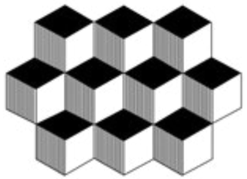
MARKET RESEARCH FOR HOUSING FINANCING SYSTEMS IN MEXICO

TERWILLIGER CENTER FOR INNOVATION IN SHELTER (TCIS)

Hábitat para la Humanidad®

Centro Terwilliger de Innovación en Vivienda

A STUDY BY:



DIEZ
CANDELAS

INDEX:

I. OBJECTIVE AND STRUCTURE

This study seeks to recognize the financial obstacles faced by the self-production housing value chain, particularly design services and provision of materials. In this regard, the following 4 general objectives are addressed:

1. Exploring financial accessibility in the housing value chain
2. Examining the promotion and availability of financial products for this segment
3. Studying financing options for self-production of sustainable housing
4. Exploring the gender perspective in the financing of the self-production housing value chain

Finally, the document explores elements that are considered central to the main problems in self-production and housing production such as institutional strength/weakness and how this affects the supply of financial services and products for self-production, institutional mandates and how these serve (or ignore) the target population, the structure of the labor market and how labor informality limits the supply of financing.

Document Structure

The structure of the document follows a top-down analysis, trying to give a general understanding of self-production of housing in Mexico and the major structural forces of the economy and access to financing for companies, to then move on to research and analysis of the value chain financing market, which in turn is complemented and enriched by the findings of a representative sample of the main players in the market.

Through a market study, carried out with available and collected information, Diez Candelas (DC) identified opportunities for innovation in financial systems for self-production of housing: in particular, the development of specific financial products that facilitate the offer of design services and construction materials for self-production, as well as the use of financial technologies that improve the accessibility and efficiency of the financing process. To do so, the range of financial products available (programs, products and services) for self-production of housing in Mexico was analyzed, differentiating them between public and private.

In this segment, however, when talking about financial products, we also talk about financial education: making informed and responsible decisions reduces the risk of over-indebtedness or default on payments; therefore, the promotion and disparities in access to financial products are also presented, as well as the main challenges faced by financial and non-financial service providers.

THIS DOCUMENT EXPLORES ELEMENTS THAT ARE CONSIDERED CENTRAL TO THE MAIN PROBLEMS IN HOUSING PRODUCTION / SELF-PRODUCTION.

Interviews that complement the market study

To complement the market study, 33 interviews were conducted with 6 segments of the value chain (architecture and design services, building companies, ONAVIS, NGOs, financing entities and builders), which allowed us to validate – or not – the financial obstacles they face in terms of access to credit or financing for self-produced housing in Mexico.

Finally, the conclusions from the different elements of the research are consolidated and recommendations for Habitat for Humanity are drafted in 8 major proposals.

II. INTRODUCTION TO SELF-PRODUCTION OF HOUSING IN MEXICO

Over the past 70 years, Mexico's population has quadrupled, from 25.8 million in 1950 to over 126 million in 2020 (from 2010 to 2020 alone, the population increased by 14 million). Additionally, the proportion of the population living in urban areas rose from 43% in 1950 to 79% in 2020, and an additional 42 million people are expected to live in urban areas by 2050, making Mexico one of the countries with the highest proportion of urban population in the world.

As a result, there has been strong pressure to meet the housing demand of the country's growing population. Factors such as the lack of urban planning, the predominantly informal structure of the labor market, and institutional weakness (particularly of local governments) have resulted in uncontrolled urban expansion, a preponderance of informal settlements, and self-produced housing, often of low quality (according to INEGI – the National Statistics Institute – there are nearly 10 million homes in Mexico with a qualitative housing deficit)[1].

IMAGE. 1
GENERAL DATA ON HOUSING IN MEXICO

Explosive Population Growth (4X in 70 years):
25.8 million in 1950
126 million in 2020

43.9 million homes in 2020

80% 35 million homes are inhabited

14% 6.16 million are abandoned

6% 2.5 milllion are for temporary use

Source: Prepared by the authors based on the 2020 Population and Housing Census.[2]

As mentioned before, a central factor when talking about housing in Mexico is the structure of the labor market, that is, of the "entitled" population (employed in the formal sector) and "non-entitled" population (employed in the informal sector)[3] to the services of social security institutions. In this sense, being an entitled population enables access to a mortgage loan through institutions such as the National Workers' Housing Fund Institute (INFONAVIT) and/or the Housing Fund of the Social Security and Services Institute for State Workers (FOVISSSTE) or the country's formal financial institutions (Banks, Multi-Purpose Financial Institutions (SOFOMs), and other regulated lenders). This is particularly relevant for lower income deciles that have historically been neglected by the country's formal financial sector and are also the segment that most resort to self-production of housing[4].

According to INEGI's National Survey of Occupation and Employment (ENOE), the rate of labor informality at the end of 2023 in Mexico was 54.8%, that is, the majority of workers in the country[5]. Therefore, most Mexicans have difficulties in accessing financing to obtain housing since there are practically no institutions or programs that meet the needs of this segment (remember that we are talking about the majority of people in the country), or they have a small and itinerant budget allocation (in relation to the market size and needs), jeopardizing the creation and maintenance of human capital and operational capacity. As a result of this situation, the Mexican population has had to resort predominantly to self-production of housing; according to the Secretariat of Agrarian, Territorial and Urban Development (Sedatu), more than 60% of the housing stock by 2022 in Mexico was self-produced.

Taking all of the above into account, it is clear that it is highly relevant to conduct a study that contributes to better understanding the self-production segment and the main obstacles to the proper planning, execution and sustainability of these actions.

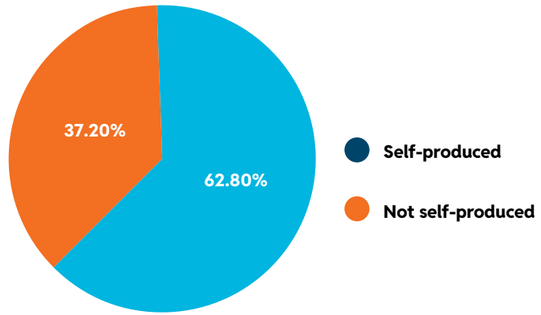
a. Analysis and trends in self-production of housing

As shown in this section, most housing in Mexico is self-produced, the product of the efforts of families who cannot (or do not want to) access housing in the commercial market and who seek alternatives that allow them to build, expand or improve their homes, often in a progressive manner.

To understand the housing self-production segment, it is useful to review some data that will help us to size it; below we offer some aggregated data for this purpose:

Proportion and number of self-produced dwellings

GRAPH 1.
SELF-PRODUCED HOUSING (BLUE) AS A PERCENTAGE OF THE HOUSING STOCK
Percentage



Source: Sistema Nacional de Información e Indicadores de Vivienda (SNIIV), Sedatu 2024

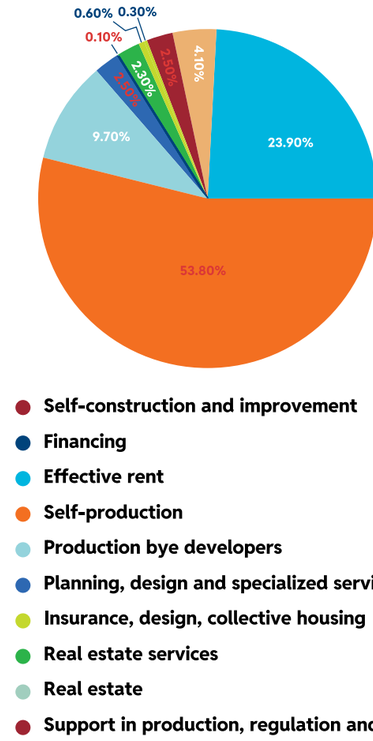
Taking into account that 62.8% of the housing stock corresponds to self-produced homes and that the housing stock in 2020 was 43,903,443 homes (see Image 1), in Mexico there are around 28 million self-produced homes.

Based on the above, and assuming that the trend in the proportion of self-produced housing remained the same, which is likely given the government's discourse and push for this type of production, around 480,000 homes would be self-produced annually.

Gross Domestic Product (GDP) of the Housing Sector and the Self-Production Segment

Once the proportion of self-produced housing in relation to the housing stock is understood, the question arises about its contribution to the sector from the point of view of the sector's GDP and in terms of the quality of these homes. As shown below, it would seem that, despite the large share of self-production, there is a loss of efficiency in the segment or a concentration in the lower value classifications (from 62.8% of the housing volume to 53.8% of GDP).

GRAPH 2.
HOUSING GDP BY AREA AND FUNCTIONAL CLASSIFICATION, 2022
Participation



Source: Satellite Account of Housing in Mexico, Press Release, November 2023, INEGI

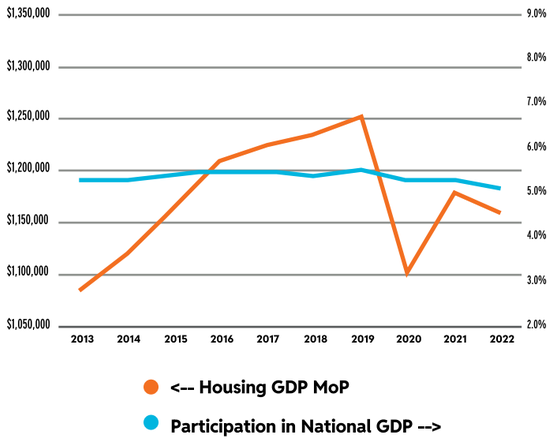
Additionally, as shown above, that the largest contribution to GDP comes from self-production of housing, followed by effective rental and the production by economic units (developers). Thus, representing more than half of the sector's GDP (53.8%), self-production of housing continues to position itself as one of the most important elements to analyze in the Sector.

When observing the evolution and trend of the GDP of the housing sector, the global economic slow-

[1] National Report on Urban Prosperity in Mexico, Prosperous Cities Index (CPI), UN- Habitat , 2019; https://onuhabitat.org.mx/index.php/herramientas/cpi
[2] Temporary use housing is a private home that is fully built and available for habitation and that, at the time of the census, is intended for vacations, rest or living for a few days, weeks or months, has no regular residents and is not occupied as a premises with economic activity.
[3] INEGI describes the entitled population as "the group of people who by law have the right to receive benefits in kind or in cash from social security institutions. This group includes direct insured or contributors, pensioners and the family members or beneficiaries of both."
[4] Self-production of housing by household income decile; https://sniiv.sedatu.gob.mx/Autoproduccion/Estadisticas_generales
[5] Employment and Occupation: National Survey of Occupation and Employment (ENOE), Labor informality rate, INEGI; https://www.inegi.org.mx/temas/empleo/

down resulting from the pandemic that affected the entire country, and the housing sector is highlighted. In this sense, the fall of the sector is justified, however, it is difficult to justify that the levels observed in 2019 have not been reached again even though the rest of the economy has already done so. This can also be seen with the fall in the sector's share in the national total (from 5.4% to 5.1% - blue line).

GRAPH 3.
GDP OF THE HOUSING SECTOR AT CONSTANT PRICES (2018)
Millions of pesos, percentage

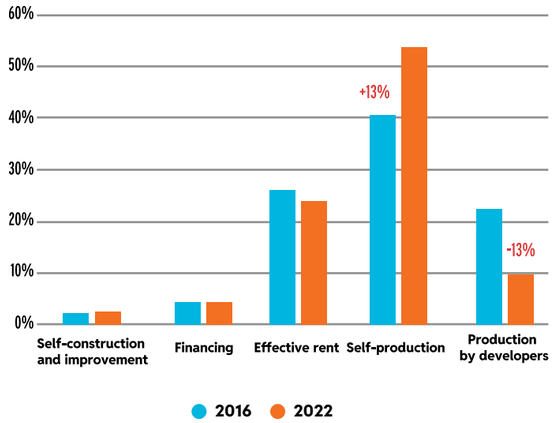


Source: Gross Domestic Product of the Housing Sector, constant prices 2018, INEGI

The above infers, again, some type of problem or inefficiency in the sector in relation to the rest of the economy.

Looking at the evolution of the GDP components, it can be seen that practically all the increase in self-production of housing corresponds to a decrease in the production of economic units, so it is intuited that this increase is not necessarily due to a preference of people who self-produce their housing.

GRAPH 4.
HOUSING GDP BY AREA AND FUNCTIONAL CLASSIFICATION, 2016 AND 2022
Percentage

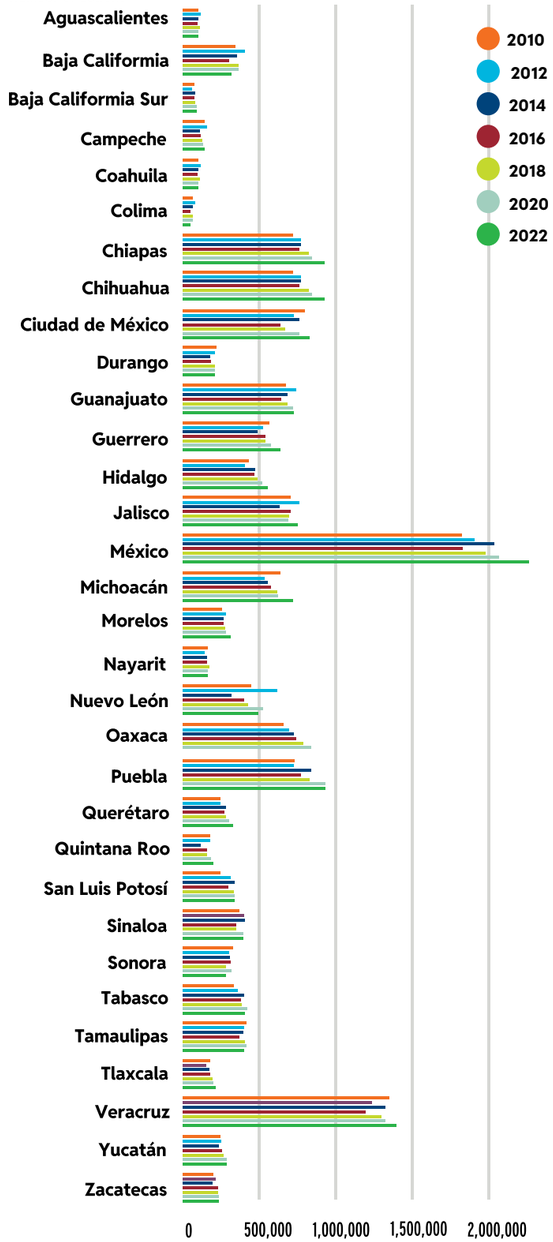


Source: National Housing Information and Indicators System (SNIIV), Sedatu 2024

A future line of research in relation to this segment would be whether self-production of housing should be promoted instead of incentivizing production by specialized economic units, particularly for urban and peri-urban housing.

Turning to the volume and relative importance of self-produced housing, we find the following:

GRAPH 5.*
SELF-PRODUCED HOUSING 2010 - 2022
Number of actions



Source: National Housing Information and Indicators System (SNIIV), Sedatu 2024

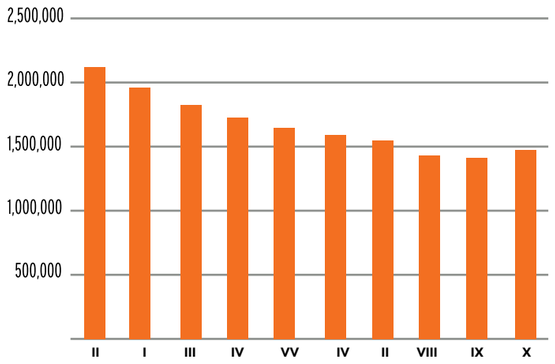
*It is understood that this information corresponds to self-production actions, that is, improvements and extensions in addition to built housing, since the sum of the years would be much higher than the total number of homes in the country. If we look at the State of Mexico, for example, the information would imply that 2 million homes are produced annually. Even so, the figure is so high that errors in the quantification by the SNIIV are suspected.

Three things stand out from what can be observed in Graph 5:

1. Housing self-production by federal entity is relatively stable in its relation to other states over time.
2. Significant increases are observed between 2010 and 2022. This is clearly seen in the State of Mexico, Puebla, Querétaro, Chiapas, Michoacán, Oaxaca, Tabasco and Veracruz, to mention the most important ones.
3. It is observed that the majority of self-produced housing corresponds, among other things, to the population of each federal entity, with the State of Mexico presenting the highest number of self-produced housing, followed by Veracruz.

Notable exceptions to the above statement (third point) are Chiapas and Oaxaca, where the volume of self-production is disproportionately high in relation to their population. Chiapas and Oaxaca are the eighth and tenth most populated federal entities in the country, while they occupy the fourth and fifth places in housing self-production; additionally, Chiapas and Oaxaca are the two states with the lowest per capita income in the country ($44,387 and $57,239 pesos annually in 2020), reinforcing the hypothesis that self-production is not a choice but a last resort for people to be able to access a home. This last point is illustrated and strengthened by the following graph:

GRAPH 6.
SELF-PRODUCTION OF HOUSING IN MEXICO BY INCOME DECILE IN 2022
Number of dwellings



Source: National Housing Information and Indicators System (SNIIV), Sedatu 2024

*It is understood that this information corresponds to self-production actions, that is, improvements and extensions in addition to built housing, since the sum of all deciles is 16,661,356 self-produced homes in 2022. Even so, the figure is so high that errors in the quantification by the SNIIV are suspected.

In this sense, Graph 6 confirms that self-production of housing actions are concentrated in the lower income segments and suggests again that a large proportion of self-produced housing is a resource, but not necessarily a choice, especially in urban environments (79% of the Mexican population lives in cities[6]).

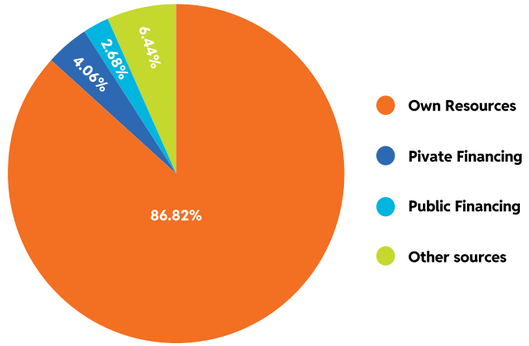
b. Financing self-produced housing

According to the Bank of Mexico's Report on Competitive Conditions in the Housing Acquisition Credit Market from February 2020[7], *"Aspects of affordability are related to the population that does not have sufficient savings or income to acquire housing, not even that which is considered the most economical. It is estimated that the minimum income level to acquire an affordable home in Mexico in 2019 was $7,256 (pesos per month or $375 USD approx.) ... In that year, 65.9 percent of the working population did not have sufficient income to acquire an affordable home through bank credit, considering that the debt service for the purchase of housing should not represent more than 25 percent of the worker's income."*

If we add to the above the high rate of informal employment (54.8% of the workforce) and the inability of this segment to access financing to acquire their home, the high proportion of self-produced housing begins to make sense, not as a first choice for people but as an option that is resorted to when it is not possible to acquire or access other housing solutions.

In this regard, and given the limited access to housing financing for the majority of the population in the country, we observe that 86.2% of self-produced housing is self-financed, usually over a period of years, incurring inefficiencies in the purchase and construction of housing. It should be noted that **public financing for this segment is only 2.68% of the total**, despite the great efforts made by the current administration of the Federal Government. The missing proportion is divided between "other sources" / informal financing (6.44%) and private financing (4.06%), also with small participations.

GRAPH 7.
TYPE OF FINANCING FOR SELF-PRODUCED HOUSING IN 2022
Percentage



Source: National Housing Information and Indicators System (SNIIV), Sedatu 2024

The above shows that government efforts, subsidies and programs around self-production of housing have had very limited results (2.68%).

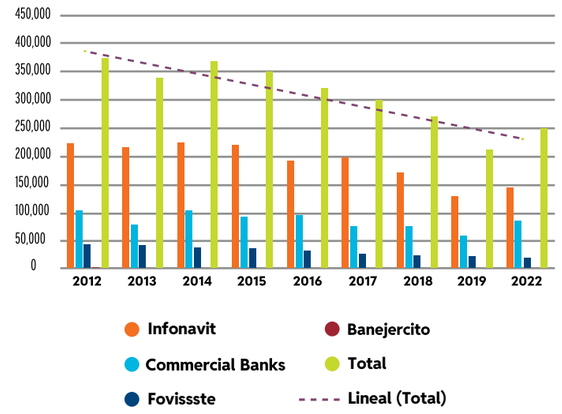
[6] Urban population, INEGI; https://cuentame.inegi.org.mx/poblacion/rur_urb.aspx?tema=P#:~:text=En%201950%2C%20en%20M%C3%A9xico%2043,es%20de%2079%20por%20ciento .[7] https://www.banxico.org.mx/publicaciones-y-prensa/reportes-sobre-las-condiciones-de-competencia-en-l/%7B079FBF5C-C70E-8476-C7B4-67F88A0428EE%7D.pdf

On the other hand, an analysis of why the market (private sector) does not meet such a large need for financing is urgently needed. The first thing that comes to mind (and is confirmed in the market analysis and interviews later in this document) is that the risks must exceed the possible benefits (uncertainty regarding legal possession the dwelling to be financed, high risk of default by people subject to credit / intermittent income, inability to provide guarantees to a mostly low-income segment and an inefficient judicial system in ruling on commercial matters).

The financing structure of self-produced housing allows us to sustain that, in addition to the fact that the great majority of people who self-produce their housing do not have access to financing, they have to act in a progressive manner, involving successive phases in the process and with the savings for self-production often being given in kind (construction materials). This also infers inefficiencies from the point of view of the capacity to negotiate the prices of materials, the increase in the price of materials over time (inflation), their transportation (longer trips with less quantity implies higher unit costs) and with implications for their appropriate construction given the inability to have an adequate planning and execution process of work throughout a prolonged process. This is confirmed later in this same document through studies and interviews.

Also, we can observe a clear and worrying downward trend in the granting of loans for the acquisition of new housing by commercial banks and ONAVIs in the last decade (see Graph 8 below). That is, housing financing in Mexico is not only insufficient, but is decreasing.

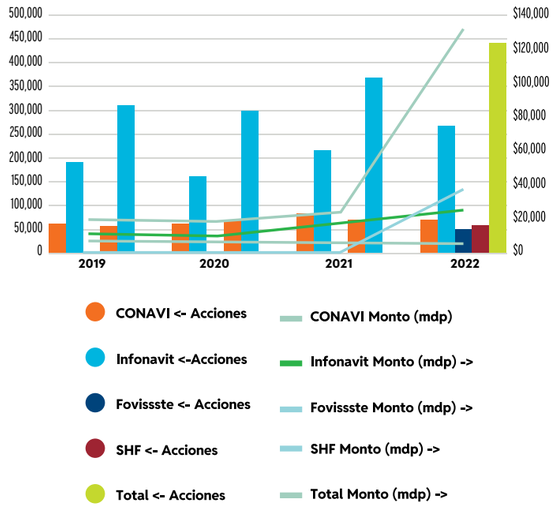
GRAPH 8.
LOANS FOR THE ACQUISITION OF NEW HOUSING
Number of loans



Source: Prepared by the authors with information from the Casa's Research and Documentation Center (Cidoc)

On the other hand, and as shown below, an effort has been made to increase financing for self-production of housing (particularly from INFONAVIT), but, due to the substantial operational complications, payment flows and work verification that we will go into later in this document, these efforts have been concentrated on housing improvements and not, as intended, on the self-production of new housing; the above can be seen by reviewing the number of credits from the ConstruYo program, focused on the self-production of new housing in 2020, 2021 and 2022 vs. the Mejoravit credits in the same years, 2020, 2021, 2022.

GRAPH 9.
SELF-PRODUCTION ACTIONS
Number of credits, millions of pesos (mop)



Source: Prepared by the authors with information from the Casa's Research and Documentation Center (Cidoc)

Given this, once again, we must ask ourselves whether we should promote/encourage self-production of housing or whether we should concentrate our efforts on the formalization of the Mexican labor market, the financial inclusion of people and the provision of adequate housing (in its 7 elements[8]) in sufficient quantities to meet demand.

Self-production of housing should be, in any case, one possibility among many others, adapted to the needs and context of the people and not, as it is now, a last and only option to satisfy the housing needs of the majority of Mexicans.

Conclusions

1. The structure of the Mexican labor market and institutional market makes it unlikely for a large proportion of the population to access housing financing.
2. Self-production of housing is the most important component of the sector, both from the point of view of GDP and the number of homes produced.
3. The decline in housing production by economic units (developers) is usually accompanied by an increase in self-production of housing, inferring that self-production of housing is not necessarily a choice but, in most cases, a resource in the face of the impossibility of obtaining other market solutions.
4. Due to the lack of housing supply and affordability (income-cost ratio), the predominantly informal structure of the Mexican labor market, and the low and decreasing participation in housing financing, people are forced to self-produce and self-finance their homes.
5. The vast majority of self-production of housing is self-financed (86.2%), generating economic inefficiencies in the purchase, transportation, time and planning and construction process.
6. The low participation of the public sector in financing self-production housing (2.68%) shows that subsidy schemes and government programs have had a minimal impact on the segment.

[8] 1. Security of tenure 2. Availability of services, materials, facilities and infrastructure 3. Affordability 4. Habitability 5. Accessibility 6. Location 7. Cultural adequacy - https://onu-habitat.org/index.php/elements-of-an-adequate-housing

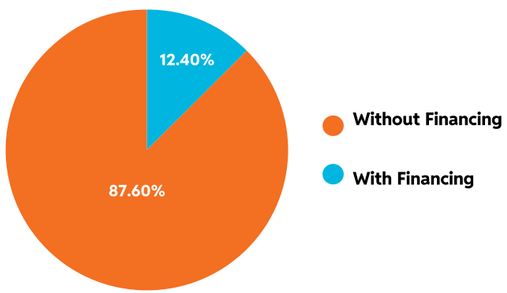
III. EXPLORING FINANCIAL ACCESSIBILITY IN THE HOUSING VALUE CHAIN

In principle, the problems faced by the self-production housing value chain do not differ much from those faced by the rest of the economy; that is, limited access to financing derived from structural problems of supply and demand. This section addresses this subject by exploring the access to financing of service providers for the design and provision of materials around self-production housing.

One of the main problems that is replicated in the value/supply chain in relation to demand is the prevalence of a large segment of micro and small businesses with a high concentration in informality /informal practices[9], difficulty in proving proof of income and inability to provide collateral and other requirements requested by the formal financial sector, making them resort to lenders from the informal sector (with high interest rates) or family and friends as the main source of financing.

Generally speaking, access to financing in Mexico is low. Analysis shows that the percentage of establishments (producers of goods, marketers of merchandise and service providers) with financing in 2018 (the most recent year of information from the INEGI Economic Census) was only 12.4% as shown below .

GRAPH 10.
PERCENTAGE OF ESTABLISHMENTS WITH FINANCING IN 2018
Percentage



Source: Economic Census 2019, INEGI

In contrast, in the European Union only 26% of establishments reported having concerns about obtaining access to financing[10].

In this sense, in order to understand the challenges of access to financing in the value chain of self-production of housing, it is useful to understand the structure and major trends in financial inclusion and access to financing for companies in general, segmenting them by the sectors to which they belong and their size.

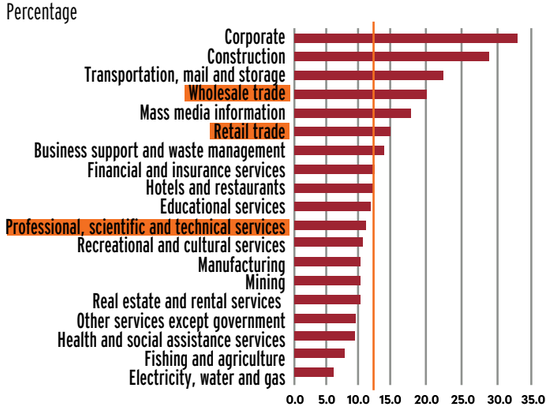
Access to financing by sectors in Mexico

A closer look at access to financing in the sectors of the economy related to this study reveals that these are not far from the national average:

1. Construction materials suppliers: wholesale and retail trade, related to the activities of materials suppliers, have greater access to financing than the national average with 19.7% and 14.2% respectively, percentages that can be argued are low (the vast majority do not have access to financing - 80.3% and 85.8% respectively). These numbers in turn indicate that there are differences in access to financing that could be attributable to the size of the economic units / companies, as we will see in the next section.
2. Design services: the professional, scientific and technical services segment, for its part, shows less access to financing than the average of companies with 10.6% (89.4% without access to financing) as shown in the following graph.

[9] The terms "informal sector" or "informal economy" are broad concepts, although with specific definitions depending on the socioeconomic context in different countries. The Organisation for Economic Co-operation and Development (OECD) defines the informal sector as those monetary transactions that are not declared to tax authorities and do not comply with labour legislation, but are otherwise legal transactions.
[10] European Central Bank report on the survey on access to finance for companies in the European Union, 2023 https://www.ecb.europa.eu/stats/ecb_surveys/safe/html/ecb.safe202306~58c0da48d6.en.html

GRAPH 11.
ACCESS TO FINANCING BY SECTORS 2018
Percentage



Source: Economic Census 2019, INEGI

Impact of company size on access to financing in Mexico

The common classification of Mexican companies based on their size segments them into micro, small, medium and large companies, using the number of workers they employ as the main criterion. In the 2019 Economic Census, INEGI classifies these segments as follows:

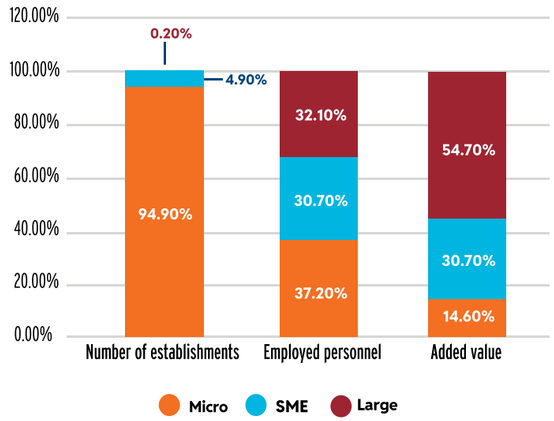
CLASSIFICATION OF MEXICAN COMPANIES BY SIZE

Size	Number of people employed
Micro	0 to 10
Small	11 to 50
Medium	51 to 250
Large	+250

Source: Economic Census 2019, INEGI

The importance of Small and Medium Enterprises (SMEs) in job creation is often discussed. Below we show the relation between the number of companies by segment (size), the proportion of jobs created and their share in the added value of the economy.

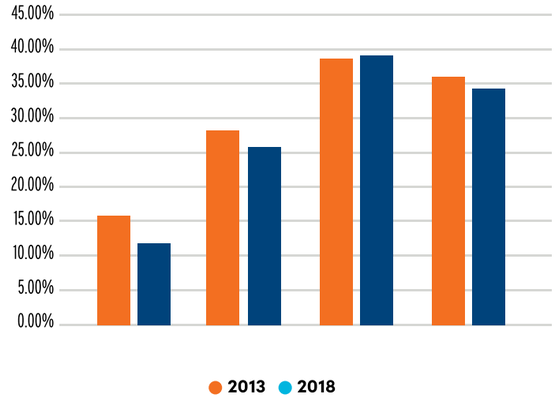
GRAPH 12.
COMPANIES IN MEXICO: SIZE, EMPLOYMENT AND ADDED VALUE
Percentage of total



Source: Economic Census 2019, INEGI

In addition to illustrating that the vast majority of companies in Mexico have less than 10 employees (95%), the graph above shows that their share of added value in relation to the proportion of jobs generated implies lower efficiency than that of large companies (micro-enterprises concentrate 37.2% of jobs but are responsible for only 14.6% of added value while large companies, which concentrate 32.1% of jobs, are responsible for 54.7% of added value). This in turn has important impacts on access to financing and is therefore of the utmost relevance to this study since there are micro, small, medium and large companies in the segments to be analyzed in the self-production housing value chain (we can think of construction material suppliers that would range from large companies such as Home Depot to small neighborhood or community construction materials suppliers).

GRAPH 13.
ACCESS TO FINANCING BY COMPANY SIZE
Percentage

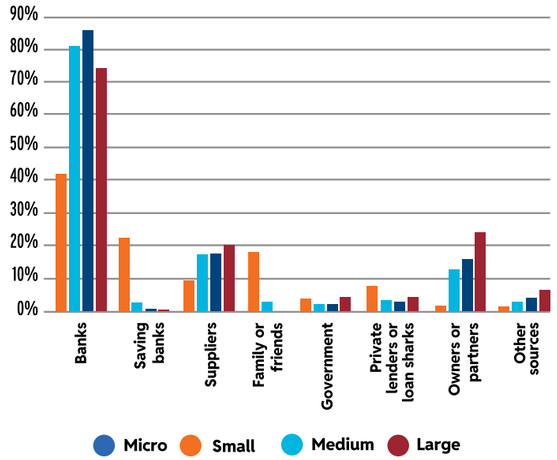


Source: Economic Census 2019, INEGI

In this sense, and as shown in the graph above, access to financing in Mexico is substantially lower for micro and small businesses than for medium and large ones (around a third). It is important to emphasize that this trend is transversal to the Mexican economy and that this affects access to financing for small businesses in the value chain of self-production of housing.

Having observed that the size of companies affects their access to financing, the sources of financing by company size are explored below, contributing to a better understanding of the situation, options and possible areas of opportunity in access to financing for the companies that are the subject of this study.

GRAPH 14.
MAIN SOURCES OF FINANCING BY COMPANY SIZE
Percentage

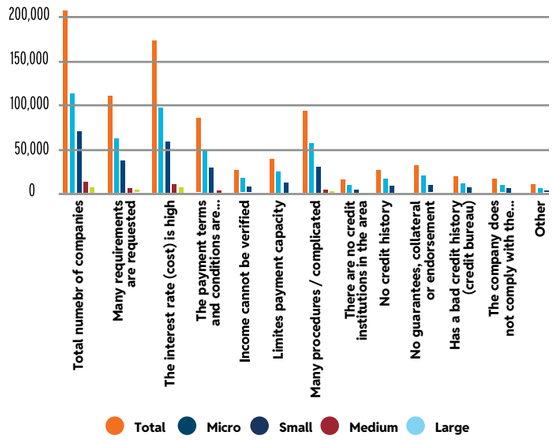


Fuente: Censos Económicos 2019, INEGI

From the graph above, it is clear that while the main source of financing for all types of companies are banks, microenterprises also have a strong dependence on family/friends and savings banks as a source to meet their financing needs. For their part, large companies turn to partners and owners through the issuance/placement of shares and debt.

Having understood the structural factors of access to financing, the factors for which companies, depending on their size, cannot access financing are set out below.

GRAPH 15.
FACTORS THAT LIMIT ACCESS TO CREDIT
Percentage



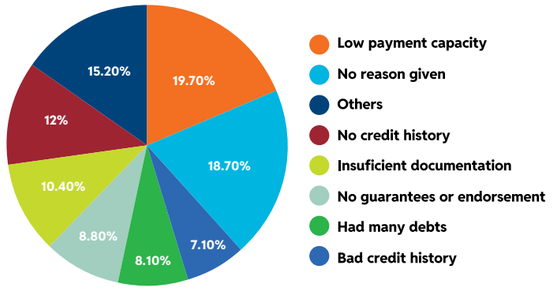
Source: Economic Census 2019, INEGI

The factors that limit access to credit (see graph above) can be grouped into two broad categories:

1) Costs – interest rates, terms and conditions of payment;
2) Requirements and procedures.

Finally, the reasons why financing applications are rejected by regulated financial institutions allow us to understand the problems and obstacles in this regard and are key to designing strategies and/or public policies that seek to promote financial inclusion and access to formal credit.

GRAPH 16.
MAIN REASON FOR CREDIT REJECTION TO COMPANIES IN 2021
Percentage



Source: National Business Financing Survey 2021, INEGI

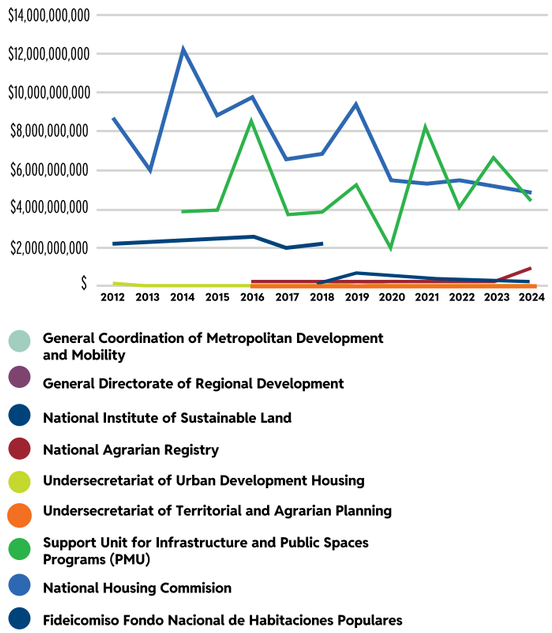
As shown in Graph 16, the main reason for credit rejection in 2021 was low payment capacity (19.7%). Some other main reasons are lack of credit history (12%), insufficient documentation (10.4%) and not having collateral or guarantor (8.1%). In this sense, it can be speculated that the inability to present formal income, intermittent income and other factors related to the supervision of companies could have an important weight in this problem.

The role of the public sector in access to financing and self-produced housing in Mexico

Having seen that 86.2% of self-produced housing is self-financed, that public financing for this segment is the smallest with only 2.68% of the total (see chart 6), and that the government's role in financing companies is also the smallest in relation to all other sources of financing (see Graph 7), we can affirm that the role of the public sector in financing the housing self-production value chain is, at best, marginal. Having said that, the public sector can have an impact on the financial and housing production market through its policies, programs and incentives; this role is explored below.

As has been shown in previous research by Diez Candelas (DC), the allocation of resources in Mexico's Federal Expenditure Budgets (PEF) regarding housing is erratic and inconsistent, there are constant institutional changes regarding names, programs, scopes and beneficiaries of housing programs and there is a low and intermittent allocation of resources to financing programs. These elements have been reflected in the destruction of institutional capacities, a degradation of institutions and their reputational capital, and a drop in private sector investment and financing due to this uncertainty[11]. These points are illustrated below:

GRAPH 17.
FEDERAL EXPENDITURE BUDGET - URBAN AND HOUSING PROGRAMS BY MAJOR ITEMS
Mexican Pesos



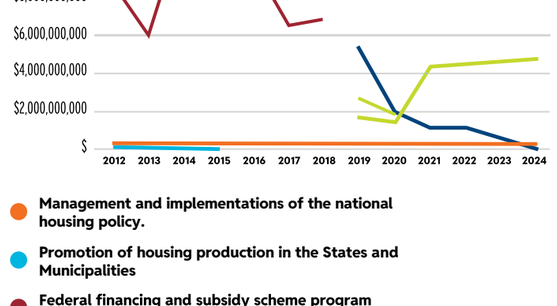
Source: Prepared by the authors using information from the SHCP

The above graph (Graph 17) is based on the multiannual information of the SHCP regarding the PEF and classifies the major items related to housing programs, that is, by Branch and by Secretariat. In this regard, the following 4 points stand out:

I. That of CONAVI (related to subsidies until 2018 and, again, but to a lesser extent, from 2021).
II. The Infrastructure and Public Spaces Program Support Unit (related to the Urban Improvement Program or PMU), which has surpassed the first in two of the last four years.
III. The disappearance of the National Fund for Popular Housing Trust (FONHAPO) in 2019, the only institution aimed at serving the "non-entitled" segment (fundamental for access to housing and self-production of housing).
IV. The low and intermittent allocation of budget to the rest of the items considered for housing and urban and territorial development.

In addition to the above, and to have a clearer view of the allocation of resources to housing, the Federal Budget by main Programs is presented below.

GRAPH 18.
FEDERAL EXPENDITURE BUDGET - MAIN PROGRAMS
Mexican Pesos



Source: Prepared by the authors using information from the SHCP.

[11] Analytical Report on Housing in Mexico: Public Policies, Actions and Evolution of the Housing Market in Mexico; Ten Candles; 2024. https://www.diezcandelas.org/s/REPORTE-VIVIENDA-V2_FINAL.pdf

When analyzing the PEF by Program, what is immediately distinguished is a lack of consistency in housing policy over time, which became more pronounced from 2019 onwards. The following points stand out with respect to the previous graph:

I. The sudden disappearance of the Federal Housing Financing and Subsidy Schemes Program in 2019.
II. A significant drop in programs directly related to the construction of new housing[12];
III. A large allocation of resources to the National Reconstruction Program (after the earthquake in September 2017);
IV. A significant allocation to the Urban Improvement Program (but only for 2 years before disappearing); and
V. An inconsistent allocation of resources to the Social Housing Program (which initially decreases and then increases).
VI. Finally, the rest of the programs, including the Program to Promote Housing Production in Federal Entities and Municipalities, have a comparatively low allocation of resources. This is particularly relevant because local authorities have the greatest influence on housing and urban development in their territory.

The erratic budget allocations shown in the charts above have considerable effects not only on confidence and investment/financing, but also on the creation and maintenance of human capital/capacity in the sector and the operational effectiveness of programs and institutions. This is particularly worrying for design and architecture service providers in the self-production of housing for low-income people (enrolled in the various government programs) since their business model, as might be expected, is highly dependent on government support.

Finally, it should be said that during this six-year period (2018-2024) SEDATU attempted to unite the efforts and capabilities of the ONAVIs for the construction of a national policy for social housing production; however, it was unable to overcome the inertia of the institutions, link the necessary resources for its operation and, therefore, failed to achieve the implementation of said initiative. This was even though great efforts were made to put on the table the large percentage of the population in housing arrears, which has self-production of housing as its only alternative.

Conclusions

1. The structural analysis of the Mexican economy shows that the wholesale and retail trade sectors (provision of materials) as well as professional, scientific and technical services (design services) show low access to financing.
2. The size of companies has a significant impact on their access to formal financing in Mexico. This is a structural factor, with micro and small companies having substantially less access to financing than medium and large companies.
3. Micro and small businesses show less efficiency in generating added value compared to large companies.
4. The main factors that limit access to credit are the high costs and requirements requested by financial institutions.
5. The main reasons why financial institutions reject a loan are low payment capacity (19.7%), lack of credit history (12%), insufficient documentation (10.4%) and not having a guarantee or endorsement (8.1%).
6. Inconsistent, erratic and volatile government policies, programs and resource allocations around housing have had a negative effect on the certainty of the housing value chain and housing self-production and, consequently, on its investment, financing, operation and profitability.

[12] For the PEF 2024, the new housing programs would be: Social Housing Program, at some point the National Reconstruction Program (but not everything is new housing), the General Directorate of Urban Development, Land and Housing, Management and implementation of the national housing policy, Undersecretariat of Urban Development and Housing and Attention to legal matters in agrarian, territorial, urban and housing matters.

MARKET RESEARCH FOR HOUSING FINANCING SYSTEMS IN MEXICO

IV. PROMOTION AND AVAILABILITY OF FINANCIAL PRODUCTS FOR THIS SEGMENT

In order to explore the promotion and availability of financial products for the self-production housing value chain, in particular design and materials provision services, work was carried out in two aspects: a market study carried out using public information and interviews with relevant actors in the sector (architectural and design services, material stores, ONAVIs , NGOs , financing entities and builders). It is worth mentioning that the market study was expanded and complemented based on the interviews carried out and that the market study was again expanded and complemented by bringing in new experts to interview, generating a virtuous circle in which both mechanisms contributed to the development of the research.

Market Study - Promotion and availability of financial products

In order to explore the promotion and availability of financial products for the self-produced housing value chain, in particular design services and provision of materials, a market study was conducted with the aim of identifying the barriers faced by actors involved in the self-produced housing value chain in Mexico, including material suppliers, design services and financial institutions. To achieve this, an exhaustive research was carried out based on the information available online, which allowed to propose solutions aimed at improving access to self-produced housing.

The scope of the study focused on analyzing how suppliers of materials and design services access – or encounter barriers to access – financial services within the self-produced housing value chain. The range of available financial products, such as public and private products, subsidies and programs, was investigated, assessing their effectiveness in supporting self-produced housing. In addition, disparities in the promotion and access to these financial products were explored, differentiating between the various actors in the value chain.

Various sources were used to collect information. These included documents and data from public institutions such as SEDATU, CONAVI, INFONAVIT, SHF or INSUS and organizations that are part of the housing and financial sectors. For this, reports from private institutions such as banks, credit unions and associations of suppliers of materials and design services were used. Relevant academic literature was also reviewed and databases and online platforms that offered sector statistics and analysis were consulted.

The research included a documentary review, which included searching for reports, case studies and statistical data published on the websites of the identified institutions. An analysis of academic literature was also carried out to identify key trends and challenges in financing self-produced housing. In addition, a comparison of the financial products offered to actors in the value chain was carried out, assessing their accessibility, features and effectiveness.

The analysis of the information made it possible to assess the diversity and suitability of the financial products available, taking into account the specific needs of each actor involved. Likewise, disparities in the promotion and access to these financial products were identified, analyzing how they affected the different actors, especially in relation to interest rates and the ability of the target population to access them.

As a result of this study, a detailed diagnosis of the barriers faced by actors in the self-produced housing value chain was obtained, and the effectiveness and suitability of available financial products was analyzed. Based on these findings, a series of complementary interviews were conducted, which will be described below.

Public Sector

Federal Government's National Strategy for Self-Production of Housing seeks to " facilitate the dissemination of existing programs, support and tools to carry out these processes" and proposes tools such as " construction regulations, the modernization of public property registries and cadastres, and the updating or elaboration of municipal urban development programs aimed at putting self-production housing at the center ."

Target audience

In public financing (CONAVI, FOVISSSTE, SHF and INSUS), the main supports are officially granted to people living in housing arrears, marginalization index or people with some disability or indigenous populations (CONAVI), state workers (FOVISSSTE), financial entities or housing production agencies (SHF) or for the population seeking legal certainty (INSUS). However, the geographic analysis of the granting of support (which was shown to the team but which was not shared for analysis) and the interviews conducted indicate that public resources and efforts were concentrated in locations where there were Strategic or Priority Programs of the Presidency of the Republic such as the Mayan Train, Transístmico, Felipe Ángeles International Airport (AIFA) and tourist and border cities, among others.

TABLE 1.
HOUSING SUBSIDIES
CONAVI 2013-2024

Year	Housing subsidies	Self-production	Expansion / Improvement
2013	162,098	25,619	25,305
2014	248,349	16,441	74,337
2015	201,223	17,349	20,755
2016	144,157	11,026	3,698
2017	101,697	14,416	3,150
2018	50,125	6,528	6,590
2019	94,760	Not indicated	37,009
2020	66,469	2,495	48,657
2021	83,978	Not indicated	75,549
2022	70,625	133	55,001
2023	70,698	No se indica	58,557
2024	75,061	No se indica	70,664

Source: Prepared by the authors using information from the CONAVI

As part of the ONAVIs, INFONAVIT implemented "ConstruYo" for the construction, expansion or remodeling of a home through technical or construction assistance. Again, and like public financing, it seeks to grant credits –differentiated by salary levels– to beneficiaries and not to architects or technical assistants.

Similarly, CONAVI prioritizes the processes of the Social Housing Production Program with support and accompaniment from qualified technical assistance.

In this sense, they differentiate between minor repairs and interventions with technical assistance or a builder: the former only have a verifier and the latter do include professional technical assistance or construction services. Additionally, products such as MejOraSi, Mejoravit Repara, Renueva or Equipa tu casa allow the direct purchase of materials – again, without being a product focused directly on financing construction materials suppliers, but rather on beneficiaries who are looking for interventions in their homes.

TABLE 2.
PRODUCTS LINKED TO THE SELF-PRODUCTION OF HOUSING FOR BENEFICIARIES
Amounts in MXN

Institution	Program or Product	Description	Amount
INFONAVIT	ConstruYo	Minor repairs	$92,414.00
		Technical assistance	$660,105.00
		Construction company	
	MejOraSi		$145,586.2
	Mejoravit	Minor repairs	$39,606.34
	Equipa tu casa		$66,010.56
	Line III		$2,716,334.54
FOVISSSTE	ConstruYes	Construction on own land	
		Acquire land and remainder for housing	$1,419,226.10

Source: Own elaboration

TABLE 3.
PRODUCTS LINKED TO SELF-PRODUCTION OF HOUSING FOR NON-ENTITLED PERSONS
Amounts in MXN

Institution	Program/ Product	Description		Amount
CONAVI	Social Housing	Self-production of housing	New housing	$330,053.00
			Housing extension	$165,026.50
			Home improvement	$82,513.25
		Housing reconstruction	Total	$330,053.00
			Partial	$165,026.50
			Rehabilitation of housing with heritage value	$412,566.25
		Housing relocation	Land acquisition	$283,845.58
			New housing	$330,053.00
			Construction of a housing complex for relocation	$462,074.20
		Improvement of Housing Units (common areas)		$13,202.12
SHF	Lot with services	Acquisition		$1,070,036.00
	Financing for home improvements			$70,000.00
	Self-production of housing			$627,100.70
INSUS	Program to regularize human settlements			$13,500.00

Source: Own elaboration

No public financing programs or products specifically oriented to design and architecture services or the provision of construction materials for self-production of housing are detected.

Impact on the Value Chain of Self-Production of Housing

Regardless of the above, and as mentioned before, the business model of design service providers and architects around self-production of housing is highly dependent on public support, while material suppliers do not depend on these supports, but face volatility around customer demand and the price of their products. A recurring explanation in interviews regarding this phenomenon is that people do not value such services and are therefore not willing to pay for them (even though they tend to reduce the costs associated with self-production and contribute to appropriate and safe construction)[13].

Private Sector

In the case of private financing, the sources are open to financing entities (multiple banks, development banks, popular savings and credit, SOFOMES, etc.) who offer products linked to the improvement or construction of housing. They are characterized by their high interest rates (reaching an average CAT of 158%) and amounts that range between $5,000 and $5,000,000 + depending on the type of product and the segment to which they are directed. In this sense, it is important to remember that high interest rates are a reflection of the perceived risk in the market, of the person / company to which the loan is made (interest rate = funding rate + perceived risk + value of money over time).

[13] Within the interviews it was mentioned that design services tend to reduce costs (or increase the built surface) by up to 40%.

TABLE 4.
SUMMARY OF SELF-PRODUCED HOUSING FINANCING PROGRAMS AND PRODUCTS

Institution	Program or Product	Description	Component
Public Sector's programs or products			
CONAVI	Urban improvement	Carry out comprehensive interventions that improve the living conditions of the target population.	Housing in urban areas: Interventions for housing on urban lots, improvement of housing units and housing in housing complexes.
	National Reconstruction Program	To serve the municipalities affected by the 2017 and 2018 earthquakes, through a set of instruments to promote projects and actions for the reconstruction of housing, physical educational infrastructure, health infrastructure, as well as restoration, rehabilitation, maintenance and training for the prevention and conservation of cultural, historical, archaeological and artistic assets.	Housing: Granted subsidies for partial or total reconstruction to communities affected by the earthquakes of 2017 and 2018.
	Social Housing Program	It offers subsidies to low-income people who are facing housing shortages or need housing and do not have access to sufficient resources or financing.	CONAVI subsidy 100%
			Co-financing
			Emerging Housing
INFONAVIT	Line III	Mortgage loan for construction on own land	
	ConstruYo	Non-mortgage loan to build, expand or remodel a home	Minor repairs
			Technical advice
			Construction company
	Crediterreno	It is a loan that allows you to buy land and build a home with the same loan.	
	Mejoravit	Non-mortgage loan to expand or improve the home with or without structural damage	Repair
			Renew
	Equipa tu casa	Credit supplement (requested at the time of credit registration) to remodel, improve, repair or equip the home	
	MejOraSi	Credit to serve the population that is currently not contributing, for the purchase of materials and payment of labor for home improvement or remodeling.	Product not valid
FOVISSSTE	Construye tu casa	Mortgage loan for self-construction assisted by construction professionals	It can be used for construction; or individual construction with land acquisition
SHF	Lot with services		
	Home improvement		
	Self-production of housing		
INSUS	Program to regularize human settlements		

Private Sector's programs or products		
Afirme	SME Real Estate (PyME Inmobiliario)	
	Tu Casa Afirme Construcción	
HIR Casa	Build or Remodel	
Bien por Bien		
FINCOMÚN	Credivivienda Fincomún	
Caja Huastecas	Mortgage Credit	
	Home Mortgage Loans	
Caja Dr. Arroyo	I dream of my home (Sueño mi vivienda)	
	Ecocredit	
SMB Morelos	Credivivienda	
Ictineo	My Credit	
UNGRA	Personal mortgage loan	
	Personal housing credit for improvement, expansion and construction	
Mercado	Personalized housing credit	
Aprecia Financiera	Aprecia Tu Vivienda	
	Aprecia Tu Patrimonio	
	Aprecia Construmas	
LI Financiera	Housing Improvement	
Mano con Mano	Expand, equip or finish your home	
ACREIMEX	Housing credit	Acreivivienda
		Improvement and/or Expansion
		Ecological Credit
CEMEX	Patrimonio Hoy	Housing advice
		Acquisition of materials
		Housing extension
		Improvement of housing elements
		Construction on own land
Home Depot	Quoter express	Wholesale prices
	Installation service	
	Donation of merchandise	
Rotoplas	Plumber Friend	Training

Programs, products, institutions or organization linked to housing financing		
Alphamundi	SocialAlpha Fund	
World Impact Foundation	Grants	They help NGOs to grow in their efficiency and service offerings to fully meet the needs of their target population. They primarily focus on supporting NGOs with the scale of income generation streams to operate as social enterprise models and reduce reliance on grant revenues
	Investments	They invest in social enterprise organizations already promoting groundbreaking solutions to access basic services
Rockerfeller Foundation	Grants	
	Initiatives	
	Big Bets	They are broad, deep, multi-year initiatives to solve a large-scale problem threatening the well-being of humanity. They use big bets to harness the power of science and technology to solve humanity's problems at their root rather than simply treat symptoms.
Clinton Foundation		
Linda Vista Foundation		
Construyendo y Creciendo		
Mejoremos		
New Story		
Habitat for Humanity		
Consultorio Arquitectónico para Vivienda		
Bhauss		

Source: Own elaboration

This table highlights some construction and consulting programs promoted by large materials companies such as CEMEX (Patrimonio hoy), Rotoplas or HomeDepot, or Foundations and International Assistance that seek to influence organizations that promote the integral well-being of communities through long-term social and physical interventions (World Impact Foundation , Rockerfeller Foundation, Clinton Foundation, Linda Vista Foundation, among others); or the presence of institutions linked to advice, promotion or specific financing for this housing production such as Construyendo y Creciendo, Mejoremos, Habitat for Humanity, New Story, and Consultorio Arquitectónico para Vivienda, to mention a few.

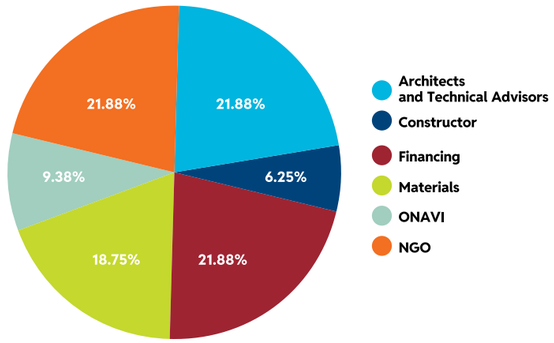
In conclusion, although there are some products aimed at the value chain, in general the financing of suppliers of materials and design and architecture services refers to what is set out in section III of this document (Exploring financial accessibility in the housing value chain) with the main elements that affect their access to financing based on their segment, market, ability to prove income, profitability, level of indebtedness, ability to provide guarantees and the size of the company. In this sense, in general, design service providers have less access to financing than suppliers of materials for self-production of housing, reflecting weaknesses in sources of income (intermittency of government programs and business model), market demand for their services and the average size of these suppliers.

For more information on programs, amounts and interest rates, please refer to Annex 3. Desk research on financing products for the self-production housing value chain in Mexico.

Interviews - Promotion and availability of financial products

To complement the market study, concept mapping and to delve deeper into the obstacles faced by the value chain, 33 interviews were conducted with architectural and design service providers, construction materials suppliers, ONAVIs, NGOs, financing entities and builders. These interviews were distributed as follows among the different actors:

TABLE 2.
PRODUCTS LINKED TO THE SELF-PRODUCTION OF HOUSING FOR BENEFICIARIES
Amounts in MXN



Source: Own elaboration

For these interviews, 5 question themes were classified in all interviews, in addition to including a sixth question that was not systematized but whose answers were used for the writing and proposals of this final report. The question themes systematized during this project were the following:

I. Financing self-production in general
II. Financing of architectural and design services
III. Financing for construction materials suppliers
IV. Financing for sustainability
V. Gender perception in access to financing
VI. Question on possible areas of improvement or idealization of the housing financing process for self-production of housing in Mexico

The main responses by interview profile were the following:

Architects and Technical Advisors: They highlight the lack of adequate financing as a key obstacle to self-production of housing, pointing out that the scarcity of government resources and the withdrawal of support from NGOs limit its scope. They also criticize the excessively bureaucratic processes that make the implementation of projects more expensive and emphasize that cash flows make them incur risks that affect their profitability and viability (in ConstruYo, for example, they have to do a lot of work - design, permits - without the certainty of receiving payment for it), in addition to the perception that current credits do not adapt to the real needs of the popular sectors.

They believe that architectural and technical assistance services are not valued by people or are undervalued and poorly funded, which affects the quality of construction.

Builders: They stress that financing faces multiple barriers, such as lack of dissemination of programs, uncompetitive interest rates, and excessive guarantees that exclude young workers (minimum of years worked, proof of income, and credit history, to name a few). The delay in the release of funds also negatively impacts the viability of projects. In addition, they face challenges in accessing materials at competitive prices, especially compared to large chains, and observe that long-term credits become expensive, affecting profitability.

Financing Institutions: These entities perceive the financing process for self-production as expensive and risky, due to the lack of solid guarantees and the informality of applicants' income. They recognize the importance of technical assistance for the success of the projects, although its high cost limits its implementation. In addition, they face difficulties in operating in rural areas and serving low-income sectors, where market fragmentation and lack of infrastructure complicate their operation.

Commercial banks are generally not interested in developing specific financial products to finance the

[14] Para ver el detalle de las preguntas específicas realizadas favor de hacer referencia al Anexo 1.

value chain in the development of self-production of housing, unless there is an intermediary such as INFONAVIT that facilitates the collection process (reducing risk) and reaches an attractive volume.

Construction Materials Suppliers: They point out that financing is scarce and not very accessible for families that self-produce, which limits their ability to acquire quality materials. They consider that the lack of specific financing for architectural services and technical assistance negatively impacts the quality of constructions.

They also face financing challenges, such as unfavorable credit conditions and limited access to flexible financing, which affects their ability to offer competitive prices and a wide range of products. One case in particular stands out, a company that sells franchises as a means of financing because it does not have access to other sources of financing.

ONAVIs: These organizations highlight that financing for self-production of housing faces significant structural challenges, such as the decline in programs and subsidies, and the lack of understanding of financial institutions about this process. Families often rely on their own resources and face obstacles in accessing credit due to the need for mortgage guarantees. In addition, the lack of demand for architectural services and technical assistance compromises the quality of constructions. ONAVIs also point out that the lack of adequate financing for houses built with eco-materials (sustainable housing) and technologies limits the advancement of sustainable projects, although they recognize the potential of these materials to improve the sustainability of housing.

NGOs: NGOs stress that lack of secure land tenure and the absence of adequate financing are the main obstacles to self-production of housing. They point out that subsidies have decreased, and that high interest rates complicate access to financing, especially for those without bank accounts. They also highlight that architectural services and technical assistance are perceived as unnecessary or expensive by families. They also mention that construction materials suppliers face financial difficulties due to fluctuating demand and prices, which complicates access to materials for families. Although there is interest in sustainable materials, their adoption is limited due to their cost, lack of education regarding their benefits, and lack of adequate financing.

Systematization of interview responses

Based on the content of the responses from the interviews conducted, these were classified into 25 categories detailed below, which respond to what they consider to be the main challenges of financing the self-production value chain:

• **Business model (23.8% of responses):** In general, it is highlighted that the business model of self-production of housing in Mexico integrates multiple actors and services at different stages of the process (public institutions, clients/beneficiaries, authorities and financial institutions, to name a few), complicating access to financing and execution of housing solutions in the value chain. The active participation of families, together with organization and technical assistance, is crucial, but it is not achieved in the short time frames sought by public and private financing or programs.

Individual loans alone are not enough, and the integration of services such as architectural design adds value – and also costs – to the process that is carried out with limited resources to meet other basic needs (food, health, transportation and education, among others). In addition, the lack of access to adequate financing, especially in rural areas, and the need for solutions adapted to local contexts, highlight the importance of a more structured and coordinated approach that allows architects, technicians, and families to work together to create effective and sustainable housing solutions.

Also the high dependence of the value chain business models on subsidies, programs and government support that have been erratic, and the lack of alternative sources of income, particularly for design and architecture services, are recurring responses integrated into this classification.

• **Costs (9.8% of responses):** The perception that self-production of housing is “expensive” arises mainly from the combination of several factors identified in the interviews:

Architects and technical advisors are seen as a significant economic burden, absorbing up to 50% of the resources available to families in some cases.

High interest rates, especially for the unbanked and rural sectors, coupled with high supervision and material costs, exacerbate this situation.

The focus on maximizing floor area often sacrifices quality and planning, which increases long-term costs and limits product competitiveness.

Lack of access to adequate financing and prejudice towards architects also contribute to the perception that self-production is an economically unviable option for many families.

• **Coordination (8.5% of responses):** “Coordination” was identified as a key solution to the financing problem in the self-produced housing value chain in Mexico due to the disconnection between the various actors involved, including governments, Colleges of Architects, financial entities and NGOs . The lack of coordination has resulted in isolated initiatives with limited and poorly remunerated results, making it difficult to include architectural and design services in financing. In addition, the absence of an integrated approach that encompasses all stages of progressive housing, from design to implementation, has limited the effectiveness of projects. Better coordination could optimize resources, standardize processes, and ensure that both architects and families have access to the opportunities and financing necessary to make assisted self-production of housing viable.

• **Policy (7% of responses):** Interviews highlight the need to institutionalize and plan this type of housing in the short and medium term. The importance of integrating design services into public policy to reduce risks is underlined, and the lack of continuity and resources in current government programs is criticized, which do not always address the most needy areas but rather political interests. In addition, the importance of a comprehensive approach that combines credit, subsidies and technical assistance to promote self-production is noted, as well as the need for financial education and policies that align with sustainability and inequality reduction objectives.

• **Architectural training (5.8% of responses):** The lack of adequate preparation to work with vulnerable sectors and in self-production contexts was one of the problems identified during the interviews. NGOs and architects point out that traditional education does not provide the necessary tools, such as the ability to dialogue and social sensitivity, which leads to many architects not getting involved in self-production projects or perpetuating solutions that do not adapt to the reality of the communities. The need for more interdisciplinary training oriented towards social architecture is highlighted, together with a focus on ethics, civics, and the ability to listen to and translate the needs of families.

• **Academia (5.5% of responses):** Interviews mainly mention that the lack of adequate training in universities to address the real needs of social housing production is a barrier in this type of projects. Although some young architects are dedicated to this field, their number is decreasing, partly due to the lack of vocation and an education that remains in the theoretical discourse, without involving students in local realities (social service). The Academy does not prepare architects to understand the phenomenon of self-production, manage administrative and fiscal aspects, or adapt to the cultural and sustainable practices necessary in progressive construction. The disconnect between educational programs and effective teaching aggravates this problem, highlighting the urgent need to reform architectural education to include a solid scientific basis and a more practical and contextualized approach.

• **Bureaucratic (5.5% of responses):** The high bureaucratic burden in financing self-produced housing in Mexico is due to the long and complicated administrative processes, such as audits, supervisions and site visits, which significantly delay projects and payments, affecting the profitability and efficiency of the sector. The lack of adequate government representation and direction has hindered the efficient arrival of resources, and the elimination of subsidies has further complicated the process with the introduction

of bureaucratic systems such as cards for the purchase of materials, which increase costs and risks of misuse. Bureaucracy also affects the security of land tenure, complicating the application for credit, while the slowness of the procedures discourages potential clients, making the business model unattractive for architects and technical advisors.

• **Lack of government resources (5.3% of responses):** The lack of government resources (subsidies) dedicated to self-production of housing has significantly weakened this segment in Mexico, causing the closure of many NGOs and the disappearance of crucial technical assistance figures. The absence of sufficient programs and subsidies prevents the proper realization of this type of production, which is the most common in the country. Current government resources are not sufficient to cover the basic needs of research, practice and financing in self-production of housing. This lack of support has left architects and technical advisors without incentives or means to continue their work in communities, especially in rural and peri-urban areas. Without an adequate management and financing system, self-production housing production faces an uncertain future, with a general consensus that essential funds for its development are lacking.

• **Local (4.5% of responses):** The problem of financing self-produced housing in Mexico is influenced by the local nature of this type of production, which requires a response tailored to the specific needs and contexts of each region and space. The interviews reveal that the lack of human capital, knowledge and participation of municipal authorities is a major obstacle, which highlights the need for municipalities to assume responsibility for the progressive construction and self-production of housing.

A massive model of processing and education for local authorities is suggested, as well as a financing strategy that takes into account the differences between urban and rural areas, taking advantage of the network of social housing producers already present in the communities. The research and interviews emphasize that decisions and success in self-production of housing depend on the local approach, since homogeneous national or state models are neither viable nor adequate for the rural, peasant or indigenous world.

• **Communication and dissemination (3.8% of responses):** Although resources and registries exist (such as the CONAVI Registry of Technical Assistants, catalogues, manuals, videos and spreadsheets, among others, which are online), there is no guarantee that the population has real access to these services, and the information available is often difficult to understand and disconnected from the practical needs of families. In addition, information on credit products and subsidies has been scarce and fragmented, affecting the ability of communities to benefit from them.

The interviews highlight the importance of developing effective communication strategies that not only inform, but also educate and train communities in the proper use of construction resources and architectural services, in order to mitigate risks and preserve construction knowledge for future generations.

• **Knowledge (3.3% of responses):** Lack of knowledge about the benefits of technical advice and adequate financial education contributes to poor integration of these services in the financing of self-production of housing.

Both families and banks often fail to understand the importance of technical assistance and architectural services in these projects. This lack of appreciation creates resistance to financing projects and hiring professionals, resulting in low profitability and construction problems that could be mitigated with adequate advice.

Families prefer to rely on bricklayers due to a misperception about the cost of architectural services, aggravated by public statements that devalue the need for technical intermediaries.

• **Regulations (3.3% of responses):** Current regulations restrict participation in these projects to non-profit entities, limiting flexibility and access to resources. The need to reform legislation to include other actors, simplify the permitting process, and adapt regulations to the reality of self-production is essential. Long and complex bureaucratic procedures, as well as the lack of inclusion of specific financial and technical tools, hinder the advancement of self-production. In addition, regulations should support the integration of incentives, such as "green mortgages," to encourage sustainable and efficient practices in housing construction.

• **Volume (3% of responses):** There is a tendency for some architects and technical assistants to avoid these projects due to the lack of economic scale, profitability and visibility. The low interest in technical advice on small and customized projects is often due to the perception that advice is only viable with large volumes, while successful projects tend to be those managed regionally and adapted to local needs, rather than massively standardized. In addition, the preference for large projects and the lack of recognition of quality in self-production, compared to larger projects, limits interest and investment in this type of housing.

WITHOUT AN ADEQUATE MANAGEMENT AND FINANCING SYSTEM, SELF-PRODUCED HOUSING FACES AN UNCERTAIN FUTURE.

• **Customs and practices (2.8% of responses):** Cultural and gender norms influence construction and financing dynamics. Women, although frequently involved in housing improvements, face challenges in being recognized in technical roles due to traditional norms that assign men to these positions. In addition, local practices such as harvest times in agricultural communities affect project planning and execution. Final decisions on materials and design often depend on residents' preferences, which, due to changing perceptions, may lean towards industrial materials (blocks) over traditional ones, but are often affected by economic decisions. Therefore, understanding and adapting to these customs and practices are key to improving the effectiveness of technical assistance and financing of self-production.

• **Property security (1.5% of responses):** Security of land tenure directly affects the viability of these projects. Without clear and regulated access to land, self-production faces problems such as speculation, illegal invasions and inflationary prices, in addition to making access to financing difficult (by not being able to obtain mortgage loans – in which the collateral is the property itself). The lack of confidence in the profile of low-income self-producers and the high default rate on credit also hinder the viability of financing. Therefore, adequate land regulation and facilities to guarantee property are essential to allow the development of affordable, accessible and sustainable housing.

• **Theory over practice (1.5% of responses):** This category reflects that government programs for self-produced housing are often limited to theoretical proposals without effective implementation on the ground. Despite having manuals and theoretical resources, the information does not reach those who need it nor is it translated into practical actions. This disconnect between theory and practice results in the ineffectiveness of initiatives, as seen in sustainability policies that, despite their supposed benefits, end up generating problems such as energy poverty. It is essential to move from theory to action to effectively address the needs of the sector.

• **Informality (1% of responses):** The lack of formal income makes it difficult to assess the payment capacity of families who build their own homes. The absence of solid records and guarantees makes the profiles of non-entitled individuals unreliable for financial institutions. In addition, the use of cash, remittances and undeclared sources of financing further complicates access to credit, since informal transactions do not allow for an adequate assessment of financial risk.

• **Technology (1% of responses):** The high cost of advanced tools such as Revit, AutoCAD and Sketchup limits professionals' access to them, losing the possibility of optimizing their services. In addition, although the calculators and tools developed are promising, their impact is reduced by the lack of effective dissemination and training among the population. The technological systems used by ONAVIS also face operational problems, with slow capital flows to these platforms, causing errors and delays in bureaucratic processes.

With 0.8% of responses in each of the following categories:

• **Corruption:** Some actions were discussed, such as the fact that the misuse of government and ONAVI resources intended for housing improvements often fails to impact the housing shortage and is diverted for other purposes. Purchase cards for materials are frequently misused, with people seeking to obtain cash or buy non-essential or necessary products for their homes. In addition, the lack of transparency in technical assistance services, coupled with the absence of clear quality standards, raises doubts about the effectiveness of these services and contributes to the perception of corruption in the sector, one of the highest of all sectors in the country.

• **The bricklayer knows more than the architect:** This is due to the greater trust that families have in local labor than in architects. Bricklayers are often valued for their ability to communicate and adapt to people's needs, despite not having the technical knowledge necessary to ensure structural stability and the suitability of materials. This lack of trust in architects and the preference for bricklayers, who do not always have adequate training in construction systems, increases the structural and financial risks in self-production projects.

• **Financial guarantee:** Financial institutions require mortgage guarantees to grant loans. Without adequate guarantees, the financial product becomes unviable for families who build their own homes, since verifying repayment capacity becomes costly and complicated. This is because institutions have difficulty identifying sources of repayment in the event of default, which limits its access to financing for these projects.

• **Non -standardised (0.5% of responses):** highlights that these projects should be understood as customized solutions ("tailor-made") rather than following predefined catalogues or prototypes. In particular, construction materials suppliers, especially those specialized in sustainable materials, focus more on providing specific training on the use of their materials for each case, rather than offering a standardized solution. This reflects the need for solutions tailored to the unique characteristics of each self-production project.

With 0.9% of the responses (0.3% each):

• **Professional certainty:** reflects the concerns of architects and technical assistants about non-payment for their services. These professionals, they fear that without adequate compensation, their designs may be used by families without due remuneration, thus affecting their confidence in the process and the viability of their participation in the projects.

• **Democratizing design:** This is a response to the proposal that design should not be considered an exclusive luxury but should be accessible and integral to both public and private housing products and programs. ONAVIS suggests that including design as an essential and accessible part of these programs would help improve the quality and sustainability of housing, making it available to all beneficiaries without prohibitive additional costs.

• **Comprehensiveness:** Emphasizes that design services should be an integral part of the housing solution, not an optional add-on. It is argued that, in order to improve the quality and effectiveness of self-production projects, design should be considered an essential component and not separate from the financing and construction process, thus ensuring that each aspect of the project is addressed in a comprehensive and coherent manner.

In Annex 5 we break down and go into more detail about each of the categories of responses received in the interviews conducted for the readers' consultation. They are presented in order of importance in all the interviews conducted.

The main conclusions of the interviews conducted regarding the availability of financial products for self-production in Mexico were the following:

1. This type of production faces major challenges due to the lack of adequate financial products, the requirement for guarantees and the distrust of banks, who lack knowledge about this type of progressive projects.
2. Informal income and diminishing government resources further complicate access to financing and the financial viability of the value chain, while fragmentation in coordination between relevant actors, together with the lack of a focus on gender, limits its effectiveness. The solution demands a comprehensive approach that includes changes in regulation, flexible financing, and the active participation of NGOs and the government.
3. Self-production of housing requires a personalized approach ("tailor-made"), which makes it difficult to achieve the standardization necessary to attract traditional financing. The requirement of guarantees by banks limits access to financing in the value chain, since many families that self-produce their homes do not have these guarantees. Banks lack knowledge on how to control and finance the construction of self-production housing, which generates mistrust and restrictions on the supply of financial products.
4. There is a tendency to prioritize the number of loans granted rather than the quality of housing, resulting in projects that do not necessarily improve people's living conditions. The progressive nature of self-production, where housing is built in stages, is not "shiny" and is often not prioritized in public policies or financing initiatives.
5. The verification process is costly, and the lack of clear guarantees adds a risk that discourages financial institutions from participating. Informal sources of income make it difficult to assess payment capacity, which in turn complicates credit approval. The reduction in government resources, together with the disappearance of key programs in CONAVI and FONHAPO, has left a void in support for self-production of housing.
6. There is a lack of coordination between the various stakeholders (government, schools, institutions, communities), resulting in isolated and ineffective actions. Long and complex administrative processes, both to access financing and to comply with regulations, increase costs and limit efficiency in self-production.
7. Although there is no mention of a specific gender approach in financial products, it is acknowledged that women are the main drivers of housing improvement. However, the lack of gender-differentiated products could limit access and impact on women.
8. There are few financial products designed specifically for the self-production housing value chain. The available products, such as home improvement loans, are not always adapted to the specific needs of self-production.
9. The lack of information and adequate dissemination of available products limits their access and effectiveness.
10. The need for changes in the law to facilitate access to land and resources for self-production is suggested, recognizing the role of self-production as a necessary national policy (particularly in rural and/or low-income settings).
11. It is recognized that self-production requires flexible financing models that can be adapted to local circumstances, including collective contributions from the family and community. The participation of local government and NGOs is crucial, especially in rural areas, to ensure that resources reach where they are most needed.

In summary, self-produced housing in Mexico faces multiple challenges ranging from a lack of adequate financial products to fragmented coordination among stakeholders and corruption. The solution requires a comprehensive approach that includes regulatory changes, operational and efficiency improvements, the creation of specific financial products, the active participation of NGOs and local communities, and increased investment by the government to ensure the sustainability and effectiveness of the model.

To find out the type of responses for each value chain profile interviewed, please see Annex 6. For more information regarding the classification of responses please see Annex 4.

Financial Accessibility for Design and Architecture Services

This analysis seeks to explore, from the perspective of architects and technical advisors, the barriers and opportunities in the financing of these services within the value chain of self-production of housing.

Within the market study carried out, no specific financing products were detected for architectural and

design services, materials, sustainability or gender for self-produced housing in Mexico. Although this Public Administration (2018-2024) worked on drafting the National Strategy for Self-Production of Housing, which promotes the participation of the State in this type of production by supporting families to make informed decisions about the criteria that adequate housing must meet, it does not contemplate products, programs or services for the financing of participants in the value chain.

As mentioned above, some products – mainly from INFONAVIT – include within their operating rules the existence of a technical assistant or construction company for the implementation of self-production or home improvement projects. Digital or crowdsourcing initiatives such as Bhauss also stand out, specifically promoting the connection of architects and designers who offer designs at affordable prices – even when they do not necessarily reach the target population.

Based on market research, a lack of financing covering all stages of social housing production was detected, evidencing a lack of clear understanding of the differences between urban and rural needs.

It is suggested that poverty and backwardness measurement policies be modified to better adapt housing programs, and the promotion of a management system that allows architects to work sustainably and meaningfully on self-production projects is recommended. Clearly establishing the support and organizations that financially support groups of architects interested in this type of production.

An area of opportunity was also identified to strengthen ongoing technical assistance and training for architects, technical advisors and communities, ensuring that design and construction services are integrated into public policy, contributing to risk reduction and improved quality of life.

The lack of products, programs and services for architects and technical assistants opens the door to the opportunity to strengthen ongoing training for technical advisors and NGOs, focusing on active listening skills and adaptation to local needs.

On the other hand, in order to strengthen the capacity to access financing for these services, there is a need to promote and make visible the design and architecture companies that participate in self-production projects, clearly and explicitly exposing their value offer and benefits in order to, in turn, strengthen their business model and increase and diversify their possible sources of income. This could include participation in local fairs, community events and awareness campaigns on the importance of professional advice in housing construction. Similarly, public-private partnerships between design/architecture companies and local governments or NGOs could be promoted to develop social housing projects. This could include the simplification of administrative procedures and collaboration in urban and rural planning.

THERE ARE FINANCING GAPS WITHIN SOCIAL HOUSING PRODUCTION, DENOTING A LACK OF UNDERSTANDING REGARDING THE DIFFERENCES BETWEEN URBAN AND RURAL NEEDS.

As a complement to the market research, and as part of the interviews conducted, it is highlighted that self-production of housing faces significant challenges in integrating professional architectural services and technical assistance. The perception of these services as dispensable expenses and the lack of appreciation in financial products limit their inclusion. Geographic fragmentation and the disconnection between the academic training of architects and the real needs of the market contribute to the low participation of these professionals in self-production. To improve access to these services, it is necessary to change the perception of architectural design, integrate these services into financial products and create specific incentives and subsidies, as well as strengthen the training and connection of architects with the self-production sector.

As has been shown, self-production of housing is a widespread phenomenon in Mexico, particularly in the popular sectors, where housing construction is largely carried out through the effort and resources of families. Despite its relevance, this sector faces multiple challenges that limit its access to professional architectural, design and technical assistance services.

One of the main challenges in financing architectural and technical assistance services lies in the perception and valuation of these services. Many architects and technical advisors point out that the population, especially in popular sectors, does not prioritize architectural design or recognize its value as a long-term investment. Architects are perceived as expensive and their intervention as a dispensable expense, compared to direct labor that offers more tangible results in the short term. This problem is aggravated by the lack of volume of work, which discourages the participation of architects in this market niche.

The value chain of self-produced housing is characterized by its fragmentation and the geographical dispersion of housing, which makes it difficult to provide design services efficiently. Architects often face difficulties in finding a sufficient volume of work to justify their participation. In addition, there is a gap in the academic training of architects, who, for the most part, are not trained to work with popular sectors or to adapt to the specific needs of self-production. This creates a disconnect between the supply of services and the real demand in these contexts.

On the demand side, financial products available to support self-production of housing, particularly for low-income segments, often do not comprehensively consider design and technical assistance services. This lack of integration translates into low profitability for architects, who do not achieve attractive returns in this area due to bureaucratic barriers and high supervision costs (relative to total amounts). Furthermore, architectural design is not seen as an essential component within financial packages, which limits its inclusion and valorization.

One of the main challenges to making the inclusion of architectural design services in self-production of housing profitable is the lack of a solid market, with diversified sources of income and the limited capacity of architects to identify and access this niche. In addition, young architects often face difficulties in charging fairly for their services, and the lack of economic incentives means that many prefer to dedicate themselves to other more lucrative areas. Academic training, focused on theory and disconnected from the reality of the market, contributes to this situation, leaving many professionals without the necessary tools to approach self-production effectively.

Despite the challenges, there are opportunities to improve access to design services in self-production of housing. A key proposal is the need to democratize architectural services, integrating architectural design as a risk reduction mechanism within financial products. The creation of specific subsidies for design services is also suggested, as well as their inclusion in public housing policies. Strengthening the link between universities, social services and architectural firms can generate a new generation of professionals committed to the social production of housing.

In conclusion, to overcome current challenges and generate specific financial products for this segment of the self-production housing value chain, a change in the perception of the value of architectural design within self-production housing is essential, along with the implementation of policies that promote the integration of architectural services and technical assistance in financial products aimed at this sector. The training of architects must be more oriented towards the reality of the self-production market, and clear incentives must be created that make it attractive and profitable for architects to participate in this segment, thus contributing to the improvement of the living conditions of families who choose to self-produce their homes.

Financial Accessibility for Materials Provision Services

In this section, specific financing products for building materials are not detected. SHF is the Mexican government institution that mainly promotes the development of housing markets through guarantees and financial instruments for the construction, acquisition and improvement of housing. Through them, credit lines are obtained

for unregulated entities, regulated entities or housing production agencies (APV), also known as OEO (Work Execution Organizations).

It was detected that the Ministry of Economy offers certain intermediaries (development banks or financial intermediaries for development - IFF -) support to trigger economic development (mainly in the agricultural and rural sector or SMEs).

There are no financial accessibility products specifically for small and medium-sized construction companies on the national market, so it is recommended to encourage the development of specific products for this sector, either by exploring alliances with public institutions and financing entities to promote innovation in this type of products.

In the interviews, on the other hand, it is highlighted that one of the main problems detected is that the lack of sufficient resources of the families that self-produce their homes has driven the use of cheap materials, often of low quality, affecting the durability and comfort of the homes. Small construction materials suppliers struggle with unstable prices and difficulties in accessing formal financing, while the available credits are insufficient and poorly adapted to the needs of self-producers or to the dynamics of the construction materials suppliers. The lack of adequate financial products, poor planning in construction and barriers to access sustainable materials reflect a fragmented and inequitable value chain. An improvement in the construction culture, public-private alliances and more flexible financing schemes are required to address these challenges.

It is worth mentioning that, being a more profitable segment of the chain in relation to design services, construction materials suppliers tend to have better and greater access to financing (see graph 10) and even interesting financial initiatives are detected such as the sale and operation of franchises.

Based on the demographic study, it can be concluded that the analysis of the value chain financing in self-production of housing in Mexico reveals multiple challenges related to construction materials suppliers and access to credit. The elimination of subsidies and the implementation of cards for the purchase of materials have altered the dynamics of this market, where cheap materials continue to dominate due to their accessibility and the priorities of maximizing the built area. This has generated a market where low-quality materials prevail, affecting the durability and comfort of homes, evidenced by the fact that, according to some interviews, more than 90% of the population faces temperature problems in their homes. The dependence on credit cards and personal financing, instead of structured financing for housing, reflects the lack of adequate solutions that respond to the real needs of people who self-produce their homes. In addition, small construction materials suppliers struggle to maintain stable prices, and do not receive financing from their suppliers, which further complicates planning and access to credit. Increases in material prices are passed directly to customers.

The main obstacles to integrating material suppliers into the value chain include the lack of direct and specialized financing for this sector, along with price volatility and poor planning in the construction processes. Current credit conditions, such as high rates and insufficient amounts, do not respond to the needs of self-producers, who often face additional barriers, such as lack of access to formal financing and dependence on their own resources. Although there are attempts at collaboration between the public and private sectors to stabilize prices and facilitate access to materials, these efforts are still insufficient in the face of the complexity of self-production in rural and urban contexts. The need to improve the construction culture and offer educational alternatives is presented as a crucial point to advance towards a more equitable and accessible market in the self-production of housing.

One of the biggest challenges mentioned by construction materials suppliers is the constant fluctuation of prices. The lack of stability in material costs, exacerbated by the absence of subsidies and market volatility, complicates planning and access to credit. In addition, each time a subsidy or support program is implemented, material costs tend to increase, which discourages consolidated purchases and negatively affects the value chain and end users.

Smaller hardware stores, which do not have established agreements or a solid credit history, often face significant barriers to accessing financing (see charts 10 and 11). Many businesses rely on personal credit cards or financing they can provide themselves, which limits their ability to expand and their competitiveness against large chains such as Home Depot or Rotoplas.

Logistics is another considerable challenge, especially when attempting to scale operations nationwide. Small construction materials suppliers often cannot guarantee fixed prices due to price volatility, lack of financing and variability in demand, and difficulties in establishing long-term agreements with suppliers, which restricts their ability to offer financing or discounts to their customers.

High interest rates and credit conditions that do not meet the real needs of consumers are other factors that limit access to financing. Small loans, such as those of 5 thousand or 10 thousand pesos, are insufficient to cover construction or remodeling needs, which discourages consumers from opting for these financial products.

In many areas, transactions are still made in cash, which encourages informal operations (no banking access and tax payments) and complicates access to formal financing. Families and small builders prefer to finance themselves or through informal loans, reducing the demand for formal credit products and limiting the penetration of financial institutions in this sector.

Although some building contractors offer lines of credit, these are usually reserved for larger companies or those with a solid credit history. There are no differentiated financial products that adapt to the specific needs of small builders or people who self-produce their homes (particularly those with low incomes or working in the informal sector), which limits their access to quality materials and/or in sufficient quantities.

There are notable differences in the treatment that bricklayers and end consumers receive in building material stores. Bricklayers, due to their purchase volume and frequency, obtain better prices and conditions, while families face higher costs and difficulties in accessing discounts/fair prices.

Poor planning and the non-linear nature of construction times make it difficult to implement traditional financial schemes. Families purchase materials based on the opportunity and availability of resources, which makes it difficult to design financial products that fit these consumption patterns.

In agricultural communities, the local economy and the seasonality of agricultural production influence the demand for construction materials. The operating rules for housing financing, designed for urban contexts, do not consider these particularities, which makes it difficult to integrate suppliers in these areas.

To improve the situation, it is necessary to address and discourage the informal nature of building companies and develop more flexible and accessible financing schemes that take into account the particularities of small builders and local dynamics. In addition, the creation of public-private partnerships could be key to stabilizing building materials prices and facilitating access to credit in this sector.

Conclusions

1. Our research and the interviewed stakeholders agree that the business model of design service providers and architects around self-production of housing is highly dependent on public support, while material suppliers do not depend on such support, but face challenges around volatility in customer demand and prices of their products. A recurring explanation in the interviews regarding the lack of sources of income for design and architectural service providers is that people do not value such services and are therefore not willing to pay for them (even though they tend to reduce the costs associated with self-production and contribute to appropriate and safe construction).
2. Government and ONAVI support and financing for self-production of housing are not directed at the value chain but rather at beneficiaries and the population close to Strategic or Priority Programs of the Presidency of the Republic.
3. No financing programs or products specifically oriented to design and architecture ser-

vices or the provision of construction materials for self-production of housing are detected.

4. The main challenges identified in the interviews are categorized into 25 classifications: the main responses have to do with the business models of the value chain that are highly dependent on erratic government programs and support, high perceived costs, erratic policies, high process bureaucracy (operational inefficiency), lack of coordination in the housing self-production segment and academic training of architects.

POOR PLANNING AND THE NON-LINEAR NATURE OF CONSTRUCTION TIMES MAKE IT DIFFICULT TO IMPLEMENT TRADITIONAL FINANCIAL SCHEMES. FAMILIES BUY MATERIALS ACCORDING TO THE OPPORTUNITY AND AVAILABILITY OF RESOURCES, WHICH MAKES IT COMPLICATED TO DESIGN FINANCIAL PRODUCTS THAT FIT THESE CONSUMPTION PATTERNS.

V. STUDY OF FINANCING OPTIONS FOR SELF-PRODUCTION OF SUSTAINABLE HOUSING

In terms of sustainability, the National Commission for the Efficient Use of Energy (CONUEE) estimated in 2018[15] that 11% of all households in Mexico (equivalent to approximately 3.5 million) are in conditions of "energy poverty", that is, they cannot access sufficient energy services to meet their domestic needs and/or must spend an excessive portion of their income to meet the energy costs of their homes. They propose disseminating knowledge on the cost-benefit of energy efficiency in housing, generating promotion programs (financial schemes) for the incorporation of sustainability attributes[16], defining standards and approved methodologies for measuring the behavior and impact of sustainability strategies, and strengthening the sustainable building capacities of technical assistants and throughout the value chain[17].

Within the market study carried out by Diez Candelas, some initiatives were detected by multiple banks (CI Banco) or popular credit and savings entities (Caja Dr. Arroyo, with its "Ecocredit" of up to $100,000 for the acquisition and installation of ecological equipment, or Acreimex and its "Ecological Credit" with amounts of up to $50,000 for the purchase of water, sanitation or energy eco-technologies for housing) around financing options for sustainable products for housing; however, these are not offered to the self-production value chain, in public programs or in a generalized way in the financing options for this type of housing production.

For this reason, it is proposed to integrate energy and inclusive energy transition policies into public housing policies to facilitate the adoption of eco-technologies in self-production projects, promoting energy efficiency and environmental sustainability in the construction, operation (eco-technologies) and maintenance of housing.

[15] National Survey on Energy Consumption in Private Homes, 2018, INEGI

[16] The Self-Production Housing Strategy for Adequate Housing in Mexico uses the SISEVIVE tool, developed by INFONAVIT as part of the continuous improvement process of the Green Mortgage. SISEVIVE or the Green Housing Evaluation System offers an energy and environmental perspective that allows for a comprehensive evaluation of housing: from design elements to construction and technological characteristics of any home in Mexico. The tool is based on thermal comfort and rational water consumption, which is why the system gives a better rating to those homes that have a lower demand for energy and water compared to a reference home. For more information, see: https://www.gob.mx/cms/uploads/attachment/file/84276/SISEVIVECONUEE.pdf

[17] The Pilot Project on energy efficiency in self-produced housing implemented by Habitat for Humanity Mexico can be highlighted, by generating a model and demonstrative tools to replicate viable solutions.

MARKET RESEARCH FOR HOUSING FINANCING SYSTEMS IN MEXICO

Similarly, innovation and the incorporation of sustainable practices in design companies and construction materials suppliers could be encouraged, supporting research into new eco-friendly materials and technologies suitable for self-production; also encouraging the use of efficient and local materials, as well as sustainable construction practices from planning to construction (environmental and social – such as access to social security for workers). Public policies should introduce environmental tools, such as the possibility of "green mortgages" as an essential part of the social production of housing in Mexico.

Based on the interviews conducted, it is argued that sustainability and climate change are one of the main challenges of self-production of housing in Mexico, and this is mainly due to the lack of access to sustainable materials at competitive prices, the poor understanding of the savings they could generate, and the high interest rate on financial products such as green mortgages. Additionally, the adoption of natural, local and/or bioclimatic materials is limited by the lack of knowledge and training, as well as by a culture that does not incorporate long-term assessments of their benefits. Although there are initiatives such as training in ancestral materials and green corporate bonds, the full integration of sustainability requires a comprehensive approach, from design to maintenance, accompanied by adequate financing in terms of both time and interest rates.

As mentioned above, one of the main challenges is the lack of access to sustainable materials at competitive prices, which limits their adoption compared to traditional materials. Although credit products such as green mortgages and financing for eco-technologies exist, these are still poorly accessible to people who self-produce their homes, and "preferential" rates are high. In addition, the perception and lack of knowledge about the advantages of natural, local and bioclimatic materials prevent their widespread adoption, despite their potential to improve energy efficiency and the quality of life of inhabitants. Resistance to change is palpable, partly due to the lack of adequate training of technical advisors and a culture that does not sufficiently value the long-term benefits of sustainability. Initiatives such as training in the use of ancestral materials and sustainability policies by companies, such as the issuance of green bonds (Rotoplas), are steps in the right direction, but there is still a long way to go to fully integrate sustainability into self-production of housing, particularly in the value chain. Sustainability in this context requires a comprehensive approach from design to maintenance, supported by accessible and well-targeted financing.

VI. EXPLORING THE GENDER PERSPECTIVE IN THE FINANCING OF THE SELF-PRODUCTION HOUSING VALUE CHAIN

The market study found that while housing policy in Mexico seeks to invite "public agencies to introduce strategies in statistical measurement tools to incorporate the gender perspective in existing instruments and to be able to have data that allow to account for the impact and participation of women in housing production," the products and programs promoted at the public and private levels do not recognize the diversity of forms of production and the different ways and needs of inhabiting a home from a gender perspective[18].

Although women's participation in housing management and improvement is highlighted in discourse, especially in rural and agricultural communities, a cultural bias persists where women face barriers to being recognized in technical roles such as price negotiation or participation in construction projects, as well as in access to employment and formal financing. It is recommended to incorporate participatory processes focused on women throughout the process of self-production of housing, from decision-making to access to credit and housing ownership; through the creation of credit products suitable for women (without using "pinkwashing") through programs that promote gender equality and recognize their role in communities.

Based on the interviews conducted, there is a perception of a deep-rooted gender bias that limits opportunities for women, who face mistrust and barriers to assuming important responsibilities, even when women have a better understanding of household needs and play an important role in price negotiation. The interviews highlight a lack of recognition of their work and contributions in the process of self-production of housing (Interview Finding 7 - although a specific gender approach is not mentioned in financial products, it is recognized that women are the main promoters of housing improvement. However, the lack of gender-differentiated products could limit access and impact on women).

The analysis reveals that gender inequalities persist in the value chain of self-production of housing, linked to customs and practices, which impact access to financing. Although women, for example, play a fundamental role in the management and maintenance of construction materials suppliers, price negotiations are still predominantly handled by men, reflecting a deeply rooted gender bias[19]. Although women have been present in this housing sector for a long time, their work has not always been recognized. The construction field has historically been dominated by men, and women who manage to position themselves face significant challenges. The perception that a single woman, or even two young women, cannot assume large-scale responsibilities persists, generating mistrust and limiting their opportunities. However, those who have been able to establish themselves have gained confidence through their empathy and continuous work, challenging these gender barriers and paving the way for future generations in a sector where the fight for equity is still ongoing.

To provide further context on the use of financial products by gender, the total national results of the ENIF 2021 by specific products and by gender are presented below, always referring to the population between 18 and 70 years of age. It is noteworthy that in some cases increases in absolute figures are reported and at the same time a reduction in the percentage reached, which in some cases is explained by the increase in the population between 18 and 70 years of age (example: ownership of an Afore).

[18] Towards Gender Equality in the Financial Sector; SHCP, AFD, AFI , Diez Candelas; 2023. https://www.gob.mx/cms/uploads/attachment/file/862411/Hacia_la_Igualdad_de_Ge_nero_en_el_Sector_Financiero.pdf

[19] This is according to the interviews conducted in this study. It was mentioned by houses or material stores and architects/technical advisors.

TABLE 5.
GENDER-SPECIFIC PRODUCT USAGE RATES 2018/2021 AT NATIONAL LEVEL

Product / Year	Absolute Numbers	% of total	% of women	% of men
Savings account				
2021	41.4 mill	49.10%	42.60%	56.40%
2018	37.3 mill	47.10%	45.90%	48.50%
Formal credit				
2021	27.4 mill	32.70%	31.70%	33.80%
2018	24.6 mill	31.10%	29.20%	33.30%
Insurance				
2021	17.6 mill	21.00%	16.40%	26.10%
2018	20.1 mill	25.40%	23.10%	28.00%
Pension				
2021	32.7 mill	39.10%	20.60%	48.70%
2018	31.3 mill	39.50%	31.00%	49.00%

Source: ENIF 2021, own compilation

VII. CONCLUSIONS AND RECOMMENDATIONS

1. There are no financial products explicitly designed for the self-production housing value chain.
One of the main conclusions of the study is that there are no financial products specifically designed to finance design and architecture services or to provide construction materials for self-production of housing, and government and ONAVI support and financing for self-production of housing are not directed at the value chain but at people (mostly beneficiaries and the population close to Strategic or Priority Programs of the Presidency of the Republic).

Similarly, there are no financial products designed specifically for the self-production housing value chain in terms of gender and sustainability. There are financing options for demand (people and families who self-produce housing) but they are scarce and generally associated with high financing costs.

2. The business models of the value chain, and specifically of the design and architecture services for the self-production of low-income housing, are weak and highly dependent on public programs and ONAVIs.
Our research and interviews agree that the business model of design service providers and architects around self-production of housing is highly dependent on public support, while material suppliers do not have such a deep dependence on this support, even though they are affected by the emergence and disappearance of this support, both in the demand for their materials and in the volatility of the prices of their products.

A recurring explanation in interviews regarding the lack of sources of income for design and architecture service providers (beyond government programs aimed at self-production of housing that require their services) is that people do not see the value of such services and are therefore not willing to pay for them.

3. Since there are no specific financial products for the self-production value chain, we can refer to certain generalities of the Mexican economy in terms of the sector and size of the business activity in question.

The structural analysis of the Mexican economy shows that the wholesale and retail trade sectors (provision of materials) as well as professional, scientific and technical services (design services) show low access to financing (around 15% for the first and 10% for the second).

The size of companies has a significant impact on their access to formal financing in Mexico. This is a structural factor, with micro and small companies having substantially less access to financing than medium and large companies.

The main factors that limit access to credit in general are the high associated costs and requirements requested by financial institutions.

The main reasons why financial institutions reject a loan are low payment capacity (19.7%), lack of credit history (12%), insufficient documentation (10.4%) and not having a guarantee or endorsement (8.1%).

4. The lack of consistency in the public sector and the perception of corruption in the sector have had a detrimental effect on the value chain

Inconsistent, erratic and volatile government policies, programs and resource allocations around housing have had a negative effect on the certainty of the housing value chain and housing self-production and, consequently, on its investment, financing, operation and profitability.

The low participation of the public sector in financing self-production housing (2.68%) shows that subsidy schemes and government programs have had a minimal impact on the segment.

This is despite the large size of the self-production housing market, both in terms of GDP and the number of homes produced.

At the government level, the local level is the only one capable of promoting and organizing this form of housing production at the territorial level. The crucial importance of municipal authorities in housing policy must be recognized: it is proposed to provide massive training and continuing education for local authorities on self-production and progressive construction. To this end, clear strategies must be established at the federal level so that municipalities assume direct responsibilities in these processes. Coordination and alliance strategies must be generated with local governments: understanding and willingness to organize this form of production. To this end, budgeting can be prioritized in housing and urban development for people with lower incomes. At the state level, Housing Organizations are usually made up of political actors, but with little real operational and budget capacity. Therefore, a new vision must be generated where states and municipalities have a leading role to generate tools to increase available resources and promote a different form of relationship with the population.

5. Some market trends show that the demand for self-produced housing is not necessarily a choice but the result of a drop in the supply of new quality housing, particularly in urban environments.

The decline in housing production by economic units (developers) is usually accompanied by an increase in self-production of housing, inferring that self-production of housing is not necessarily a choice but, in most cases, a resource in the face of the impossibility of obtaining housing on the market.

Due to the lack of housing supply and affordability (income-cost ratio), the predominantly informal structure of the Mexican labor market, and the low and decreasing participation in housing financing, people are forced to self-produce and self-finance their homes.

6. The structure of the Mexican labor and institutional market makes it impossible for a large proportion of the population to access housing financing.

The informal employment rate at the end of 2023 in Mexico was 54.8%, that is, the majority of the country's workers. The disappearance of FONHAPO and programs aimed at the informal sector have resulted in a generalized lack of access to financing for this majority segment of the population. Proof of this is that the vast majority of self-production of housing in Mexico is self-financed (86.2%), generating economic inefficiencies in the purchase, transportation, time and planning and construction process.

The disappearance of FONHAPO, an entity that recognized housing in its progressive social process and not as a finished product, was one of the biggest mistakes of the outgoing Administration. Recovering the principles of providing suitable land, decent and dignified housing or improvements, with special attention to social groups, using guarantees that are not necessarily mortgages, eliminating intermediaries and comprehensive advice should be part of a new program directed and operated by the Government.

Even though the Government's priority should be to provide assistance to the population with the lowest economic means, the resources available from public bodies and financing entities are often allocated marginally to the population with the lowest incomes.

7. Land ownership is a central issue in financing self-production of housing

As mentioned during the interviews and research, land is one of the main barriers to self-production. The lack of urban development plans and programs – which responsibly incorporate the ejidatarios in the process – will be a step to follow. During this six-year period, it has been shown that the regularization of property has a multiplying effect on irregularity and is prone to political and/or corruption issues. The acquisition of well-located land with services must be a priority in order not to force displacement to the distant periphery that only promotes irregular housing.

In order to have a solid social housing production program, comprehensive regulatory and legislative strategies must be generated for the design and execution of policies, programs and projects for territorial planning and management, without neglecting the environment. To do so, it is recommended not only to adapt regulations and technical standards, but also to have a new relationship between the municipal authority and citizens regarding socially produced housing: an alliance to communicate the minimum criteria for inserting a new home into the urban fabric, building with order – a technical standard to have the best results with the resources of the self-producers.

8. Other conclusions

It is noteworthy that INFONAVIT implemented the ConstruYo program and modified its Law to be able to finance the acquisition of land. CONAVI moved forward with the operational implementation of the conceptual framework for the Social Production of Assisted Housing, but was unable to promote the National Housing Program, due to the lack of comprehensiveness in the Housing Programs that it was able to implement (Programs focused on certain locations – where there were Strategic or Priority Programs of the Presidency – and with a clearly limited budget, see BUDGET Chart). FOVISSSTE, SHF and INSUS, although they tried to support the initiative, were unable to achieve significant results to expand or consolidate the self-production of housing initiative.

The research identified that there are no project offers or financing programs that strengthen the housing ecosystem: from design and architecture services, to construction materials suppliers and a sustainability approach... But – even without being part of the objective of the research – there are also no programs to strengthen the organized action of the communities (with collective loans, for example) or guaranteed by funds created specifically for and by the organization.

Since social housing production seeks to have people guide the processes, comprehensive support is needed to better invest resources and improve the quality of housing.

Other key players are social banks, which need a series of incentives to bring credit and savings options closer to income levels and the logic of progressivity of this type of housing production. They are capable of implementing a new financing strategy that is adaptable both to urban areas (with construction companies and small technical advisors and architects) as well as to rural areas (where NGOs have a greater established presence). Popular banking and credit institutions can be allies to ensure financing mechanisms that consider the specific needs of each context and facilitate equitable access to financial resources.

Recommendations based on the analysis and conclusions

Review and piloting for the expansion of public and private financing: financing schemes and pilots for the value chain could be proposed, seeking proposals to modify financing policies to ensure that they cover all stages of social housing production, clearly differentiating between urban and rural areas. This includes reviewing and adjusting the criteria for measuring housing gaps to improve the allocation of resources (adobe, for example, is considered a precarious material). It could also be considered to propose "community" performance guarantees to address this major obstacle in the granting of credits (guarantees).

Strengthening government capacity: Establishing an effective government that not only manages housing programs, but also adequately oversees and guides implementation on the ground (giving more "teeth" to state and municipal governments). This involves training local authorities in specific policies on self-production and social housing.

Financial and technological education: Implement financial education programs in communities where there is a lack of financial inclusion, ensuring that families have a proper understanding of the credits and subsidies available. Also, facilitate access and training in technological tools to improve efficiency in the design and construction of housing.

On the value chain side, training would also have to be provided on the programs, complemented by workshops that help them strengthen their business models. Some key aspects to be addressed in these workshops would be:

- key partners,
- key activities,
- value proposition,
- key resources,
- customer relations,
- customer segments,
- communication channels,
- cost structure and
- sources of income.

Practical implementation: Prioritise the practical implementation of housing programmes over theoretical studies, ensuring adequate resources and ongoing monitoring to ensure tangible and sustainable results on the ground. It is great to have all the information on one online page, but this information must be passed on to the population that is self-producing the housing.

Inclusion and empowerment of women: Promote the active participation of women in the entire self-production ecosystem of housing, from management and negotiation to design and construction, through programs that promote gender equality and recognize their fundamental role in communities. Workshops or modules specifically aimed at women.

Quality over quantity in housing programs: Promote adjustments in ONAVIS programs to prioritize quality over quantity of housing actions, ensuring that each self-production project meets adequate standards of architectural design and sustainability. And that it has an impact, especially in improvements and expansions, on the real reduction of the housing shortage.

Regional and personalized approach: Support a local and regional approach to self-production of housing, providing personalized technical advice adapted to the specific needs of each community, avoiding standardized solutions that do not fit the local context. Take advantage of and enhance the territorial knowledge and experience of NGOs that have been involved in this type of production for decades.

Promote the formalization of the labor market and the value chain

In summary, Habitat for Humanity could delve into:

1) Make proposals and pilot projects for financing the self-production housing chain, making proposals to modify policies, seeking to ensure comprehensive financing and scalability of initiatives that cover all stages of social housing production, differentiating between urban and rural areas.
2) Contribute to promoting an effective government that adequately supervises and guides self-production housing programs, training local authorities in self-production housing policies.
3) Promote the creation and delivery of programs to improve financial education in communities and facilitate access to technological tools.
4) Prioritize practical implementation over theoretical studies, ensuring resources and continuous supervision for tangible and sustainable results of self-production.
5) Actively promote the participation of women in all aspects of self-production of housing and recognize their role in the communities.
6) Adjust self-production financing programs and products to prioritize quality over quantity, ensuring that self-production housing has a direct impact on reducing the backlog.
7) Support a local and regional approach to self-production, providing tailored technical advice and empowering local technical knowledge.
8) Promote the formalization of the labor market and the self-production housing value chain.

Finally, in addition to the study carried out, the DC team identified elements that it considers highly relevant to the mission and achievement of the objectives of Habitat for Humanity. We include in Anex 8 of this document Six Proposals to Deepen and Improve Self-Production of Housing in Mexico.

ANNEXES

Annex 1.
Specific questions asked in the interviews

I. Financing self-production in general
The following guiding questions were used for this topic:
What do you think are the main challenges or barriers to financing self-produced housing in Mexico?
How wide is the range of financial services available (characteristics, description and assumptions) for self-produced housing?
Do you have specific financial services designed for this?
How do they work?
Are there products differentiated by gender (men and women)?

II. Financing of architectural and design services
What do you think are the main reasons why there are challenges in financing for architectural, design or technical assistance services?
What are the main obstacles to bringing design service providers into the self-built housing value chain?
Do you have differentiated products for this type of credit?
What are the main challenges and barriers to accessing financial services for self-production? Why is it not profitable/attractive to include architectural design services?
What incentives exist for hiring design services for families who self-build?
How could other financial services be included for self-build housing?

III. Financing for construction materials suppliers
What do you think are the main reasons why there are challenges in financing for construction materials suppliers or financing in general for materials for self-produced housing in Mexico?
What are the main obstacles to bringing building material suppliers closer to the self-built housing value chain?
Do you have differentiated products for this type of credit?

IV. Financing for sustainability
What are the main challenges that, from your perspective, you consider you face in financing sustainable materials or products for self-produced housing in Mexico?
What credit or financing products are available for purchasing sustainable products?
What are the terms and conditions?
Are there incentives for gender, bioclimate or the purchase of sustainable products (energy-saving faucets, rainwater harvesting, solar panels, solar heaters, reflective paints, thermal insulation, household appliances)?

V. Gender perception in access to financing
Do you think there are differences in financing self-produced housing related to gender policies?

VI. Question about possible areas of improvement or idealization of the housing financing process for self-production of housing in Mexico
As a closing question, and without this being part of the systematization of responses, each of the interviewees was asked what they would do to improve the financing of self-production of housing or, if it were in their hands, what modifications they would make to improve or eliminate the barriers detected during the interview (for more information on responses not related to financing, see Annex 2. Main ideas from the interviews conducted not related to the object of financing the value chain).

PREVIOUSLY, MOST OF CONAVI'S FINANCING WAS DIRECTED TO NEW HOUSING, NOW MORE THAN 90% IS ASIGNED TO SELF-PRODUCTION.

Annex 2.
Main ideas from the interviews conducted not related to the object of value chain financing.

Importance of design in housing: Good design can improve the functioning of the home, save resources such as light and water, and provide better temperature, among other benefits.

Role of architects: In self-production projects, it is crucial to listen to architects due to their expertise in design and construction techniques.

Resistance to advice: To overcome resistance to advice, it is suggested to offer concrete benefits, such as savings in construction or specific improvements to the project.

Social housing production vs. construction companies: Social production has different rhythms than commercial construction companies and is more focused on community needs and support than on profits and speed of delivery.

Community participation in design: Community projects must emerge from the needs and desires of the community to be effective and accepted.

Barriers to quality housing: Barriers include cost and lack of technical knowledge and access to suitable materials.

Importance of technical assistance: Technical assistance should be available for all project levels, not just offered by large companies.

Need for personalization in housing: Housing must be customized according to the specific needs of people and communities.

Using tools to streamline time: The tools used by architects can help optimize time, although this process has not yet been fully perfected.

Subsidies and financing for self-production: Previously, most of CONAVI's financing was directed towards new housing, but now more than 90% is allocated to self-production.

Technical support in self-production: Technical support is promoted as a form of financing that not only facilitates production, but also ensures the habitability and structural safety of homes.

Negotiations with construction materials suppliers: An attempt was made to establish agreements with construction materials suppliers to offer lower prices in specific areas, but this was not achieved due to the lack of purchase guarantees.

Focus on gender equity: More than 60% of CONAVI's housing actions are directed at women, recognizing the importance of gender equity in official housing programs.

Critical perspective on the profession: A critical reflection is proposed on the profession of architect, comparing it with the figure of healers who do not always have a scientific basis behind them.

The "invisible" component in technical assistance: Technical assistance is seen as a crucial and "magical" component that guarantees the success of housing projects, mobilizing local capacities and community constructive knowledge.

Impact of long-term programs on the local market: The importance of stable, long-term programs that can positively impact the local supply market and create sustainable solutions for families is highlighted.

Political criteria in the implementation of housing programs: It is mentioned that housing programs are more influenced by political criteria (focus on areas with strategic projects or programs of the Presidency) than by real needs, which can affect their effectiveness and long-term sustainability.

Optimism about viable credit: Despite challenges, faith remains that credit and programs can make a positive difference in people's lives.

Self-production as a housing solution: Self-production is seen as a solution to the housing problem for non-entitled persons in Mexico, allowing construction in stages while the home is inhabited.

Microcredit as an effective tool: Microcredit, especially those below 25,000 pesos, stands out as an effective and revolving financial tool in the construction sector.

Specialization and adaptation during the pandemic: Companies have had to adapt and specialize in self-production during the pandemic, moving towards this sector of the construction materials market.

Limited financing and long construction time: Due to the lack of other sources of financing, many people must use their own resources to build homes, which can extend construction time up to 20 years.

Challenges in changing paradigms and traditions: It is difficult to change the entrenched ideas of people who have built a particular way throughout their lives, even when they are offered an alternative.

Constitutional right and housing subsidy: It is highlighted that the right to housing is a constitutional right, and the subsidy is a way of exercising this right.

Challenges in the conservation of traditional housing: The conservation of traditional housing faces significant challenges, especially in regulatory and structural terms, although progress has been made in specific cases such as reconstruction in Oaxaca.

Valuing diversity in construction: Emphasis is placed on the importance of valuing the diversity of ways of life and construction in Mexico, and how this affects construction standards and practices.

Structural crisis in the housing sector: The housing sector in Mexico faces not only a financial crisis, but also a structural one, where different actors have different objectives and languages, which makes effective cooperation and access to economic resources difficult.

Challenges of financial instruments and economic resources: There is debate as to whether the main problem is the lack of adequate financial instruments or the lack of economic resources to implement the necessary incentives in the housing sector.

Digitalization as an improvement for INFONAVIT: It is suggested that the digitalization of requirements could improve the access and efficiency of processes at the National Workers' Housing Fund Institute (INFONAVIT).

Awareness of the benefits of technical advice: It is considered important that people are aware of the benefits they can obtain by using technical advice in construction, allowing them to make more informed decisions.

Perceptions about the profession of architect: The phrase "we are all a bit of architect and crazy" is mentioned, reflecting a popular perception about the profession.

Lack of appreciation of the technique: There is a perception that the technique in construction and architectural design is not adequately valued, which represents a problem.

Educational and academic limitations in construction: Some professors and colleagues in academia do not teach or limit the teaching of alternative construction methods, such as the use of materials other than concrete, which could limit students' options.

Ethics in charging for architectural services: The practice of charging high amounts for standardized or unethical architectural services is criticized, especially when dealing with clients with limited resources who sacrifice a lot to build a home.

Working from people's possibilities: Emphasis is placed on the importance of designing and building homes based on what is possible and viable for people, taking into account their resources and capabilities.

Social improvement and awareness generation: It is emphasized that the objective should not only be to improve housing, but also to generate awareness and capacities in communities to face challenges more effectively.

Recognition and regulation of the technical advisor: The need arises for regulations to adequately recognize and regulate the role of the technical advisor, not limiting it only to the Director Responsible for Works (DRO).

MARKET RESEARCH FOR HOUSING FINANCING SYSTEMS IN MEXICO

Financial and collateral challenges in construction: Mention is made of the lack of adequate financial schemes for employees and the importance of collateral to reduce interest costs on housing loans.

Ethics and social responsibility in the construction materials sector: The need to generate social responsibility in construction materials companies is discussed, through tax incentives or other mechanisms, to support social projects.

Training and entrepreneurship in self-production: Although training and efforts have been made to encourage self-production, many architects and design services do not remain in this field, limiting the growth of new offices or initiatives.

Adaptation and sustainability in construction: The challenges of adapting and maintaining operational sustainable and socially responsible construction models are mentioned, which often face operational and economic difficulties.

Negotiation and prevention of material prices: It is suggested that alliances between technical advisors and construction materials suppliers can help families anticipate increases in material prices, improving resource management in construction projects.

Financial risks and credit inquiries: The importance of credit inquiries to assess risk in loans is discussed, with conditions varying according to the applicant's credit profile.

Economic impact on construction projects: It mentions how increases in the cost of materials can force executive projects to be adjusted to maintain the economic viability of constructions.

Bureaucratic and technical challenges in construction: Criticism is given to bureaucratic and technical incompetence that affects the safety and quality of housing, highlighting the importance of appropriate regulations and procedures.

Universal need for architectural services: It is argued that architectural services, such as executive projects and structural calculations, are necessary in all economic sectors, not only as a luxury, but as a basic necessity.

THE HOUSING SECTOR IN MEXICO IS FACING NOT ONLY A FINANCIAL CRISIS, BUT ALSO A STRUCTURAL CRISIS, WHERE DIFFERENT ACTORS HAVE DIFFERENT OBJECTIVES AND LANGUAGES, WHICH MAKES EFFECTIVE COOPERATION AND ACCESS TO ECONOMIC RESOURCES DIFFICULT.

Annex 3. Desk research on financing products for the self-production value chain of housing in Mexico

Public financing

CONAVI

The National Housing Commission or CONAVI[20] is a government institution that "provides housing support and subsidies aimed at those who need it most," prioritizing families living in conditions of housing arrears, high marginalization rates, high rates of violence, people with disabilities and indigenous populations.

From 2019 to 2020, the Urban Improvement Program[21] (coordinated by SEDATU) was operated, seeking to carry out comprehensive interventions to improve the living conditions of the target population; in the area of Housing[22] in urban areas (interventions for housing in urban lots, improvement of housing units and housing in housing complexes). It operated in border and tourist areas. The program is active, but CONAVI is no longer involved.

From 2019 to 2023, work was carried out on the National Reconstruction Program[23], in its Housing component, granting subsidies for partial or total reconstruction to communities affected by the earthquakes of 2017 and 2018. It focused on the central-southern region of the country. CONAVI received "requests for visits to assess damages", which were submitted individually to the CONAVI Parts Office or the Welfare Integration Centers.

The Social Housing Program (previously called the "Program for Access to Financing for Housing Solutions") is the Program that is still in force within CONAVI. It offers subsidies to the low-income population that is in housing arrears or in need of housing and without access to sufficient resources or financing. It has 3 operating schemes:

A) 100% CONAVI subsidy: granted directly to the beneficiary, not associated with credit or subsidy from another entity, to cover housing needs and address the housing shortage conditions of the priority population.
B) Co-financing: the combination of contributions from different sources of resources for the correct execution of the housing intervention.
C) Housing Emergence: Created to reactivate local economies and generate employment in the housing construction industry.

The Emergency Housing Program, which was actually a project, was operated to address improvements and expansions during the pandemic. In 2023 it was called the "Program for Better Housing," but both are part of the Social Housing Program – they were called Programs – although they are Projects – to give them an identity with the population.

CONAVI points out that for the application of the subsidy, priority is given to the participation of beneficiaries in the processes of Social Production of Assisted Housing, with support and accompaniment from qualified technical assistance.

Checking what is described in the Sectoral Strategy for Self-Production 2023-2024, a document that seeks to promote self-production as an effective alternative for housing needs and to improve the quality of life, it is ensured that 71.64% of homes need improvements, 12.02% need expansions and 16.33% need replacements[24]. Therefore, it is not surprising that the vast majority of subsidized housing actions focus on improvements and expansions of homes, and not so much on the construction of new housing.

FOVISSSTE

It is a financial institution that grants housing loans to workers in the service of the State. Within its product portfolio, it offers "Build your house"[25] , a mortgage loan for self-construction assisted by construction professionals.

It can be used for individual construction on land, with 100% of the amount for construction; or individual construction with land acquisition (35% for the purchase of the land and 65% for the construction of the house). It has an interest rate that ranges from 4 to 6% and a maximum payment term of 30 years. A financial institution[26] is responsible for formalizing the credit.

SHF

Sociedad Hipotecaria Federal (SHF[27]) is a Mexican government institution that promotes the development of housing markets through guarantees and other financial instruments for the construction, acquisition and improvement of housing.

It is a bank that promotes primary and secondary housing markets that, in the case of financing for self-production of housing, offers[28], both to individuals and to financial entities, and through banks, SOFOMEs, SOFIPOs, Credit Unions or Savings Entities, financing for the construction, improvement or expansion of housing through a Housing Production Agency (APV).

The SHF credit line[29] allows financing of the land management process, the construction and distribution of housing under the direct control of the final borrowers (either individually or collectively) through the contracting of the APV.

Financial Institutions[30] seeking this line of credit must meet certain eligibility criteria[31], including:

-For non-regulated entities: equity of $15,000,000
- For regulated entities: equity of $8,000,000
- Portfolio of less than $30,000,000
- Non-performing loan index (IMOR) less than 10%

INSUS

As presented in the study Self-production of adequate housing: *"One of the main challenges in the self-production process is that many of the people who need to build, improve or expand a home live in informal settlements and, not having legal certainty of their land, cannot access credits, subsidies, support programs or other benefits. In order to support families in going through this process, the first thing the National Institute of Sustainable Land (INSUS) must do is identify which land is suitable for regularization and which is not [32]."*

INSUS[33] plans, designs, directs, promotes and executes programs, actions, projects, works or investments for the management and regularization of land with criteria of territorial, planned and sustainable development.

Through the Program to Regularize Human Settlements[34] (PRAH), INSUS offers a support instrument that allows access to the formality and legal security of plots. This support applies to polygons where INSUS has the power to regularize, supporting the population that does not have legal certainty about the plot they occupy and that has a degree of urban marginalization (from low to very high).

Private financing

INFONAVIT

The National Workers' Housing Fund Institute (INFONAVIT) was created with the aim of fulfilling the right to housing for workers, which was established in the 1917 Constitution. It is a national benchmark in the placement of financial solutions with mortgage loans, with the participation of 74% of the traditional market, according to figures from 2016.

INFONAVIT offers 3 alternatives for construction[35]:

a) INFONAVIT Credit (Line III): This is a credit of up to $2,716,334.54 (depending on the beneficiary's ability to pay) and a rate differentiated by salary level. If requested with a spouse, a higher amount may be obtained. INFONAVIT offers a list of construction professionals registered to carry out the work.

[20] https://www.gob.mx/conavi/es/que-hacemos
[21] https://mimexicolate.gob.mx/preguntas-frecuentes/
[22] It granted subsidies for improvement, expansion, construction, sustainability or auxiliary productive space. For more information see: https://dof.gob.mx/nota_detalle.php?codigo=5562218&fecha=07/06/2019#gsc.tab=0
[23] https://www.gob.mx/conavi/acciones-y-programas/programa-nacional-de-reconstruccion-componente-de-vivienda
[24] SEDATU (2024), Sectoral Strategy for Self-Production: Collaborative actions in the territory to promote the self-production of adequate housing, P.32
[25] https://www.gob.mx/fovissste/acciones-y-programas/creditos-hipotecarios
[26] https://entidadesfinancieras.fovissste.gob.mx/faces/xhtml/busqueda/busqueda_inicio.xhtml
[27] https://www.gob.mx/shf/que-hacemos
[28] https://www.gob.mx/shf/acciones-y-programas/financiamiento-para-autoproduccion-asistida
[29] https://www.gob.mx/shf/documentos/86568
[30] During the information gathering process, an interview was held with one of the Self-Production Financial Entities endorsed by the SHF: https://www.gob.mx/shf/documentos/entidades-financieras-autoproduccion
[31] https://www.gob.mx/shf/documentos/86567
[32] SEDATU (2021), Autoproducción de vivienda adecuada en México, GIZ, p.64
[33] https://www.gob.mx/insus/que-hacemos
[34] https://www.gob.mx/insus/acciones-y-programas/programa-para-regularizar-asentamientos-humanos-prah
[35]https://portalmx.INFONAVIT.org.mx/wps/portal/INFONAVITmx/mx2/derechohabientes/quiero_credito/quiero_construir/!ut/p/z1/jc9BDoIwEAXQs3CC_hYoZUmoYCEW-GkPFbgwrQ6Lownh-MeJCEtTZTfJ-_gxxpCVu6O79sb v1l6E7jfve8QPPgXUaUC2sSGB0rFnJfZUqTnYvoCSoSMFoKBi4sqssKKyfVz5xi3lWJNE7vwzcX_3L4JnHwiQY8-6zoo-qyFCYL-XaDGgjZD1D7czD_gU8gjmVASwFWUw0Ya6hUMkKIYAJfzry em6ZFr_rE8x7x61C7/dz/d5/L2dBISEvZ0FBIS9nQSEh/

b) ConstruYo: allows you to build, expand or remodel in one or more stages through technical assistance or by hiring a construction company. This credit allows you to build any type of property (private, communal, ejidal or derived from a government program) and only the documents that prove secure possession must be presented[36]. This credit has 3 options:

a. Minor Repairs: for minor home improvements, such as replacing windows, flooring, painting, waterproofing, or replacing kitchen or bathroom furniture. Funds are deposited based on the progress of the work, which will be validated by a verifier.

b. With technical advice: for improvements that imply damage to the structure, construction of new housing, extensions or reinforcements. INFONAVIT offers a list of registered technical advisors[37] to guarantee the safety and quality of the work. In this modality, a bricklayer can be hired, and the decision can be made as to where to buy the materials, provided that the times and costs agreed upon in the project carried out with the technical advisor are met. A verifier will validate the work in order to receive the resources.

c. With a construction company: This modality allows you to build a new home, expand, reinforce or remodel by choosing a registered builder[38] who delivers the finished home based on the agreed project. To do this, a contract is signed authorizing INFONAVIT to directly deliver the funds to the construction company, which in turn agrees to carry out the agreed project at an agreed price. A verifier will validate that the builder is carrying out the work within the agreed time frame.

c) Crediterreno: This is a loan that allows you to buy land and build a house with the same loan. To buy the land, 100% of the savings in the Housing Subaccount plus up to 35% of the total loan is considered (without exceeding the lesser of the appraisal value or the purchase price). To carry out the in the case of construction, 65% of the total amount of the loan granted is held, which is delivered in several installments according to the progress of the work determined. If less than 35% of the amount of the loan granted is allocated to the acquisition of the land, the difference can be allocated to the construction. In this loan, the land and the house are used as collateral for payment of the loan (first only the land, and when the construction begins, also the house).

Currently, INFONAVIT offers 4 credit alternatives for remodeling, in addition, in this Administration there was a fifth option (MejOraSi) which is detailed at the end of this section.

The current credit alternatives for improvement, expansion or remodeling are[39]:

a) Mejoravit Repara: This is a non-mortgage loan with an amount of up to $39,606.34, without exceeding 90% of the amount of the Housing Subaccount, and with a fixed annual rate of 10%. You can choose a term of 1 to 5 years for the payment of the loan. This is a loan designed to repair, expand or improve the home without affecting the structure. The funds are granted in two cards: one to use 80% of the amount to purchase from authorized stores and another with 20% to use the cash to pay for labor.

b) Mejoravit Renueva: This is a non-mortgage loan of up to $156,445.03 with a fixed annual rate of 11%, to repair, improve or expand the home without affecting the structure. It operates in a similar way to the Mejoravit Repara product.

c) ConstruYo: This is a loan to expand or remodel a home. It can be done in one or several stages (with one or several loans) and can be applied to any type of property. Depending on whether or not there is damage to the structure, it can be done independently, or through a Technical Advisor or Construction Company. The annual interest rate is 24% and the APR is 26.8%.

d) Equipa tu casa: This is an additional amount, as a complement to the credit for the purchase of a new or existing home, to remodel, improve, repair or equip the home. This credit can only be requested at the time of registration and its maximum amount is $66,010.56. Like Mejoravit, the credit resources are granted in two cards: one with 80% of the amount for purchases in authorized stores and another with 20% to be used in cash for the payment of labor.

MejOraSi: This credit was created to assist beneficiaries who are not paying contributions. The amounts are received in two installments: 50% for labor expenses and the other 50% on a card to buy materials in established places. The maximum amount loaned was up to $145,000 and the credit guarantee was the Housing Subaccount; and a maximum period of 60 months was given to pay monthly at a bank or affiliated establishment.

INFONAVIT provides a list[40] of businesses affiliated with the remodeling credit program.

Other financing avenues for the development of self-production in Mexico

The Mexican financial sector has a series of institutions that serve the most vulnerable segments, even though financial inclusion remains one of the major pending issues in Mexico: gaps persist, which are more noticeable in rural areas and with high levels of social backwardness. According to information published by the National Banking and Securities Commission (CNBV) in the Annual Panorama of Financial Inclusion 2023 (with figures as of December 2022)[41], there are 152 municipalities with very high social backwardness, and of these, 106 do not have branches of any financial institution.

As a measure to reduce social backwardness and as a factor that allows promoting equity, the population living in these municipalities must have access to financial services, in order to have more elements that allow them to overcome the backwardness in which they find themselves. To this end, the financial intermediaries of the Popular Savings and Credit Sector play an important role in serving this population, by virtue of the fact that they have more experience operating with the population of municipalities with these characteristics. Community Financial Societies (SOFINCOS), Savings and Loan Cooperative Societies (SOCAPS) and Popular Financial Societies (SOFIPOS) are some of the alternatives to serve this population. These institutions have been focused for more than 70 years on meeting the needs of savings and credit services of a segment of the population that, for the most part, is not served by traditional banking.

According to information published by the CNBV as of December 2022[42], SOCAPS and SOFIPOS managed 22.1 million deposit accounts, representing 15% of them, and granted 9% of the financial system's loans.

As will be seen below, not all avenues for private financing of self-produced housing are offered through specific loans or products. In many cases, it is recognized that families use consumer loans or productive loans for the production, construction and equipment of housing, or all of them.

[36] In the case of Private Property: Public deed, Title of property, Certificates or evidence of fiduciary rights, Irrevocable power of attorney contract, Private sales contract, Agreement, convention or contract of Assignment of rights, Donation contract, Award of inheritance or legacy, Ad perpetuam Information , Judicial or Administrative Registration Resolution, Court Rulings.
In the case of Property Subject to the agrarian regime: Title, agrarian certificate or land rights certificate or proof of minutes of an assembly approved by the Agrarian Attorney's Office and registered in the National Agrarian Registry, Title, certificate or proof of acquisition of full ownership from the national registry, Transfer of agrarian rights, Minutes of the General Assembly and/or Certificate from the Ejidal or Communal Commissioner granting possession, Certificate of the titling process by institutions authorized to regularize land ownership, Judgment or judicial resolution on agrarian matters.
In the case of Property of Public Agencies and Entities: Deed, certificates or contract of delivery receipt of the lot, land or dwelling by the public agencies or entities. For more information: https://portalmx.INFONAVIT.org.mx/wps/wcm/connect/3dbd5a03-09c3-4ad2-81c4-14c862f98901/poisesion_segura.pdf?MOD=AJPERES&ContentCache=NONE&CACHE=NONE&CVID=ngxNHpV

[37] https://portalmx.INFONAVIT.org.mx/wps/wcm/connect/3e044684-398a-4732-b7e6-35b2d3256474/ASESORES_TECNICOS_MAYO2024.pdf?MOD=AJPERES&ContentCache=NONE&CACHE=NONE&CVID=o.5Gv3w

[38] https://portalmx.INFONAVIT.org.mx/wps/wcm/connect/77be4b50-5554-4955-b0a6-fe3729e76ea0/CONSTRUCTORAS_MAYO2024.pdf?MOD=AJPERES&ContentCache=NONE&CACHE=NONE&CVID=o.5GAdm

[39] https://portalmx.INFONAVIT.org.mx/wps/portal/INFONAVITmx/mx2/derechohabientes/quiero_credito/quiero_remodelar/!ut/p/z1/lZDNDoIwEISfxSfotvSPI6GChchPjIC9GE6ERNGD8fkIGBOjtuDetvmmMzvIoAaZob33XXvrL0N7 GveD4UceA2xCir NcRCGUEeO7LRTjG0f1E9AKsAyBYCYJcF2tI5pUXpx7yLzrZSUDKDM_Iyn3SBKII94O2PU61NypnwCzKL_Nny_z931FcSqBFDgDKKsSK60EMKDL9GCZAP68__tA4_6-RsZZESMzQOF9Aj86nABXS /

[40] https://portalmx.INFONAVIT.org.mx/wps/portal/INFONAVITmx/mx2/derechohabientes/quiero_credito/quiero_remodelar/comercios/!ut/p/z1/jZDPDoIwDIefxSdYO8f-HAkEmWSTxQC6i-Fklih6MD6_JISDJg56a_P92vQjnpyIH_p3uPav8Bj629ifPb9wnQPKDGhZCgWcFY6ZFtEYJN0E7ADKjKGVrUzBWWVpxbd0n3Li1-SVyhlWEmiNFsC1DnOdC0iArcvD-n0phXT4C-Pj6jvjpx-GzgIIoMXJHwo4F6nPFf4EuRlkijwOhQLAHziZjFpT-e96ZpThB00JsPJ3VRmg!!/dz/d5/L2dBISEvZ0FBIS9nQSEh/

[41] Comisión Nacional Bancaria y de Valores, Panorama Anual de Inclusión Financiera 2023, noviembre, 2023. Disponible en: https://www.cnbv.gob.mx/Inclusi%C3%B3n/Anexos%20Inclusin%20Financiera/Panorama_2023.pdf

[42] National Banking and Securities Commission, Annual Overview of Financial Inclusion 2023 with data as of the end of 2022 available at: https://www.cnbv.gob.mx/Inclusi%C3%B3n/Anexos%20Inclusin%20Financiera/Panorama_2023.pdf

Banca Afirme
Banca Afirme's Real Estate[43] SME is a simple loan designed for SMEs that wish to acquire premises, offices, warehouses, land or build and remodel on SME land.

Fixed annual ordinary interest rate: 15.50%, with a term of 7 years, with loans from $1,000,000 to $15,000,000.

Your Casa Afirme Construcción finances 100% of the project, and you can have the credit with 0% progress in construction and a term of up to 20 years to pay it with an annual rate of 11.10%.

For non-salaried employees, the following is requested: 6 months of bank statements and formal proof of employment.

HIR Casa
At HIR Casa[44], loans are offered for amounts ranging from $300,000 to $15,000,000 with monthly payments starting at $7,700 for each million. It is an attractive option since they adapt to the income profile and credit history without too many requirements.

The main differences with other financing options are:
1) They are an alternative for many people in Mexico who are not served by banks or are looking for personalized advice and attention.
2) They are flexible with income verification and credit bureau.
3) HIR Casa's initial monthly payment is the lowest on the market at $7,700 per million and allows for early payments without penalty.

For people without a formal employment relationship, they are required to show proof of at least 3.5 times the monthly payment. They request a 33% down payment for any housing solution.

Bien para Bien
It is a financial institution[45] that offers liquidity loans to remodel a home from $200,000 to $5,500,000. They require a lien-free guarantee, being between 18 and 60 years old and having an income of more than $16,000 per month.

Fincomún
With its product Crédivivienda Fincomun offers a loan to improve your home without prior savings and with fixed payments. It is a loan of up to $50,000 for individuals with their own business or with their own or family home. It has an average APR of 158.6% and they request proof of economic activity that demonstrates payment capacity.

Caja Huastecas
As a savings bank, it offers a range of products, including two linked to housing:

Mortgage loan[47]: with a maximum amount of up to 850,000 UDIs and a term of up to 120 months for individuals with or without business activity and up to 71 years of age. They request a guarantee whose value is in proportion to 1.5 times the amount of the loan. The fixed annual ordinary interest rate is up to 21.60% before VAT and the CAT is 20% without VAT.

Mortgage loan for housing[48]: for the purchase, remodeling or construction of housing. It is intended for individuals who have been employed for more than 3 years, with a maximum amount of 850,000 UDIs for a term of up to 20 years. The mortgage guarantee will be the home itself that is acquired, improved or built. The fixed annual ordinary interest rate is 12% and the average APR is 12.9%.

Caja Dr. Arroyo
It offers a loan (Sueño mi Vivienda[49]) to purchase, remodel or build a home with free technical advice. The loan allows you to buy the land or furnish the home. It is a loan of up to $1,000,000 with a term of up to 96 months to pay and a fixed annual interest rate of up to 26% before taxes; and a fixed annual default rate of 31% before VAT. The APR is 24.80% before taxes. To obtain this loan you need a mortgage guarantee.

[43] https://www.afirme.com/afirme
[44] https://hircasa.com.mx/
[45] https://bienparabien.com/
[46] https://www.fincomun.com.mx/credito/
[47] https://cajahuastecas.org/site/index.php/prestamos/credito-hipotecario
[48] https://cajahuastecas.org/site/index.php/prestamos/prestamo-para-vivienda
[49] https://www.cajadrarroyo.com/sueno-mi-vivienda/

In addition, the loan offers an Ecocredit[50] of up to $100,000 for the acquisition and installation of "ecological" equipment. The loan has a maximum term of 36 months and an ordinary interest rate of 16% fixed per year before taxes and a default interest rate of 17%.

Innovando Casa
It is a construction company for remodeling, improving or building housing on its own land[51]. They offer advice and project design, management and obtaining of credits and construction. They offer "packages" quoted in prices per square meter that include material and labor "from the foundations to turnkey."

SMB Financial Morelos
It is a Community Financial Company (it carries out operations in municipalities of Morelos) specialized in the rural area and that seeks to promote the area through financial products adapted to the low-income population.

Among their products are loans for home improvements.

"Credivivienda"[52] is a complementary financing for the purchase, expansion, repair or construction of a home. The maximum amount is $200,000 and the maximum payment term is 36 months. The interest rate is 2.5% per month and a joint guarantor is required.

Ictineus
It is a regulated financial entity (Sociedad Financiera Popular, SOFIPO) that develops financial products to boost the businesses of its partners.

"Mi Credi"[53] is a simple loan for individuals, salaried employees, located in rural and suburban areas who "carry out productive activities or perform any legal activity" and require productive, consumer or home remodeling credit.

It is a short-term product with relatively low amounts that is granted to people who prove a fixed income. It is designed as a consumer loan with amounts up to $60,000 and up to 24 months with weekly, biweekly or monthly payments. The annual interest rate is 144% without VAT and the average APR is 269.3% without VAT.

UNAGRA
It is a Popular Financial Society that was born as a Credit Union in 1992. It has mainly supported the sugarcane activity. They have a portfolio of products that includes the "Personal Mortgage Loan[54]" intended for the acquisition and/or payment of liabilities of a house for residential use. They finance from $100,000 to $3,000,000 and up to 90% of the value of the project.

The loan term is up to 240 months and advance payments can be made without penalties. Mortgage guarantees on the property, damage insurance and insurance on the outstanding balance of the loan are required. They have a fixed annual rate of 9% without VAT.

Its portfolio also includes the "Personal housing loan for improvement, expansion and construction" which is intended for employees, workers, sugarcane workers and suppliers of the mill for the improvement, expansion and construction of housing, acquisition of housing or payment of housing liabilities in rural areas.

They finance up to $400,000 for employees and workers and up to $150,000 for other clients. The maximum term is 18 months and can be requested up to the age of 87. It has an annual variable interest rate without VAT TIIE + 12pp.

Mercado Servicios Financieros
It is a Community Financial Society that was born as a Solidarity Fund, whose members are 70% linked to agricultural, fishing and livestock activities - with an entirely rural vocation.

Among their personal loans is the Housing loan[55], which allows for the expansion or remodeling of the home. It can be paid in installments based on the har-

[50] https://www.cajadrarroyo.com/ecocredito/
[51] https://innovandocasa.com/servicios
[52] https://www.smbmorelos.com/vivie.php
[53] https://ictineo.com/mi-credi/
[54] https://unagra.com.mx/#/creditos-personales
[55] https://mercadosofinco.com/

vest dates or within a period tailored to the members (up to 36 months). They require a liquid guarantee of 20%.

Amexta
Although they do not offer specific housing loans, they are a non-profit association that promotes the comprehensive transformation of marginalized communities in Mexico, empowering community leadership – with a strong gender component – and local participation. Their axes are gender equity and support in personal processes.

Through Amextra Finanzas[56], they support savings, individual or solidarity credit, and comprehensive training for entrepreneurs. As a "socially responsible financial institution," the income is reinvested in community development programs to improve the environment of its clients.

Currently offers:
- CrediNegocio
- CreiPersonal
- CrediMujer
- AgroCredit
- CrediApoyo
- CrediEstabilizate

Information on self-production financial entities endorsed by SHF

Aprecia Financiera
Aprecia offers the Aprecia Tu Vivienda[57] product as a financial solution that allows you to obtain a "turnkey" home in 4 months on a plot of land. To do so, you need to work for a company or institution that has an agreement with Aprecia Financiera. Part of its benefits is technical advice and construction through certified construction companies. It is a loan with a maximum term of 60 months and an average annual interest rate of 27.36% and a Total Annual Cost (CAT) of 35.50% without VAT.

There is also the Aprecia Tu Patrimonio product, a financing to buy a lot with services with a credit term of 12 to 48 months. In this case, the average annual interest rate is 14.88% and the CAT is 81.6% without VAT.

And finally, they have Aprecia Construmas, a financing for remodeling or improvements with a credit of up to $30,000 for construction materials purchased at Construrama. It is a 6, 9 or 12 month credit with an average annual interest rate of 75% and an average APR of 129.50% without VAT.

LI Financiera[60]
It offers loans for home improvements or expansions, aimed at individuals and with weekly payments. They lend up to $70,000 with a term of up to 36 months and a regular interest rate of 62% per year plus VAT and an average APR of 83.10% without VAT.

LI Financiera is linked with "Sister Companies" such as LI Desarrollos (whose main activity is the construction and marketing of residential properties and has carried out more than 2,350 solutions in the 2014 self-production and housing improvement program) and LI Services (a company incorporated in the United States whose main activity is the granting of loans, as well as consulting and business management services. Its business model is based on "a scheme of direct attention to Mexican citizens residing in the United States of America, so that, through financing granted in accordance with North American regulations, obligations contracted in Mexico are paid, as a result of loans for self-production, improvement or expansion of housing)". It also has "Mano con Mano"[61], promoted as an alternative to improve the quality of life of your family through loans to expand, equip or finish the home.

Acreimex
The Cooperative offers certain public information through its website[62] and it was possible to compare it with the information sent following one of the interviews conducted.

According to public information, the Housing Loan is a loan for home improvements and/or expansions for individuals who are members of the cooperative. The loans are up to $200,000, with a payment term of up to 60 months and an annual interest rate of 21% before taxes, and a default interest rate of 73%.

Based on the information received after the interview, we learned of 3 additional aspects, or those not published online, of the Housing Credit:
- Acreivivienda: with amounts from $200,000 to $20,000,000, and weekly, biweekly, fortnightly or monthly payments. With a differentiated rate of 19% and 17% per year without VAT depending on the amount borrowed. Payment terms are from 1 to 120 months and require 5% of liquid guarantee and mortgage guarantee.
- Improvement and/or Expansion: with amounts from $3,000 to $300,000 with weekly, biweekly, fortnightly or monthly payments. With an annual interest rate of 21% plus VAT and a term of 6 to 84 months. They request 10% of liquid guarantee and endorsements according to the conditions of the product.
- Ecological Credit: with amounts from $1,000 to $50,000, with weekly, biweekly, fortnightly, or monthly payments and an annual rate of 18% plus VAT: Payment terms are from 6 to 36 months and require 5% liquid guarantee and endorsements according to the conditions of the product. This credit product allows the purchase of:
  - o Water: water heaters, cisterns, water tanks, water storage tanks, domestic motor pump, deep well, water purification filters, hydraulic connections.
  - o Sanitation: construction or remodeling of bathroom, bathroom accessories, shower, faucets, sinks, electrical connections and pipes, latrines, septic tanks, biodigesters and drainage connections, sanitary connections.
  - o Eco-techniques: purchase of solar panels for lighting and ecological stoves
  - o All those products for the home that contribute to the conservation of the environment

Other sources of financing for self-production (technical assistance and materials)

Following the interviews conducted within the framework of this research, the financial support received by NGOs through International Cooperation (mainly mentioning GIZ) was mentioned repeatedly[63].

CEMEX Patrimonio Hoy
Patrimonio Hoy is a CEMEX company with a progressive housing construction and improvement program[64]. They have a savings-credit scheme and architectural advice that allows for the progressive construction and improvement of homes.

It is done through affordable weekly payments to have the necessary materials for construction. It also includes architectural advice, a financing plan and materials available at Construrama.

The program includes advice that allows you to plan the materials that will be used throughout the construction period, the materials are delivered to your home, and you have attention and service throughout the project.

The housing consultancy they offer seeks to define which materials and in what quantity will be used in the project in order to avoid material waste. The products resulting from this consultancy are:
- Sketch
- Construction tips by construction stage
- Quantification of material by stage
- Estimated budget of materials by construction stage

You can hire only the housing counseling and not include the weekly payment plan for the delivery of materials.

The published costs as of June 2024 are as follows:
- Survey and quantification of construction project of up to 48 m2: $900
- Construction project design: cost per m^2

[56] https://www.amextra.org/servicio-amextra-finanzas/
[57] https://aprecia.com.mx/aprecia-tu-hogar/
[58] https://aprecia.com.mx/aprecia-tu-patrimonio/
[59] https://aprecia.com.mx/aprecia-construmas/
[60] https://lif.com.mx/
[61] https://www.manoconmano.mx/
[62] https://acreimex.com.mx/credits
[63] https://www.giz.de/en/worldwide/33041.html
[64] https://www.patrimoniohoy.com/

- Guidance for procedures and permits: $690
- One supervision visit during the project: $690

The material can be received in a single delivery or in partial quantities depending on the products chosen.

Alphamundi
It is an organization[65] founded in 2007 and based in Geneva, dedicated to impact investments with benefits for society. Since 2017, it has integrated gender analysis into its investment processes (with an explicit effort to promote SDG 5 on gender equality and women's empowerment).

World Impact Foundation
Provides financial support[66] to organizations working to eradicate poverty (around education, energy, food, healthcare, housing and water).

It is for organizations with a minimum of 3 years of operation, and minimum revenues of $250,000 USD, that work in Latin America, with an experienced management team aligned with the impact of the Foundation's objectives and offer financing between $50,000 USD and $500,000 USD.

Rockerfeller Foundation[67]
It is a philanthropic foundation that promotes well-being by seeking and expanding solutions that drive opportunities and reverse the climate crisis, including self-produced housing in rural regions.

Clinton Foundation[68]
It is an operational foundation that expands economic opportunities to improve public health and address the climate crisis on issues including housing and sustainable urban planning.

Linda Vista Foundation
The Linda Vista Foundation[69] was formed to improve the quality of life of people by providing grants and loans to our partner organizations primarily for community development, education, and locally driven projects. They offer grants or loans for agriculture, community development, education, job training, healthcare, nutrition, or clean water.

Other institutions linked to the promotion and/or financing of self-production

Construyendo y Creciendo: Responsible for providing education to construction workers[70], this can be an interesting forum for offering technical training, construction systems and sustainability.

Mejoremos[71]**:** They provide technical advice, training and technical and social support to build, expand, remodel and improve housing.

Habitat for Humanity[72]**:** A non-profit civil society organization that promotes the recognition of housing as a fundamental human right, develops communities, and mobilizes resources, volunteers, and allies to make access to adequate housing possible for low-income families. To achieve this, they implement the social housing production system, in close collaboration with the families and communities they support. They support self-construction, rehabilitation, and housing improvement, offer technical advice, provide training on social issues, and connect through market development and alliances so that families can access tools and resources to improve their homes.

New Story[73]**:** Since land is expensive and limited, there is no accessible financing for the population with informal jobs and families take more than 25 years to improve their homes, they propose solutions to make land accessible for the purchase, construction or financing of housing in Latin America through 3 major strategies: (1) Development and sale of equipped land for families, (2) Use of land as collateral for housing financing (either through a housing prototype or self-production) and (3) Development of housing products according to the different regions and bioclimates.

[65] https://www.alphamundigroup.com/
[66] http://worldimpactfoundation.org/
[67] https://www.rockefellerfoundation.org/
[68] https://www.clintonfoundation.org/
[69] https://lindavistafoundation.org/
[70] https://construyendoycreciendo.org/home/#
[71] https://www.mejoremos.com.mx/
[72] https://www.habitatmexico.org/habitat-mexico
[73] https://www.newstoryhomes.org/

MARKET RESEARCH FOR HOUSING FINANCING SYSTEMS IN MEXICO

Consultorio Arquitectónico para Vivienda: This is an initiative that seeks to integrate architects with the popular and low-income sectors. David Mora's proposal[74] seeks to be located in the public space to offer: "architectural consultations", visits and project development.

The "architectural consultations" resolve the doubts of the neighbors in the same public space where the Clinic is installed. The visits are an assistance on site to resolve specific doubts on site and the development of projects and plans are carried out in 4 stages: survey and needs, first proposal, feedback, and final project with a construction "recipe".

Bhauss: It is a crowdsourcing platform[75] that connects architects and designers who offer ideas for designs at affordable prices.

The product received is a preliminary project that serves as a guide to make a better investment in the project you are looking for (improvement, expansion, construction, etc.).

HOUSING PROGRAMS ARE MORE INFLUENCED BY POLITICAL CRITERIA (FOCUS ON AREAS WITH STRATEGIC PROJECTS OR PROGRAMS OF THE PRESIDENCY) THAN BY REAL NEEDS, WHICH CAN AFFECT THEIR EFFECTIVENESS AND LONG-TERM SUSTAINABILITY.

[74] https://www.2wcavi.com/
[75] https://bhauss.com/

TABLE 6.
COMPARISON OF AVAILABLE PRODUCTS (AMOUNTS IN MXN)

Institution	Program or product	Description	Component	Rate	Amount
CONAVI	Social housing	Self-production of housing	New housing		$330,053.00
			Housing extension		$165,026.50
			Home improvement		$82,513.25
		Housing reconstruction	Total		$330,053.00
			Partial		$165,026.50
			Rehabilitation of housing with heritage value		$412,566.25
		Housing relocation	Land acquisition		$283,845.58
			New housing		$330,053.00
			Housing for relocation		$462,074.20
		Improvement of Housing Units (common areas)			$13,202.12
INFONAVIT	Line III	Mortgage loan for construction on own land			$2,716,334.54
	ConstruYo	Non-mortgage loan to build, expand or remodel a home	Minor repairs	26.8%	$92,414.00
			Technical advice		$660,105.00
			Construction company		$660,105.00
	Crediterreno	It is a loan that allows you to buy land and build a home with the same loan.		6.5-11.00%	$2,828,454.00
	Mejoravit	Non-mortgage loan to expand or improve the home with or without structural damage	Repair	10.00%	$39,606.34
			Renew	11.00%	$156,445.00
			Minor repairs	11.00%	$39,606.34
	Equipa tu casa	Credit supplement (requested at the time of credit registration) to remodel, improve, repair or equip the home		Not available online	$66,010.56
	MejOraSi	Credit to serve the population that is currently not contributing, for the purchase of materials and payment of labor for home improvement or remodeling.	Product not valid	NA	$145,586.29
FOVISSSTE	Construye tu casa	Mortgage loan for self-construction assisted by construction professionals	Construction on own land	4-6%	$1,419,226.10
			Acquire land and remainder for housing		

Institution	Program or product	Description	Component	Rate	Amount
SHF	Lot with services	Acquisition		Not available online	$1,070,036.00
	Home improvement				$70,000.00
	Self-production of housing				$627,100.70
INSUS	Program to regularize human settlements				$13,500.00
Afirme	SME Real Estate			15.50%	$1,000,000.00 - $15,000,000.00
	Tu Casa Afirme Construcción			11.10%	$200,000.00 - $10,000,000.00
HIR Casa	Build or Remodel			Not available online	$300,000.00 - $15,000,000.00
Bien por Bien	Mortgage			13.75%	From $500,000.00
FINCOMÚN	Credivivienda Fincomún			158.60%	$50,000.00
Caja Huastecas	Mortgage Credit			21.60%	850,000 UDI (Aprox. $6,625,665.00)
	Home Mortgage Loans			12.00%	850,000 UDI (Aprox. $6,625,665.00)
Caja Dr. Arroyo	Sueño mi vivienda			26.00%	$1,000,000.00
	Ecocredit			16.00%	$100,000.00
SMB Morelos	Credivivienda			30.00%	$200,000.00
Ictineo	My Credit			144.00%	$60,000.00
UNGRA	Personal mortgage loan			9%	$100,000.00 - $3,000,000.00
	Personal housing credit for improvement, expansion and construction			Aprox. 23.24%	$150,000.00 - $400,000.00
	Personalized housing credit			Aprox. 23.24%	$10,000.00 - $400,000.00
Aprecia Financiera	Aprecia Tu Vivienda			27.36%	Not available online
	Aprecia Tu Patrimonio			14.88%	Not available online
	Aprecia Construmas			75.00%	$30,000.00
LI Financiera	Housing Improvement			62.00%	$70,000.00

Institución	Programa o producto	Descripción	Componente	Tasa	Monto
Mano con mano	Expand, equip or finish your home			Not available	$70,000.00
ACREIMEX	Housing credit	Acreivivienda		21.00%	$200,000.00 - $20,000,000.00
		Improvement and/or Expansion		21.00%	$3,000.00 - $300,000.00
		Ecological Credit		18.00%	$1,000.00 - $50,000.00

Annex 4. Classification of responses received

After systematizing the 33 interviews conducted, the responses were classified into the following categories:

- Academia: identified by responses that highlight various deficiencies that affect the comprehensive development of students. Broadly speaking, this category identifies the lack of adequate academic exercises and insufficient social service that limit the practical acquisition of knowledge. In addition, it is said that the study plans present significant deficiencies in the provision of necessary tools for students, preventing their adequate preparation to face specific professional contexts such as self-production of housing. Teaching is not sufficiently oriented towards practical application, which results in a lack of knowledge of the processes, technical language and needs of the work environment of this type of housing. Likewise, a lack is observed in the teaching of fiscal and business aspects, as well as in the effective use of sustainable materials. Finally, responses were detected referring to a notable discrepancy between the established educational plan and academic freedom, which affects the consistency and quality of the education provided.

- Bureaucratic: the responses that are directed towards the various problems that negatively impact the efficiency and profitability of administrative processes are highlighted. Complex audits and administrative processes, together with the lack of adequate direction from the government or the ONAVIS and the absence of resources, contribute to the ineffectiveness of the system. Included in this category are those responses related to the time taken to accredit payment methods that are tedious and lengthy. As well as those responses that had to do with the large number of bureaucratic controls and the increase in operating costs. Included here were responses related to complaints about prior work not quantified or adequately paid in the processes with the authorities, such as the ONAVIS. In addition, responses related to the processes that result in the financing of services or products due to the long administrative payment times, without guarantees for the work carried out before the formalization of the credits, were included. Broadly speaking, this category included those administrative processes that were reflected in a slowness in the administrative processes of the ONAVIS, especially in relation to the secure possession of properties.

-Certainty of ownership (land): This category included those responses that stressed the fundamental importance of ensuring certainty of land ownership – whether to avoid speculation or price increases – as well as matters related to serviced lots, intermediaries and officials who ensure that land transactions are carried out in a legal and transparent manner.

- Professional certainty: includes all responses that highlight the problems that design or architecture professionals face as significant risks related to the protection of their work. Included here were responses that referred to the fact that people often keep designs without going ahead with the contract and how this lack of certainty and professional security is reflected in the lack of remuneration for the services provided. This is reflected in a lack of mechanisms that ensure the reliability and continuity of the projects developed (guarantee payment for services and protect intellectual property).

- Communication and dissemination: This category includes responses that identify the shortcomings that hinder the efficiency and effectiveness of dissemination and communication in the sector; for example, dissemination of the location and activities of groups that allow for the non-duplication of efforts and the lack of synergies between supply, demand and authorities. This category includes responses related to the publication and constant updating of supply (technical assistants) and demand (target population) lists. This category includes responses related to the significant disconnection between supply and demand aggravated by the lack of constant dissemination of regulations or acquired knowledge, the appropriation of processes, among others. This category includes responses that highlight the fact that there is information (web pages) that are not necessarily the appropriate channels for the population, or the gaps or discrepancies in communication for the inclusion of sustainable construction materials or processes. This category also includes responses related to the insufficient dissemination of the products offered by the ONAVIS, the fragmentation of information in the different channels and the fact that third parties (generally service providers such as architects or construction companies) must compile the information to offer it to the public. Responses are also made about the lack of a didactic approach to the appropriation of acquired knowledge and the adequate transmission of best practices.

- Coordination: this category includes responses that highlight the importance of the link between organizations, financiers, technicians, communities and authorities; also those related to the strengthening of Colleges of Architects. It includes responses that seek to include the coordination of the different technical, social and financial tools in the self-production process, as well as those initiatives that avoid the implementation of isolated actions (seeking the coordination of policies, programs and actions). This category includes responses that required the search for comprehensive mechanisms for financing and payment. Topics such as coordination that allows for the establishment of equitable payments, the alignment of political efforts and the collection of information were included in this category. This category grouped responses that dealt with the consolidation of purchasing strategies for the supply of materials, agreements with local companies and the coordination of the value chain (from government, landowners, financing, service providers and communities). Comments on the coordination of the different donors or sources of financing for NGOs and the efforts they make for the planning and corresponding audits for each type of process; as well as the coordination to generate specific alliances throughout the production chain by the Government for specific projects (such as a natural disaster) were included here.

- Corruption: Responses are taken up again regarding the fact that products that do not have adequate verification or support do not always have the desired impact in reducing the housing shortage and can be used for other purposes. Criticisms related to the delivery of resources (through credit cards) without technical assistance or support, as well as the lack of financial education, cause many families to spend these resources on products that they do not necessarily need. Basically, this category includes responses that highlight how the lack of supervision and control of resources can reduce the effectiveness of the programs and perpetuate corruption problems that affect the correct implementation of this type of housing production.

- Expensive: This category includes responses that highlight the perception that architects are expensive and that supervision, although necessary to ensure the proper use of resources, can be burdensome. The lack of interest of commercial banks in providing financing leads to the need for other sources, while unbanked or informal people face high interest rates. Responses related to the fact that the prices of materials and construction processes influence the type of self-construction housing in unassisted processes are also included, and many small construction materials suppliers depend on credit as a form of financing. This category includes notions such as the fact that costs not only affect the purchase of land, but also how savings are perceived by not using design services, with many indispensable things seen as expenses rather than investments. Responses are included that relate to the fact that families prefer to see their expenses in a tangible way, and small construction materials suppliers struggle to maintain prices over time,

making it difficult to maintain the stability of budgets initially set. This category reflects comments about the fact that the amounts that can be paid for architectural, design or assistance services are limited by the costs of the type of production, and how some comparisons show that the percentages of indirect costs are higher in processes carried out by established construction companies than by technical assistants (MiPymes). The cost of consumer loans compared to mortgage loans and the inability of families to meet the minimum savings for ONAVIS or private banking loans are also critical factors reflected in this category. This category includes responses related to the processes of portfolio recovery, perceived as something difficult and expensive when the flow of resources to families cannot be assured. A recurring theme is the fact that personalized projects are not replicable ("tailor-made"), sustainable materials are expensive initially, and families are not always willing to pay more for them, even if they are more beneficial in the long term.

- Lack of knowledge: This category includes ideas and responses related to the fact that many financial institutions do not understand the production processes for this type of housing, which prevents adequate attention. Also, responses about the resistance to knowing what technical assistance includes, along with a lack of appreciation for design services, without recognizing the profitability or investment they represent. The lack of information or knowledge about the importance of construction processes and ecological or sustainable materials for technical comfort is included as part of this category. In addition, it summarizes responses that revolve around the idea that the value of technical assistance is not recognized, and how recent university graduates are unaware of the forms of payment in stages or do not have the necessary tools to face the production of social housing. Here, ideas are taken up that recognize that the lack of recognition of the savings that can be achieved through technical assistance and the appreciation of technical knowledge are critical aspects that need to be addressed to improve the effectiveness and efficiency of this type of production.

- Democratize: highlights comments that seek to make design and technical assistance services accessible and valued by all people, regardless of economic, geographic or other situation. It takes up those responses that seek to inform or educate the value chain about self-production processes, as well as raise awareness among the population about the importance of this type of services.

- The bricklayer knows more than the architect: it takes up the perceptions or responses that consider that people trust the workforce more due to the practical experience and the direct dialogue they have with clients. It summarizes responses that appeal to the perception that the workforce – personified by the bricklayer – has the experience that allows it to adapt and respond to the immediate needs of people without imposing its criteria. However, it also includes the risks that are perceived in the fact that bricklayers, even though they have valuable knowledge and can give useful recommendations, lack the formal academic and technical knowledge that architects possess, which can imply risks in the execution and durability of projects.

- Lack of resources (subsidies and budget): This includes responses related to the decrease in government resources and subsidies, which has mainly affected NGOs and the economy of communities to obtain housing in less time. The government, in wanting to centralize control, has stopped allocating budget to critical areas. There are conversations about subsidies, which when they exist, are allocated to priority areas for the government and not necessarily where the population needs them. This lack of resources also impacts research and support for technical assistants, who often receive in-kind payments due to the lack of money in the communities. In addition, suggestions are taken up that government subsidies should not be limited only to credit but should also be allocated to cover basic needs such as land, materials, labor or technical assistance.

- Architectural training: related to the "academy" category, in this case it includes discussions about the disparities in the scope and levels of professionalism of architects in the different regions of the country. There are criticisms of the personality and attitudes of architects, especially in contrast to the change of mentality observed in younger professionals, who face different realities and challenges specific to their context. This category also highlights the importance of interdisciplinarity, the integration of technological and fiscal tools, and adaptation to the different scales of architecture and design firms. In addition, the need for ongoing training and cultivating a social vocation that allows architects to adequately respond to the needs of the communities in which they work is emphasized. These dynamics influence ideology and professional inertia, shaping the way in which architectural services are developed and perceived in different parts of the country.

- Guarantees: This category addresses concerns regarding the importance of mortgage guarantees to secure financing for housing projects. Verification and guarantees are essential for financial institutions to be able to grant loans with confidence, ensuring that funds will be recovered. Responses related to the lack of knowledge about repayment sources, and the uncertainty that this generates mainly in financing institutions.

- Informality: This category addresses how the lack of knowledge about the source of income and the ability to pay of people who self-produce their housing makes them an unsafe financial profile. This uncertainty is transferred to the entire value chain, causing intermediaries to assume most of the financial risk. Informality is also reflected in the predominance of cash payments, which further complicates the traceability and security of transactions. These structural factors mean that informality not only affects individual producers, but also imposes significant risks on the entire financial ecosystem involved in self-production of housing.

- Comprehensiveness: This takes up the emphasis received in the interviews on the fact that architecture, design and technical assistance services must be conceived as an integral service that accompanies all phases of self-production of housing. This means that these services must not be limited to a single stage of the process, but must be present and consistent over time, ensuring that the proposed solutions are coherent, sustainable and adapted to the changing needs of the projects and their beneficiaries over time.

- Local: This category highlights responses around the importance of local-level advocacy versus the lack of national impact, stressing that the knowledge and capacities of local actors should directly benefit their communities. The role of municipal authorities is crucial, as their understanding of local needs and contexts allows for better tailoring of solutions, particularly with regard to differences between rural and urban settings. Furthermore, the logistical challenges of covering dispersed localities and territorial penetration are essential to building trust and ensuring the effectiveness of programs. It also addresses the lack of federal support and correspondence to local efforts and how this limits the reach and effectiveness of initiatives. The nature of many construction materials and methods also varies across localities, underscoring the need for context-specific approaches.

- Business model: This category emerges as the most prominent response in the research, focusing on the various aspects that make up the assisted self-production housing value chain. This encompasses the main activities, resources, and value propositions, as well as the relationships with the public, the communication channels, and the specific segments to which this model is directed. The participation and organization of the actors involved, the production processes, the payment dynamics, and the income structure are analyzed, always considering the final product or service that is expected to be delivered. In addition, issues related to location, tax issues, and the procedures necessary for the effective implementation of this business model are addressed, highlighting the importance of understanding and coordinating each of these elements to ensure the success and sustainability of self-production housing projects.

- Non-standardized: This includes responses that address the reality that many self-produced housing projects are unique, designed as "tailor-made suits" that respond to the specific needs and contexts of each community. This includes issues such as the use of ancestral materials and construction systems that do not follow conventional industrial standards, which poses challenges both in terms of uniformity and integration into broader regulatory and logistical frameworks.

- Regulations: This category includes interviews that proposed legal modification and the construction of an institutional framework that responds to the particularities of self-production of housing. It includes responses on the importance of entering into agreements with local governments to facilitate obtaining permits and licenses, as well as the need for specific regulations that adapt to this type of production. In addition, the urgent need to establish normative and regulatory frameworks that facilitate access to popular financing or cooperatives is highlighted, thus promoting a more inclusive environment adapted to the realities of those who opt for this housing model.

- Policies: highlights the responses that revolve around the need to institutionalize self-production of housing and to establish long-term planning that integrates design as a key mechanism for reducing government risks. Both current and past federal programs are discussed, emphasizing the importance of coordination between federal agencies and their relationship with local governments, as well as the effective use of fiscal resources for their implementation. Criticisms point to the design of the programs, pointing out direct and indirect costs as obstacles, and emphasizing that the problem is not limited to financing issues, but extends to public policy in general. A comprehensive approach is advocated that combines credit, subsidies and technical assistance as a guarantee, suggesting that these elements should be pillars in housing policies. In addition, poverty measurement policies and their impact on the adoption of sustainable construction materials and systems are highlighted. The lack of adequate governance and the exclusion of NGOs and technical assistants due to the management of subsidies in this six-year term are also critical aspects mentioned.

- Technology: This covers both the opportunities and challenges associated with digital tools in the field of housing design and self-production. Digital tools, such as design software and online budget calculators, offer the possibility of being more efficient and accurate, but they often have an associated cost that can be prohibitive for some professionals. In addition, although these technological efforts are promising, they are often not effectively implemented on the ground, remaining disconnected from practical realities. At the institutional level, there is frustration with credit platforms, whose processes and procedures, rather than streamlining, tend to slow down time, making it difficult to access and efficiently use technological resources in housing projects.

- Theory rather than practice: This category reflects criticism of current programs that, due to a lack of resources, have remained in the theoretical realm without being implemented in practice. Despite the theoretical advances made during this six-year period, there is a lack of practical applications of the manuals and web pages generated. The information remains in the cloud, disconnected from the territory, which prevents its real impact. It is necessary to delve deeper into the theory already developed and find effective ways to apply it, especially in areas such as climate change, where simulations and good intentions regarding the use of materials and construction systems have not materialized into practical solutions adapted to local reality.

- Customs and habits: This section addresses the responses on the influence of traditional perceptions of masculinity and femininity on the division of tasks (such as price negotiation and physical labor). It also includes responses on the importance of recognizing and respecting the habits and customs of living in different cultures, as well as the aspirations that come with the use of industrialized materials in contrast to traditional materials in some localities. Concepts such as “empathy,” “trust building,” and “bias” are some of those that were classified in this category. Likewise, the relevance of agricultural times in payment planning, material selection, and the periodicity of work is mentioned, highlighting how these traditional practices influence construction processes and experiences.

- Volume: This category included concerns about the lack of volume in the demand for architectural services and the institutional tendency to prioritize the number of loans granted over the quality of housing. This classification included responses to concerns that self-production housing solutions do not have the same media impact as large public space projects, which makes them less visible despite their importance. In addition, those related to the correct scale of intervention are key to considering a project as “profitable” and “sustainable,” even if each solution is unique. Technical advice is linked to the capacity of professionals to manage multiple cases simultaneously, and although these solutions are not massive, their number is significant. It also includes comments on the specific nature and scope of each project and how these make it difficult to replicate in other regions or contexts.

THE COORDINATION OF DIFFERENT TECHNICAL, SOCIAL AND FINANCIAL TOOLS IN THE SELF-PRODUCTION PROCESS IS MENTIONED, AS WELL AS THOSE INITIATIVES THAT AVOID THE CARRYING OUT OF ISOLATED ACTIONS (SEEKING THE COORDINATION OF POLICIES, PROGRAMS AND ACTIONS).

Annex 5. Responses broken down by category

Business model

Not taking into account the research carried out by the Cabinet, which, as mentioned, indicates that informality is one of the structural reasons for the financing problem in general, the business model, with 23.8% of the responses, is the main problem detected in the interviews:

Main response categories during the interviews conducted	
Business model	23.8%
Expensive	9.8%
Coordination	8.5%
Policy	7.0%
Architect’s training	5.8%
Academy	5.5%
Bureaucratic	5.5%
Lack of government resources	5.3%
Local	4.5%
Communication and dissemination	3.8%
Ignorance	3.3%
Regulations	3.3%
Volume	3.0%
Customs and traditions	2.8%
Certainty of ownership	1.5%
Theory more than practice	1.5%
Informality	1.0%
Technology	1.0%
Corruption	0.8%
The bricklayer knows more than the architect	0.8%
Financial guarantee	0.8%
Not standardized	0.5%
Professional certainty	0.3%
Democratizing design	0.3%
Comprehensiveness	0.3%
Grand total	100%

If classified by interviewee profile, for both Architects and technical advisors (18%), Financing Institutions (40%), Construction Materials suppliers (39%) and NGOs (18%), the main responses and conversation revolved around the Business Model.

Social housing production requires the active participation of families, with organization being a key element that cannot be achieved in short periods of time. Individual credits are not effective on their own and must be integrated into a broader system. In this context, the costs of architectural services or related services range from 3% to 10% of the value of the solution. Independent architects need to ensure a constant flow of money to maintain financial stability, which includes seeking credits that facilitate this flow and making initial payments for design services, as well as payment of bonds or guarantees that are required of them to work in existing institutional programs.

To sustain an architectural firm, we are told, it is necessary to have other sources of income, since the professional market is not adequately developed to be profitable.

According to the responses obtained through the interviews, there is a critical stance towards the mass housing model ("package housing") promoted by INFONAVIT in the first decade of the century and the lack of vision for policies and access to the non-entitled population. For some architects, construction companies in Mexico tend to strengthen the Federal Government with the objective of obtaining profits, instead of focusing on the generation of social production housing.

Many NGOs point out that payment methods should be aligned with local agricultural or economic processes (family payment methods), and not with traditional credit or subsidy or government support delivery terms (fiscal budgets).

The financial terms of material loans are often inherited from previous loans, which perpetuates the same limitations ("I give the credit that is given to me"). Including design services also adds value to the loans.

In terms of housing options, ONAVIS usually prefer technical assistance or specialist architects for solutions that are dispersed but close to each other (in the same area or region) and deliver projects to construction companies or housing developers (OEOs) in cases of vertical housing and housing for older adults or with specifications or technical difficulty.

NGOs shared that participatory design must go beyond choosing between two prototypes from a catalogue of possibilities. And in terms of operation, and given the lack of explicit government support, they highlighted donations for catastrophic events in terms of solidarity financing, but they point out that they are not sustainable in the long term.

Many architects point out that, without adequate technical assistance, the use of personal credit for housing needs proper management and monitoring, especially in rural areas where resources are often diverted to other purposes. However, traditional banks do not usually offer financing in these areas and prefer to finance entire homes rather than incrementally. In these cases, SOFINCOs, SOFIPOs and SOCAPs are viable options, offering credit in stages, although often, in the case of SOFOMEs, with very high credit rates.

Traditional banks face difficulties in adjusting their services according to the location and focus of the target population. However, they understand that housing is a basic need and has a strong family incentive, which makes loans viable for social and popular financing entities when the family comes together to fulfill them. This is reflected in a non-performing loan portfolio of less than 1%, highlighting the high rate of compliance by families. Mainly savings banks and community or popular financing promote and serve this type of solutions. Individually, these loans would be unviable for any bank or financial institution.

Technical assistance provided by NGOs can absorb the costs of design and architectural services, promoting good practices such as the creation of service portfolios for producers by trade, which fosters a social and circular economy among partners or the community.

In the interviews, small architectural and engineering firms offering technical assistance highlighted the importance of considering fiscal aspects, such as VAT collection, and that teams assume that collections will be made once payments are received, with percentages assigned according to the level of involvement in the project.

In the case of INFONAVIT financing, the first loan that a family obtains must achieve a basic level of habitability, ensuring an enclosed space and recognizing that it is a progressive process. In the case of this and other ONAVIS, there is work prior to the formalization of the contract that is not always recoverable for the technical assistants.

Another finding of the research is that many of SHF's financial intermediaries – responsible for financing for OEOs, developers or builders – did not demonstrate resilience to COVID-19, and some recovery pilots focused more on these intermediaries than on end-users. This highlights a dissonance in the market regarding financing costs and the final deployment of resources.

Among the main proposals identified is the idea that SHF can act as a first-tier bank, offering financing for the purchase of materials, which can be operated by family businesses and offering short-term loans.

For financial intermediaries, loans secured by the Housing Subaccount are attractive products due to the high interest rates they can offer. For technical advisors, the main limitation to growth is the need for collateral (generally requiring a property or guarantees per project).

Among the main recommendations in these responses is to find profitable financial products for families, who buy according to the opportunities available. It was highlighted that, in the reconstruction of Acapulco after Hurricane Otis, it would have been desirable to have an initiative that would allow for close coordination that would allow the agreements for the definition of subsidized or stable prices – agreed with the different suppliers – to be endorsed by the authorities and not leave the construction companies to assume all the risks.

Sustainability must be integrated into the design, with proper planning and efficient materials. The maintenance and use of the home are key to its long-term sustainability.

Without financing for architectural and design services, architects or technical advisors use the client's money for the project, limiting the growth of professionals based on their ability to obtain bail. With adequate financial inclusion – both for families that self-produce their homes, as well as for construction materials suppliers and architectural services – the use of digital payment methods can increase profits by at least 30% (figure offered for the case of construction materials suppliers).

Expensive

With almost 10% (9.8%) of the responses received in all the interviews carried out, architects and technical advisors were the ones who mentioned it the most. Paradoxically, people who self-produce their homes (according to the rest of the interviewees) tend to perceive architects as expensive. On the other hand, financing entities also consider that supervision costs – or the processes necessary to ensure the use of resources – are perceived as high and of poor quality, and they also mention that they make the product more expensive and reduce its profitability for investors.

On the other hand, it is believed that the government had better alternatives for housing production through the institutions and instruments of past administrations (for example, the defunct FONHAPO and CONAVI subsidies).

Architects, for their part, believe that the government is not interested in self-production processes because they are long and costly, and instead seeks short-term actions with a high media impact.

NGOs seeking funding point out that when serving unbanked people, interest rates increase significantly, citing rates higher than traditional rates, between 20% and 35%. In addition, these NGOs believe that cheap materials will continue to be used, despite not meeting the necessary structural and thermal characteristics, or often not meeting customs and practices, since people prefer to maximize the amount of construction for their money.

Some material suppliers finance their sales through credit cards, which is also classified as "expensive" by the interviewees – as they are financed by interest. Architects observe that when the government or funding agencies prioritize profitability, crucial aspects of design and planning are sacrificed, making self-production an "expensive" product.

These prioritizations also result in poor quality land, with no legal certainty, located in risk areas or areas of invasion, which will require intervention by the authorities over time and will entail a cost (not contemplated).

As mentioned at the beginning, architectural design or services are seen as an expense rather than an investment, which is problematic given that people prefer to see their money reflected in something tangible. Another crucial aspect of costs is related to the fact that self-produced housing, being progressive, faces the difficulty of maintaining the prices of materials over time.

Some interviewees mention that, since the middle of the last century, technological advances were expected to make housing cheaper, which has not happened in the case of self-production, especially in rural and peri-urban areas, which again translates into an expensive product. On the other hand, the costs of NGOs are higher than those of individual architects, which justified a difference in the payment of indirect costs in FONHAPO (and which continues in products such as ConstruYo by INFONAVIT and the allocation processes in CONAVI), going – according to the data of the interviewees – from 15% for individuals to 26-30% for NGOs , due to the additional responsibilities in contracting.

Some cooperatives or SOFINCOs do not include technical support due to the high impact on payroll. For ONAVIS builders, the product is not competitive due to high interest rates, ranging from 20-24%, which makes long-term credit more expensive. Technical advisors registered with ONAVIS are limited by the low amounts of financing available to families, ruling out 80% of those prequalified.

Second-tier banks face average rates of over 50% on these products, which limits the growth of the segment, in addition to the high cost of collecting these funds. Although loans can be obtained quickly, the amounts granted and the high interest rates make them insufficient or "unviable" – in the words of one interviewee.

Families who build their own homes have limited resources that they must prioritize. The prices of independent architects, according to some interviewees, can absorb up to 50% of the available resources, making them unviable for this segment.

It is also noted that, for many interviewees, self-produced products are expensive because they are tailored to the specific needs of each case ("tailor-made").

In conclusion, it can be said that there is a prejudice against architects, who are considered imposing and expensive. Although large architectural firms show interest in self-production, small firms do not participate due to poor remuneration, and large firms can afford to do pro-bono projects.

The purchase of materials is the biggest cost in self-production, so savings in kind should be promoted. Sustainable materials are not yet affordable for this segment, with conventional materials predominating.

Technical assistants consider that the construction company option for ONAVIS products is more expensive due to fixed-price contracts, which increase costs by 10-15% to protect their profits and to cope with variations in the price of materials, thus reducing the resources available to families.

Coordination

Technical bodies face a significant challenge: although there are many initiatives, they are not adequately connected/coordinated. Self-production of housing, when not supported in design and architecture, as well as in economic and financial aspects, results in a "disaster". Therefore, just as there are technical and social tools, it is essential to provide financial tools and adequate coordination between all of them.

Part of the coordination initiatives should focus on strengthening the Colleges of Architects: the lack of coordination and dialogue between the government, Colleges of Architects (or Architectural Associations) and the institutions that provide funding is a significant problem, resulting in a poorly paid profession and non-standardized approaches (or with the minimum information expected). Even though there are computer portals, one proposal for coordination mentioned throughout the interviews is the compilation of opportunities, since currently the actions seem isolated. Architects do not know where the market is, and families do not know where to find architects.

For example, CONAVI created a register of technical assistants and Construction Execution Agencies (OEOs). Initially, there were about 900, but after a purge, this was reduced to about 400 or 500, with staffs ranging from 2 to 50 people in each company. It is crucial to find mechanisms to include architectural and engineering services in the granting of mortgages or housing financing, integrating them as an integral part of the credit. Although this information is public, those interested do not necessarily know how to find it.

On the other hand, the lack of coordination in the Colleges of Architects is highlighted. In the interviews, they recommend establishing collection parameters, such as 4% of the value of the construction for architectural services, possibly starting with a subsidy. This requires greater will and spaces for dialogue to be achieved.

In order to reduce the prices of materials, coordination efforts have been made, seeking to consolidate purchases of materials by the different Programs among the different groups of beneficiaries. However, each new government program linked to a specific geographic area has resulted in price increases in local stores selling materials. These increases have not been controlled due to the lack of guarantees on purchases in certain stores and the lack of will of the Government to get deeply involved in this issue.

IT COULD BE SAID THAT THERE IS A PREJUDICE AGAINST ARCHITECTS, WHO ARE CONSIDERED EXPENSIVE AND TAXING. ALTHOUGH LARGE ARCHITECTURAL FIRMS SHOW INTEREST IN SELF-PRODUCTION (PRO-BONO), SMALL FIRMS DO NOT PARTICIPATE DUE TO POOR REMUNERATION.

One of the proposals in this regard could be, according to some interviewees, the creation of "vouchers" or cards that allow people to access materials at affordable and agreed prices in certain stores. In addition, large materials companies, such as Home Depot, could offer negotiated prices, although such agreements do not exist with smaller local stores. Despite the alliances with materials companies and the coordination from financing entities, families, by controlling the resources, decide where to buy their materials.

For assisted self-production to work, it requires joint work between the state or municipal government, which provides the land; the participation of the beneficiary, through labor or prior savings, and financing institutions, which would complement the investment. Smaller hardware stores must create alliances with various associations to access credit, for example, those offered by the Ministry of Economy.

Another idea mentioned during the interviews, and related to the category of "Coordination", has to do with the fact that current financing schemes do not consider all the stages of progressive housing (such as diagnosis, participatory design, planning, or-

ganization, implementation, evaluation and monitoring) but only cover the implementation stage. Given the lack of government resources, NGOs must coordinate with other funds, whether private or international, as well as with local construction materials suppliers, requiring the coordination of 4 to 6 external sources of financing for each project.

According to some Community Financial Societies, the savings + credit + subsidy scheme allowed for better coordination of technical advice and available funds.

It is also said that the lack of coordination between different institutions results in variations in the data published on housing shortages.

Some best practices that were discussed during the interviews, and related to coordination issues, are financing housing developers and construction companies to produce housing for members of Cooperatives or Associations; by financing both the builder and the housing loan, the production chain can be coordinated in terms of costs.

Policy

With 7% of the content of all interviews, the "political" category is one of the main ones mentioned by architects and technical advisors in relation to the general financing of self-produced housing, and the financing of design services in particular.

The main comment heard in the interviews has to do with making an effort to institutionalize self-production of housing, ensuring that it is well planned and with a short- and medium-term vision. Authorities must recognize that a well-developed architectural project is key to risk reduction, so its design should be integrated into public policy.

One initiative of the architects and technical advisors interviewed is to subsidize design services as a means of reducing these risks (both physical and financial). In the current administration (2018-2024), there have been at least three government programs that contemplated self-production, but they lack continuity with previous Programs and sufficient resources, limiting themselves to operating where the Government decides (intervention zones with priority or strategic projects such as the Mayan Train, Transístmico, AIFA, tourist and border cities, among others) and not necessarily where people need housing. The lack of continuity of the programs is also linked, according to those interviewed, to the fiscal time for the disbursement of resources in the territory, highlighting the need for clear public policies that define forms of financing and specific programs.

During Román Meyer's administration at SEDATU, the representative offices of the federal ONAVIS have been eliminated, replaced by "camps" with limited functions and scope, this being one of the main points discussed in interviews with representatives of the ONAVIS.

Some technical assistants have expressed their dissatisfaction with the percentages of indirect charges established in public programs. They have emphasized that the housing problem is essentially a problem of politics and inequality, not just an economic problem. The true success of self-production is not measured only by the amount and rate of credits, but by the combination of credit, subsidy and technical assistance, the latter being the component that really boosts self-production.

The biggest challenge to self-production is poverty; subsidies can be a double-edged sword: while they are necessary to reduce construction times, they can also stifle social initiative. Some popular and community institutions comment that when there are collective mechanisms and family effort, however small the payment, greater personal and social learning is encouraged. SOFINCOS emphasize that prior savings are essential for families; with constant technical assistance, construction and reconstruction becomes easier, taking advantage of the historical memory of the communities.

During the interviews, it was mentioned that housing policies must go hand in hand with energy and climate change policies to facilitate the incorporation of eco-technologies, materials and construction systems in self-produced housing.

MARKET RESEARCH FOR HOUSING FINANCING SYSTEMS IN MEXICO

NGOs report that funding does not cover all stages of social production, revealing a lack of clear understanding of the different types of housing production and the differences between urban and rural areas. There was a great emphasis on modifying poverty and backwardness measurement policies in the different institutions (mainly CONEVAL and CONAVI).

As for the issue of risk, many technical advisors and NGOs do not see it in the construction of the house itself, but in the identification of construction problems that can lead to destruction – due to the lack of an obligation to have technical assistance from a policy. It is essential that there is an effective government; although there are programs in the ONAVIS, there is no government that controls and guides these programs adequately.

Another issue related to "policy" has to do with the review of information asymmetry (financial education), since in some places people do not understand that they were taking out a loan, believing that the resources received were a subsidy or "gift" from the government. There is an urgent need for financial education (considering that in Mexico at least 85% of payments under 500 pesos are made in cash). The Administration (in this case SEDATU, CONAVI–or in the past FONHAPO, as well as INFONAVIT and SHF) should not act only as an intermediary between the builder and the owner/user, but as a technical specialist who facilitates the relationship between the two.

Architect's training

With 5.8%, compared to 5.5% in the "Academy" category, "Architectural Training" is, for NGOs, one of the main obstacles to the general financing of self-produced housing.

One of the main findings is that some ONAVIs were surprised to discover that the training of architects is not uniform throughout the country, so the operation and scope at a national level is not equal for families who receive technical advice from architects or engineers. In this sense, some architects comment that many of their colleagues prefer not to "get their hands dirty" with self-production projects and tend to compete among themselves, which leads them to other sectors or types of housing production. That is why they make the suggestion to change the mentality of the new generations within the profession: "the architect should not control everything and should learn to listen to people" is one of the phrases heard in the interviews.

Many of the certainties learned in academia do not hold up in the reality of housing and the city where housing is self-produced. Some architects do not see this as a problem, which is "worrying" for some of them. Therefore, some architects consider that those trained in a traditional (current) way are not prepared to work with these sectors of the population. These professionals believe that traditionally taught architecture is not designed to assist these types of segments and typologies. Consequently, some architects perpetuate architectural solutions that do not necessarily correspond to the reality in which they work. The few architects trained for this work often do not find work due to lack of resources. A group of architects and technical advisors interviewed advocates for a social architecture.

All architects agree that there is a lack of technical advisors with an interdisciplinary vision.

Furthermore, monitoring and supervision are essential in the training of architects; otherwise, a plan can be drawn without knowing how it will be built in the end. The profession lacks civility and ethics; teachers should teach many other tools – not just techniques – and they should be responsible for raising awareness and building mechanisms to work in this reality.

One of the main tools lacking in the profession is dialogue, which allows people to gain trust.

For NGOs, constant investment and training is necessary for the new generations of architects and engineers, not only to learn how to charge, but above all to know how to listen and interpret the needs of families without imposing positions. The main problem in the training of architects is the lack of vocation.

Academy
Along with the "Training of Architects", the "Academy" is one of the topics discussed during the interviews. The need to create a school of self-production is mentioned directly and indirectly, since the Academy is not training the new generations adequately.

As mentioned above, although there are young architects who are dedicated to social housing production, their number is decreasing (commenting that this is due to a lack of vocation). Since much of the housing construction in Mexico is incremental, it is essential that these needs, methodologies and tools are addressed in academic education.

However, the Academy often remains only in the "discourse". It is crucial to involve local universities and social services to generate a vocation in students, who can learn about the real needs of the population in their own localities. Otherwise, the training resembles that of "healers" according to one interviewee, lacking a solid scientific basis.

Architects graduate without knowledge of how to charge for their services, and students do not fully understand the phenomenon of social housing production. In administrative matters, it is not enough to teach them how to "sell" their services; it is also necessary to instruct them in fiscal and labor matters.

As Paulo Freire points out, in order to be able to dialogue effectively, one must first be on the same level. Extended families in Mexico function within family networks that encompass spatial, economic and legal aspects, with their own customs and habits that influence the construction and use of housing.

In terms of the inclusion of sustainability issues, there seems to be resistance within the industry towards indigenous materials and construction processes, which is an additional challenge.

There is a disconnect between what educational programs establish and what teachers actually teach.

Bureaucratic
The housing sector in Mexico faces numerous administrative challenges. Processes such as audits, supervisions and site visits are excessively long, which significantly delays projects (and payments). It would be beneficial for architects to be more involved in these procedures to streamline and improve efficiency.

One of the central problems highlighted in the interviews is the lack of proper representation and direction by the government. The absence of adequate management has prevented the efficient arrival of economic resources. In addition, the elimination of subsidies – which, as analyzed in the cabinet research, are strictly limited to specific Programs and zones active for a certain period of time and without continuity – has led to the implementation of projects such as the delivery of cards for the purchase of materials, but the bureaucracy associated with this system has increased costs due to the controls that must be implemented to avoid their incorrect use. At this point it is mentioned that if the resource is delivered directly to the family without technical advice, it "lends itself" to the possibility of using these resources for other uses, not necessarily associated with housing.

One of the main complaints of technical advisors regarding OEOs or developers/builders is that the former comment that the procedures prior to registration for credit are free and can be assumed when the contracts are at a fixed price (which is the type of contract for OEOs or builders). However, the greatest risk occurs before the formalization of the credit, at which time there is no guarantee, which generates uncertainty and a lot of unpaid work. In addition, assigning the resources to a construction company instead of an architect complicates and bureaucratizes the process even more.

The profitability of the architects and technical advisors' sector is affected by the volume, amounts and interest of clients, since the processes are slow and complicated. At this point, it is known that there is a large percentage of the population that could be

their "clients", but the Business Model is not attractive. Reducing the slowness of these procedures would be a viable solution. Although strict requirements have been established to avoid corruption, this has considerably slowed down the progress of the product in institutions such as INFONAVIT.

Secure ownership of land is another challenge, as even when the established requirements, such as direct kinship, are met, there are too many obstacles to applying for credit.

Lack of government resources
Due to lack of resources and government-imposed control (supervision and verification), many NGOs have had to close down. Without government budgets, resources or subsidies, technical assistance figures are disappearing.

During the interviews, they comment that it is essential for the government to understand that these are non-refundable resources; they should not expect economic recovery since the objective must be another. Currently, self-produced housing is not being carried out properly because there are no sufficient programs or resources. The main problem lies with the government: this being the most common type of production in the country, it should receive the largest amount of resources.

Current resources are not even sufficient for research, since Public Law does not allow this type of contract. On the other hand, they say that there is a lot of theory and very little practice; manuals are being published, but self-production requires practical advice. In many cases, architects were paid with food and lodging in the communities where they worked, since there are no resources for this type of service.

For NGOs, one of the biggest obstacles is legal security around land, followed by funding and municipal services in these areas. Previously, there was support from FONHAPO and funding from SHF, but these have ceased to exist or support these initiatives under the current administration.

It is suggested that what public policy seeks with the subsidy be separated from what people do with said subsidy. The subsidy has always been minimal and is currently non-existent, with very few people who self-produce receiving government support. Banks and government institutions should invest in the development of self-produced housing, but currently the available fiscal money is very scarce and is not directed to these purposes.

The architects propose a management system that would allow professionals to work with a basic but significant income under current conditions, fostering their interest in this type of production on a permanent basis. To do so, support is required so that groups of architects can organize themselves and continue working in communities (mainly rural or peri-urban).

People valued the subsidy because it allowed them to finish their houses more quickly. For the financing institutions, it is essential that there is a subsidy, whether for land, technical assistance or labor. Likewise, there must always be a contribution from the family, whether in labor or materials. Currently, all those interviewed agree that there is definitely a lack of funds for housing.

As mentioned at the beginning, many NGOs developed their business model based on the existence of the subsidy and, when this disappeared, many have also disappeared. Unfortunately, many technical advisors predict that in the coming years there will not be enough resources for this type of production either.

Local
In self-produced housing, the impact is local and not national, so what the interviews suggest is that architects should work in their own regions. It is crucial to consider the role of municipal authorities in housing policy, as there is currently a notable lack of knowledge and participation of local authorities in self-production processes. Therefore, it is essential that the Municipality assumes responsibility for progressive construction and self-production.

In the interviews, a massive model of processing and education for local authorities is proposed. In addition, a new financing strategy is proposed for the social production of assisted housing that includes valid mechanisms for both urban areas, with construction companies, and for rural areas, with NGOs present in the communities. It is emphasized that not everyone knows how to serve the rural sector, so the network of social housing producers should be taken advantage of.

Decisions on self-production of housing are always made at a local level, regardless of the push from integrating organizations, technical assistance or national policies. The rural, peasant or indigenous world does not adapt to homogeneous models designed at a national or state level but is extremely local. One of the constants in the interviews is that attempting national logistics is unviable for this type of production, so it is better to operate locally.

A key finding from both the desk research and the interviews is that it is essential to clearly differentiate between the social production of housing in urban and rural settings: whatever the case, for a project to work, a significant investment is required in penetrating the territory, over time (trust), supporting NGOs that already have a presence in the communities. One of the important comments in this regard is that, for NGOs and technical advisors, the difference between urban and rural projects does not lie in methodology but in information.

One of the biggest problems of current politics is the lack of correspondence between local bodies and the federation. For a programme to work in different contexts, much more experience and sensitivity is needed.

Communication and dissemination

Some ideas classified within this category have to do with approaches that seek that all entities should have a census that identifies the housing groups that are working on self-production projects, making this information transparent and communicating would allow efforts not to be duplicated. In this sense, although there is a CONAVI Register of Technical Assistants, this does not guarantee that the population has real access to these professionals; therefore, it is not only important to communicate, but also to disseminate and ensure that the information reaches the desired users.

There is a lack of regulation and uniformity in knowledge at the municipal level, which is crucial to adequately accompany people in these processes. The population needs information that is accessible and direct: despite the large number of reports, plans and guides generated, these resources are not always within reach of the people who need them. In other words, there is a significant disconnect between the theoretical information produced and the practical application by families.

Building stores are not usually visited by families engaged in self-build, but rather by bricklayers or construction workers; therefore, information aimed at these families would not necessarily be effective on the counters of building stores.

Popular savings and credit institutions, such as SOFINCOS and Cooperatives, play an important role in providing information through promoters, who offer a portfolio of products adapted to the needs of each member. However, credit products and the possibilities of access to subsidies have had very little dissemination and very little reach under the current administration (subsidies have practically disappeared).

One of the main recommendations from the interviews is to generate more advertising to increase the placement of these products. Currently, the information is insufficient and fragmented across multiple channels.

Studies on building culture show that the problem does not necessarily lie in the materials, but in the construction systems used. Therefore, it is essential to develop educational alternatives that allow people to understand and mitigate construction or structural risks.

Breaking paradigms is one of the biggest challenges: through communication, it is essential that

people understand the importance of incorporating architectural services to mitigate risks. Lack of communication is possibly one of the biggest barriers to integrating these services into the financing of self-produced housing.

A crucial aspect is the ability to transmit knowledge to others in order to prevent the loss of tradition: architectural training and teaching in academia is threatened by a lack of continuity and transmission. It is vital to find effective ways to share and preserve the constructive knowledge of the communities themselves for future generations.

Ignorance

ONAVIS consider that banks do not understand how self-produced housing is controlled and built, which creates reluctance to finance this type of project. In addition, families who self-produce their homes often show resistance to technical assistance, which suggests the need for design firms to work on clarifying and raising awareness about the advantages of their services.

In short, the lack of appreciation for architectural and design services results in low profitability for these initiatives. NGO studies indicate that 90% of families in Mexico suffer from cold in their homes, not only because of the materials used but also because of the construction techniques employed in self-production; this could be mitigated with adequate technical assistance in the construction process.

It is essential that architects learn to charge in stages, following the progressive nature of housing, something that should be taught in schools, and which the new (and some older) generations are currently unaware of. Rural or community financing institutions have reported savings of up to 30% in housing projects that have technical assistance.

Many people are unaware of the usefulness of having an architect, preferring to trust master builders or bricklayers with whom they have already worked. After the 2017 earthquake, it was expected that people would value the advice of architects more, but this has not been reflected – partly due to public statements by the President of the Republic, who said: "[...] We are seeing it in the case of these loans, but housing loans will also be like this, directly, without intermediaries, so that whoever receives a housing loan can help us manage their loan well, save, buy construction materials at a good price, hire master builders and workers to give them work. And we feel that in this way the loan will be more profitable, it no longer necessarily has to be a company to whom they give the money, many times with this mechanism they lose up to half of their loan, because the house, the apartment that they are given is worth more than it should be, than it really costs, due to corruption; or a housing unit is built in ravines, in remote areas. And if it is done, the beneficiary will be much better off. This is a change. Why was it not done this way? Because of corruption. And it was justified or used as an excuse, as a pretext, that people did not have technical knowledge and that they needed the advice of engineers, of architects. It is like when rural roads were built in Oaxaca, when the government, an institution, managed the money and did not give it to the municipal governments of uses and customs because they said they did not have the technical capacity to make a road, the heirs of those who built Monte Albán and Mitla, and they are the best construction workers in the world, did not have the capacity to make a road. It has already been demonstrated; the funds were given to them. Well-made roads, at low cost, employment is given to the community, without corruption, they even return what they had left over [...]" (Morning press conference on April 23, 2020[76]).

Families often view the involvement of an architect as an expense rather than an investment or an insurance policy for their home. The lack of funding for architectural and design services, as well as the incorporation of new materials or construction systems, is closely linked to the lack of knowledge on these issues.

Regulations

The interviews highlighted the need to modify the Law that currently limits social housing production to non-profit entities: if it is opened to others, greater participation in self-production is facilitated. The creation of the institutional and regulatory framework for self-production has been complex.

[76] https://www.gob.mx/presidencia/articulos/version-estenografica-de-la-conférence-de-prensa-matutina-jueves-23-de-abril-de-2020?idiom=es

The ONAVIS defend the support in these processes as essential and seek to establish agreements with local governments to simplify obtaining permits. Generally, the permit procedures are only carried out in cases of complexes with problems, in joint housing projects or in those with the intervention of a Construction Execution Agency (OEO). "Individual" or isolated assisted housing does not go through the administrative process in the municipality.

In terms of financing, the entities of the popular savings and credit system, in particular the SOFINCOS affiliated with the Mexican Association of Credit Unions of the Social Sector (AMUCCS) have requested modifications in the specific regulation for self-production figures, such as the elimination of the obligation to charge VAT on consumer credits.

Technical assistants face problems in starting work due to difficulties in obtaining building permits from municipalities: when permits are issued by individuals and not processed by an ONAVI, the times and processes are long and tedious. Self-production is penalized by bureaucracy and the long times required to obtain licenses, despite the high demand.

Regulations should include financial, technical and bioenvironmental tools that support self-production: one example selected during the interviews is the idea that regulations should allow the inclusion of "green mortgages" in the regulations for granting self-production credits.

Currently, the support required for self-production cannot be formalized in a credit regulation, since these focus solely on the amount, rate, term and financial viability of the credit.

Volume

Within the market study, it is highlighted, in issues related to volume, that some architects avoid self-production projects due to the lack of sufficient volume; or that in the ONAVIS programs, the quantity of credits continues to prevail over the quality of the housing: Self-production does not usually appear in architectural magazines or at inauguration events, since a concrete slab is not as "showy" as a park or a public market.

Some NGOs tell us that many housing developers prefer large projects with 2,000 or 5,000 homes, while sometimes it is better to build home by home and not in large packages, even considering that each solution is unique.

When thinking about consulting, one must consider the limits or capabilities of an individual architect, and although one can think of an architectural firm or the union of several professionals, it is crucial not to exploit the profession and always design with users in mind ("tailor-made suits"). Some positions consider that technical consulting only makes sense with a certain volume and do not consider customized design necessary (defining certain prototypes that the community agrees with, or selecting from a catalog of prototypes); and others defend that projects are unique and not replicable. The latter advocate a self-production project as a form of local and regional production, not massive; those who are successful achieve this by working regionally and over time, not in a massive and standardized way throughout the country.

Customs and traditions

In terms of the "customs and habits" category, much of what was collected included anecdotal comments or feelings expressed during the interviews. For example, it was mentioned that although women tend to take care of the building materials, the negotiation of prices is carried out with men, and it is difficult to obtain recognition as an architect; many of the women interviewed hope that these things will change.

Technical assistants, architects and NGOs point out that there have always been women in the social production of housing, but they were not given the job, which was traditionally considered a male field, which made their visibility in the construction site a battle of titans. A bias still persists, as people are afraid or feel that a single woman or two women will not be able to handle the "package". For families to trust women, continuous and empathetic work is required.

On the other hand, it is said that self-production does not require a specific gender approach, since women are the main promoters of housing improvement and the main beneficiaries in kind.

Another point that was mentioned in the interviews is that, as an architect, you must have an open mind, since the project you designed is likely to be modified by families and by time.

Crucial aspects for the implementation of many ideas and initiatives for financing materials have to do with the fact that construction companies offer better prices to builders than to customers. And, on the other hand, there is an aspirational issue for many inhabitants between the use of industrialized materials versus traditional ones: the final decision always falls on the people.

In agricultural communities, planting and harvesting times must be considered, as current operating rules are designed for urban housing production and do not take these issues into account.

Certainty of ownership

Self-production, carried out with the effort and savings of families, is a viable option if it offers security in terms of land and has financing possibilities. However, the necessary facilities have not been provided to make this a reality accessible to all. As has been repeated on countless occasions, the profile of the self-producer does not generate confidence in financing institutions and, as has been proven, "credits on demand" have a high percentage of default (80%)[77].

Land is a crucial factor in this process, as it is the starting point for speculation, illegal invasions and land invasions in risky areas, and the increase in housing prices. Having a plot with basic services represents 80% of adequate housing, highlighting the importance of good management and access to land.

The main challenge lies with the authorities, since land regulation is where the biggest obstacle lies. Without adequate and facilitating regulation, it is difficult to advance in the development of affordable and sustainable housing projects – not only for the social production of housing.

Theory more than practice

Currently, government programs remain in theoretical terms without resources to implement them in the territory. In other words: the general problem is that they are addressed in a theoretical way and not in a practical way. All institutions have the theory, but they do not put it into practice, there are many manuals and web pages, but they do not reach the people who need them: it is as if the information remained in the cloud and never reached the territory.

In the words of many interviewees, it is necessary to stop doing studies and start looking deeper and taking action. For example, in terms of sustainability, many climate change initiatives, although theoretically indicating savings, actually generated energy poverty. We must be careful with theory and focus on testing in practice.

Informality

Since the source of income is not formal, it is difficult to assess the payment capacity of self-producers. The profile of the non-entitled person is not safe for financing institutions, so they need guarantees that they often cannot provide. Many interactions move in cash, with remittances and with informal or undeclared sources of financing, which makes access to credit even more difficult.

Technology

The tools needed to improve the efficiency of design and architecture services, such as Revit, AutoCAD or Sketch-up, entail a significant cost for professionals. The calculators developed represent a great effort but have not adequately reached the population.
In operational terms, especially in the systems of the ONAVIS: the flow of capital to the technological platforms is not usually so fast; therefore, some of the systems that some ONAVIS use present several errors that translate into bureaucracies and delays.

Corruption

In general, it is mentioned in interviews with financing institutions, NGOs, and architectural services that many improvement products, especially those that do not include verification, are not having the desired impact on the housing gap and the resources can be used for other purposes. In this regard, in several material stores, people often ask if they can get cash with the card they were given for the purchase

[77] https://expansion.mx/economia/2024/07/10/se-recupera-20-creditos-palabra-finabien

of materials or what products it will be enough for, instead of using it to buy what they really need.

In another sense, the category of "corruption" had to do with the fact that some NGOs question the quality of the services that some technical assistants are offering, since the quality standards applied to guarantee the effectiveness of these services are not known.

The bricklayer knows more than the architect
Some interviewees mention that people trust the workforce more than architects; even architects themselves sometimes know more than bricklayers than people with a degree: at least they know how to talk to people and do not impose their criteria.

Families pay more attention to the bricklayer and that is where the risk comes from in structural and financial terms: they can give good recommendations, but they do not have the adequate knowledge to safeguard the home in the event of natural disasters, they do not have the knowledge of construction systems and the proper use of materials.

Financial guarantee
In the interviews, it was stressed that it is crucial to understand that any bank will always require a mortgage guarantee. In many cases, when there is no guarantee and verification is costly, the financial product becomes unviable for families or individuals who self-produce. In addition, in the case of financial institutions, it was mentioned that for this type of product it is very difficult to identify the source of repayment in case of default.

Not standardized
In this category, the fact that self-produced housing projects should be understood as "tailor-made suits" and not the selection of a catalogue or already defined prototypes is mentioned. In the specific case of construction materials suppliers, especially those specialized in sustainable materials, rather than offering financing to their clients, what they offer is specific training on the use of their materials for each specific case.

Professional certainty
This category is where concerns are raised, mainly by architects and technical assistants, who fear that designs made, especially when they have not received payment, may be appropriated by families and never be compensated.

Democratizing design
ONAVIS proposes democratizing design: it should not be considered a luxury and should be an integral part of products or programmes.

Comprehensiveness
In some way related to the idea of democratizing design, it is said that design services must be integral to the housing solution.

SOCIAL HOUSING PRODUCTION REQUIRES THE ACTIVE PARTICIPATION OF FAMILIES, WITH ORGANIZATION BEING A KEY ELEMENT THAT CANNOT BE ACHIEVED IN THE SHORT TERM. INDIVIDUAL LOANS ARE NOT EFFECTIVE ON THEIR OWN AND MUST BE INTEGRATED INTO A WIDER SYSTEM.

MARKET RESEARCH FOR HOUSING FINANCING SYSTEMS IN MEXICO

Annex 6. Type of response by value chain profile interviewed to 5 structured questions of the Interview

ARCHITECTS AND TECHNICAL ADVISORS

The market study reveals deep dissatisfaction among architects and technical advisors involved in self-production of housing. Architects and technical advisors agree that financing for self-production of housing is insufficient and poorly managed. The lack of government budget and the withdrawal of resources for NGOs are seen as key factors that have limited the scope of these projects. The problem is aggravated by inefficient and costly bureaucratic processes that make project implementation and supervision more expensive. There is a widespread feeling that individual credits do not work well in the context of social housing production, because current policies are not adapted to the real needs of the popular sectors.

Interviewees express frustration at the lack of recognition and adequate funding for architectural and technical assistance services in self-production of housing. They point out that these services are seen as an unnecessary expense, which limits the ability of professionals to offer quality work. Furthermore, the lack of resources and specific programs to finance these services contributes to job insecurity within the sector. It is suggested that subsidizing these services could be an effective solution to reduce risks and improve the quality of the housing produced.

Financing for homes made from materials is another problematic issue. Architects point out that construction companies often inflate the prices of materials to protect their profit margins, which increases the final cost of homes. In addition, the lack of access to quality materials at competitive prices is a significant barrier. The need for a more accessible market for sustainable materials is highlighted, as these are not yet cheap enough to compete with traditional materials.

As for sustainable materials, there is a consensus that they have not yet been fully integrated into self-production of housing due to their high cost and lack of availability on the market. Interviewees point out that these materials are not sufficiently accessible to consumers and have therefore failed to displace conventional materials. Furthermore, they mention that the lack of government support to finance these technologies limits their adoption, despite their long-term benefits.

The gender perspective is a critical aspect that architects and technical advisors consider has been ignored in the financing of self-production of housing. Women, especially young women, face greater obstacles to access financing and opportunities within the sector. There is a persistent bias that underestimates women's ability to lead construction projects and access financial resources. Interviewees underline the need to change the mentality within the profession and institutions to ensure greater inclusion and gender equity in this area.

In summary, architects and technical advisors see a significant disconnect between public policies, available financing and the real needs of popular sectors in self-production of housing. Lack of resources, bureaucracy, gender bias and failure to integrate sustainable materials are seen as critical obstacles that require structural solutions and greater political will to be overcome.

BUILDERS

Builders point out that financing for self-production of housing faces several obstacles. First, they mention the lack of dissemination of self-production programs and products, which limits access to resources by those interested. In addition, they point out that the interest rates offered are not competitive, ranging between 20% and 24%, which makes loans unattractive. They also emphasize that loans require guarantees that are difficult for young workers to meet, who must have several years of contributions to qualify for a loan. Finally, builders see the slowness of the fund release processes as a problem, which affects the profitability and viability of the projects.

As for the financing of architectural services and technical assistance, builders indicate that these services are not well covered by financing programs. They mention that the work prior to credit registra-

tion, such as the preparation of contracts and technical evaluation, is absorbed by the construction companies without being reimbursed, which represents a significant additional cost. In addition, they point out that technical advisors usually charge around 10% of the value of the project, a cost that is not always easy to pass on to clients, especially when credit amounts are low.

Builders face challenges in financing materials, especially due to the disparity between large chains and small hardware stores. Large chains, such as Home Depot, offer negotiated prices and agreements that facilitate large-scale purchasing, while small hardware stores do not have the ability to offer the same discounts. This difference negatively impacts smaller or local builders, who cannot compete on equal terms. In addition, they mention that long-term loans, greater than six years, become very expensive due to accrued interest, affecting the profitability of the projects.

Regarding sustainable materials, builders say that although there is growing interest, the associated costs remain prohibitive. They are hesitant to use these materials throughout the country due to complex logistics and high prices. In addition, the lack of specific funding for eco-technologies limits their adoption, even though they could offer long-term economic and environmental benefits.

Builders do not make explicit mention of the gender perspective in financing self-produced housing, suggesting that this issue is not a priority in their current considerations. However, this may also reflect a lack of awareness or sensitivity about the barriers women face in accessing financing and opportunities within the construction sector.

In short, self-builders face multiple financial obstacles that hinder the viability and sustainability of their projects. From high interest rates and slow processes for releasing funds to lack of access to materials at competitive prices and financing for eco-technologies, the challenges are numerous and complex. Furthermore, the lack of focus on the gender perspective in housing financing reflects a missed opportunity to address inequalities in the sector.

FINANCING INSTITUTIONS

Financial institutions stress that the process of financing self-production of housing is considerably expensive, particularly due to verification and the absence of solid guarantees. The lack of traditional guarantees, such as public deeds, makes it difficult to assess the applicant's ability to pay, which increases the risks and costs of credit. In addition, returns for investors are minimal, making financing even more expensive. This situation is aggravated in the context of commercial banking, which generally focuses on mortgage loans backed by traditional guarantees, and not on self-production schemes.

A central concern for institutions is the informality of applicants' income sources, which complicates the assessment of repayment capacity. Without formal income sources, repayment predictability is low, increasing credit risk. In some cases, even when grants are provided, there is concern that beneficiaries do not use the resources for the intended purpose, allocating them to other needs. Institutions have noted that this problem is especially prevalent in contexts where resources are delivered directly to the beneficiary without strict control (technical assistance).

Technical assistance is considered a crucial component for the success of self-production projects. Financial institutions recognize that the combination of credit, subsidy and technical assistance can significantly increase the chances of success of projects. However, the cost of providing this assistance is high, and many institutions, especially SOFIPOS and savings banks, do not have the financial capacity to assume it, which limits its implementation. In projects where technical assistance has been integrated, a 30% improvement in results has been observed, which underlines the importance of this component.

Financial institutions face difficulties in operating in rural areas and serving low-income sectors. Commercial banks tend to avoid these areas due to low profitability and high operating costs. Instead, SOFIPOS and other local financial institutions have taken on the role of financing self-production in these areas, albeit with great challenges. Market fragmentation, lack of infrastructure, and the need to adapt to social production models that do not fit with traditional financial structures complicate operating in these areas. Furthermore, success in these contexts depends largely on the collective effort of communities and the use of local approaches.

Financing for green technologies, such as solar panels, is seen as an area with potential, but it faces several obstacles. Institutions point to the lack of clear energy policies supporting the adoption of sustainable technologies, which limits the demand and supply of these products. In addition, the high costs of these technologies and the absence of specific financial products with preferential rates for their acquisition make their adoption slow. Although some institutions have developed sustainable breeding products, large-scale implementation remains a challenge.

Financing institutions point out that, although there is interest in supporting self-production of housing, high costs, lack of guarantees, informal sources of income, and the difficulty of operating in rural and low-income areas present significant obstacles. The integration of technical assistance is seen as key to success, but its high cost limits its implementation. Finally, financing of eco-technologies presents opportunities, although it is still in an early phase due to the lack of structural support and clear policies. To advance in this area, greater collaboration between financial institutions, local governments, and communities would be required.

CONSTRUCTION MATERIALS SUPPLIERS

The building companies point out that financing for self-production of housing is scarce and not very accessible, especially for families who need it. Most self-producers lack sufficient credit and must resort to their own resources or personal loans, which are not always adequate to cover the needs of the project. This creates a dynamic in which purchases are made mainly in cash or through credit cards, limiting the ability of customers to acquire quality materials or in the necessary quantity. The building companies note that this context affects both the viability of the projects and their relationship with customers, who often have to plan their purchases very carefully due to the limited availability of financial resources.

Building companies perceive a lack of specific funding for architectural and technical assistance services, which negatively affects the development of self-produced projects. Since self-producers tend to manage their resources very carefully and allocate most of it to the purchase of materials, design and technical advisory services are often considered a luxury rather than a necessity, which in turn impacts the final quality of constructions. The lack of financial support for these technical services limits the ability of self-producers to plan and execute projects that meet adequate safety and durability standards.

Construction material suppliers face their own financing challenges. In many cases, these companies rely on limited financing, such as short-term lines of credit, and often must resort to self-financing to maintain their operation. Credit conditions offered by banks are often seen as unfavorable, with high interest rates and terms that do not always align with the needs of the business. This forces them to be cautious in their operations, avoiding extending credit to their clients unless there is a consolidated relationship of trust. In addition, the lack of access to broader and more flexible financing limits the ability of construction materials suppliers to offer competitive prices or expand their product range.

Although there is growing interest in sustainable materials and eco-technologies, material companies mention that funding for these products is even more limited than for conventional materials. Sustainable products are often more expensive and require a higher initial investment, which discourages many customers operating on tight budgets. The lack of specific financial incentives for the adoption of eco-technologies exacerbates this situation, leaving these products in a niche market that has yet to fully take off. In addition, the lack of information and education about the long-term benefits of these materials contributes to their slow and fragmented adoption.

In terms of gender, building companies perceive that the construction industry, including self-production of housing, is still dominated by men.

ONAVIS

ONAVIS note that financing for self-production of housing faces significant structural challenges. They

underline that available programmes have decreased in number and scope, limiting the options for families wishing to improve or build their homes. In addition, they mention that banks and financial institutions do not adequately understand the self-production process, resulting in a limited supply of suitable financial products. Families often rely on their own resources, and when seeking financial support, they face obstacles such as the need for mortgage guarantees, which is not always feasible in the context of progressive self-production.

The ONAVIS point out that access to financing for architectural and technical assistance services is insufficient. The general perception is that architects and technical advisors do not receive the volume of work necessary to sustain their businesses because families do not prioritize these services, often considering them expensive or unnecessary. In addition, there is a lack of recognition of the added value that these professionals can offer in terms of savings and efficiency in self-produced projects. This context has led to a lower use of technical services, which could compromise the quality and safety of self-produced housing.

The ONAVIS observe that construction materials suppliers, which are fundamental in the self-production chain, also face difficulties in accessing financing. Fluctuations in demand, increases in costs and the lack of consolidated purchases between program beneficiaries have complicated the operation of these companies. Although some establishments can obtain commercial credit lines, the conditions are not always favorable. This directly affects self-producers, who depend on the availability and price of materials to advance their projects. The ONAVIS suggest that the creation of financing schemes more adapted to the needs of construction materials suppliers could have a positive impact on the entire value chain.

The ONAVIS point out that, although there is a growing interest in sustainable materials and systems, the adoption of eco-technologies remains limited due to their cost and lack of adequate financing. The perception is that the population is still not willing to pay more for sustainable products, partly because effective policies promoting their use and financing have not been implemented. In addition, the ONAVIS emphasize that eco-technologies require a level of technical advice that is often not available or accessible to families in self-production processes. However, they recognize the potential of these materials to improve the sustainability of homes and advocate for programs that encourage their use through specific financing and subsidies.

In terms of gender, the ONAVIS recognize that there is a marked inequality in accessing and managing financing for self-production of housing. Although many women are involved in the maintenance of building-construction materials suppliers, financial and negotiation decisions are often dominated by men. This reflects a broader pattern of inequality in the construction industry, where gender influences power dynamics and financing opportunities. The ONAVIS highlight the importance of developing policies that not only include the gender perspective, but also actively promote the equal participation of women in all aspects of self-production of housing, from access to financing to decision-making in the construction process.

NGOs

NGOs point out that lack of secure land tenure and the absence of adequate financing are the main obstacles to self-production of housing. Although self-production depends on the effort and savings of families, government programs have been reduced and subsidies have been replaced or eliminated, which has proved insufficient. High interest rates, especially for those without banking access, and the need for mortgage guarantees complicate access to financing. In addition, bureaucracy and the lack of flexibility in financial schemes to adapt to the economic realities of families, especially in rural areas, hinder the advancement of smaller-scale projects.

NGOs point out that architectural and technical assistance services are perceived as unnecessary or expensive by self-producing families, which reduces their demand. Despite their importance in ensuring the quality and safety of constructions, these services are not adequately valued, and architects face difficulties in maintaining their businesses focused on this type of production due to the lack of a constant market. NGOs also underline the need to involve universities and to provide more training to young architects so that they can offer their services in this sector in a profitable and efficient manner.

Again, it is noted that construction materials suppliers, essential in the self-production chain, also face financial difficulties, exacerbated by fluctuating demand and prices for materials. NGOs mention that families depend on the availability and cost of materials to continue with their projects, but the lack of stability in prices and lack of access to adequate financing complicate the process. Payment methods do not always align with the economic realities of families, creating further obstacles in the self-production process.

Although there is growing interest in sustainable materials and systems, their adoption is limited due to their high cost and lack of specific funding. NGOs point out that eco-technologies require more technical advice and training for their use, which is not always available to families who self-produce. In addition, there is a perception that sustainable materials are not a priority for families, who prefer to invest in more tangible and immediately usable items. However, NGOs recognize the potential of these materials to improve the sustainability and efficiency of homes.

> A CENTRAL CONCERN FOR INSTITUTIONS IS THE INFORMALITY OF APPLICANTS' INCOME SOURCES, WHICH COMPLICATES THE EVALUATION OF THEIR REPAYMENT CAPACITY. WITHOUT FORMAL INCOME SOURCES, THE PREDICTABILITY OF REPAYMENT IS LOW, WHICH INCREASES CREDIT RISK.

Appendix 7. Memorable quotes from the interviews conducted

"A well-designed home is a different world, right? I mean, you're going to spend the same amount, but it's going to work better, it can grow, you might save on electricity, you save on water, you save on many things because of good design, you have a better temperature, many things." [ONAVI]

"If you are going to lend to build, then you have to listen to the architects." [ONAVI]

"If there is resistance from people's rights to advice, you have to give them something very specific in return, almost like <with this advice that is given to you, you are going to save this percentage on your construction, or it is going to help you with exactly that>." [ONAVI]

"In works of progressive self-production, you can't always go and cut the ribbon." [ONAVI]

"How do we make the service available to everyone? And so that the price barrier is not an element, and also the knowledge barrier, a barrier that prevents us from having better quality homes with design. What we do perceive is that the sector is in a strong crisis, very, very strong." [ONAVI]

"From a thousand pesos that they should have paid me in one installment, they paid me 100 pesos in 10 installments. And credit in Mexico is very important for all of us to work (they pay in 45 or 90 days)."[Construction materials supplier]

"That is to say, my profit is the price, the cost of what I buy, plus a profit from financing, so to speak. It is my work, everything I invest in distributing my tools, in selling them." [Construction materials supplier]

"These are tools that, given the circumstances, that is, given the fact that the tools are cheap, are thrown away. Before, they were repaired, before I sold many spare parts because they were repaired; now, the tools are thrown away and new tools are bought because of the price, so it is no longer worth repairing them." [Construction materials supplier]

"I work with credit cards, but that's how I am, I'm very exact with payments, I mean, I would hardly pay interest, I have several cut-off dates." [Construction materials supplier]

"You have to be very careful with cards because in Mexico the card is very expensive, they charge you 60% so they are very, very expensive. If you miss half a day, then you have already lost your profit, your 3 months that you were going to earn have changed into profit and the money has gone to the bank." [Construction materials supplier]

"When there are few resources, it is more important to design. The room for error in a house of that amount... well, it is more important to design carefully and think ahead."[Architect]

"When we move to the developer model, it is the one that affects everything, because they start to look for higher returns by sacrificing some important things, not only do they start to buy bad land but they also start to save on design issues... and I think that is where a rather delicate point comes from, the low participation of architects in these segments." [Architect]

"There is nothing worse than allocating a specific resource to address something so delicate without a planning process, so it is foolish not to do so if you are already investing these resources and you are pushing this as an essential part." [Architect]

"Just as commercial production needs a series of supports, tools, a whole system, a whole system of trained actors, etc. Social production is the same, right?" [NGO]

"People are very wise, yes, they are very wise in the sense that they know how to balance the money they have and what they can spend. But not necessarily in decision-making, because they do not have sustainable materials at hand, they do not have someone at hand to help them with training." [NGO]

"When we decided to call it Self-Production, it was because, reviewing the Law, Social Production is carried out by non-profit organizations. And the moment you assume that, as if that is what you are doing, you are leaving out all the private ones." [NGO]
"We are talking about a process where people make decisions and they do not have the knowledge, the capacity or the actors on their side to be able to make good decisions." [NGO]

"For me, the barriers are 1) the knowledge that people have and 2) the access they have to both technical assistants and materials. That's why it's important to approach self-production as an ecosystem where you have to work from - not just from credit - but from training or access to information so that you can make better decisions. And for that, you have to offer a series of actors and service providers that can help you make that good decision." [NGO]

"Technical assistants: Who are they and how do you identify them? I mean, where do you go and find them, right? How do people know they can approach you?". [NGO]

"Maybe you can't charge for an executive project for the entire day, day one. Maybe what you charge for is the question." [NGO]

"All decisions taken by the authorities must be considered from the perspective that there are two ways of producing housing. So you don't send Social Production to an isolated place, apart…". [NGO]

"You always have to prioritize one thing over another, maybe it's more important to have the roof than to have the design services." [NGO]

"What we think could help INFONAVIT would be the digitalization of these requirements."
[Financing institution]

"People could do it themselves, but they should be aware of the benefits that can be obtained with technical advice."[NGO]

"They say that we all have a bit of architect and madness."[NGO]

"The value of technology is not known or understood, right? And I think that is a problem." [NGO]

"Now that I am at the Academy, I have had crises with several colleagues, teachers, because they do not want to teach students to build with these materials – or they do not know how… and they tell them: <no, no, no, build with concrete>. So, that also greatly limits the viability of a person, of a student who does something that works for them, that is useful, that is economical, or is for the community, or that can improve their environment." [NGO]

"[Regarding the builders] It is also an abuse on the part of the specialists, to charge that much for something that is not worth it… and it is not important for people from a sector of the population, with resources. Well, I understand that you are going to charge a lot of money, because there they can pay you and they will surely negotiate the price. But a person who is pledging his whole life to build a house, well, it seems to me to be quite unethical that you charge him 100 thousand pesos for a project that you already have there in the drawer and you copy it 20 times." [NGO]

"Housing should not last a lifetime either, that is nonsense: housing is built and its materials should be able to be changed. When you talk about credit it becomes very complicated. I have to tear down the roof because the palapa is already a mess, I have to replace it. How do you get the credit again?" [Architect]

"Federal agencies want housing to be finished, to be nice, to be painted white, and that is not the case in the social production of housing. Housing production has a completely different rhythm than that of a construction company. The construction company wants to finish this and make a profit. And the final objective is the regrouping of people and the support that is given to each other." [Architect]

"Once the community is organized, projects emerge without any problem. But the projects are the product of the people. They are not designed to generate income." [Architect]

"If you calculate that it is 54% and you calculate that you have a bag of so many millions, then calculate in percentage terms how this is going, right? And then there would be resources." [Architect]

"People know, yes, they know how they want to live, but we have the technique. Yes. How should we build with resistance, durability and safety? Otherwise, why do we even insist? Tell me, why do we study? Why does the degree exist?" [Architect]

"A girl told me in a community: <Hey architect, we can throw this away because if we tell the architect, she will say no. I told her, well, look, you just told her>."[Architect]

"In terms of subsidies, there was a very small percentage that was for self-production. That is to say, most of the financing and specifically the CONAVI financial schemes that were only co-financing, that is, credit plus subsidy, were directed towards the placement of new housing. Today more than 90% goes to self-production." [ONAVI]

"We have tried to promote the issue of technical support and self-production as a form of financing that recognizes not only that it is a form of production, but that it also helps to achieve the right to adequate housing." [ONAVI]

"We believe that technical support is the only way to ensure that a home has structural security, that it is habitable, and that it will be designed according to people's needs." [ONAVI]

"In order to make agreements with the material companies, the Government said, <I can't tell you that people will buy from you, rather, you help me offer people a lower price and that will guarantee you. In other words, I'm going to open the door for you to go to the areas where I'm going to tell you which areas. I can't tell you who they are, because it's a matter of personal data, but I'm going to tell you where we have the Program>. It wasn't achieved, because they wanted a guarantee of purchasing a specific number of materials and that wasn't going to happen." [ONAVI]

"How many of your housing shares are for women? I have more than 60% for women." [ONAVI]

"She goes to the area a lot... when she made a visit - I don't remember if it was in Oaxaca - and she arrived and started scolding the architect <Hey, how do you put a room out there? How isolated without it being linked to the house? ... and the lady there told me, <Don't even move it, okay? Because when my husband comes home drunk, we put him there, and then he doesn't hit anyone.>" [ONAVI]

"But we believe and have faith that these types of loans are viable and that we can really make a difference." [Builder]

"Self-production is the solution to the housing problem in Mexico, because you can build your home, in parts or in stages. And in the meantime, you can live in it." [Technical Advisor]

"I do it because for me it is a service to humanity." [Builder]

"What works best for you in all these aspects? It is definitely microcredit. Credit of less than 25,000 pesos. And that is revolving." [Financing institution]

"We are a company that has been in the construction materials sales sector for 26 years. And for the last three years we have specialized in the self-construction sector. Because the pandemic took us there." [Construction materials supplier]

"Since there are no other sources of financing, they always end up doing it with their own resources and that is why it takes up to 20 years to build a house." [Construction materials supplier]

"It takes a lot of work to break paradigms, to break the ideas of people who have done the same thing all their lives, and when you tell them they can do it differently, they don't really believe you."

"The only thing we really charge is 100 thousand pesos plus VAT from the franchise account. We don't charge royalties, we don't charge anything else; just 1% monthly for advertising and that's it. The rest is the investment. Our investment is estimated at 500 thousand pesos, because the other 400 thousand pesos, let's say, are for remodeling and adapting the premises... they are premises between 40 to 50 square meters (construction franchises are around 2 million pesos and up)." [Construction materials supplier]

"People do with what they have because there is no housing policy...we have self-construction as a way of solving the housing problem, it is an unguided, unadvised way and everyone does as they can and it is undoubtedly the most expensive form of construction that exists." [NGO]

"When the process is comprehensive, people pay, they pay happily. We have a very small portfolio, a very small credit portfolio and our, our, our default, our default, is that it does not reach default, let's just call it default, it is one, 2%, 1.98%". [NGO]

"If we could have housing for everyone, then the problem would be solved. What we do is, one of the exercises we do once we arrive in the community is to do co-design."[NGO]

"There are three ways to obtain land: with the ejido, with residual space from the municipality, or with developers." [NGO]

"What have we been trying to do wrong for so many years? Trying to align the objective of financing with the objective of housing for the newly banked, a mistake, a class mistake. Financing has one objective, which is to generate more money, that's all." [NGO]

"From the self-producer 's side, it is very difficult for them to see the issue of technical advice as an element of value, initially." [NGO]

"In a budget, we have to make generating numbers. If you want to systematize, you need a Neodata specialist, and you don't have that team in the office... Within the team you would need an accountant, a design specialist, another in structures, another in installations...". [NGO]

"Most of the resources, or the resources they may have, they prefer to allocate to something that is tangible, such as construction. If I have $50,000 pesos, I prefer those $50,000 pesos, complete, in rods, or I find a way to start paying the construction foreman so that he can start building."[NGO]

"An architect who is younger than me may come, but the simple fact of being a man, both for the people who are going to acquire the service, as well as for the contractor, as well as for the bricklayer, has more presence and opinion than I have [for being a woman]." [NGO]

"I learned to make complete executive projects, right? So, when you want to translate that into reality in self-producing families, it's a shock, because the project is progressive." [NGO]

"In terms of scale, even if you have many, many, many homes, you still have to work hard, you still spend a lot of money, a lot of time on all these solutions. So, it's not profitable. Each home is a tailor-made suit." [NGO]

"Construction times change and, for example, when you charge for supervision, in one way or another, you are charging for the time that you included in a schedule. In a progressive home you do not know how long it will take to supervise that home, there is uncertainty in time." [NGO]

"A big limitation is the bureaucratic processes... to be able to get to just the site visit they were very long. So, you had already hired architects two months before. And it turns out that those two months before the solutions barely arrived, and then on top of that the bureaucratic process was another month, another bit and then there you started to get I think 30% of the payment and you already had, that is, you already had to have previously paid the salaries for all those months, the benefits and so on, right? It is very expensive, I mean, we couldn't see it. I think that that is something that should be taken care of, the issue of efficiency, removing all the bureaucracy." [NGO]

"I think that the tools we use as architects can help us to make our time more efficient, but we haven't been able to hit the nail on the head either." [NGO]

"People also do not understand the right to housing, which is a constitutional right, and that the subsidy is a right through which this right is exercised." [NGO]

"It is very difficult to have a standard for adobe and even more so if they want to measure it structurally as they measure industrialized materials, then it is much more complex, but if they have allowed, let's say, the construction or the rescue of traditional life in that sense, it has been much easier, but not the rest." [NGO]

"For example, the reconstruction of traditional kitchens and ovens in Oaxaca, well, it was basically with women." [NGO]

"Working collectively with groups is not the same as working as a family, as working with a community assembly, or with a neighborhood assembly in an urban area, and these different work contexts are also very important to understand." [NGO]

"Respect for traditional housing, because of course, since it is not a home that is classified as heritage or cultural heritage, there is no protection for that home, and when an earthquake comes and it is damaged, it is destroyed and replaced." [NGO]

"It is about valuing other things, right? Valuing thermal inertia, valuing spatiality, valuing the very diverse ways of life that exist in this country, as well as other things that are not like a standard." [NGO]

"The housing sector is not only going through a financial crisis, but also a structural crisis, where everyone speaks their own language. The financiers are looking for one thing, the technical advisors are looking for something else, the families are looking for something else, and right in the midst of this understanding we see the lack of financial resources." [NGO]

"I used to think it was a lack of financial instruments, but now I think it is more a lack of economic resources – the instrument can vary – how do we make these incentives reach those who are working today." [NGO]

"Construction materials suppliers go through periods where they do not have enough flow for the repurchase of materials." [Financing institution]

"[As for the architect] it is not something they are considering borrowing to hire an architect, rather it is borrowing in order to be able to build." [NGO]

"In many cases, to address issues of self-production, you need a vocation, it is not just a matter of knowledge, yes, but you need a vocation." [NGO]

"It is very complicated to try to create a school for social housing production, because it is such a customized issue that it can rarely be replicated…each model is different." [NGO]

"There were some who wanted to move to open demand, but their model was so cumbersome that it was difficult for them to maintain it operationally, and also at an economic level, to pass those costs on to the customer." [NGO]

"Exercises where families save money and pay it into an account and at the end they can exchange it for materials." [NGO]

"Having the prices of the basic basket, but the prices of materials, but when they tried to do it, everything became complicated because it was so scattered that they couldn't put everything together in one document." [NGO]

"One way we have seen that families can prevent this is through the alliances that technical advisors have with material companies. They know that there will be an increase, they tell them so that the clients know that the price is going to go up and, in any case, if they need it and can, and are going to use it, then they buy it before the price goes up." [NGO]

"When a construction company does it, the beneficiary's credit yields less." [Technical Advisor]

"The beneficiaries are more likely to use advice. For the main reason that the credit yields more, and for the other reason that the beneficiary has control over the resources." [Technical Advisor]

"The challenge is to build these types of homes in stages, that is, the first part, perhaps up to 300 thousand pesos, with personal guarantees… and then give them a little respite while they pay to renew the credit and really continue in stages." [Financing institution]

"Normally, in the towns of Oaxaca, it is very difficult for people to accept technical advice because they are used to building with traditional materials." [Financing institution]

"Because these types of loans have the lowest rates that the cooperative handles. It is very different from commercial and consumer products, it has a special rate for housing products, which is why it is always attractive." [Financing institution]

"One of the important aspects to measure risk is, precisely, the direct consultation of the credit bureau: high, medium and low; this defines if I am going to give you one or two guarantors, if I am going to give you liquid collateral, maybe if I am going to give you a term, if I am going to give you a larger amount." [Financing institution]

"We quoted the materials, and now everything is 30-35% more expensive and, literally, we had to redo the executive project, we removed all the steel and the project was redone in concrete to lower costs because steel is very expensive." [Technical Advisor]

"Nobody is going to freeze the price of materials for you." [Technical Advisor]

"As a natural person, sometimes you don't even have the necessary documentation, right? For a loan or even to obtain these discounts. And everything is always going to be much more like this when it is a company established." [Technical Advisor]

"When they were very big projects, they saw me as a woman and I feel like they said, < no, I mean, how am I going to give 20 million pesos to this girl?>." [Technical Advisor]

"Architectural services, we are not talking about moving furniture, we are talking about people's lives and I feel that people do not take it seriously." [Technical Advisor]

"In the execution of a project, knowledge must be implicit and this is because it is a cycle of incompetence,

that is, incompetence from the construction permits, where you give money and then they give you the permit and you no longer need to have the expert sign it. In other words, it is a whole cycle of incompetence that encourages the majority of the population not to understand that a project will lead to safe housing." [Technical Advisor]

"It is not a luxury, simply an executive project or a structural calculation, it is a necessity and should be a necessity in any economic niche." [Technical Advisor]

"Everyone, we are builders by nature, we like to do things, people like it, to a greater or lesser extent, from putting something together in our home to ending up being designers, not with the academic knowledge that is needed to be an architect. So, what we have detected a lot with the workshops that we have suddenly given, has to do precisely with energy efficiency issues, is that people like it and they believe that they have the solution. And evidently, they do, because they are the first-hand experts on their needs. But there is no direct link with, let's say, with professionals." [Architect]

"Over time you realize that it is not true, that there is an economic decision that cannot be made by you, a social decision, a political decision, problems that begin to directly permeate the projects, where you have to, in reality, the decisions are made together, it is no longer made by a single person, it is no longer made by this totalitarian architect who controls everything as we used to know architects." [Architect]

"And in reality, no matter the scale, no matter the dimension, technical assistance always has to be present." [Architect]

"And maybe we should also erase the idea of technical assistance because we are focusing on the fact that the architect can give you solutions, let's say, at the level where you need an engineer or structural engineer, for one of the installations. Maybe we should change that perception of the technical and add a word, I don't know, assistance that has to do with space, the design of space itself." [Architect]

"As ProBono, we take certain projects that we know other projects can pay for and we start to do these housing projects, housing reinforcement projects." [Architect]

"I think that we generalize housing too much, don't we? And housing has to be individualized." [Architect]

"We always started from the concept of working on what was possible for people." [NGO]

"It is a radical change in the authority of that place, they are persecuting him and seeing who is doing the work to get the 50 pesos from him, is to see how we can make him do it better." [NGO]

"It is not just about continuing to make improvements, it is about raising awareness." [NGO]

"We are working on an innovative process so that other types of projects can be generated, for social production, which have nothing to do with building a house, but rather with building people's capabilities so that they can better deal with the problems of everyone." [NGO]

"The Regulations must recognize the technical advisor, now they only recognize the DRO." [NGO]

"One of the most important issues is that there is no financial plan for employees. And it doesn't only mean dealing with the organization in terms of financing, but the issue of guarantees is very important so that interest rates can be lowered." [NGO]

"How can you generate social responsibility in the construction materials suppliers? Well, you need a tax issue, because nobody does it for free: win-win is necessary."

"Training has been done, there have been attempts to influence architects and design services, however, many do not continue working in that field. There is no opportunity to find or even create their own office. I mean, the size of the market is large enough for more offices to be created or more architects to start their own production." [NGO]

"There are certain programs, such as the Reconstruction program, the Social Housing Program, but then

they have to include an Emergency Housing Program, because even though it is a project, if they don't call it a program, it doesn't have the institutional spirit that it needs." [NGO]

"People are clear that there are two things they want to achieve: the first is that they want a durable home, because for low-income people it is a home that will last for several generations and that will allow them to help the extended family. The other issue is that they know they need to do it in the most economical way possible. So, what they are looking for is economy and materials. But that is contradictory, because you want durability and you don't have the quality of the materials. There is a construction culture that does not help in many cases." [NGO]

"What people ask you is how much it will cost me, how far I will go and what I need to do next so that I can get that house." [NGO]

"We are doing what we can, but we can do very little." [NGO]

"On the one hand, you need to invest time in the territory. You need to invest in generating capacity, training and generating tools. You need the possibility of starting to have demonstrative effects with people." [NGO]

"Before: 40% was a subsidy from CONAVI, 50% was credit and 10% was savings (could be in kind)." [Financing institution]

"In CONAVI's past schemes, technical assistance was 10%." [Financing institution]

"The administration of resources, why was it important that it be transferred through a financial institution? Because the money was actually transferred to the account of the financial institution's partner or client, and it was combined there, the credit was transferred, they deposited their savings, or the architect reported and checked that there was that amount in material as a counterpart." [Financing institution]

"They paid for their housing loans because they knew they had access to a second subsidy, which motivated them, and in general it is known that when people use their loan for housing, they pay it back." [Financing institution]

"Success does not depend on an amount and a rate, but on the possible combination of credit, subsidy and technical assistance; where what guarantees success is technical assistance, it is the invisible and magical component of all this. But what is interesting is that technical assistance is not like urban experts who come and do cases in their rural areas, but that this technical assistance mobilizes the local capacities of construction foremen, bricklayers, and the people themselves, because there are constructive experiences in the communities." [Financing institution]

"If you have stability in the territory for two, three, five, six years or more, you can impact the local supply market and you can really create solutions for the majority of families, because if you come with a program that lasts one year or that only distributes sheets or makes cement cheaper, that is, it has no impact." [Financing institution]

"[Currently, subsidies] are based on political criteria, not need." [Financing institution]

Appendix 8. Six Proposal by Diez Candelas to deepen and improve self-produced housing in México

Proposal	Objective	Actions
Improvement of Social Housing Production	Promote a model of social housing production in Mexico that is sustainable, inclusive, and cost-effective, with community participation.	Strengthening Community Participation: Establish programs that promote community organization as a central element in social housing production. Encourage the formation of cooperatives and local associations that work in collaboration with construction companies and independent architects.
		Review of the Costs and Financing of Design and Technical Assistance Services: Implement policies that regulate the costs and scopes of architecture and related services, exploring flexible financing schemes tailored to local conditions, including support from NGOs and cooperatives as alternative sources of financing.
		Innovation in Credit Models: Develop loans specifically designed for progressive housing projects, allowing adjustments based on construction stages and project progress. Facilitate collaboration among banks, Sofincos, Sofipos, and cooperatives to provide accessible financing tailored to the needs of rural and urban communities.
		Promotion of Best Practices and Circular Economy: Support initiatives by NGOs that provide technical assistance and promote the social and circular economy in housing construction. Encourage the creation of service portfolios and technical training by trades, promoting sustainability and quality in social housing production projects.
		Adaptation to Crises and Resilience: Develop response mechanisms for crises, such as the COVID-19 pandemic or Hurricane OTIS, strengthening the resilience of financial intermediaries and ensuring that resources are effectively directed to end users, avoiding discrepancies in financing costs and resource execution. Coordinate to ensure that discounts or agreed prices with material suppliers are effectively utilized for these purposes.
Strengthening the Construction sector and Education in Social Housing	Improve the efficiency and sustainability of the construction sector in Mexico, focusing on participatory design, education in self-production, and the integration of sustainable practices from planning to material use.	Clear Roles and Financial Support: Transform SHF into a first-tier bank that facilitates access to financial resources for social housing production, leveraging its infrastructure and experience in program management to enable the long-term financial sustainability of OEOs, technical assistants, or NGOs. Simplify the requirements for bonds and guarantees for social housing projects supported by ONAVIS, especially outside urban areas.
		Innovation in Financing and Products: Develop attractive financial products secured by the Housing Subaccount, adjusting interest rates to make them more accessible to families. Explore applications to stabilize material prices during crises or catastrophic events, ensuring availability and controlled costs through consolidated purchases.

		Education and Training: Establish a School of Self-Production in collaboration with universities and social services, focused on training the new generations of architects in social housing production. Integrate fiscal and labor education so that young architects understand how to charge for their services fairly and legally.
		Promotion of Sustainable Practices: Encourage participatory design that goes beyond standard prototypes, fostering innovation and local adaptation in construction processes. Support the use of efficient and regional materials, addressing resistance within the industry to these practices through awareness programs and ongoing training.
		Inter-institutional Cooperation and Continuous Evaluation: Establish mechanisms of cooperation among academies, local governments, and NGOs to ensure the relevance and effectiveness of education in social housing.
		Implementation and Monitoring: Create an interdisciplinary committee to oversee the implementation of these measures, ensuring transparency and coordination among all involved parties. Establish clear success indicators and conduct regular evaluations to ensure compliance with the established objectives.
Improvement of Administrative Efficiency and Access to Information in the Housing Sector	Optimize administrative processes, improve access to information, and strengthen government management to facilitate self-production and the development of accessible and sustainable housing in Mexico.	Administrative Reform and Architect Participation: Involve architects more actively in administrative processes such as audits and site visits to streamline and improve the efficiency of housing projects. Simplify procedures prior to the registration of loans and reduce bureaucracy to receive initial disbursements.
		Efficient Management of Resources and Subsidies: Improve government management to ensure an efficient distribution of economic resources allocated for housing—not limiting them to politically Strategic Projects. Review and adjust controls and procedures to reduce costs and facilitate access to subsidies without increasing bureaucracy.
		Promotion of Self-Construction and Land Access: Facilitate self-production from local governments through policies that provide support and appropriate technical assistance to families. Implement clear and facilitating regulations for access to land with basic services, crucial for the development of accessible and sustainable housing projects; and above all, to prevent the invasion of at-risk lands or protected natural areas, thereby promoting accessible urban development.
		Access to Information and Education: Establish an updated census to identify housing groups involved in self-production projects in various localities. Expand and improve the CONAVI Technical Assistants Registry to ensure real and effective access to qualified professionals. Promote accessible and direct education about housing, ensuring that theoretical information is applicable and useful for families.

		Regulation and Transparency: Strengthen the regulation of the land market to prevent speculation and uncontrolled price increases on invaded lands. Promote uniformity in municipal knowledge to adequately support communities in their housing development processes.
		Implementation and Monitoring: Create an inter-institutional committee to oversee the implementation of these measures, establishing clear performance indicators and conducting periodic evaluations. Foster collaboration among government, academia, and civil society to ensure the effectiveness and relevance of the implemented policies.
Improvement of Coordination and Efficiency in Self-Construction and Progressive Housing	Optimize coordination among various entities and improve access to resources to facilitate self-production and the development of progressive housing in Mexico, ensuring greater participation of architects and promoters in the processes.	Coordination and Information Dissemination: Improve the advertising and dissemination of credit products and access to subsidies through coordinated and more effective campaigns (ensuring that information is not scattered across various channels). Establish centralized and accessible platforms that integrate information on financing, technical assistance, and materials for families involved in self-production.
		Strengthening of the Architects' Associations: Support the Architects' Associations in creating collection parameters and standard fees for architectural services. Facilitate dialogue and coordination spaces among government, associations, and financial entities to effectively integrate these services into the housing credit and financing processes.
		Strategic Alliances and Affordable Material Prices: Promote the creation of alliances between local material stores and associations to access credits from the Ministry of Economy. Implement vouchers or cards that allow individuals to purchase materials at agreed-upon and affordable prices, thereby reducing costs and ensuring constant availability.
		Capacity Development and Technical Education: Establish educational programs and training in appropriate and safe construction systems. Include modules on risk management and sustainability in self-production, ensuring that families and builders have the necessary knowledge to construct safely and efficiently.
		Integration of All Stages of the Housing Project: Review and expand financing schemes to cover all stages of progressive housing, from diagnosis and participatory design to implementation, evaluation, and monitoring. Promote coordination among NGOs, private funds, and material suppliers to ensure the continuity and success of the projects.
Improvement of conditions for Self-Produced and Progressive Housing	Facilitate equitable access to resources and improve conditions for self-production and progressive housing in Mexico, addressing the identified financial, technical, and social barriers.	Review and Optimization of Financing Schemes: Implement financing schemes that coordinate both housing credit and financial support for developers and construction companies, ensuring an efficient production chain and controlled costs.

		Improvement in the Quality of Technical Services: Establish clear quality standards for the technical services provided by technical assistants and NGOs. Promote ongoing training and periodic evaluation of these services to ensure their effectiveness and compliance with regulations.
		Promotion of Appropriate Design and Planning: Encourage architectural design and urban planning as strategic investments rather than mere expenses. Promote the integration of sustainability, structural safety, and energy efficiency aspects from the initial stages of projects.
		Cost Reduction and Access to Materials: Facilitate access to construction materials at affordable prices through agreements with large suppliers and the implementation of vouchers or purchase cards for self-producing families. Promote efficient and sustainable purchasing practices.
		Strengthening Local Capacities: Support small architectural firms and local developers through training programs, initial subsidies, and collaboration with universities and technical colleges to enhance the provision of design and supervision services in self-production projects.
		Interinstitutional Coordination and Administrative Simplification: Establish a coordinated system among government entities, NGOs, and the private sector to streamline administrative procedures and reduce the bureaucracy associated with obtaining credits and subsidies.
Action Strategy to access and value architecture and design services in self-production of housing	Promote the value of architecture and design services as strategic investments to improve the quality, safety, and sustainability of self-produced housing in Mexico.	Education and Awareness: Introduce education on the importance of architectural design and technical assistance in schools and universities. Include specific modules on staged billing and the benefits of having architects in housing projects.
		Promotion and Dissemination: Carry out promotional campaigns that highlight the benefits of architectural advisory services in the construction of safe and efficient housing. Use case studies and testimonials to illustrate the added value of these services.
		Strengthening Local Capacities: Support small architectural firms through training programs and initial subsidies. Encourage collaboration with NGOs and cooperatives to expand community access to design and supervision services.
		Financial Incentives: Establish tax incentives or subsidies for families that hire architectural and design services in self-production projects. Facilitate the inclusion of these costs in government and community financing schemes.
		Regulation and Quality Standards: Implement clear regulations that promote the use of sustainable materials and appropriate construction practices in self-production. Establish quality standards for technical assistance and architectural services.

		Interinstitutional Coordination and Government Support: Improve coordination among government entities, NGOs, and the private sector to ensure ongoing support for progressive housing initiatives. Ensure the appropriate allocation of resources for programs that promote responsible self-production