Action in cities: housing and SDGs in Mexico

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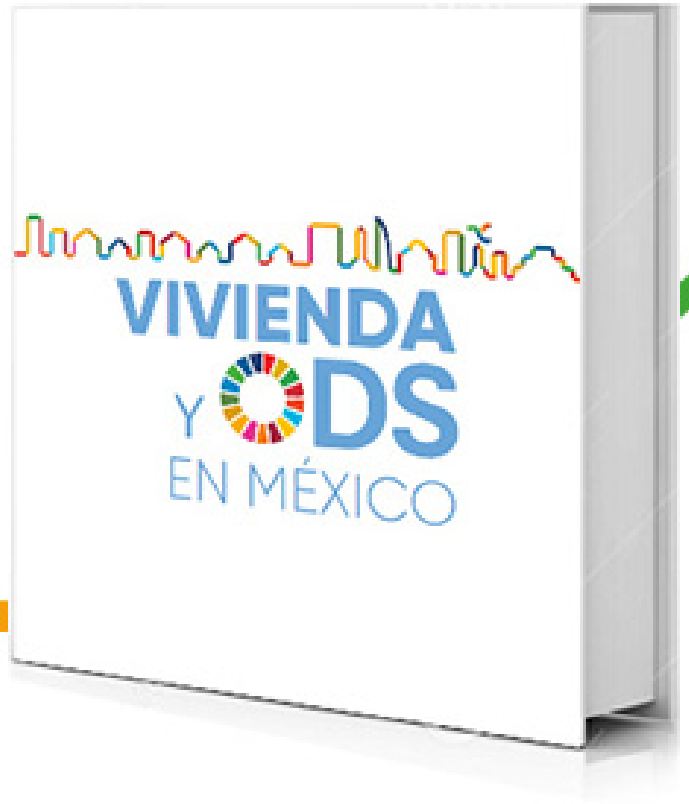
INTRODUCTION



HOUSING AND SDGs IN MEXICO

SIX STRATEGIC GUIDELINES

UN HABITAT
UNITED NATIONS HUMAN SETTLEMENTS PROGRAMME

https://www.onuhabitat.org.mx/index.php/la-vivienda-en-el-centro-de-los-ods-en-mexico

UN HABITAT
UNITED NATIONS HUMAN SETTLEMENTS PROGRAMME

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The report proposes six strategic guidelines, considering housing as a crucial sector to achieve the 2030 Agenda:

1. Promote intraurban social housing
2. Facilitate the access of vulnerable groups to adequate housing
3. Foster social rental of housing
4. Improve deficient urban fabrics
5. Reduce the environmental impact of housing and increase its resilience
6. Optimize housing's life cycle

Significant challenges remain in Mexico's housing sector, related to social exclusion, economic inequality and environmental degradation.

- The persistence of high levels of inadequate housing that particularly impact on the most vulnerable groups.

- A model of formal housing construction based on financing and subsidy schemes for the acquisition of finished housing units located in disconnected and poorly consolidated peripheral areas. This model favours the process of accelerated low density urban sprawl of Mexican cities during the last decades.

- Environmental imbalances generated by the massive construction of housing on agricultural or environmentally sensitive land, as well as an inefficient management of human settlements in the face of natural and climatic hazards

Specific challenges of the housing sector in Mexico relate to resource and energy use and production of negative externalities as GHG, with high potential for a circular transition generating multiple co-benefits

The life cycle of housing in Mexico responds to a linear production and consumption model based on the paradigm of "take, make, consume, throw away".

This model has significant negative impacts in environmental terms due to the excessive use of energy, water and raw materials, the amount of waste resulting from their production processes and the generation of contaminating pollutants released into the air, water and soil.

The greenhouse gas (GHG) emissions released into the atmosphere by the production and consumption of housing jeopardize the fulfilment of the commitments on climate change acquired by Mexico in the Paris Agreement.

A longer permanence of construction materials and products in the housing life-cycle would contribute to minimize the creation of non-reusable waste and to a sustainable, efficient and low-carbon economy.

Responses to the challenges of the housing sector in Mexico in terms of resource and energy use and production of negative externalities as GHG, with high potential for a circular transition generating multiple co-benefits

Optimizing the life cycle of housing requires a transition towards a circular model of production and consumption in which resources are used more efficiently.

This effort involves strengthening the inter-institutional collaboration between the different public administration bodies and the formulation of a normative framework that coordinates actors, laws, norms, standards and building codes related to all the different phases of the life cycle of housing.

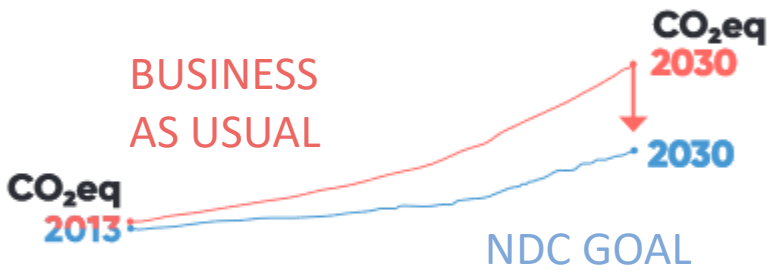
Likewise, fiscal and financial stimuli are needed to support the transition of the productive processes of the housing industry to more sustainable schemes which optimize the use of materials and reduce the waste of natural and economic resources.

It is necessary that the entire construction sector adopt technologies, processes, practices and constructive systems that are appropriate to each bioclimatic region of the country to improve energy efficiency and reduce water consumption, as well as the polluting emissions in both new and existing housing.

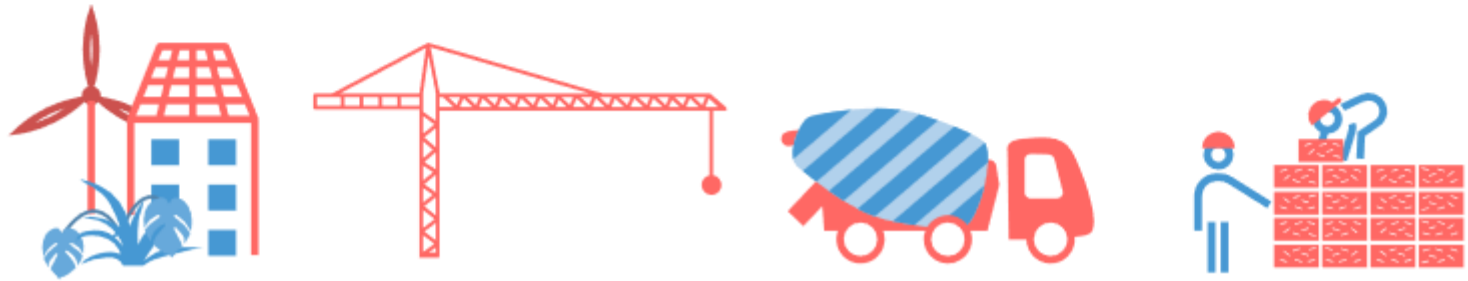
Mexico's commitment for the Paris Agreement

Reduction of 22% GHG emission by 2030 (2013 baseline)

MEXICO AIMS AT A REDUCTION OF 22% GHG BY 2013 AS ITS NATIONALLY DETERMINED CONTRIBUTION UNDER THE PARIS AGREEMENT



CONSTRUCTION SECTOR AND RESIDENTIAL CONSUMPTION ARE KEY FOR ACHIVING THIS GOAL



Mexico's commitment for the Paris Agreement

A set of emissions mitigation actions GHG in:

Transport; electricity generation; residential and commercial building; oil and gas; industrial; agriculture and livestock; waste, and LULUCF.

National GHG emissions according to the trend scenario and unconditional goals of the Paris Agreement, 2020-2030

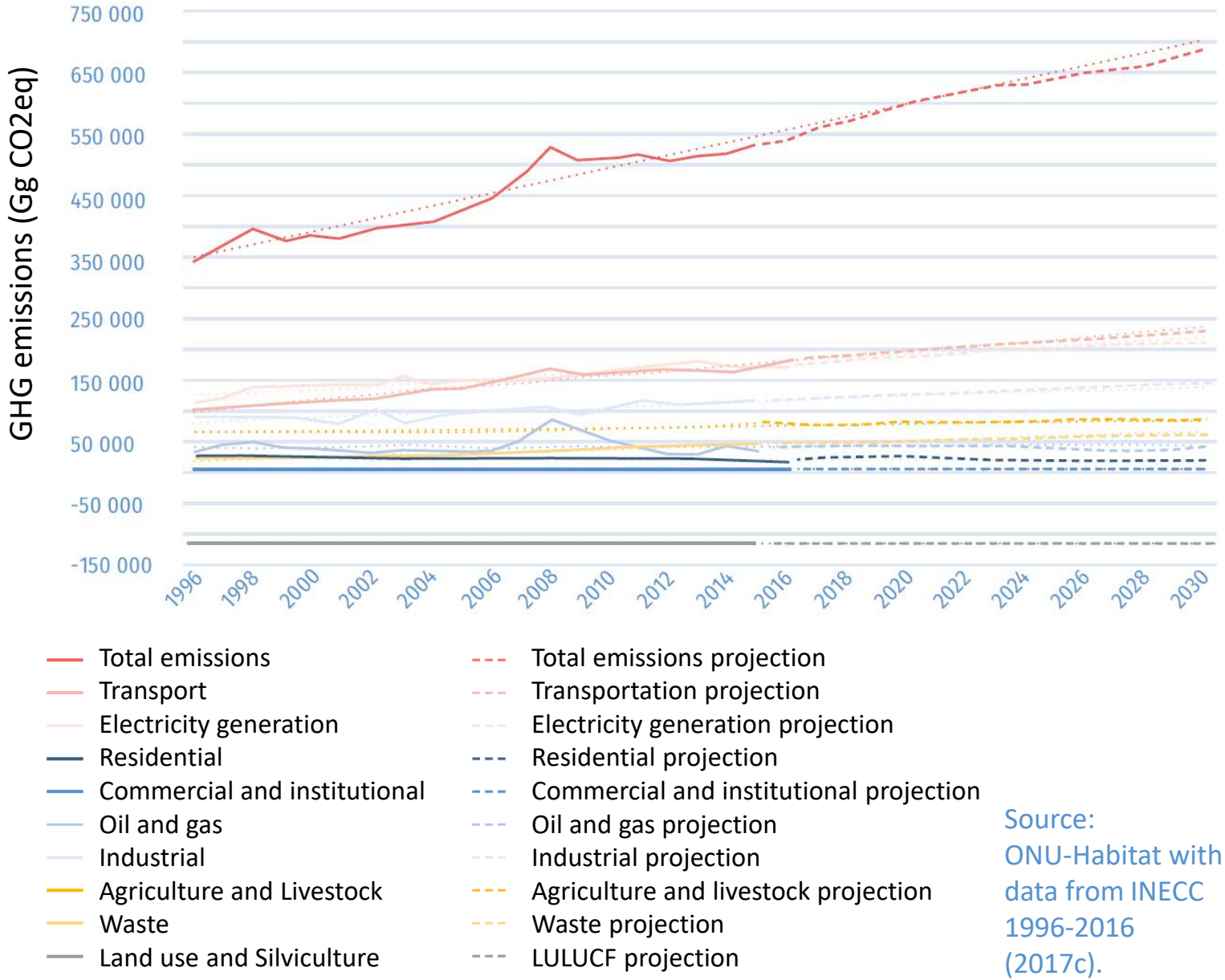
Carbon emissions ($Mt\ CO_2eq$)						
Baseline (2013) and trend scenario					NDC not conditional	Necessary reduction (%)
Sector	2013	2020	2025	2030	2030	
Transport	174	214	237	266	218	-18 %
Electricity generation	127	143	181	202	139	-31 %
Residential and commercial building	26	27	27	28	23	-18 %
Oil and gas	80	123	132	137	118	-14 %
Industrial	115	125	144	165	157	-5 %
Agriculture and Livestock	80	88	90	93	86	-8 %
Waste	31	40	45	49	35	-28 %
LULUCF	32	32	32	32	-14	-144 %
TOTAL EMISSIONS	665	792	888	973	762	-22 %

Source: ONU-Habitat, Gobierno de la República (2014)

Non-sustainable housing production model

These trends jeopardizes the scope of the objectives of the Paris Agreement and of the not conditioned NDCs to reduce 22% of GHG emissions compared to the trend scenario

Net GHG emissions by sector 1996-2016 and emission projection to 2030

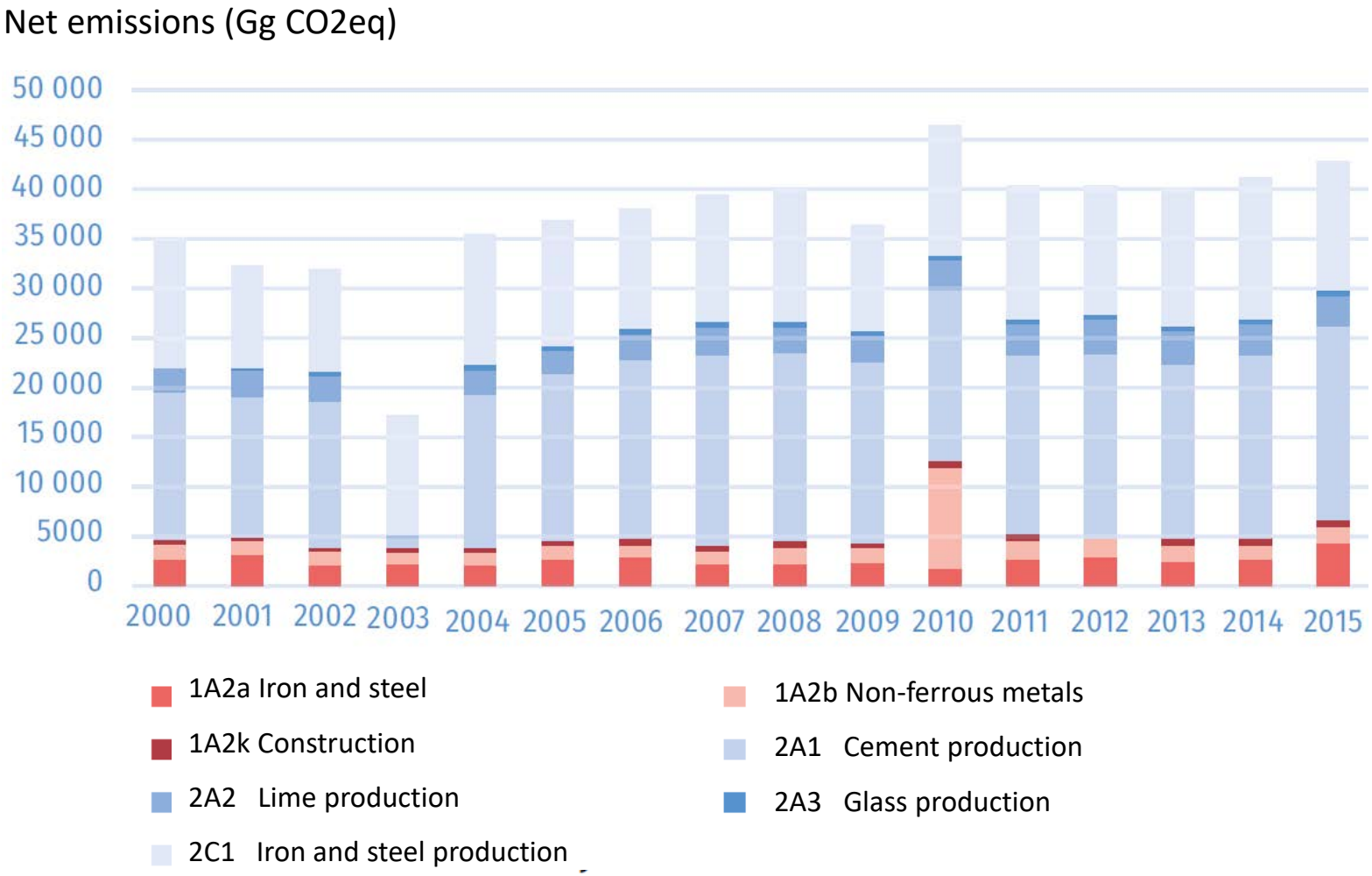


Source: ONU-Habitat with data from INECC 1996-2016 (2017c).

Non-sustainable production model construction sector

- 137.5 million inhabitants in 2030 in Mexico
- 40.1 million homes

GHG emissions related to the energy, industrial processes and use of products, 2015



Source: ONU-Habitat with data from INECC, 2000-2015 (INECC, 2017c)

Non-sustainable consumption model housing sector

Net GHG emissions from the residential sector 1996-2016 and emission projection to 2030

Source: ONU-Habitat with data from INECC 1996-2016 (2017c).

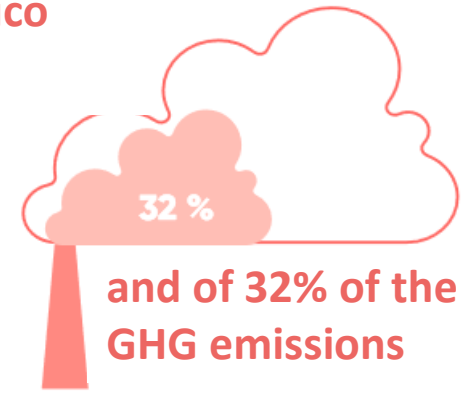
Consumption patterns in construction and housing sectors in Mexico

Housing sector is responsible for 32% of total GHG emissions

Between 2006 and 2012
6.1 mil tones of waste were produceced by the construction sector

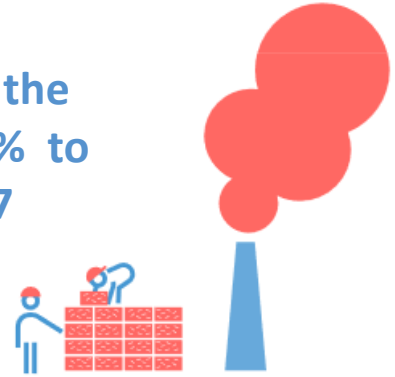
construction sector is the 3rd largest source of waste generation

Housing sector was responsible in 2013 for 16.2 % of the total energy use in Mexico



and of 32% of the total GHG emissions

Construction sector increased the energy consumption from 9.8% to 10.4% between 2014 and 2017



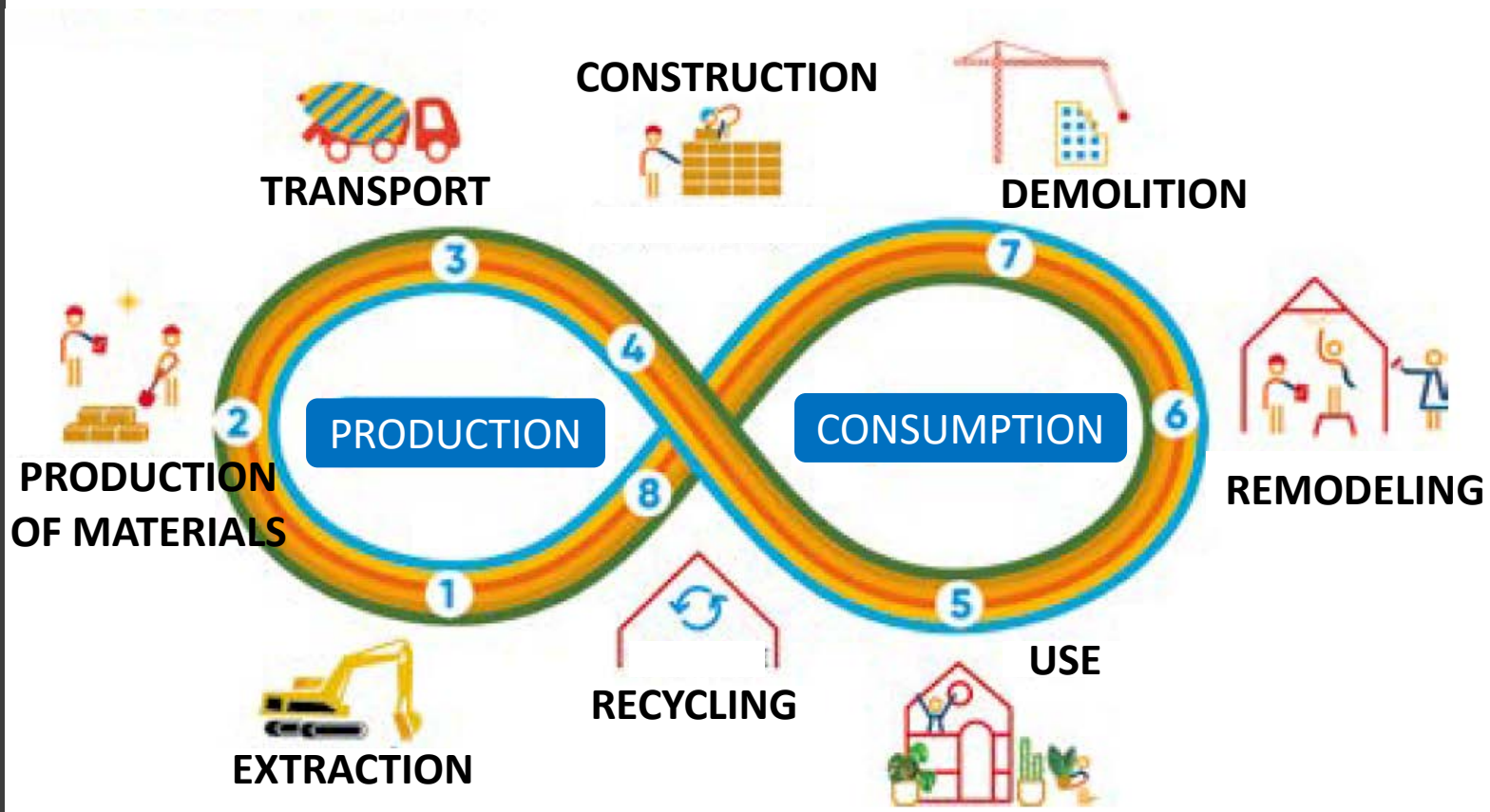
RECOMANDATIONS

Circular transition for housing/construction

a normative, programmatic and institutional framework that stimulates the most efficient use of the resources used in the construction and consumption of housing, while promoting a more sustainable economic dynamic , less polluting and more competitive than the linear economy

intervening both its mode of production and the consumption of water and energy resources, in order to mitigate GHG emissions and reduce its contribution to climate change

Housing life cycle (production and consumption)



Source: UN-Habitat

Regulations and programmes to reduce housing resources consumption

- Housing building code
- Mexican standard for sustainable building
- Green Housing Assessment System
- Appropriate National Mitigation Actions
- Housing Environmental Evaluation Tool
- Green Mortgage

PROPOSAL 11A

PROMOTE A MODEL A MODEL FOR THE SUSTAINABLE PRODUCTION OF NEW HOUSING

ACTION 11A1

INTER-INSTITUTIONAL GOVERNANCE

Strengthen institutional governance to promote the transition of construction and housing sector toward circular economy

a. Establish a new institutional organization with specific mandate for the promotion of a a national program for supporting the sustainable production of new housing through its the entire life cycle.

b. Define a normative framework for promoting the implementation of circular economy principles in housing and construction sectors.

PROPOSAL 11A

PROMOTE A MODEL A MODEL FOR THE SUSTAINABLE PRODUCTION OF NEW HOUSING

ACTION 11A2

FINANCIAL AND FISCAL INSTRUMENTS

Define appropriate financial and fiscal instrument to promote a circular economy transition of the housing sector

a. Incentives for industrial exchange of secondary raw materials, particularly for mining, metal treatment and construction industry.

b. Federal fund to support research and innovation on circularization of housing and construction sectors.

c. Strength and simplify norms and incentive system for supporting the development of markets of secondary raw materials, as well as recycled and reused products.

PROPOSAL 11B

STRENGHT THE RESPONSIBLE CONSUMPTION IN EXISTING and NEW HOUSING

ACTION 11B1

NORMATIVE FRAMEWORK

Update the normative framework to increase efficient energy use and optimize material use for new and existing housing

a. Ensure compliance with current norms, and review codes, norms and regulations (national and locals) to increase energy efficency, the sue of recycled materials and modularity in construction to favor efficent disasembly, resuse and recycle.

b. Strenght normative and legislation for the adoptions of nature based solutions to increase energy and material performance of buildings (e.g. green roofs and walls, also at neighbourhood and urban scale).

c. Continue and expand current initiatives as Hipoteca Verde, NAMA for new housing

PROPOSAL 11B

STRENGHT THE RESPONSIBLE CONSUMPTION IN EXISTING and NEW HOUSING

ACTION 11B2

FINANCIAL AND FISCAL INSTRUMENTS

Develop fiscal and financial incentives for the support efficient energy and material use in existing housing

a. Incentives for developers and constructors

b. Incentives for dwellers

PROPOSAL 11B

STRENGHT THE RESPONSIBLE CONSUMPTION IN EXISTING and NEW HOUSING

ACTION 11B3

POLICIES AND PROGRAMS

Strength the retrofitting and refurbishment of existing houses incorporating SD and CE criteria.

a. Increase the energy efficiency of existing houses both reducing consumption and increasign efficency and renewable energy use

b. Increase the water efficiency of existing houses, reducing consumption and increasign efficency in distribution and use.

PROPOSAL 11B

STRENGHT THE RESPONSIBLE CONSUMPTION IN EXISTING and NEW HOUSING

ACTION 11B4

EMPOWERING CITIZENS

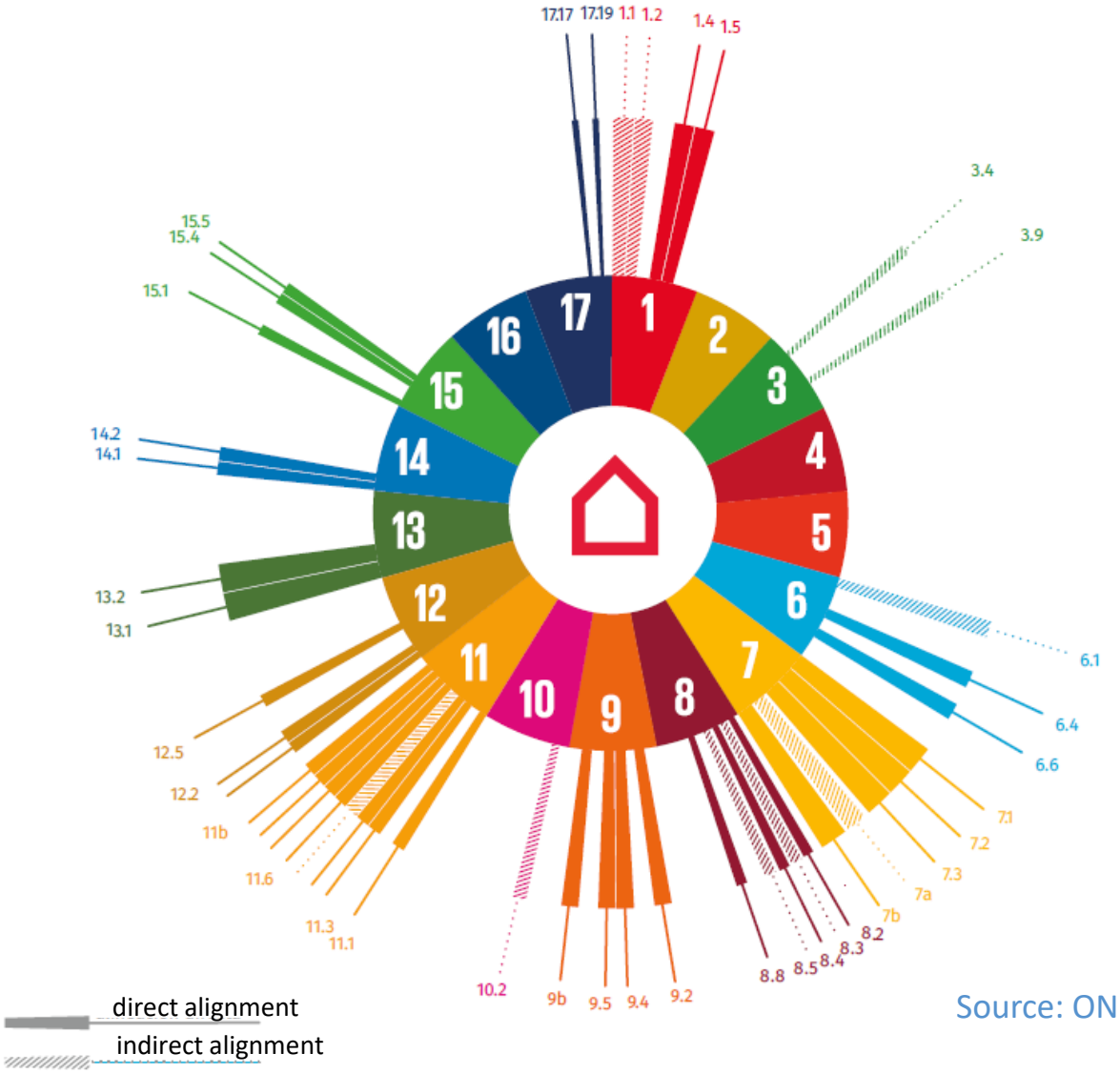
Promote sustainable consumption through capacitating and increasing awareness of house dwellers

a. Create user manuals for the sustainable and circular use and manitenance of houses

b. Define capacity building and awarness raising programs for house dwellers

Low-carbon transition through Circular Economy and generation of co-benefits through SDGs integration

Contribution to optimize the life cycle of housing to meet the goals of the Sustainable Development Goals



Source: ONU-Habitat

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