientific literature with varying degrees of rigor and comprehensiveness. As an essential component of sustainable development, affordable and sustainable housing encompasses four aspects (Golubchikov and Badyina 2012):

- **Social**: socially acceptable housing ("*adequate housing*"), adapted to the needs of residents; helping to create social ties and improve quality of life;
- **Cultural**: housing that takes into account residents' practices and usages, traditional building techniques and urban cultural heritage is little studied in the literature;
- **Environmental**: housing that is compatible with environmental protection and sustainability requirements (resource-efficient and low-waste housing production), including sustainability over time (resilience to climate change);
- **Economic**: housing that is affordable for residents and economically viable for companies that produce it.

Other studies in the field of architecture identify criteria for affordable and sustainable housing based on an analysis of housing research, and identify ten criteria (Nainggolan, Dewi and Panjaitan 2020):

1. **Materials** used in construction, adapting buildings to climate change
2. **The energy** used by the building, its emissions and ability to operate with minimal energy consumption and using renewable energies
3. **Waste, water and wastewater:** managing waste and wastewater, reusing rainwater, etc.
4. **The site and its surroundings:** land use, location, public services, shops, leisure areas, schools, green spaces, etc.
5. **Human behavior:** environmentally-friendly attitudes, reducing pollution
6. **Housing quality:** housing adapted to the needs of residents, maintenance of housing, good location for employment opportunities, etc.
7. **The culture and values** that should apply in housing
8. **Communication and transport:** availability of an Internet connection, clean public transportation systems, etc.
9. **Safety and living comfort:** safe place, low crime level, low noise level, quality lighting, etc.
10. **Price and availability** of accommodation.

Among these ten criteria, those that are most studied in the literature review focus on construction materials and energy, while those related to behavioral aspects are less explored.

Related terms are used in the literature for affordable and sustainable housing:

- **"Affordable housing"**

  The term "**affordable housing**" is used in academic literature to refer to housing whose economic cost is deemed compatible with its inhabitants' modest incomes: **housing is generally considered affordable when the cost of housing is less than 30% of the occupants' income** (Jamaludin, Mahayuddin and Hamid 2018). In countries in the Global South, such housing options often target middle-class households with some level of borrowing capacity, even if it's low, and stable employment with regular income. They are not usually aimed at lower-income households. Defining affordable housing according to this ratio has the merit of simplicity, but is criticized for being prescriptive and arbitrary, and for failing to take into account the context of countries where there is a lack of financing for housing construction and where the formal rental sector fails to meet needs. Additionally, this definition does not take into account the challenges of housing quality (Stone 2006).

  Beyond this issue of definition, many studies have focused on **the conditions of production of affordable housing**, neglecting the social and cultural aspects. This can be explained by the fact that the main constraint on affordable housing is economic affordability. Several studies aim to identify the success factors for the creation of "sustainable affordable housing", with no apparent consensus (Adabre and Chan 2019). This would mean housing that integrates the needs of present generations without compromising those of future generations (Pullen et al. 2010).

  Various models can fall under the umbrella term of "affordable housing". This is the case, for example, with rent-to-own schemes, which enable a household wishing to buy the property it occupies to pay the owner rent (the rental portion) and an advance on sale price (the purchase portion). This is also the case for schemes that separate land and building property, enabling a person to only acquire the home without the land. In France, the **"bail réel solidaire" (joint real estate lease)** follows this logic: this form of purchase is accessible to households under a certain income level and who are already in a position to pay off their debts. It enables purchase at a lower cost (a saving of 20 to 40% on market prices), thanks to reduced VAT rates and zero-interest loans. On the other hand, resale is highly restricted: capital gains are capped, and potential buyers must also meet income criteria.

- **“Adequate housing”**

  The right to *adequate housing* is enshrined in the 1948 Universal Declaration of Human Rights (article 25) and the 1966 International Covenant on Economic, Social and Cultural Rights (article 11). While the "sufficiency" or "suitability" of housing must be assessed in the light of social, economic, cultural, climatic, ecological and other factors–which vary over time and from country to country–, minimum criteria are spelled out at international level: security of land rights, availability of services, affordability, habitability, ease of access, acceptability of location and respect for the cultural environment (Rajagopal 2022, p. 4). In his 2022 report, rapporteur Rajagopal (Rajagopal, UN, 2022) emphasizes the link between climate change and the right to adequate housing, implicitly bringing it closer to the notion of sustainable and affordable housing.

- **“Social housing, public housing, council housing”**

  Social housing is a category of dwellings whose rents are lower than those on the formal market, thanks to public subsidies, and reserved for households subject to income ceilings. These homes may be owned and managed by public or non-profit organizations. This generic definition differs from country to country, as the stakeholders involved in building and financing social housing are specific to each country (CECODHAS Housing Europe Observatory 2013). The literature distinguishes between three models of social housing, depending on the profile of beneficiaries and housing market organization objectives (Lévy-Vroelant and Tutin 2016 ; Marot et al. 2022):

  - The universalist model (Sweden, Netherlands, Denmark), where access is open to all households regardless of income. In these countries, social housing strongly regulates the real estate and land markets.
  - The generalist model (Hong Kong, Taiwan, South Korea, France, Austria) targets beneficiaries with income ceilings that remain relatively high to allow for a relative social diversity and develop residential mobility.
  - The residual model (UK, Belgium, Germany), which limits social housing to the poorest households, and where this type of housing does not help to regulate the market.

  Historically subsidized by public authorities, the production of social housing has been facing gradual withdrawal of public funding, in several Northern and Southern countries, since the early 2000s (Phibbs 2012). As a result, the private sector is playing a growing role in the financing of such housing, focusing on profitability objectives: construction of housing allowing higher rents under certain criteria, development of profitable activities by public and non-profit organizations, sale of social housing to institutional investors (Turk 2023; Halbert and Gimat 2018).

- **“Slum” (“shanty town”, “precarious housing”, “informal settlements”)**

  Precarious and informal settlements, also known as slums[1], refer to insalubrious and fragile buildings made of salvaged materials. These terms cover protean realities between and within countries of the North and South, ranging from encampments of a few people in the public space to "mega-slums" in cities of the South, without the literature agreeing on a single definition (Damon 2019). Their statistical census is sometimes formalized, as in India; in other countries, they are not counted in official statistics (de Barros and Vorms 2019). For UN-Habitat, a slum is defined by default as a group of individuals living under the same roof in an urban area and lacking at least one of five amenities: sustainable housing (solid permanent structure), sufficient living space, access to drinking water and sanitary services, security and stability of tenure (against evictions in particular), (UN-Habitat 2022).

  Since 2016 and the publication of the New Habitat III Urban Agenda, the recommendations of international organizations have converged on the idea of regularizing the situation of precarious neighborhoods through their gradual rehabilitation, through participatory and multi-partner approaches. While slums and informal housing provide housing for the poorest people, they pose a series of current and future humanitarian and environmental problems : environmental deterioration and threats to health (including air and water pollution), exposure to environmental risks, illnesses and physical damage, uncontrolled and conflict-ridden urban sprawl, etc. (Golubchikov and Badyina 2012). Other authors are more critical of the utopia of a city without slums (Frediani, Cociña and Roche 2023) highlighting the growing inequalities between city dwellers (Deboulet 2016). In addition, the literature highlights the limitations of many rehabilitation or demolition-reconstruction programs: the inhabitants of these neighborhoods are often relocated to the outskirts of cities (where available land is less expensive), far from employment centers, not always properly served by transportation networks, and sometimes not integrated with the rest of the city (Viratkapan and Perera 2006). Existing social ties and informal economic activities between residents are not always taken into account in these moves, nor are the economic and social activities that used to be linked to them (Sibyan 2020).

- **“Cooperative housing”**

  Cooperative housing takes various forms, all of which share the common goal of moving away from a traditional land ownership approach tied to the financialization of land and real estate. Instead, they aim to achieve land access, land security, resident participation, and financial accessibility (Simonneau, Denis and Sory 2019). Examples include housing cooperatives (collective spaces held in common, where each person owns the land her individual home) or the "community land trust" model, where land is held in common and housing is owned individually.

1 Originally, the term "*slum*" was used in Victorian England to describe substandard housing and neighborhoods of ill-repute, while "*shantytown*" was used to describe buildings made of salvaged materials (Deboulet 2016). In this document, the terms "*slum*" and "*shantytown*" are used indiscriminately.

1.2. Challenges and limits

In light of these definitions, the development of affordable and sustainable housing faces several structural challenges and limitations:

- **Land acquisition.** Land acquisition is seen as the main lever, but also as a major obstacle to the construction of affordable housing (Adjanohoun 2022). The issue of land ownership relates as much to the recognition of land rights (existence of a land registry, title deeds, etc.) and the means to enforce them, as it does to issues of regulating land use and controlling land speculation.

- **Financing.** The financing of housing, the involvement of various stakeholders, the tools used, and the scale at which it is implemented, are key issues to sustain access to affordable, sustainable housing. This implies that households either have the capacity for self-financing (and therefore savings) and/or access to credit at sufficiently low rates, and/or public and/or private subsidies (Ebekozien, Abdul-Aziz and Jaafar 2019; Centre for Affordable Housing Finance in Africa 2022).

- **Urban integration.** Mass construction of standardized housing, often disconnected from the city in terms of location and form, provides a rapid response to the urgent demand for housing faced by the countries of the South, given their dynamic urban demographics. This logic excludes residents from the design, construction and management processes, while their participation is recognized as a cornerstone of appropriate and sustainable housing (Adjanohoun 2022 ; Aini, Sunarti and Esariti 2021). It is incompatible with long-term sustainable urban planning, whether for the social integration of residents or for the built environment (Valette 2013). Local public authorities do not always have financial and technical means to service the large suburban areas created by the standardized housing constructions. It also reflects a sector-based approach to urban development, present in countries of both the South and the North: stakeholders, funding and institutions in housing, transport, water, sanitation, energy and services all intervene in isolation within their own sphere of action, without coordination or joint reflection with those of other sectors.

- **The importance of informal housing.** More than 1 billion people are estimated to live in informal housing (Frediani, Cociña and Roche 2023) and demographic growth is essentially urban and concentrated in these precarious neighborhoods. This so-called "irregular" urbanization, outside the legal norms of construction, planning and city design, provides housing solutions for a growing proportion of the population in the South in need of formal and decent housing. The regularization, renovation or rehabilitation of housing to make it more decent and sustainable can result in the eviction of the most precarious populations, either because they are unable to finance rent increases, or because they are rehoused in less attractive neighborhoods, further away from economic activity hubs and services (Deboulet 2016; Goetz 2012). Such programs can thus reinforce social, economic and spatial inequalities. Some projects do, however, succeed in requalifying precarious housing, improving both buildings and housing conditions (neighborhood-wide intervention), without these negative effects. In Medellín (Colombia), for instance, the municipality has embarked on a program of public gardens linking self-produced working-class neighborhoods (Dupont 2016).

- **The cost of building materials.** Rising construction costs in both northern and southern countries raise the question of economic viability for builders. Increasing exit prices, driven by generalized inflation, make it hard for underprivileged households, as well as a growing part of middle-classes, to access housing.

1.3. General problem and methodology

Given housing definitions and issues identified, the present study for building a case for affordable and sustainable housing as a major lever for achieving SDGs revolves around the following issue:

To what extent is affordable and sustainable housing part of the solutions to achieve the Agenda 2030's SDGs?

To answer this question, a theoretical framework has been elaborated through seven interviews with experts and an initial analysis of the scientific literature. This enabled a series of research questions to be consolidated, to which the in-depth literature review provided answers. Details of this methodology are provided in Appendix 1.

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ANALYSIS BY SDG

The following section presents each identified SDG and associated targets, highlighting the **main issues mentioned in the literature** with regard to affordable and sustainable housing. **Bibliographical sources** are mentioned and **a case study for each SDG** is presented. The **SDGs covered were identified in the literature review** based on their relevance to affordable and sustainable housing.

11 SUSTAINABLE CITIES AND COMMUNITIES

TARGETS:

11.1 Access to decent housing
11.3 Sustainable and inclusive urbanization
11.4 Heritage preservation
11.5 Reduce the number of disaster victims
11.6 Environmental impact of cities and buildings
11.7 Access to safe green spaces and public areas
11.b Integrated policies for resilient territories

ISSUE 1

Qualifying and contextualizing affordable and sustainable housing

The definition of affordable and sustainable housing is neither theoretically nor operationally stabilized. Other related terms come close (accessible, decent, safe, popular, social, informally rehabilitated, green, etc.).

Depending on the actors and contexts in which these concepts are used, the criteria for housing affordability and sustainability vary (Golubchikov, BadyinZa 2012; Nainggolan et al. 2020). In countries of the Global South, "affordable housing" is often intended for households with stable incomes and jobs (local officials, military personnel, etc.). This housing remains inaccessible to the most disadvantaged.

While the form of this type of housing varies from country to country (small or large multi-family dwellings, single-family homes, etc.), **the low-cost economic model** often combines the acquisition of cheap land on the outskirts of cities, and standardized production, with no thought given to adapting to the needs of residents, or to the provision of public services and infrastructure. Beyond the impact on quality of life and access to jobs, this can lead to maintenance difficulties (Perrin 2013), or even degrade the long-term asset value of housing and place households in situations of over-indebtedness and insolvency (Marot, Lévy, Clément et al. 2022).

Sustainability can be associated with several dimensions of sustainable development, each with varying requirements. “Green” labels ("green housing", "green architecture") conform to criteria tailored to the expectations of international investors, which do not always guarantee the sustainability of housing in the environmental sense (environmental protection over time, resource savings), (Mahdavinejad et al. 2014; Capeluto 2022; Centre for Affordable Housing Finance in Africa 2022).

GUIDELINES

Systematically specify the definitions of the terms used in each national context, to establish a common reference framework for intervention.

Prioritize housing rehabilitation or construction projects first based on the population for which they are intended, before focusing on the technical and economic characteristics of the projects.

Evaluate the construction of green labels qualifying certain housing units.

KEY FIGURES

In Sub-Saharan Africa:
Over **55% of households** spend more than **30% of their income** on housing.(Ndugwa et al. 2018)

Investment in the housing sector accounts for **6% of annual GDP**, with an average of five jobs created per home built.
(World Bank Group, 2015)

SDGs LINKED

1 NO POVERTY — 1.4

10 REDUCED INEQUALITIES — 10.2, 10.3

13 CLIMATE ACTION — 13.1

ISSUE 2

Establishing and enforcing land use and building regulation

The existence and enforcement of land and rental rights and building codes provide residents with security of tenure that is compatible with the development of economic and social activities, while limiting land speculation (Simonneau et al. 2019; 2022).

Many housing units occupied by impoverished and vulnerable populations do not have property titles or occupancy contracts (Deboulet and Salenson 2016). This is a source of insecurity for residents, who can easily be evicted. Conversely, individual ownership symbolizes a social norm of success and allows for the accumulation of assets (Marot, Lévy, Clément, et al. 2022).

The existence and application of a legal framework guaranteeing individual property rights is a pre-requisite for mortgage lending, a major source of financing for affordable residential real estate for middle class populations in the Global South (Ababsa 2020). In the same way, a legal framework helps to prevent tenancy insecurity, erratic rent trends, and the resulting psychological burden and social and economic instability.

Other forms of collective ownership, such as users' cooperatives based on mutual aid, in which residents hold shares granting usage rights to land and housing, can be viable alternatives. These models combine financing, collective self-construction and self-management, as seen in Uruguay (Simonneau et al. 2021).

GUIDELINES

Support the development of land, rental and building regulatory frameworks by national and local public stakeholders, as well as their enforcement.

Limit the risk of land and property financialization that goes with land and property normalization (Fauveaud 2020).

KEY FIGURE

Between 2010 and 2024, in Uruguay, **34% of housing built** with public funding has been and will be in the form of cooperatives (around 8,600 units). (Simonneau et al., 2021).

SDGs LINKED

- 1 NO POVERTY — 1.4
- 3 GOOD HEALTH AND WELL-BEING — 3.4
- 8 DECENT WORK AND ECONOMIC GROWTH — 8.5

ISSUE 3

Ensuring affordable prices in a context of financialization

The financialization of land and housing, which have become safe havens for savers, often disconnects housing construction from residents' needs, especially for the poorest. It requires public regulation and a guarantee of affordable prices (Durand-Lasserve et al. 2015; Adjanohoun, 2022).

The financialization of housing can be defined as a process whereby the design, production and purchase of housing are primarily motivated by financial reasons and their exchange value, rather than by their utility value (Aalbers, 2017). It combines international and local investment logics in the Global South, as seen in places like Phnom Penh (Cambodia), where investment in condominiums serves as an outlet for middle- and upper-middle-class Asian buyers seeking lucrative investments (Fauveaud 2022). The transformation of state involvement since the 1980s has facilitated private initiatives by developers, banks and investors rather than regulating housing production for its intended use.

These financial logics contribute to the production of housing that is unaffordable and unsustainable for the most disadvantaged populations (residential real estate that lacks integration into its surroundings, and doesn't consider public infrastructure and services, etc.).

GUIDELINES

Encourage alternative programs that counteract the financialization strategy for housing creation, such as self-construction supported by local associations and NGOs, housing cooperatives, etc.

KEY FIGURE

Housing for low-income households is a major component of cities in developing countries, generally **accounting for 50-70% of gross fixed capital formation** (acquisitions minus asset disposals) in urban areas. (UN-Habitat 2003)

SDGs LINKED

- 10 REDUCED INEQUALITIES — 10.2
- 13 CLIMATE ACTION — 13.1

CASE STUDY

AFFORDABLE HOUSING IN INDIA, MASS HOUSING WITHOUT SUSTAINABLE URBAN PLANNING

In India, the production of "affordable housing" is a state-supported offer targeted at the middle classes, located on the periphery and disconnected from urban centers. It raises questions of social and economic sustainability for residents, as well as environmental issues.

"Affordable housing" in India. Given India's demographic dynamism and the concentration of the population in cities (with over 377 million inhabitants in 2011), more than half of urban dwellers cannot afford to buy a home at market price. A growing number of so-called "affordable" housing in the form of high-rise apartment blocks on the outskirts of cities are being built. Since 2001, the liberalization of foreign investment has enabled international investors and property developers to mass-produce housing on the outskirts, on land that is still available. The development of a middle class in India and state intervention to facilitate access to such housing has contributed to the strong growth of private residential real estate.

The New Faridabad district. To build New Faridabad, in Delhi's outer suburbs, development of the residential and commercial sectors was allocated to mainly local private developers from the 2000s onwards. Some farmers sold their land to developers, while others became developer-builders, relying on government schemes to subdivide their plots and rent them out.

To maximize profitability, several strategies were employed:

- Densification of plots; reduction of community spaces (leisure areas, green spaces).
- Homogenization of construction design repeated across multiple plots (buildings on stilts with parking on the ground floor, circulation paths around the esplanade, a lawn on the esplanade between the towers).
- Lower quality materials and workmanship.

KEY FIGURE

Faridabad's master plan forecasts 300% population growth by 2031, with 3.8 million inhabitants.

KEY LESSONS

A number of challenges emerge from these major programs:

- Maintenance costs for households with limited financial means (run-down condominiums).
- Delays in connections to utility networks (water, energy) due to the volume of work required by the government, which requires costly self-contained production systems.
- A lack of public transport, schools and local amenities.
- The production of fragmented urbanization in rural and agricultural areas, leading to isolation.
- High environmental costs (private wells for water supply, lack of regulatory sanitation, etc.).

Source:

De Bercegol, Rémi, Bérénice Bon, and Karen Lévy. "In the shadow of the tower planters. Affordable housing blocks on the outskirts of Indian cities", *NAQD*, vol. 38-39, no. 1-2, 2020, pp. 267-284.

TARGETS: 1.1 Extreme poverty **1.2 Poverty**
1.4 Access to resources **1.5** Vulnerability

ISSUE 1

Contributing to slum clearance

Access to affordable and sustainable housing offers an alternative to the informal sector, which currently constitutes one of the only options for populations (Nubi et al. 2021).

Slums have been expanding in southern countries for several decades as a result of the challenges faced by both public and private stakeholders in coping with urban growth and housing demand. Some residents turn to the informal sector (either by occupying land or renting housing) as they are unable to access property ownership or afford high rents in the formal rental sector (Nubi et al. 2021).

Populations in slums are exposed to a high risk of eviction when they do not benefit from property titles or leases (particularly within the framework of rehabilitation policies), which leads to higher social instability (Wakely 2016; Raul and al. 2008).

Residents of informal settlements can invest financial and time resources in improving their housing quality and access to infrastructure, which would benefit their living conditions and promote the development of social capital. However, the risk of eviction for slum residents does not encourage them to invest in their housing (maintenance work, repairs, etc.), which result in a deteriorated residential environment (Wakely 2016).

Access to a property ownership contributes to better housing quality, a reduction in household size and investment in education. A study conducted in a Buenos Aires neighborhood where, on the one hand, households obtained ownership of their land, and on the other hand, households occupied their plots illegally, showed that property owners invested more in improving their homes, reduced household size and prioritized their children's education, all of which contributed to poverty reduction (Galiani 2010).

GUIDELINES

Strengthen public policies for building and managing affordable and sustainable housing while regulating private stakeholders' action.

KEY FIGURES

Life expectancy would increase by 4%,
with an average gain of 2.4 years worldwide, with the provision of secure access to affordable and sustainable housing in informal settlements
(Habitat for Humanity 2021).

In African cities, residents of informal settlements spend between **30% of their monthly budget** on building materials to repair and improve their homes
(Maina et al. 2023).

SDGs LINKED

10 REDUCED INEQUALITIES: 10.1, 10.2, 10.7

11 SUSTAINABLE CITIES AND COMMUNITIES: 11.1

ISSUE 2

Reducing the cost of housing in household budgets

In the absence of affordable and sustainable housing and without regulation of the informal sector, vulnerable residents are more exposed to the risk of incurring high costs for access to and maintenance of their housing. These high costs do not provide access to quality services and weigh heavily on household budgets (Habitat for Humanity 2023).

Access to housing in the informal sector contributes to reinforcing the vulnerabilities of populations when residents are at the mercy of slumlords and rental investment rationales (Nzau and Trillo 2020). Often, people in these situations pay high, above-market costs, and may resort to informal loans with high interest rates and little security. Access to affordable and sustainable housing is a key factor for the development of economic capital for residents. Once their access to housing is secured, they are more likely to invest in time and financial resources, as well as the improvement and development of their homes. Furthermore, access to affordable and sustainable housing enables them to save financial resources, have more disposable income and allocate a portion of their budget to other expenses (Wakely 2020).

GUIDELINES

Implement regulations and programs to ensure that housing costs do not account for too large a share of household budgets, affecting their disposable income.

KEY FIGURE

In sub-Saharan Africa, **over 55% of households spend more than 30% of their monthly budget on housing** due to the lack of adequate housing solutions in relation to their resources (United Nations 2018).

SDGs LINKED

8 DECENT WORK AND ECONOMIC GROWTH — 8.5

10 REDUCED INEQUALITIES — 10.1

ISSUE 3

Improving access to resources by promoting access to jobs and services

Access to affordable and sustainable housing near places of employment, commercial and social activities promotes social equity (Nieuwenhuijsen 2016; Mangweta et al. 2022; Marot et al. 2022).

Informal settlements address immediate housing access needs but do not provide solutions for other aspects of housing quality and access to domestic infrastructure (Lonardoni 2016). Affordable and sustainable housing programs that involve relocating people to distant neighborhoods have limited, and in some cases, negative impacts. Such programs may distance residents from employment areas, resulting in significant social and economic costs for populations (Deboulet 2016). Similarly, affordable and sustainable housing programs must take into account residents' service needs to align with sustainability principles. Neighborhoods designed without local services and shops often lead to the emergence of numerous informal activities in order to meet the residents' needs.

GUIDELINES

Allocate housing based on household and workplace characteristics.

Provide for mixed land use to meet residents' needs and avoid the development of informal businesses.

KEY IDEA

The development of affordable and sustainable housing needs to **be considered alongside issues of access to jobs and services**.

SDGs LINKED

8 DECENT WORK AND ECONOMIC GROWTH — 8.5

10 REDUCED INEQUALITIES — 10.1, 10.3

11 SUSTAINABLE CITIES AND COMMUNITIES — 11.3, 11.6

ISSUE 4

Improving the development of residents' social capital by encouraging their participation

Better inclusion of communities in developing and managing housing enables residents to understand better the practices of construction and maintenance stakeholders.

Public and private housing development programs reveal a growing separation between stakeholders who produce and maintain housing, on the one hand, and the inhabitants who live there, on the other hand (Wakely 2020). Nevertheless, since the 1970s, the principles of participation and co-production with communities and individuals in housing projects for low-income people has been regularly put forward by international organizations and some researchers.

These production methods improve mutual understanding and reduce conflict. Community involvement also improves access to and efficiency of services, and the involvement of residents in developing and managing their housing. This enables them to acquire new knowledge and skills, which promotes social change and the democratization of practices (Wakely 2020).

GUIDELINES

Prioritize residents' involvement in designing and implementing affordable and sustainable housing programs.

KEY IDEA

Involving residents in affordable and sustainable housing programs **aincreases their sustainability and relevance**.

SDGs LINKED

10.2
10.3

11.1

CASE STUDY

MEXICO'S AMBIVALENT PUBLIC HOUSING POLICY

Mexico's public housing policy has primarily facilitated the development of a large supply of affordable and sustainable housing for the poorest segments of the population. However, it has also contributed in different ways to reducing urban poverty.

In the 1940s, Mexico introduced a public housing policy designed to promote home ownership among low- and middle-income households, through a low-cost housing credit system and a policy of granting title deeds for informal settlements. From the 1990s onwards, the state's disengagement from the housing sector led to the delegation of housing construction to the private sector, giving rise to new housing models on the outskirts of cities.

The development of an affordable and sustainable housing supply through a policy that facilitates access to housing credit has reduced the housing deficit for low- and middle-income earners. In 2012, it was estimated that almost one in every four homes in Mexico was a home created in the 2000s through the mass production policy with a mortgage (Solana Oses 2013). Nevertheless, the liberalization of housing policy from the 1990s onwards has made mortgage loans less accessible to certain populations, particularly those working in the informal sector and lacking employment contracts. Moreover, the liberalization of the housing market has reduced the share of financial aid previously allocated to self-construction for the poorest households (Geneste et al. 2022). The reform of public policy on affordable and sustainable housing has therefore had a less significant impact on the most vulnerable populations (Duhau and Jacquin 2008).

The liberalization of the housing sector has resulted in the development of social interest housing estates on the outskirts of Mexican cities (Duhau and Jacquin 2008). This urban development model meets certain residential aspirations in terms of privacy protection, the possibility of making extensions, contributing to the ideal of home ownership, and reducing neighborhood conflict. However, it results in significant urban sprawl, leading to longer distances from city centers and employment areas (Solana Oses 2013). Furthermore, the massive development of these programs does not include sufficient infrastructure and services, as local governments often lack the resources to provide them. Residents must travel long distances to work and pay for certain services that should be guaranteed by law (for example, access to schools), which has significant social and economic costs. Access to this type of housing can therefore introduce new vulnerabilities for populations by limiting their access to resources (Geneste et al. 2022).

The dysfunctions of the affordable and sustainable housing model in Mexico have resulted in a high vacancy rate for social interest housing, especially in housing estates, despite the high demand for housing (Solana Oses 2013).

KEY FIGURES

In 2011, a study estimated **the vacancy rate for social housing at 31.8%** (INFONAVIT 2011) while at the same time in 2012, half of all existing housing belonged to the informal sector (CIDOC 2012).

Sources:

Emilio Duhau and Céline Jacquin, "Les ensembles de logements géants de Mexico. Nouvelles formes de l'habitat social, cadres de vie et reformulations par les habitants", *Autrepart*, 2008, vol. 47, nº. 3, p. 169-185.

Pauline Geneste et al, "Le sol social mexicain porte-t-il encore des communs? Ejidos et lotissements d'intérêt social dans la périphérie de Mexico" in *Le sol social mexicain porte-t-il encore des communs*, Agence française de développement, 2022, p. 1-56.

Oyan Solana Oses, *Affordable Housing and Urban Sprawl in Mexico: The Need for a Paradigm Shift*, The University of Manchester, 2013.

TARGETS: 3.2 Neonatal and infant mortality **3.3** Communicable diseases **3.4** Non-communicable diseases **3.9** Health and environment

ISSUE 1

Reducing infant mortality

Access to affordable and sustainable housing is an important factor in reducing infant mortality, specifically among children under the age of 5 (Adebowale et al. 2017).

The issue of infant mortality has been identified in the literature as a key indicator of children's health and global health in a given country. Children are one of the most vulnerable populations to housing-related health problems because they spend proportionately more time indoors, breathe in more ambient air than adults, and their organs are still developing (Thabethe et al. 2014).

In sub-Saharan Africa, 1 in 12 children dies before the age of six months, and access to affordable and sustainable housing has been identified as an important factor in reducing infant mortality. The risk of mortality below the age of 5 is higher among children living in housing built with inadequate materials, such as earth and sand. Similarly, exposure to an inadequate home environment (humidity, mold, etc.) increases the risk of chronic illnesses such as asthma and respiratory diseases (Adebowale et al. 2017).

GUIDELINES

Consider housing as an important factor in reducing infant mortality.

KEY IDEA

Access to affordable and sustainable housing is **a way to reduce infant mortality,** along with women's education and the care received during childbirth.

SDGs LINKED

1 NO POVERTY 1.2 1.5

10 REDUCED INEQUALITIES 10.3

11 SUSTAINABLE CITIES AND COMMUNITIES 11.1

ISSUE 2

Limiting the transmission of infectious diseases and associated morbidity

Access to affordable and sustainable housing reduces exposure to pathogens and the transmission of infectious diseases due to lower occupancy density, fewer thermal insulation problems, and better domestic equipment and infrastructure (Rauh et al. 2008; Coburn & Sverdlik 2017; Vaid 2023).

In environmental health, taking into account people's living environment is seen as a pre-for health care. It is necessary to take a holistic approach to health, focusing on where people live before deciding on health intervention. In this context, high housing density– defined as more than three people occupying a habitable room, according to UN Habitat – is one of the characteristics of slums according to the UN and is a major risk factor (World Health Organization 2018). On the one hand, high density has an impact on the transmission of infectious diseases such as tuberculosis, respiratory problems, and gastrointestinal issues (World Health Organization 2018). On the other hand, high housing density is a risk factor for social pathologies and mental health problems (Rauh et al. 2008).

GUIDELINES

Establish an occupancy limit for units within affordable and sustainable housing programs and set up appropriate ways of measuring the number of residents.

KEY FIGURE

In Kyrgyzstan, **high housing density lead to a death rate of 18.14 people** per 100,000 from tuberculosis.
(Braubach et al. 2011)

SDGs LINKED

- 1 NO POVERTY: 1.5
- 6 CLEAN WATER AND SANITATION: 6.1, 6.2
- 7 AFFORDABLE AND CLEAN ENERGY: 7.1
- 10 REDUCED INEQUALITIES: 10.3
- 11 SUSTAINABLE CITIES AND COMMUNITIES: 11.1

ISSUE 3

Limiting the risk of chronic diseases

Access to affordable and sustainable housing prevents the development of regular health problems (lung and cardiovascular diseases, exposure to pollutants, mental health issues, etc.) by ensuring a healthy living environment including physical, sensory, psychological, and social conditions that are conducive to health, comfort, and privacy (Adebowale 2017).

As with communicable diseases, high housing density is identified in the literature as a risk factor for developing chronic diseases, including mental and sleep problems (World Health Organization, 2018).

Several housing construction methods can also cause regular health problems. Causal links have been established between air pollution and cardiovascular problems, lung disease, and cancer (Coburn and Sverdlik 2017; Nieuwenhuijsen 2016; Ramirez-Rubio et al. 2019). Yet 41% of the world's population uses coal and heats their homes using open fireplaces and simple stoves, resulting in indoor air pollution and inadequate ventilation (World Health Organization 2018).

The installation of inadequate infrastructures and the use of unsuitable building materials for walls, floors, and roofs result in poor indoor air quality and significant contamination by toxic substances. For example, exposure to lead through paint and water pipes leads to behavioral problems and learning difficulties in children, and heart disease and anemia in adults (Rauh et al. 2008).

GUIDELINES

Establish international standards for building materials. .

KEY FIGURE

In 2016, **3.8 million deaths worldwide can be attributed to household air pollution** linked to the use of solid fuels for cooking. Almost all of these deaths occur in low- and middle-income countries.
(World Health Organization 2018)

SDGs LINKED

- 1 NO POVERTY: 1.2, 1.4
- 6 CLEAN WATER AND SANITATION: 6.2
- 7 AFFORDABLE AND CLEAN ENERGY: 7.1, 7.3
- 11 SUSTAINABLE CITIES AND COMMUNITIES: 11.1, 11.6

ISSUE 4

Reducing the risk of domestic accidents

Access to affordable, sustainable housing designed with appropriate design, built with quality materials and developed in a suitable environment reduces the risk of falls and injuries, particularly among children and the elderly (Raul et al. 2008).

Unsuitable design and building materials can cause various types of injury and domestic accidents within housing: falls, burns, poisoning, ingestion of objects, smoke inhalation, drowning, building collapses, etc. These accidents have a major impact on residents' health and mortality. Studies show that the poorest populations are more affected by these types of accidents and injuries because they most often live in inadequate housing (World Health Organization 2018).

These homes are not designed to limit the risk of accidents, for example due to the lack of smoke detectors, staircase railings or window guards. A study conducted in Bangladesh shows that children living in homes where the kitchen is not separated from the rest of the dwelling by a door are more exposed to burns (Mashreky et al. 2010).

Poor housing design also has an impact on the elderly and people with reduced mobility: access to housing can be more complicated for these people, who tend to spend more time indoors, exposing them to a higher risk of accidents.

GUIDELINES

Establish international standards for domestic infrastructures and their uses.

KEY FIGURE

A third of all injuries worldwide occur in the home. **In 2016, half of all injury-related deaths resulted from injuries in the home.** (Turner et al. 2011 ; World Health Organization 2018)

SDGs LINKED

1 NO POVERTY: 1.2, 1.5
6 CLEAN WATER AND SANITATION: 6.2
7 AFFORDABLE AND CLEAN ENERGY: 7.1, 7.3
10 REDUCED INEQUALITIES: 10.2, 10.3
11 SUSTAINABLE CITIES AND COMMUNITIES: 11.1

ISSUE 5

Reducing health inequalities

Access to affordable, sustainable housing improves access to healthcare and the social determinants of health, which are social and economic factors that impact a population's health (Rauh et al. 2008; Coburn and Sverdlik 2017).

Poor housing conditions make social and environmental inequalities manifest as health inequalities. Residents who have to devote a significant proportion of their budget to housing have fewer financial resources to allocate to healthcare, food and energy. People's health problems have economic impacts that exacerbate inequalities between populations. On the one hand, they can lead to difficulties or even an inability to work. On the other hand, untreated health problems ultimately lead to significant expenses (World Health Organization, 2018).

Access to affordable and sustainable housing promotes improved health and reduces health inequalities, although the various determinants of health are not always well measured in the absence of comprehensive assessment practices (World Health Organization 2016).

GUIDELINES

Demonstrate the links between housing and health to promote affordable and sustainable housing programs.

KEY FIGURE

For every dollar invested in access to water and sanitation, there is **a 4.30 dollars reduction in health costs** for individuals and society worldwide. (World Health Organization 2016)

SDGs LINKED

1 NO POVERTY: 1.2, 1.5
8 DECENT WORK AND ECONOMIC GROWTH: 8.5
10 REDUCED INEQUALITIES: 10.1, 10.2

CASE STUDY

HEALTH IMPACT OF RE-DEVELOPING INFORMAL SETTLEMENTS IN INDIA

A longitudinal study was carried out in India on the health impacts of housing re-development in informal settlements.

125 women from three informal settlements were divided into three intervention and control groups and then monitored to determine the effects of housing on physical and mental health and quality of life. The intervention group was re-settled in low-rise apartment buildings within the same neighborhood and monitored three years before the intervention and two and a half years afterwards. One of the control groups had already benefited from a housing improvement and was monitored two and a half years and then eight and a half years after the intervention. The other control group did not benefit from any specific action, as they were on the waiting list.

KEY LESSONS

Relocating people to the same neighborhood and improving the quality of informal housing has a medium-term impact on women in terms of improving their physical and mental health, as well as their quality of life.

The same medium-term results cannot be observed for women who do not benefit from re-housing or housing improvement policies.

Sources:

Uchita Vaid, "Physical and mental health impacts of housing improvement: A quasi-experimental evaluation of in-situ slum redevelopment in India", *Journal of Environmental Psychology,* 2023, vol. 86, pp. 101-968.

CASE STUDY

A REVIEW OF THE ORIGINS OF SOCIAL HOUSING IN 19th CENTURY FRANCE

The origins of social housing policy in France are a good case study for understanding the centrality of health to the development of affordable and sustainable housing.

In the 19th century, the issue of unhealthy housing in France provoked parliamentary debate in the wake of the cholera epidemic of 1832, which claimed almost 19,000 lives in Paris. From then on, hygiene theories played an important role in public policy, which incorporated housing into debates on the working-class condition.

A first law was passed in 1849, enshrining the principle of public intervention to combat substandard housing. It defined the causes of insalubrity and proposed procedures for expropriation and sanitation work. Although the law was passed against a backdrop of renewed cholera outbreaks, it had little effect.

From the 1870s onwards, in parallel with Haussmann's efforts to clean up the urban environment, private initiatives multiplied in response to the housing shortage in a context of rural exodus and accelerating industrialization. Various hygienist-inspired projects were developed, such as the Familistère set up by industrialist M. Godin to house workers close to their place of work.

In 1891, the first low-cost housing project was built in Saint-Denis. In 1894, the Siegfried law was passed to regulate and encourage the development of such housing, first for the working classes and then for the middle classes, particularly in order to fight against tuberculosis. This law established state intervention in the development of affordable housing. It also marked the transition from a focus on hygiene and substandard housing to a more resolute framework for action, giving rise to social housing.

Sources:

Belmessous Fatiha, "Les bénéficiaires des politiques du logement en France (XIXe-XXe siècle). Histoire d'une catégorisation normalisée", *Droit et Ville*, 2020/1 (n° 89), p. 115-131

TARGETS: **4.1** School education **4.2** Pre-school care and education **4.3** Vocational training and higher education **4.5** Equal opportunities **4.6** Adult education **4.a** Accessibility of schools

ISSUE 1

Stabilizing schooling

Access to affordable housing promotes residential security, which has a positive impact on schooling.

Occupational security is a key determinant of school attendance and performance. Occupancy status (ownership or rental) is one of the most significant variables impacting children's education.

In Taiwan, for example, living in a family-owned home increases 16-17-year-olds' chances of entering high school by 3%, and those of 19-20 year-olds entering university by 6% (Lien, Wu and Lin 2008). Housing instability and frequent moves are also associated with lower achievement, higher rates of grade repetition, and more dropouts, especially among poor children (Brennan et al. 2014; Schwartz et al. 2017).

GUIDELINES

Promote access to home ownership and residential stability for families with school-age children.

KEY FIGURE

In Taiwan, home ownership **increases the chances of 19-20 year-olds entering university by 6%.**
(Lien, Wu et Lin 2008)

SDGs LINKED

5 GENDER EQUALITY 5.1

8 DECENT WORK AND ECONOMIC GROWTH 8.5

ISSUE 2

Promoting diversity and quality in the educational system

Affordable and sustainable housing can promote social diversity and equality of educational opportunities both in and outside of school.

The distance between housing and school or educational services is a key factor in children's schooling and success. Enrolment rates and academic performance increase as the distance to the nearest school decreases (Frediani et al. 2023). Developing affordable housing in affluent and well-served neighborhoods also opens up access to the high-performing schools (Chetty, Hendren and Katz 2016).

GUIDELINES

Develop housing options near schools and in well-serviced neighborhoods rather than on the outskirts.

KEY FIGURE

In Botswana, the greater the distance to school, the lower the math results (53/100 on average when the school is more than 16 km away; 62/100 when it's less than 8 km).
(Baliyan et Khama 2020)

SDGs LINKED

ISSUE 3

Ensuring good study conditions

Good housing conditions are essential for studying and learning.

Housing conditions have a decisive impact on schooling, both in terms of access to education (enrolment, attendance) and learning. Several factors link housing and education.

Space: The more spacious a home is, the more it guarantees personal and quiet work spaces conducive to schoolwork. Children living in overcrowded housing (> 1 person/room) are more anxious and do worse at school compared to those with their own bedrooms (Solari et al. 2012; Goux and Maurin 2015). In Argentina, living in overcrowded housing reduces the chances of 13-17 year-olds staying in school by 11-13% (Lanús 2009).

Time: Access to water is a key factor in school completion, especially for girls. In Nepal, a one-hour increase in the time spent fetching water reduces by 16 percentage points the probability of girls (aged 14-16) completing primary school (Dhital et al. 2022). Better-equipped housing reduces the time children spend on domestic work, and cuts school absenteeism.

Light: Adequate lighting is necessary for studying and completing homework. Electrifying homes therefore increases children's study time, and hence their academic performance (Bensch, Kluve and Peters 2011; Kumar and Rauniyar, 2018).

GUIDELINES

Support academic success through housing policies, with the aim of increasing the size of housing units and improving their amenities.

KEY FIGURE

In Bhutan, electrification of rural dwellings resulted in children gaining an additional **9 minutes of study time per day and an increase of 0.72 years of schooling**.
(Kumar et Rauniyar 2018)

SDGs LINKED

ENJEU 4

Enabling families to invest in education

Lower housing costs and less time spent on domestic work mean that families can invest more in their children's education.

Low-income families living in affordable housing and those receiving benefits invest more in their children's education, with positive impacts for their schooling (Newman and Holupka 2014). The time freed up by better infrastructure or a local educational service can also be reinvested in education through the formation of educational communities (Brennan et al. 2014).

GUIDELINES

Reducing rents or granting housing allowances helps support people's education.

KEY IDEA

Better housing conditions allow families to spend more time and money on raising their children.

SDGs LINKED

1 NO POVERTY 1.4

10 REDUCED INEQUALITIES 10.3

CASE STUDY

IN MOROCCO, A RESETTLEMENT POLICY WITH LIMITED IMPACT ON EDUCATION

Morocco's policy for reducing informal housing has improved living conditions for households, but has not had the desired impact on education. The inadequacy of services at the neighborhood level is a contributing factor.

Morocco's "City Without Slums" program. The first informal settlements around Morocco's major cities appeared in the 1920s and grew rapidly until the 1990s. In 2004, the Moroccan government set a target of eliminating slums from urban centers by re-housing 362,000 households in 85 towns, at a total cost of 2.25 billion euros. As a result, the demographic weight of households residing in slums in Moroccan cities fell from 8.2% in 2004 to 3.9% in 2010. In 2008, part of the project was evaluated, including 9 projects in 5 cities (Casablanca, Agadir, Kénitra, Ain el Aouda, and Berkane) that enabled the relocation of 11,000 households, mainly through resettlement (i.e., subsidized housing lots sold to families to be self-constructed or self-promoted, in return for the demolition of the original dwelling). This evaluation (Toutain & Rachmul 2015) assessed the program's impact on various aspects (housing conditions, urban integration, financial situation, housing financing, mobility, etc.). There is also a national evaluation of the program (Kingdom of Morocco, 2015) and more recent qualitative research on Rabat (Harroud 2019; Atia 2022) and Casablanca (Sakina et al. 2021).

Improved housing conditions but short-term financial difficulties. Resettlement has considerably improved housing conditions for families, with an increase in living space (from 69 to 82 m2 on average), improved basic home services, such as water supply, sanitation (from 21% to 91% access) and electricity (from 48% to 78% access) and improved overall comfort (kitchen, electrical appliances, etc.). Beneficiaries saw a significant drop in their poverty rate (from 49% to 28%) and an improvement in their health conditions. However, the increased value of assets for residents who became homeowners came with a reduction in their spending on food and healthcare. Three quarters of residents also say they are dissatisfied with the facilities, shops and services in their new neighborhoods, as public transportation, street lighting, and schools are taking too long to be built.

Maintained but weakened social ties. Families feel that the neighborhood's mutual support and conviviality have weakened, leading to a feeling of isolation. "The glaring lack of employment opportunities (...), its low level of facilities (in terms of education, health, leisure services, etc.) and its poor public transport links all contribute to accentuating the feeling of social exclusion and relegation, deeply felt by most of its inhabitants", concludes research on a Rabat neighborhood (Harroud 2019). In Casablanca, studies show that despite the project's "good intentions", "new satellite towns are generally environmentally unsustainable, socially isolated and culturally unsuitable" (Sakina et al. 2021).

Ambivalent impact on education. Despite the improvement in housing conditions, the impact on young people's schooling is nuanced. The relocalisation associated with resettlement has resulted in fewer children dropping out of school than the authorities feared (between 7 and 12%), but the re-configuration of the neighborhoods has eliminated community educational resources (support classes for children and literacy classes for women).

Continued on next page...

CASE STUDY

IN MOROCCO, A RESETTLEMENT POLICY WITH LIMITED IMPACT ON EDUCATION

KEY IDEA

"The incompleteness of operations and inadequacy of facilities and services are creating difficulties in urban integration for families. Despite the housing acquisition, families face a deterioration in their conditions of urban integration due to the absence of social and community facilities (schools, health centers, ovens, hammams, etc.). (...) Women, deprived of opportunities to meet, train and develop income-generating activities, as well as children and young people, for whom no sporting or cultural activities exist, are the most affected by resettlement." (Touatain et Rachmul 2014, p.8)

KEY LESSON

Access to decent housing can only have a positive impact on education if certain conditions are met, including proximity to educational services (schools, social and cultural centers, etc.) and taking into account existing community support networks.

Sources:

Toutain Olivier and Virginie Rachmul,2014, *Évaluation et impact du Programme d'appui à la résorption de l'habitat insalubre et des bidonvilles au Maroc*, AFD/Gret, *Évaluation de l'AFD Ex Post*, n° 55.

Kingdom of Morocco, 2015, *Enquête Nationale d'Évaluation d'Impacts des Programmes de Lutte contre l'Habitat Insalubre sur les Conditions de vie des Ménages* [Rapport], Ministère de l'Habitat et de la Politique de la Ville Secrétariat Général Direction de l'Habitat and UN Women.

Sakina Boufarsi, Behiye Isik Aksuku and Aysu Emre Mehmet, 2021 "Slums in Casablanca: Assessment of the VSB program, case study: Er-hamna Slum", *Global Scientific Journal*, 2021.

Harroud Tarik, 2019, "D'une marginalité à l'autre : droit à la ville et pratiques de réadaptation des "bidonvillois" dans les nouvelles marges urbaines de Rabat", *Annales de géographie*, 2019, vol. 729-730, n° 5-6, pp. 14-37

Atia Mona, 2022, "Refusing a "City without Slums": Moroccan slum dwellers' nonmovements and the art of presence", *Cities*, vol. 125, p. 102-284.

TARGETS: 5.1. End discrimination **5.2.** End violence and exploitation
5.4. Promote shared domestic work **5.6.** Sexual and reproductive health
5.a Rights and access to resources **5.b** Technology and empowerment

ISSUE 1

Giving women access to economic activity

Housing contributes to women's financial independence and economic security by enabling them to develop income-generating activities.

In the Global South, the lack of consideration for domestic, reproductive and agricultural work makes women's participation in the economy "statistically invisible". According to the Indian census, 54% of men and only 15% of women work in urban areas (Kapur Mehta and Pratap 2020). Female labor remains poorly remunerated and recognized because most of it takes place at home and not in the formal economy. In India, only 10% of micro and small businesses are owned by women (Francis and Kaviarasu 2019).

Poor or unstable housing conditions severely hamper women's opportunities to set up and develop businesses. To create and maintain an income-generating activity, they need to have control over a workspace and/or storage space for goods and machinery (Chant 2013). They also require the ability to allocate time, which is "the scarcest resource for women in poor communities" (Miraftab 2011). Improved housing conditions enables them to do so and facilitates their entrepreneurial activities (Grogand and Sadanand 2013).

Women are also too rarely involved in housing construction, even when they have the skills. In Ghana and Uganda, 41% of women have construction skills, but only 4% and 7% have built their own homes (Miraftab 2011).

GUIDELINES

Involving women in housing construction.

Consider the role of their home-based business.

KEY FIGURE

In Nicaragua, electrification of rural housing has increased women's propensity to work outside the home by 23%.

SDGs LINKED

1 NO POVERTY	1.1 1.4
8 DECENT WORK AND ECONOMIC GROWTH	8.2 8.5

ISSUE 2

Ensuring domestic safety

Access to housing is a key tool to fight domestic violence against women. In preventive terms, good housing conditions reduce the risk of violence. In corrective terms, stable housing is essential for taking care of victims.

The issue of housing is closely linked to gender-based violence. On one hand, homeless women are particularly exposed to violence (Cinacchi et al 2021). On the other hand, domestic violence against women is one of the primary causes of housing insecurity and homelessness (Menard 2001). Half of abused women wish to leave the marital home but are confronted with inadequate emergency accommodation and affordable housing (Guiraud 2021) and discriminatory practices (Barata & Stewart 2010).

Simply being a female homeowner does not reduce exposure to domestic violence (Brownridge 2005), but female housing independence helps better address marital difficulties (Clark, Burton and Flippen 2011). For couples, co-ownership of housing would be the most secure (Gahramanov, Gaibulloev and Younas 2022).

GUIDELINES

Take into account domestic violence issues in housing policies to promote victims' access to decent, stable and private housing (Baker et al. 2010).

Encourage joint ownership of housing for couples.

KEY FIGURE

Housing co-ownership reduces the likelihood of psychological violence in married couples **by 10%**. (Gahramanov, Gaibulloev et Younas 2022)

SDGs LINKED

ISSUE 3

Promoting women's health and well-being

Access to decent housing has a specific positive impact on women's health and well-being.

Good conditions of housing, sanitation and water supply improve women's experiences of menstruation, pregnancy and childcare (Chant 2013). They have a positive impact on women's physical and mental health, for example by reducing maternal mortality (Benova, Cumming and Campbell 2014). Access to private sanitation facilities also reduces the risks associated with using or avoiding public sanitation facilities (Pearson and McPhedran 2008).

Finally, access to affordable and sustainable housing is linked to better family planning and a decrease in fertility rates, which is conducive to urbanization and women's empowerment (Dyson, 2010). Fertility rates are generally higher in informal settlements than in more affluent urban areas (Chant and McIlwaine 2009).

GUIDELINES

Designing housing facilities to meet women's health and hygiene needs.

Involving women in housing design.

KEY FIGURE

A poor water supply **increases maternal mortality by a factor of 1.75**, while inadequate housing sanitation **increases it by a factor of 3**. (Bnova, Cumming et Campbell 2014)

SDGs LINKED

ISSUE 4

Reducing the workload associated with reproductive work

Living in decent and well-equipped housing reduces the burden of reproductive work on women.

When housing is poorly equipped (poor access to water, energy, sanitation, and services), women do the unpaid compensatory work (Chant 2013), especially most of the work of managing and preserving water in the home (Caruso et al 2023). When households have no access to water, women are responsible for its collection in 80% of cases, a time-consuming and physically demanding task (UNEP 2016).

Women also compensate for the lack of services: they collect fuel when there is no electricity, do the daily shopping in the absence of refrigeration, dispose of waste where there is no collection or sanitation services, etc. (Khosla 2019).

Finally, women absorb the high energy costs of poorly equipped housing by sacrificing their personal health and comfort. To save money, they limit their use of electrical appliances (lights, fans, air conditioners, etc.) (Sunikka-Blank, Bardhan and Haque 2019).

GUIDELINES

Integrating gender issues into urban development.

KEY FIGURE

In sub-Saharan Africa, **women spend 16 million hours a day collecting water** – compared to 6 million hours for men.
(UNEP 2016)

SDGs LINKED

6 CLEAN WATER AND SANITATION: 6.1, 6.2

7 AFFORDABLE AND CLEAN ENERGY: 7.1, 7.3

ISSUE 5

Promoting women's access to home ownership

Affordable and sustainable housing is an essential lever in combating discrimination against women in access to home ownership, and promoting their empowerment.

Women still face significant discrimination in their access to property ownership. They are less likely to own land and property compared to men (Gaddis, Lahoti and Li 2018) and paying higher rents compared to their income. In India (Tamil Nadu), female-headed households are more likely to rent and use 42% of their income for rent, compared to 27% for male-headed households (BIRD 2020).

However, land ownership is the primary empowerment factor cited by women, ahead of education and employment (in India in particular, Chowdhry 2017). Women's access to home ownership reduces the risk of household poverty (Baruah 2010) and elevates women's social status (Pathak and Patel 2019).

GUIDELINES

Women-only home ownership programs.

Systematic inclusion of women's names in property titles, free of charge.

KEY FIGURE

39% of men compared to 13% of women own a home
in sub-Saharan Africa.
(Gaddis, Lahoti et Li 2018)

SDGs LINKED

1 NO POVERTY: 1.1, 1.2, 1.4, 1.5

11 SUSTAINABLE CITIES AND COMMUNITIES: 11.1, 11.3

CASE STUDY

HAMMOND'S FARM (SOUTH AFRICA)

Prioritizing women's housing: an effective public policy with conditions.

Housing and gender equality in South Africa. Access to housing in South Africa is structured by the legacy of racial, social, and gendered inequalities produced by colonization and apartheid. Prior to 1994, non-white women had no right to buy or own housing or land. Since 1994, a large state-subsidized housing program has sought to reduce these historical inequalities. Over 4 million homes have been built to replace informal housing, with priority given to housing the poorest populations and black women. Housing is provided free of charge, but beneficiaries are required to pay registration and service fees. From its inception, the government program was openly aimed at "supporting the role of women in the housing provision process": 56% of the units were allocated to women.

Hammond's Farm. Hammond's Farm was built as part of a South African government program in 2011. Located north of eThekwini (Durban), it comprises 1,800 two-storey townhouses. Each property contains two bedrooms, a kitchen and a bathroom. Most of the residents were relocated from an informal settlement 17 km to the north. Hammond's Farm is part of a particularly proactive gender equality program: 70% of the subsidized housing has been allocated to women.

Positive effects for women's safety, but ambivalent effect on gender relations. When questioned in 2014, almost all the women living at Hammond's Farm said they felt safer in their new home, especially thanks to the private sanitary facilities. They also said that the additional space and privacy has reduced domestic violence. However, this sense of security may be linked to the fact that formal housing reduces the possibility of hearing disturbances in the neighborhood. Relocation also has negative effects, including reduced employment opportunities due to the move away from previous informal work, and growing tensions within couples due to women's access to property, which is perceived negatively by men.

KEY LESSONS

To improve women's daily lives, homes need to be large enough. The Hammond's Farm homes generate greater satisfaction among residents because they have 2 bedrooms. Conversely, similar programs with narrower units are associated with a loss of privacy and a deterioration in women's educational practices and couples' relationships.

A public policy that is openly favorable to women may be perceived negatively by men, weakening its impact. Legal tools alone are not enough but must be accompanied with a cultural transformation.

KEY IDEA

"The legal status of a home 'owner' can transform and destabilize power relations, helping women, but it can also fuel violence, especially when poverty and unemployment are present. (...) Material and legal interventions can only contribute to equality between men and women if they are supported by cultural, political and economic transformations that take account of the context."
(Meth, Buthelezi et Rajasekhar, 2019, p. 1086)

Source:

Meth Paula, Buthelezi Sibongile et Rajasekhar Santhi, 2019, "Gendered il/legalities of housing formalisation in India and South Africa", *Environment and and A: Economy and Space*, vol. 51, nº 5, pp. 1068 1088.

TARGETS: 6.1 Access to safe drinking water
6.2 Access to sanitation and hygiene services
7.1 Access to energy **7.3** Energy efficiency

ISSUE 1

Accessing water, sanitation and energy to improve living conditions and habitability

Rehabilitating homes and/or entire housing districts, or creating new affordable and sustainable housing, can help improve access to drinking water, sanitation and energy, including renewable source if integrated into the design and maintenance of housing.

Better access to water, sanitation and energy services in housing has positive effects on habitability conditions and the general living conditions of occupants (Teferi and Newman 2018; Frediani, Cociña and Roche 2023).

The time saved by easier access to these services can be used for paid work, especially for women who still do most of the unpaid domestic work. This avoid the need for external sources (wells, water delivery trucks, small private providers, irregular electrical connections, etc.), which are of lower quality and much more expensive than water or energy obtained from the public network (Baker 2012). In Nicaragua, a study shows that household electrification increases women's propensity to work outside the home by around 23% (Grogan and Sadanand 2013). Conversely, power and water service outages or lack of service have an impact on the economic equilibrium of households, generating additional costs and missed employment opportunities (Obolensky et al. 2019).

Improving access to these services in housing units or residential neighborhoods has a positive impact on health, by limiting the transmission of contagious diseases and domestic accidents, and improving indoor air quality ,reducing the use of biomass for cooking, which is still predominantly used and can cause respiratory problems and environmental damage (Baker 2012).

GUIDELINES

Integrate individual or collective access to water, sanitation and energy services into programs to support the construction or renovation of affordable, sustainable housing.

KEY FIGURE

In urban areas of East Africa, **53% of households have access to safely managed water services**, and 27% to sanitation services. (Tumwebaze et al. 2023)

SDGs LINKED

1 NO POVERTY	1.2 1.4
3 GOOD HEALTH AND WELL-BEING	3.2 3.3
4 QUALITY EDUCATION	4.1 4.2
5 GENDER EQUALITY	5.2
8 DECENT WORK AND ECONOMIC GROWTH	8.2 8.5

ISSUE 2

Combining the satisfaction of water and energy needs with the efficiency of provided services

Access to affordable and sustainable housing helps meet essential needs in terms of access to water and energy, while also allowing for rationalized consumption under certain conditions.

In developing countries, urban dwellers use less energy and emit far fewer greenhouse gases than their higher-income counterparts (Marcotullio et al., 2013), due to a lack of access to services. As domestic infrastructures develop, water and energy consumption typically increase. Private stakeholders are increasingly proposing solutions based on new technologies, particularly in the energy sector, but these solutions are often targeted at financially solvent market segments, leaving out those with limited financial capacities. Without public regulation, this can lead to a fragmented of water and energy offering, an absence of interconnected networks, and areas without service coverage, thereby exacerbating social and economic inequalities (Jaglin and Guillou 2020).

Furthermore, in the energy supply sector, projects aimed at increasing the number of low-power installations (individual solar panels, for example) are less effective in the medium term than building mini-grids (connecting individual panels) requiring local collective action. This can be explained by the poor adaptation of small-scale installations to the needs of local residents (Berthelemy 2020). Public regulation can help integrate these local projects into an overall public energy policy.

The use of new technologies can facilitate the micro-payment of these services by residents, making them more accessible financially, simplify consumption tracking, and limit resource wastage through technical monitoring (Kibala Bauer 2020).

GUIDELINES

Integrate new technologies and promote public regulation of water and energy services to address widespread unmet needs while controlling consumption.

KEY FIGURE

Nearly **26 million African households** (around 100 million people) **have access to electricity via decentralized forms** dof energy production. (IRENA 2016)

SDGs LINKED

1 NO POVERTY — 1.4

11 SUSTAINABLE CITIES AND COMMUNITIES — 11.1, 11.3

CASE STUDY

THE EFFECTS OF LIMITED ACCESS TO SANITARY FACILITIES IN NAIROBI (KENYA)

The conditions for accessing toilets within or near housing in an informal settlement in Nairobi (Kenya) affect the health, safety, and access to education for women and girls.

In Mathare Valley, an informal settlement in Nairobi, Kenya, there is an average of one toilet for every 85 residents. Only 15% of residents have access to private toilets. For women, these access conditions have specific impacts on health. They increase the risk of urinary tract infections, diarrhea, and other infections during menstruation.

This situation also exposes women to violence: the distance between shared toilets and the place of residence increases the risk of violence experienced during the journey, especially at night (Gosling et al. 2015). In this neighborhood, a study showed that out of 435 female respondents, 68% reported physical violence related to toilet use (Corburn and Hildebrand 2015). The lack of toilets can also lead teenage girls to skip school to avoid publicly displaying poor hygiene.

Sources:

Chebii S. J. *Menstruation and education: how a lack of sanitary towels reduces school attendance in Kenyan slums*. BUWA, October 2014.

Corburn J, Hildebrand C., Slum Sanitation and the Social Determinants of Women's Health in Nairobi, Kenya. *Journal of Environ Public Health*. 2015

Gosling L. et ali., "Nowhere to go: How a lack of safe toilets threatens to increase violence against women in slums", *Sverige*, Stockholm: WaterAid, 2015.

Winter S.C. et al., "A mixed-methods study of women's sanitation utilization in informal settlements in Kenya", *PLoS ONE*, 21 March 2019, vol. 14, nº 3.

TARGETS: 8.1 GDP growth **8.2** Economic productivity
8.5 Full employment and decent work

ISSUE 1

Facilitating access to employment for residents and improving household incomes

Access to affordable and sustainable housing with suitable domestic infrastructure enables residents to focus on income-generating activities and promotes access to employment as well as income growth, particularly for women (Coburn and Sverdik 2017).

Issues with access to domestic infrastructure lead to a reduction in people's temporal and financial resources. They spend more time on domestic work such as fetching water, leaving less time for paid work (Coburn and Sverdik 2017).

Furthermore, regular issues with access to domestic infrastructure result in increase in absenteeism. This includes power cuts, difficulties accessing water, or accessibility issues (flooded roads, for example). In Africa, power outages reduce the probability of employment by 35%, and possibly 55% in the case of non-agricultural employment (Obolensky et al. 2019). Domestic infrastructure issues can therefore affect employment opportunities and stability.

Lastly, improved access to domestic infrastructure means higher wages for the populations concerned, with wage gains of up to 30% according to results from housing electrification projects in Bangladesh (Khandker et al. 2009).

GUIDELINES

Develop affordable, sustainable housing in close conjunction with domestic infrastructures.

KEY FIGURE

Improved access to water in the home saves a lot of time, and **enables 72.1% of households to work more**. (Aiga et Umenai 2002)

SDGs LINKED

- 1 NO POVERTY: 1.4, 1.5
- 6 CLEAN WATER AND SANITATION: 6.2
- 10 REDUCED INEQUALITIES: 10.1, 10.3
- 11 SUSTAINABLE CITIES AND COMMUNITIES: 11.1

ISSUE 2

Developing housing that facilitates access to employment areas

The location of housing has an impact on employment status and income levels. Therefore, the development of affordable and sustainable housing supply should be in proximity to places of employment for housing to be attractive (Smet and Van Lindert 2016; Akinwande and Hui 2022; Marot et al. 2022).

A lack of thought in spatial planning and connectivity to infrastructure can lead to the development of an affordable and sustainable housing supply that is far from employment centers. Yet increased transportation times reduce employment opportunities for residents (Obolensky et al. 2019) and result in higher transportation costs for them.

A study by the Inter-American Development Bank shows that households living on the outskirts of cities see their mobility-related expenses increase by 45% in Brazil, 42% in Mexico and 27% in Colombia (Obolensky et al. 2019). To be sustainable, the development of housing must be integrated with existing infrastructure in order to foster local economy growth (Smet and Van Lindert 2016).

GUIDELINES

Ensure alignment with local available employment and built housing units.

KEY IDEA

Construction of affordable and sustainable housing supply must **be aligned with local socio-economic dynamics**.

SDGs LINKED

1 NO POVERTY — 1.4

10 REDUCED INEQUALITIES — 10.1, 10.2

ISSUE 3

Promoting local construction supply chain development

Development of affordable and sustainable housing supply is an opportunity to develop the construction sector, and by extension the local economy (Ojoko and Ojoko 2017).

13% of gross domestic product growth worldwide depends on the housing sector (Habitat for Humanity 2021). The construction industry can therefore make an important contribution to job creation, local value chain activation and business inclusion, as well as national economy development. To achieve these benefits, the construction sector must be at least partly controlled by local stakeholders.

The development of affordable and sustainable housing can be synonymous with economic growth at various levels. The United Nations Economic Commission for Latin America and the Caribbean estimates that a 1% growth in the construction sector leads to a 0.7% increase in GDP. Similarly, a World Bank study estimates that 5 jobs are created for every home built (Habitat for Humanity 2023).

GUIDELINES

Favoring local companies to develop affordable and sustainable housing in order to secure economic benefits for the populations and countries concerned.

KEY FIGURE

Access to affordable and sustainable housing in informal settlements can generate a direct impact of up to **10.5% in economic growth**, measured either as gross national income or gross domestic product per capita.
(Habitat for Humanity 2023)

SDGs LINKED

1 NO POVERTY — 1.4

10 REDUCED INEQUALITIES — 10.1

11 SUSTAINABLE CITIES AND COMMUNITIES — 11.1, 11.4

13 CLIMATE ACTION — 13.1

ISSUE 4

Facilitating financial inclusion

Enabling a larger proportion of the population to become homeowners, providing access to financial products and services that are affordable, useful, adapted and offered by reliable providers (Marot et al. 2022).

Access to property is an important source of economic capital for populations and remains a key condition for developing financial resources. However, vulnerable households often do not have access to bank loans, which complicates home ownership (Marot et al. 2022). Moreover, when people do manage to access home ownership through subsidy programs, land title regulation and self-construction, they may be confronted with debt issues, as well as problems of poor housing quality and management difficulties that can lead to a loss of economic capital (De Bercegol et al. 2020).

Against this backdrop, several alternative models for access to affordable and sustainable housing are emerging in Southern countries to promote financial inclusion for populations, notably through the principles of urban commons, cooperatives housing and shared land tenure (Marot et al. 2022).

GUIDELINES

Design housing projects with consideration for households' financial means and their access to the necessary financial resources.

KEY IDEA

The development of affordable and sustainable housing can be part of a broader effort **to promote access to financial services for vulnerable populations**.

SDGs LINKED

1 NO POVERTY — 1.5

10 REDUCED INEQUALITIES — 10.2, 10.3

CASE STUDY

IMPROVING ACCESS TO WATER AND WORK IN MANILA (PHILIPPINES)

In Manila (Philippines), improved access to water is transforming the way this resource is collected, and household water expenses.

The study conducted in Manila is based on a comparison between a former informal settlement that benefited from improved access to water with the installation of private access in dwellings, and an informal settlement using three public water taps.

KEY FACTS AND FIGURES

The cost of water is lower in the former informal settlement where access to water has been improved.

72.1% of households living in the former informal settlement with improved access to water started working more to increase their income. The proportion of the population living below the poverty line fell from 55.6% to 29.9%.

Residents of the informal settlement not benefiting from improved access to water spend an average of 3 to 4 hours a day collecting water, even though the nearest water point to their home is less than 100 meters away. 68% of residents in this neighborhood say they would like to work more to increase their income once they spend less time collecting water.

Source:

Hirotsugu Aiga and Takusei Umenai, "Impact of improvement of water supply on household economy in a squatter area of Manila", *Social Science & Medicine* (1982), August 2002, vol. 55, nº 4, p. 627-641.

TARGETS: **10.1** Change in incomes of the poorest people **10.2** Empowerment and integration **10.3** Equal opportunities **10.4** Targeted public policies **10.7** Migration **10.a** Special and differential treatment **10.b** Official development assistance

ISSUE 1

Housing policies adapted to urban and rural contexts

Poor housing does not take the same form in urban and rural areas. Housing policies adapted to these spatial inequalities and their evolution are needed to guarantee equity.

In cities, the pressure is growing: as the world urbanizes, poverty is shifting from rural to urban areas. 55% of the world's population now lives in urban areas and this proportion is set to rise to 68% by 2050 (UN World Urbanization Prospects 2018). However, the rural exodus is exacerbating the urban housing crisis and inequalities: 1 in 3 urban dwellers lives in a slum (Ritchie & Rose 2018), and income inequalities between households are now greater in cities than on a national level (OECD 2016; Nijman and Wei 2020).

However, extreme poverty is highest in rural areas, where 84% of the poorest people live (UNDP 2021). Rural dwellers are more likely to own homes they build themselves, but these homes are often less well-equipped. In China, for example, 13% of urban homes but 58% of rural homes had no running water in 2010 (Bian and Lu 2014).

GUIDELINES

Develop specific housing policies dedicated to rural and urban environments.

KEY IDEA

The housing crisis take different forms in urban areas (high levels of inequality, privatization, slums, etc.) compared to rural areas (extreme poverty, lack of facilities, services and resources, etc.).

SDGs LINKED

1 NO POVERTY: 1.1 1.2 1.4 1.5

11 SUSTAINABLE CITIES AND COMMUNITIES: 11.1 11.3

ISSUE 2

Reducing housing inequalities

Inequalities in housing reflect and produce wider social and economic inequalities. Reducing housing inequalities is essential to promoting equal opportunities.

Housing architecture both reflects and contributes to producing social and economic inequalities. This effect is not linked to a specific building type or style, but to housing policies and urban planning (Martin, Moore and Schindler 2015).

Inequalities in housing exist first and foremost on an international scale, between countries. The proportion of people living in informal housing is much higher in the Global South. 20% of the world's population lives in inadequate, overcrowded and unhealthy housing, and over 90% of urban dwellers living in slums live in poor countries (UN-Habitat 2022).

Inequalities are then manifested at national and local levels, between populations: the poorest populations are hit the hardest by inadequate housing. In developing Asian countries, for example, the probability of the poorest 20% living in adequate housing is close to zero (Aizawa et al. 2020). Rising housing costs widen inequalities between the richest and poorest and increase segregation (Nijman and Wei 2020).

KEY FIGURE

56% of the urban population of Dub-Saharan Africa **lives in informal settlements**. (Cobbinah et Nyame 2021)

SDGs LINKED

1 NO POVERTY: 1.1 1.2 1.4 1.5

6 CLEAN WATER AND SANITATION: 6.1

7 AFFORDABLE AND CLEAN ENERGY: 7.1

ISSUE 3

Facilitating housing for migrants

Access to housing is a priority to facilitate migration and mobility.

Migrants are particularly vulnerable to human rights violations and their right to housing is one of the most threatened (UN 2010). This situation is caused by the urgency to find housing, lack of information, legal insecurity and discrimination. Among migrants, refugees are the most affected by inadequate housing (Browns, Gill and Halsall 2022), as illegal immigrants are excluded from public housing programs (Liu et al. 2020; McConnell 2013).

Reduced access to home ownership and less well-equipped housing has a negative impact on migrants' physical and mental health (Xia et al. 2018) and the privatization of asylum exacerbates these inequalities (Browns, Gill and Halsall 2022).

GUIDELINES

Deploy public housing programs that are accessible to people with irregular immigration status.

Take specific action to combat discrimination against migrants in the housing sector.

KEY IDEA

Difficulties in accessing affordable and sustainable housing are more pronounced among migrants and refugees.

SDGs LINKED

3 GOOD HEALTH AND WELL-BEING: 3.4

16 PEACE, JUSTICE AND STRONG INSTITUTIONS: 16.b

CASE STUDY

RENTAL HOUSING IN THE *FAVELAS* (BRAZIL)

In Brazil, investment in upgrading *favelas* at the expense of a new public offering of affordable housing encourages informal renting, a dynamic that widens inequalities between inhabitants of the poorest neighborhoods.

Informal housing and renting in Brazil. The economic recession of the 1980s severely undermined the provision of social welfare and housing in Latin America, resulting in increased illegal land occupation and the development of informal housing markets. Despite reforms and investment at the turn of the 2000s, Brazil's *favelas* continue to grow – eight times faster than formal cities. These neighborhoods are adapting to investment and new neo-liberal contexts by renewing informal housing management models, notably through rental.

Serrinha, Sol Nascente and Solemar, three *favelas* around Florianópolis. Founded in the 1970s-1980s, these three informal settlements house around 2,300 households in 2010. Residents earned between 0.88 and 1.7 times the minimum wage (compared with 3.1 times for the Florianópolis urban area).

Between 2006 and 2010, the proportion of rental housing in these *favelas* increased fourfold. Several factors contributed to the emergence of rental housing. On the one hand, macroeconomic policy and reforms aimed at stimulating the domestic market by increasing investment and encouraging consumption through better access to credit enabled *favela* residents to invest in building consolidation and rental housing production. At the household level, the changing role of women and their increased participation in the formal job market reduced family size and increased incomes. On the other hand, the growth of Florianópolis, with its concentration of job opportunities, services and public facilities, attracted a significant flow of low-income migrants. However, the lack of affordable housing options outside informal settlements persisted. The development of rental housing in the *favelas* was therefore a response to a continuing and growing demand for affordable housing: longstanding residents extended their homes to offer part of them for rent to new arrivals, mainly low-wage construction workers. The state supported these practices by investing in infrastructure and the consolidation of housing in Serrinha and Sol Nascente.

A "new class" of homeowners. The new owners are older (15 years older on average) than their tenants, more likely to be married, with children, and have been living in the favela for twice as long (18 years on average). They live in homes that are twice as spacious and better equipped than their tenants.

KEY FIGURE

In the *favela* rental market, owners have 2.5 times more space per person than their tenants (45 m^2 /person vs. 18 m^2 /person).

KEY LESSONS

Investment in informal settlements improves living conditions and increases residents' sense of security. However, it also increases the demand for housing, and hence the informal rental market.

Informal landlords are taking over from the state and the private sector as providers of affordable housing. Renting is a real economic opportunity for them, but it also creates new inequalities between homeowners and renters.

Source:

Fernanda Lonardoni and Jean Claude Bolay (2016) Rental housing and the urban poor: understanding the growth and production of rental housing in Brazilian favelas, *International Journal of Urban Sustainable Development*, 8:1, 49-67.

TARGETS: 13.1 Resilience and adaptation **13.2** Climate policies
13.3 Improved individual and institutional capacities
13.b Strengthening country capacities

ISSUE 1

Limiting the impact of climate change on informal housing inhabitants

People living in informal housing are among the most exposed and vulnerable to the impacts of climate change, whether it is large-scale events (cyclones, storms, hurricanes, floods, etc.) or slower ones (global warming, rising sea levels, drought, extreme heat, etc.).

This increased exposure can be explained in particular by the location of vulnerable housings in areas prone to greater risks (flood zones, areas susceptible to landslides, etc.) (UN-Habitat 2022), by the absence or weakness of housing construction regulations (using materials that are not resistant to large-scale events, that may not be adapted to heatwaves, lack proper ventilation and access to water exposing residents to health risks, particularly during periods of drought) and by the layout of their immediate environment (limited public spaces for rainwater drainage or air flow, high housing density, etc.), (Satterthwaite 2014; Satterthwaite et al. 2018; Bezgrebelna et al. 2021).

Several studies have shown that improving housing conditions can help improve residents' resilience to the effects of climate change, by reducing risks (Wamsler 2007; Satterthwaite 2014). To be effective, climate action needs to be carried out at multiple levels of planning, encompassing not only housing but also urban and regional considerations.

POINT OF VIGILANCE

Improving housing conditions, especially environmental renovations, can lead to the displacement of certain populations as they may increase the cost of housing (purchase/rent).
(Patel et al 2018, Mitra et al 2017)

KEY FIGURE

Five of the ten countries most affected by climate shocks in 2019 were in Africa.

SDGs LINKED

1 NO POVERTY — 1.5

10 REDUCED INEQUALITIES — 10.2

11 SUSTAINABLE CITIES AND COMMUNITIES — 11.1, 11.3, 11.b

ISSUE 2

Reviewing construction techniques

The combination of traditional building techniques, specific to each local context, and contemporary techniques can help adapt housing to climate change while mitigating its effects.

The use of imported building materials is costly, generates environmental impacts (extraction, transport, etc.) and is poorly adapted to local contexts (e.g., with regard to seismic risks, housing ventilation requirements, etc.) (Center for Affordable Housing Finance in Africa 2022). The use of building materials produced with local resources can be a solution for limiting construction costs and adapting to local environmental conditions. It can also have environmental advantages: the bricks developed by the National Slum Dwellers Federation of Uganda – which do not require firing – limit deforestation and are cheaper than ordinary fired bricks (Dobson, Nyamweru and Dodman 2015).

This reflection on the origin of materials can go hand in hand with a review of construction methods to enhance the adaptation of housing to climate change and indirectly limit its effects on health and well-being. For example, the orientation of housing can be designed to maximize sun exposure on the most exposed face; this facilitates air circulation through features like interior courtyards, patios, small windows (air quality, adapted temperature) as well as light, which contributes to residents' quality of life and their ability to adapt to climatic variations (Chavan and Chandar 2022; Dayaratne 2018; Haque, Dodman and Hossain 2014). Participatory self-construction experiences based on these methods also involve residents in the production of their housing (Rachmuhl and Cyr 2007) and can raise awareness about climate change adaptation..

GUIDELINES

Support from public institutions, associations and NGOs for participative housing, led directly by households or small-scale contractors) can be a way of encouraging the use of certain materials while promoting sustainable building standards which focus on reducing risks, improving living conditions (health, sanitation, adaptation to climate change...) and limiting environmental impacts.

Take into account that perceptions associated with traditional building techniques may be undervalued locally, while imported materials and housing models symbolize modernity (Foruzanmehr, 2015).

KEY FIGURE

In Gorakhpur, India, flood-resistant housing designs with raised plinths, second-floor bedrooms and brickwork techniques for better ventilation are estimated to be achievable for **18% less than the cost of standard construction**, using low-cost materials such as bamboo. (Moench et al. 2017)

SDGs LINKED

ISSUE 3

Design homes in harmony with their environment

Picturing housing in its environment, anchored in a territory (definition of "habitat", Allen 1998) helps to apprehend the effects of climate change on housing and vice versa, while taking into account interactions between different scales (home, neighborhood, city, etc.).

Designing housing in its environment means giving thought to air circulation between dwellings (healthiness, light, etc.), vegetation and water supply in public spaces (refreshes and improves the living environment), and population mobility (facilitates evacuation and intervention in the event of climatic hazards; Galal, Sailor and Mahmoud 2020).

Dense urban forms can reduce or increase the impact of housing on climate. The concentration of housing, infrastructure and jobs can generate economies of scale (less travel, lower energy and water consumption thanks to network concentration), but also negative externalities in the absence of undeveloped green spaces (reinforcement of the heat island phenomenon), if collective infrastructures and services are not adapted to demographic density, or if residential areas are not easily accessible and are too far from employment areas (road congestion, public transport that is undersized or does not serve certain neighborhoods, impacts on air quality, accentuation of risk situations, etc.) (Dodman 2009). In northern countries, studies identify urban forms as a lever in the fight against climate change, emphasizing several dimensions: housing typology affects energy consumption; urban forms influence GHG emissions (travel needs in particular) and can be designed to limit heat islands while improving air quality (Cerema, 2018).

GUIDELINES

Evaluate programs to renovate or build affordable and sustainable housing, taking into account neighborhood (green spaces, traffic arteries, etc.) and city (concentration of housing, links with infrastructures, etc.) scale.

KEY FIGURE

In New Aswan (Egypt), variations in urban geometry (street orientation, shadows, etc.) affect the physical temperature felt by pedestrians by an average of 9°C.
(Galal, ali.2020)

SDGs LINKED

CASE STUDY

BIOVERNACULAR HOUSES IN MANABÍ (ECUADOR)

In Ecuador, a three-room "vernacular" house in rural Manabí province already meets certain sustainability criteria. These results could be enhanced using modern techniques.

The vernacular house in Manabí. Vernacular architecture is construction that continuously adapts to its environment and social needs, drawing on the skills and traditions of local builders. In the province of Manabí, on the west coast of Ecuador, the vernacular house is characterized by its three-room structure on stilts (a kitchen, a rest room, all joined by a corridor to isolate the first two spaces and limit the risk of fire in the whole dwelling, the corridor has gradually been transformed into a dining room). The stilted structure limits the consequences of flooding. The materials used (palms or straw for the roof; earth-reinforced wood or cane for the walls and floor) give the dwelling its lightness, enabling it to withstand earthquakes, landslides and floods. The use of passive bioclimatic principles such as orientation, windows, doors and other openings to take advantage of natural light, shade and ventilation contributes to the well-being of residents and the longevity of construction.

Modern techniques for "biovernacular" housing. Combining traditional design with a contemporary approach to housing promotes economic, social, environmental and cultural sustainability. Today, these habitats are not recognized as a cultural historical heritage in the province. In addition, other materials are added to traditional ones (breeze blocks, etc.), including for internal equipment (concrete, zinc, aluminum, glass, etc.), increasing construction and maintenance costs without necessarily being sustainable. These homes do not use renewable energies.

The construction of "biovernacular" housing would offer sustainable technical and architectural solutions that enhance the value of these dwellings, while promoting their recognition as cultural heritage. Such biovernacular housing could incorporate several principles:

- The design could allow each of the three rooms, as well as the first floor, to be adapted according to their use and changing family composition (number of bedrooms, use of the ground floor as a garage or storage space, etc.).
- The structure of the dwelling could be reinforced by concrete foundations, while the rest of the building could still be made of lightweight local building materials (bamboo in particular).
- Passive bioclimatic principles could be exploited, with attention to integration into the landscape and renewable energy use.
- Construction costs could be monitored and accessibility guaranteed for the province's residents.

KEY FIGURE

The construction of biovernacular housing would cost 40% less than the construction of reinforced concrete housing.

Source:

Hidalgo Zambrano, et al., 2023. "A Sustainable Proposal for a Cultural Heritage Declaration in Ecuador: Vernacular Housing of Portoviejo", *Sustainability 15*, nº. 2.

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CONCLUSION

This study proposes and details a **case** for affordable and sustainable housing as a focus for action to achieve the SDGs. It presents **the main issues identified by SDGs, as well as the bibliographical references used, and several case studies linked to the targeted SDGs**.

This study falls withing the field of research on the interaction between the SDGs, whose approach, vocabulary, salient results and visualization tools are presented in **Appendix 3** - Interactions between SDGs: an active research field. International scientific literature has clearly established that **the 17 SDGs are indivisible and integrated**: the achievement of one goal necessarily has positive or negative effects on achieving the others. This is particularly true for **SDG 11 - Sustainable Cities and Communities, which is one of the most central and positively connected SDGs**. The openness, safety, resilience, and sustainability of cities and human communities are a central, driving objective for the 2030 Agenda.

More specifically, **this study shows how affordable and sustainable housing is a central component in achieving the SDGs, as it is strongly linked to 10 of the 17 SDGs and some of their targets**. A study of the challenges of affordable and sustainable housing in relation to these 10 SDGs shows that they are strongly interlinked, and that achieving one SDG can have an impact on others. Moreover, SDGs 5, 10, 11 and 4 are particularly relevant to affordable and sustainable housing, as most of their targets can be linked to this theme. The table below summarizes all the SDGs and targets identified, using a rating scale to specify the extent to which the targets are relevant to affordable and sustainable housing.

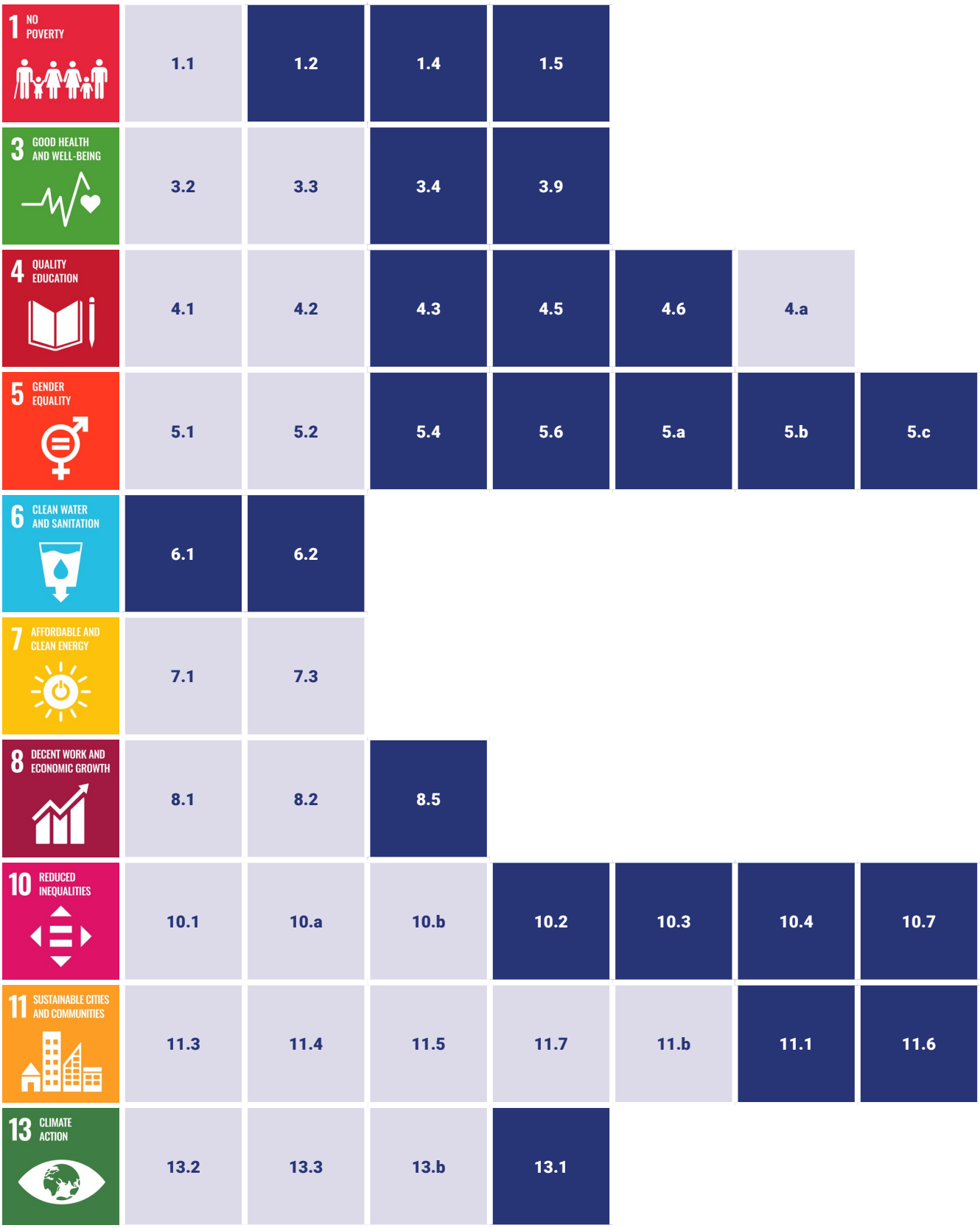
The rating scale is structured as follows:

Interaction established	Strong Interaction
Several sources document the interaction	Interaction is mentioned systematically
++	+++

Beyond the analysis of 10 SDGs with regard to affordable and sustainable housing, the in-depth study of the literature highlights **several salient lessons** for developing an offer adapted to residents' contexts and practices:

- **Access to affordable and sustainable housing must be understood as an important component of development** as it has a wider impact on various fields of intervention such as health, education, gender equality, employment and climate change management.
- **Interventions to improve housing and develop private domestic infrastructure,** such as access to water or electricity, or the development of private sanitation facilities, have a significant leverage effect on the other SDGs. It is therefore important to take the housing sector into account in development and infrastructure projects, in order to reinforce their impact.
- **Within housing, the layout and interior design of dwellings have a significant impact on gender issues,** particularly in terms of gender equality and access to education and employment for women.
- **The most vulnerable populations are proportionally paying the highest housing costs.** In this context, access to affordable and sustainable housing is even more necessary for vulnerable populations as it contributes to building up assets, improving housing conditions and mobilizing more living expenses.
- **Housing location is a criterion for its sustainability.** An inadequate supply of affordable and sustainable housing can induce significant new costs in terms of transport and access to services when populations are relocated away from their old neighborhood.
- **Access to property should not be considered as the only method of developing affordable and sustainable housing for populations.** Rental is providing housing solutions but must be strongly regulated.

FIGURE 1 – Interaction between affordable and sustainable housing and SDGs' targets
(see Appendix 4 for detailed table)

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APPENDICES

Appendix 1 – Methodological note

The objectives, issues, and lines of questioning for this mission to build a case for affordable and sustainable housing in relation to the SDGs were consolidated during the scoping phase of the study through interviews and a literature review.

SCOPING INTERVIEWS

For this study, we conducted **7 scoping interviews** in order to expand our knowledge of the context of AFD's mission and objectives, issues related to affordable, sustainable housing, and sustainable development goals:

- **1 interview with the two people in charge of the mission at AFD** (Olga Koukoui and Anastasia Muratet).
- **6 interviews with 7 key stakeholders in sustainable housing and researchers with expertise in the field:**
    - **Marie Defay,** economics and urban planning, urban development consultant and lecturer at the École nationale supérieure d'architecture de Paris – Belleville.
    - **Suzanne Déoux,** doctor of medicine, honorary associate professor at the University of Angers, initiator of health engineering in the built and urban environment, consultant.
    - **Françoise Navarre,** urban planning and development, professor at the École d'urbanisme de Paris (Lab'Urba).
    - **Philippe Poinsot,** economics and urban planning, lecturer at Université Gustave Eiffel (LMVT).
    - **Virginie Rachmuhl,** sociology and urban planning, head of urban programs at GRET, associate professor at the Paris School of Urban Planning.
    - **Jean-Pierre Schaefer,** engineering and economics, habitat, housing and urban development expert.
    - **Claire Simonneau,** geography and urban planning, lecturer at Université Gustave Eiffel (LATTS).

LITERATURE REVIEW

The literature review carried out in this study is based on **two corpuses: grey literature** (reports, communication documents, framework documents, declarations, etc.) and **scientific literature** (books, papers published in scientific journals, conference and symposium proceedings, theses, research reports, etc.).

It was carried out in three main stages:

- **Survey and identification of relevant sources on affordable and sustainable housing.** This first stage involved a search of international scientific databases using key words in French and English, cross-referencing the notion of affordable, sustainable housing and related terms ("sustainable housing", "affordable housing", "slum", "green housing", "cooperative housing", etc.) with the themes of the various SDGs (health, education, climate change, gender, etc.). Other keywords were used to identify case studies ("case study", "project") and examples in large geographical areas ("Global South", "Asia", "Africa", "Latin America", "South America"), or to find out about the state of the literature on the various SDGs ("Sustainable Development Goals", "SDGs", "ODD"). The bibliographies of the initial articles identified other authors on the issues studied or on other case studies.
- **Active reading of these works.** This second stage enabled us to identify, for each SDG, the recurring issues, the converging results and those subject to scientific debate, as well as the solutions tested. It also enabled us to identify case studies (monographs in one city/country; comparisons between several cities/countries) which are developed to illustrate the different issues.
- **Structuring the data collected for each SDG.** This last phase resulted in the problematized structure of the report, written in a progressive and reasoned manner, remaining attentive to the fluidity of the reasoning and the clarity of its structure.

Appendix 2 – Presentation of the SDGs

The 17 sustainable development goals are listed below[2].

End poverty in all its forms everywhere

End hunger, achieve food security and improved nutrition and promote sustainable agriculture

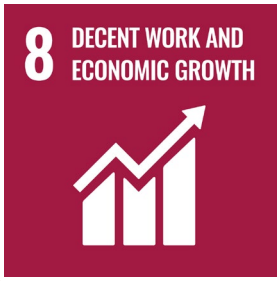
Ensure healthy lives and promote well-being for all at all ages

Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all

Achieve gender equality and empower all women and girls

Ensure availability and sustainable management of water and sanitation for all

Ensure access to affordable, reliable, sustainable and modern energy for all



Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all

Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation

Reduce inequality within and among countries

Make cities and human settlements inclusive, safe, resilient and sustainable

Ensure sustainable consumption and production patterns

2 Source : https://www.un.org/sustainabledevelopment/blog/2015/12/sustainable-development-goals-kick-off-with-start-of-new-year/

Take urgent action to combat climate change and its impacts

Conserve and sustainably use the oceans, seas and marine resources for sustainable development

Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss

Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels

Strengthen the means of implementation and revitalize the Global Partnership for Sustainable Development

Appendix 3 – Interactions between the SDGs: an active field of research

Since their adoption by the United Nations in 2015, academic research has focused heavily **on the intersections and interactions between the 17 Sustainable Development Goals** (Anderson et al. 2022; Magendane and Kapazoglou 2022).

The literature on interactions between SDGs is based on **the indivisible, integrated nature of the 17 SDGs**: achieving one goal necessarily has positive or negative effects on achieving the others. Hence, international research is proposing **models to qualify, analyze, and measure these interactions**, primarily based on systematic reviews of scientific literature and analyses of official databases from UN member countries. **The aim of this work is fully operational**: "*Most articles on the interaction of SDGs have at least the implicit intention of strengthening policy integration and coherence*" (Bennich, Weitz and Carlsen 2020).

MODELS TO DESCRIBE SYNERGIES BETWEEN SDGs

These models are based on **a scientific consensus around the notions of synergies and trade-offs between the SDGs**, depending on whether the objectives reinforce or compete with each other (Anderson et al. 2022). Several detailed scales have been proposed to measure the strength of these synergies or trade-offs, such as those of Fader et al. (2018) and Nilsson et al. (2016) which order the links between SDGs from "Canceling" (the attainment of one goal makes the attainment of another impossible) to "Indivisible" (the attainment of one goal is inextricably linked to that of another); see Figure 2 below. Regardless of these scales, most studies conclude that the "**synergies far outweigh the trade-offs**" (Magendane and Kapazoglou 2022, p. 10).

FIGURE 2 – Rating scale for the relative influence of the SDGs

GOALS SCORING
The influence of one Sustainable Development Goal or target on another can be summerized with this simple scale.

Interaction	Name	Explanation	Example
+3	Indivisible	Inextricably linked to the achievement of another goal.	Ending all forms of discrimination against women and girls is indivisible from ensuring women's full and effective participation and equal opportunities for leadership.
+2	Reinforcing	Aids the achievement of another goal.	Providing access to electricity reinforces water-pumping and irrigation systems. Strengthening the capacity to adapt to climate-related hazards reduces losses caused by disasters.
+1	Enabling	Creates conditions that further another goal.	Providing electricity access in rural homes enables education, because it makes it possible to do homework at night with electric lighting.
0	Consistent	No significant positive or negative interactions.	Ensuring education for all does not interact significantly with infrastructure development or conservation of ocean ecosystems.
–1	Constraining	Limits options on another goal.	Improved water efficiency can constrain agricultural irrigation. Reducing climate change can constrain the options for energy access.
–2	Counteracting	Clashes with another goal.	Boosting consumption for growth can counteract waste reduction and climate mitigation.
–3	Cancelling	Makes it impossible to reach another goal.	Fully ensuring public transparency and democratic accountability cannot be combined with national-security goals. Full protection of natural reserves excludes public access for recreation.

Source: Nilsson et al. 2016

Studies of the interaction of the SDGs mobilize two types of approach:

- **Global approaches which look at the interactions between all the large-scale SDGs** (notably Pradhan et al. 2017; Warchold, Pradhan and Kropp 2021).
- **Specific approaches which focus on the interactions of a single SDG–or even a single action or target– with others:** for example, energy (Nerini et al. 2018), climate action (Nerini et al. 2019), or gender equality (Leal Filho et al. 2022).

Our study falls under the second type of approach and the literature on the interactions between the SDGs provides interesting avenues for analyzing the impact of affordable, sustainable housing on the achievement of the SDGs (see below). However, it also points to **the limitations of this type of initiative**:

- **Focusing on the impact that a single SDG has on the others contradicts the indivisible nature of the SDGs:** "The notion of 'systems thinking' is a central idea underlying most studies (...) Goals should be seen as part of an interconnected system and not studied individually or in pairs" (Magendane and Kapazoglou 2022, p. 5).
- **The links established between the SDGs based on literature reviews are often purely theoretical** and lack empirical grounding.
- **Universal approaches to the SDGs and their interactions fail to account for the weight of economic, social, and environmental contexts** (Nilsson, Griggs and Visbeck 2016).

By focusing on countries of the Global South and proposing case studies, our study avoids the last two criticisms. We address the first criticism by using a rigorous methodology to analyze existing literature.

INTERACTIONS BETWEEN SDG 11 AND OTHER SDGs

International research has not addressed the specific question of the link between affordable and sustainable housing and the achievement of the SDGs that is the subject of this study. However, it has addressed the question of the interactions of SDG 11 - Sustainable Cities and Communities. The two main results of this research provide us with a framework for reflection and relevant avenues for understanding the specific impact of sustainable housing.

- **Result 1: SDG 11 is one of the most central and positively connected SDGs.**

A number of studies have established that **SDG 11 is one of the most synergistic with the others**. It shares this status with SDGs 14 (aquatic life), 13 (climate change), and 16 (peace, justice, institutions) according to Anderson et al. (2022, p. 1464); with SDGs 2 (hunger), 8 (labor) and 12 (consumption and production) according to Fariña García et al. (2021) who describe them in terms of **driving forces**:

> "There is a group of goals that are always well connected to the others and could be described as driving forces: this high level of connection means that their progress drives the others forward. These goals are SDG 2 (zero hunger), SDG 8 (decent work and economic growth), SDG 12 (responsible consumption and production) and SDG 11 (sustainable cities and communities)". (Leal Filho et al. 2022, p. 10 about Fariña Garcia et al.)

- **Result 2: SDG 11 has particularly strong interactions with SDGs 1** (poverty), **3** (good health and well-being), **4** (education), **5** (gender equality), **6** (water), **7** (energy), **8** (jobs), **9** (innovation and infrastructure), **10** (inequality) and **13** (climate change).

Anderson et al. (2022) show that **SDG 11 has the strongest positive impact on SDG 1 (poverty)**, and Scharlemann et al. (2020) consider that **SDG 11 has the most positive interactions with SDGs 3 (good health and well-being), 4 (education), 6 (water), 7 (energy), 8 (jobs), 9 (innovation and infrastructure) and 10 (inequality)**, and to a lesser extent with SDGs 12 (consumption and production), 13 (climate change), 14 (aquatic life) and 5 (gender equality). It would be least connected to SDGs 2 (hunger), 16 (justice, peace, institutions) and 17 (partnerships).

In addition, specific studies on certain SDGs have established their influence on SDG 11, whose progress would benefit from the achievement of other SDGs:

- Leal Filho et al (2022) establish the **special** link **between SDG 11 and SDG 5 (gender equality)**: achieving SDG 5 would impact 100% of SDG 11 targets.
- Nerini et al. (2019) show that climate action and sustainable development would achieve 3 of the 10 targets of SDG 11, would strengthen 1 and is indivisible from 5 other targets. In this respect, **SDG 11, in conjunction with SDG 12 (consumption and production), is the SDG most positively linked to SDG 13**.

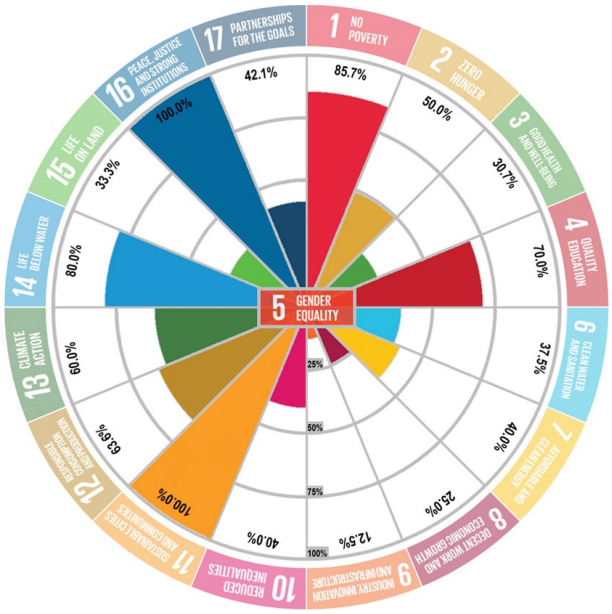
VISUALIZING INTERACTIONS BETWEEN SDGs

Finally, the international literature provides a set of proposals for visualizing the interactions between SDGs in the form of matrices, wheels, and tables. The visualizations proposed in this study on the impact of affordable, sustainable housing are inspired by some of the models presented below.

FIGURE 3 – Influence matrix of the 16 SDGs and their interactions

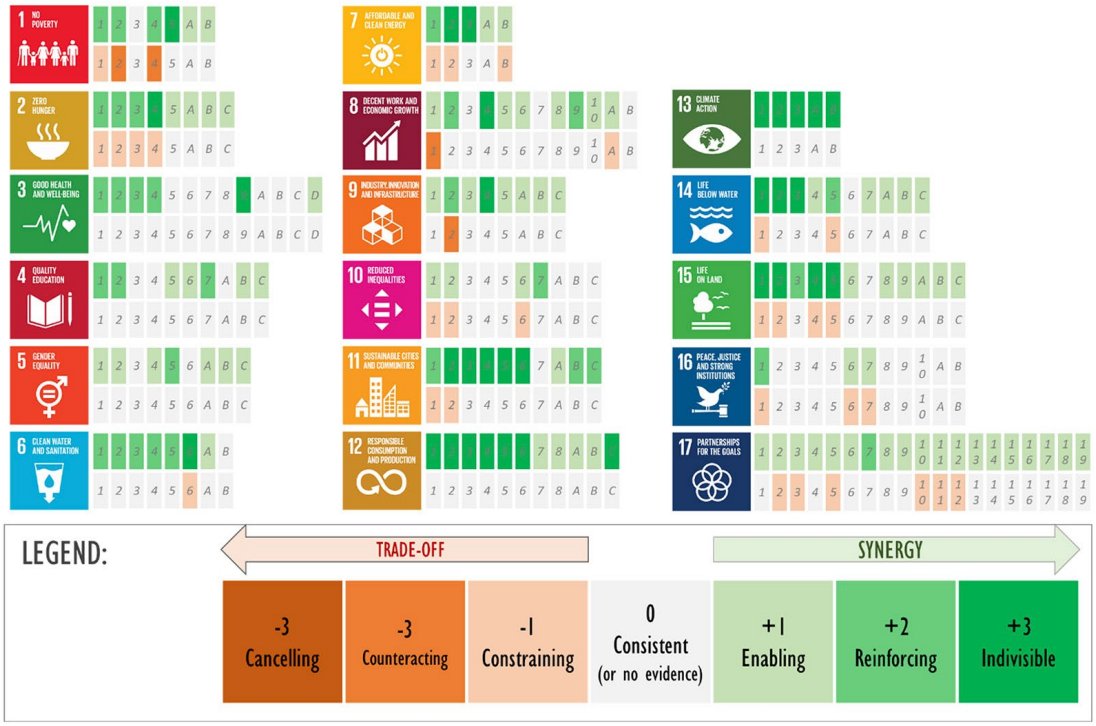
Source: Scharlemann et al. 2020 Fig. 1: Influence Matrix of the 16 SDGs and their interactions, assessed according to the extent to which measures taken to achieve each SDG (rows) are likely to influence achieving other SDGs (columns).

FIGURE 4 – Modeling the impact of SDG 5 on achieving the other SDGs



Source: Leal Filho et al. (2022)

FIGURE 5 – Synergies and trade-offs between climate action and the SDGs



Source: Nirini et al. 2019. Reading: each rectangle to the right of the SDG logo represents a target. Coloration represents the strength of an interaction (scale adapted from Nilsson et al. 2018). The absence of highlighting indicates the absence of identified evidence. The absence of identified evidence does not necessarily imply the absence of a link.

Appendix 4 – Meeting the targets of several SDGs (detailed table)

1 NO POVERTY	3 GOOD HEALTH AND WELL-BEING	4 QUALITY EDUCATION	5 GENDER EQUALITY	6 CLEAN WATER AND SANITATION
1.1 Extreme poverty	**3.1** Maternal mortality	**4.1** School education	**5.1** Combating discrimination	**6.1** Access to drinking water
1.2 Poverty	**3.2** Neonatal and infant mortality	**4.2** Preschool care and education	**5.2** iolence and exploitation	**6.2** Access to sanitation and hygiene services
1.3 Social protection	**3.3** Transmissible diseases	**4.3** Vocational training and higher education	**5.3** Forced marriage and mutilation	**6.3** Water quality
1.4 Access to resources	**3.4** Non communicable diseases	**4.4** Skills and access to employment	**5.4** Promoting and sharing housework	**6.4** Sustainable management of water resources
1.5 Vulnerability	**3.5** Addictive beahvior	**4.5** Equal opportunities	**5.5** Participation and access to management positions	**6.5** Integrated resource management
1.a Resource mobilization	**3.6** Road accidents	**4.6** Fundamental learning	**5.6** Sexual and reproductive health	**6.6** Protecting and restoring ecosystems
1.b Policy integration	**3.7** Sexual and reproductive health	**4.7** Education for sustainable development	**5.a** Rights and access to resources	**6.a** Cooperation and capacity building
	3.8 Universal health coverage	**4.a** Accessibility of schools	**5.b** Technology and empowerment	**6.b** Collective water management
	3.9 Health - environment	**4.b** Training and higher education grants	**5.c** Equality policies	
	3.a Tobacco	**4. c** Teacher training (PED)		
	3. b Research, development and access to medicines			
	3.c Health personnel			
	3.d Health and safety			

7 AFFORDABLE AND CLEAN ENERGY	8 DECENT WORK AND ECONOMIC GROWTH	10 REDUCED INEQUALITIES	11 SUSTAINABLE CITIES AND COMMUNITIES	13 CLIMATE ACTION
7.1 Access to energy	**8.1** GDP growth	**10.1** Income trends for the poorest households	**11.1** Access to decent housing	**13.1** Resilience and adaptation
7.2 Renewable energies	**8.2** Economic productivity	**10.2** Empowerment and integration	**1.2** Safe, accessible and sustainable transport	**13.2** Climate policies
7.3 Energy efficiency	**8.3** Development of VSEs and SMEs	**10.3** Equal opportunities	**11.3** Sustainable and inclusive urbanization	**13.3** Education and empowerment
7.a Research and investment	**8.4** Efficient use of resources	**10.4** argeted public policies for equality	**11.4** Heritage preservation	**13.a** Green funds
7.b Energy supply	**8.5** Full employment and decent work	**10.5** Financial regulations	**11.5** Preventing and limiting the impact of disasters	**13.b** Capacity building
	8.6 Access to employment and training for young people	**10.6** International governance	**11.6** Environmental impact	
	8.7 Child exploitation; trafficking; forced labor	**10.7** Migration	**11.7** Access to green spaces and safe public areas	
	8.8 Rights & safety at work	**10.a** Special and differentiated treatment	**11.a** Regional development	
	8.9 Sustainable tourism	**10.b** Official development assistance	**11.b** Integrated policies for resilient territories	
	8.10 Access to financial and insurance services	**10.c** Transaction costs	**11.c** Sustainable and resilient buildings	
	8.a Aid for trade from developing countries			
	8.b Global Jobs Pact			

Towards a world in common

Agence Française de Développement (AFD) implements France's policy on international development and solidarity. Through its financing of NGOs and the public sector, as well as its research and publications, AFD supports and accelerates transitions towards a fairer, more resilient world. It also provides training in sustainable development (at AFD Campus) and other awareness-raising activities in France.

With our partners, we are building shared solutions with and for the people of the Global South. Our teams are at work on more than 3,250 projects in the field, in the French Overseas Departments and Territories, in 115 countries and in regions in crisis. We strive to protect global public goods – promoting a stable climate, biodiversity and peace, as well as gender equality, education and healthcare. In this way, we contribute to the commitment of France and the French people to achieve the Sustainable Development Goals (SDGs). Towards a world in common.

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