

The World Bank
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Report No: ICR00005484

IMPLEMENTATION COMPLETION AND RESULTS REPORT

ON A

LOAN

IN THE AMOUNT OF US\$100 MILLION

TO THE

UNITED MEXICAN STATES

FOR THE

IMPROVING ACCESS TO AFFORDABLE HOUSING PROJECT

February 28, 2022

Urban, Resilience, and Land Global Practice
Latin America and the Caribbean Region

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CURRENCY EQUIVALENTS

Exchange Rate Effective: January 11, 2022

Currency Unit = Mexican Pesos (Mex\$)

Mex\$20.39 = US\$1

FISCAL YEAR

July 1 – June 30

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ABBREVIATIONS AND ACRONYMS

| | |
|-----------|---|
| CCS | Social Accountability Committee (<i>Comite de Contraloria Social</i>) |
| CONAVI | National Housing Commission (<i>Comisión Nacional de Vivienda</i>) |
| CPF | Country Partnership Framework |
| CPS | Country Partnership Strategy |
| ESMAP | Energy Sector Management Assistance Program |
| ESMF | Environmental and Social Management Framework |
| FM | Financial Management |
| GHG | Greenhouse Gas |
| ICR | Implementation Completion and Results Report |
| INFONAVIT | National Workers' Housing Fund Institute (<i>Instituto del Fondo Nacional de la Vivienda para los Trabajadores</i>) |
| INPI | National Institute of Indigenous Peoples |
| IP | Indigenous Peoples |
| IPP | Indigenous Peoples Plan |
| IRR | Internal Rate of Return |
| ISR | Implementation Status and Results Report |
| KGTF | Korea Green Growth Trust Fund |
| M&E | Monitoring and Evaluation |
| MTR | Midterm Review |
| NPV | Net Present Value |
| OEO | Works Executing Agency (<i>Organismo Ejecutor de Obra</i>) |
| OR | Operational Rules |
| PAD | Project Appraisal Document |
| PDO | Project Development Objective |
| POM | Project Operations Manual |
| RAS | Reimbursable Advisory Services |
| SEDATU | Ministry for Agrarian, Territorial, and Urban Development (<i>Secretaría de Desarrollo Agrario, Territorial y Urbano</i>) |
| SHCP | Ministry of Finance and Public Credit (<i>Secretaría de Hacienda y Crédito Público</i>) |
| SHF | Federal Mortgage Society (<i>Sociedad Hipotecaria Federal</i>) |
| TA | Technical assistance |
| TTL | Task Team Leader |
| UMA | Unit of Measurement and Adjustment (<i>Unidad de Medida y Actualización</i>) |

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DATA SHEET

BASIC INFORMATION

Product Information

| | |
|------------------------|--|
| Project ID | Project Name |
| P157932 | Improving Access to Affordable Housing Project |
| Country | Financing Instrument |
| Mexico | Investment Project Financing |
| Original EA Category | Revised EA Category |
| Partial Assessment (B) | Partial Assessment (B) |

Organizations

| | |
|---------------------------|---------------------|
| Borrower | Implementing Agency |
| The United Mexican States | CONAVI |

Project Development Objective (PDO)

Original PDO

The Project's development objective is to increase access to affordable housing for low-income beneficiaries.

FINANCING

| | Original Amount (US\$) | Revised Amount (US\$) | Actual Disbursed (US\$) |
|---------------------------------|------------------------|-----------------------|-------------------------|
| World Bank Financing | | | |
| IBRD-87640 | 100,000,000 | 99,895,004 | 99,895,004 |
| Total | 100,000,000 | 99,895,004 | 99,895,004 |
| Non-World Bank Financing | | | |
| Total | 0 | 0 | 0 |
| Total Project Cost | 100,000,000 | 99,895,004 | 99,895,004 |

**KEY DATES**

| Approval | Effectiveness | MTR Review | Original Closing | Actual Closing |
|-------------|---------------|-------------|------------------|----------------|
| 14-Jun-2017 | 08-Dec-2017 | 21-Jan-2020 | 31-May-2021 | 31-Aug-2021 |

RESTRUCTURING AND/OR ADDITIONAL FINANCING

| Date(s) | Amount Disbursed (US\$M) | Key Revisions |
|-------------|--------------------------|--|
| 13-Apr-2020 | 72.44 | Change in Results Framework Change in Components and Cost |
| 12-May-2021 | 93.63 | Change in Loan Closing Date(s) |

KEY RATINGS

| Outcome | Bank Performance | M&E Quality |
|--------------|------------------|-------------|
| Satisfactory | Satisfactory | Substantial |

RATINGS OF PROJECT PERFORMANCE IN ISRs

| No. | Date ISR Archived | DO Rating | IP Rating | Actual Disbursements (US\$M) |
|-----|-------------------|--------------|--------------|------------------------------|
| 01 | 06-Oct-2017 | Satisfactory | Satisfactory | 0 |
| 02 | 18-Apr-2018 | Satisfactory | Satisfactory | 19.36 |
| 03 | 23-Oct-2018 | Satisfactory | Satisfactory | 58.46 |
| 04 | 15-May-2019 | Satisfactory | Satisfactory | 58.46 |
| 05 | 25-Nov-2019 | Satisfactory | Satisfactory | 58.46 |
| 06 | 09-Jun-2020 | Satisfactory | Satisfactory | 72.44 |
| 07 | 09-Dec-2020 | Satisfactory | Satisfactory | 72.44 |
| 08 | 14-Jun-2021 | Satisfactory | Satisfactory | 93.63 |



SECTORS AND THEMES

Sectors

Major Sector/Sector (%)

Financial Sector 50

Public Administration - Financial Sector 50

Industry, Trade and Services 50

Housing Construction 50

Themes

Major Theme/ Theme (Level 2)/ Theme (Level 3) (%)

Finance 49

Finance for Development 49

Housing Finance 49

Urban and Rural Development 100

Urban Development 100

Services and Housing for the Poor 100

Urban Planning 1

Environment and Natural Resource Management 50

Climate change 50

Mitigation 50

ADM STAFF

| Role | At Approval | At ICR |
|--------------------------|--------------------------|-------------------------|
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I. PROJECT CONTEXT AND DEVELOPMENT OBJECTIVES

A. CONTEXT AT APPRAISAL

Context

- 1. At the time of appraisal in 2017, Mexico had managed to preserve its economic and financial stability amid adverse external shocks through monetary and fiscal policy responses.** The Mexican economy was facing a complex external environment that posed challenges to the country's economic and financial stability and growth outlook. Although monetary poverty in Mexico had not improved, since 1990 non-monetary poverty had shown an improvement because of a reduction in social deprivations. The housing sector was considered key for poverty reduction and economic growth considering its impact on the Gross Domestic Product (GDP), the creation of jobs and poverty alleviation.
- 2. Mexico had a solid legal and institutional housing framework in place, which stood out for producing standardized, finished housing units at scale.** The rapid expansion of housing finance since the mid-1990s, led by the National Workers' Housing Fund Institute (*Instituto del Fondo Nacional de la Vivienda para los Trabajadores*, INFONAVIT) and facilitated by public policies to increase formal housing supply, expanded access to housing for an increasing share of formal sector, salaried ('affiliated') workers.¹ With the creation of the National Housing Commission (*Comisión Nacional de Vivienda*, CONAVI) in 2007, which provides direct housing support to the lowest-income segment, Mexico made important gains in terms of improving housing affordability for the poor.
- 3. Despite the substantial progress made in increasing housing supply, the housing deficit persisted.** Between 2000 and 2014, approximately nine million additional housing units were built in Mexico. However, given the similarly large increase in household formation, the housing deficit remained stable at an estimated nine million units in absolute terms or around 30 percent of the housing stock between 2000 and Project appraisal in mid-2017.² Moreover, the emergence of large-scale housing developments in urban peripheries, financed by loans from INFONAVIT and, partly, direct housing supports by CONAVI, was associated with the unsustainable growth of Mexican cities and overall dissatisfaction among new homeowners who found themselves distant from jobs and other urban amenities.³ Although the qualitative housing deficit remained high, comparatively limited support was allocated for home improvement and self-production of housing, which most poor people relied upon for their housing needs.
- 4. The Improving Access to Affordable Housing Project ("Project") was developed in a context of increasing political interest in a more efficient urban and housing sector.** The Government of Mexico recognized the importance of a national urban policy framework that included compact development and densification of cities, as well as addressing Mexico's housing deficit in the face of a rapidly urbanizing population, as key objectives.⁴ With this new orientation, the Government sought to build on Mexico's

¹ *OECD Urban Policy Reviews: Mexico - Transforming Urban Policy and Housing Finance*, 2015, Paris: OECD Publishing.

² *Evolución del rezago habitacional por entidad federativa, 2008–2018*, Diaz Duarte, C., and Gustavo Zaldivar, <https://sniiv.conavi.gob.mx/doc/analisis/2019/Calculo%20de%20Rezago%20Habitacional.pdf>.

³ *Mexico Urbanization Review: Managing Spatial Growth for Productive and Livable Cities in Mexico*, Kim, Yoonhee, and Bontje Zangerling, 2016, Washington, DC: World Bank.

⁴ Programa Nacional de Vivienda 2014–2018. http://dof.gob.mx/nota_detalle.php?codigo=5342865&fecha=30/04/2014.



achievements in vastly increasing housing supply in the country while addressing some of the persistent shortcomings of previous approaches, including uncoordinated urban sprawl which characterized many Mexican cities; the need to diversify housing solutions beyond the focus on the production of new housing at scale; the importance of increasing the energy efficiency and sustainability of the sector; and the need to address the housing requirements of the most vulnerable sector of the population, including informal sector (non-affiliated) workers.

5. **The World Bank established a robust dialogue with the housing and urban authorities that led to the preparation of this Project.** World Bank dialogue built on decades of engagement with the housing authorities in the country. Between 2001 and 2012, three development policy loans were implemented to support housing and urban development reforms (P070371, P089852 and P101342) that specifically focused on affordable housing and urban poverty reduction. In parallel, the International Finance Corporation focused on supporting and stabilizing the mortgage market by injecting liquidity in the sector, while the expansion of products to the lower-income segments was modest.⁵ Before Project preparation, under the Mexico Urban and Housing Programmatic Approach (P147899), the World Bank prepared (a) the Mexico Urbanization Review Report (P133243) and (b) the Reimbursable Advisory Services (RAS) on Housing Policy and Financing (P150380), which was implemented with CONAVI and provided critical recommendations to improve the design and operability of CONAVI's main housing investment support program ('the Program').⁶ A significant number of the recommendations stemming from the technical and analytical work were implemented to enhance the design and operability of the CONAVI housing support program and were reflected in the Operational Rules (OR) before Project approval. These included an adjustment of the Program parameters to strengthen the support provided for self-producers and the informal sector and diversifying of available housing solutions to more effectively provide support for the acquisition of new and existing units, home improvement, self-productions, and the purchase of serviced plots.

6. **At the time of appraisal, the Project's objective was highly relevant to the country context.** By targeting low-income populations and informal sector workers, the Project supported the Mexican Government to address persistent challenges of reaching poor and vulnerable groups who lack access to the broader housing finance market. Moreover, by applying location criteria for direct housing support allocation, the Project sought to contribute to the Government's objective of promoting more sustainable urbanization. Component 3 was specifically targeted to strengthen urban management capacities, with a view to creating incentives for the development of affordable inner-city housing. The Project design reflected Government priorities in the urban and housing sectors, and the rationale for assistance was built on robust technical and analytical work as well as decades of World Bank experience and lessons learned.

7. **The Project was designed in full alignment with the Country Partnership Strategy for Mexico for the period 2014-2019 (Report No. 80800-MX),** particularly the objective of "promoting green and inclusive growth".

⁵ Independent Evaluation Group. 2016. *World Bank Group Support for Housing Finance - Learning Product*. Washington, DC: World Bank.

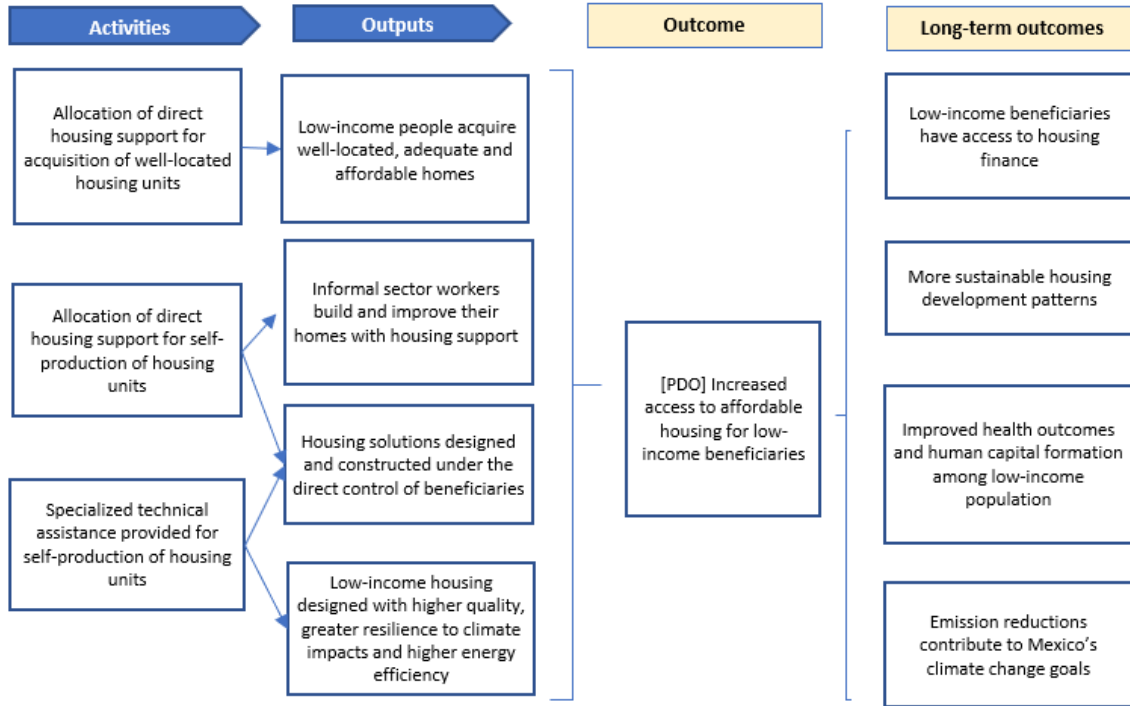
⁶ At appraisal, CONAVI's main housing support program was called Access to Financing for Housing Solutions Program (*Programa de Esquemas de Financiamiento y Subsidio Federal para la Vivienda*). With the change of administration in 2018, the Program was renamed the Social Housing Program (*Programa de Vivienda Social*).



Theory of Change (Results Chain)

8. Figure 1 summarizes the (retrofitted) results chain linking the Project’s activities to the objectives and expected short-, medium-, and long-term outcomes. The results chain, including the definition of outcomes, was prepared for this Implementation Completion and Results Report (ICR).

Figure 1. Results Chain



Critical Assumptions:

- A1: Resources and commitment to maintain financial and technical support in place.
- A2: Knowledge gained through capacity building is sustained.

Project Development Objectives (PDOs)

9. The PDO as stated in the Loan Agreement and in the PAD is to increase access to affordable housing for low-income beneficiaries.

Key Expected Outcomes and Outcome Indicators

10. The original PDO indicators to measure Project outcomes were as follows:

- (a) Number of direct housing supports allocated to low-income beneficiaries



- (b) Direct Project beneficiaries, of which are female⁷
- (c) Percentage of beneficiaries from the informal sector⁸
- (d) Number of cities that take concrete steps and actions to increase the density or relieve regulatory bottlenecks for affordable housing provision.

11. PDO Indicator (d) was removed as part of a restructuring in 2020 as it was related to Component 3 of the Project, whose resources were subsequently reallocated to Component 2 (see further details below).

Components

12. The Project originally comprised three components.

Component 1: Acquisition of Housing Units (estimated allocation at appraisal: US\$48.75 million, actual allocation at closing: US\$33.03 million)

13. The purpose of this activity was to enhance access to housing by assisting low-income beneficiaries to purchase their first new or existing housing unit in eligible locations through the provision of direct housing supports. 'Low-income beneficiaries' were defined as eligible beneficiaries earning less than four units of measurement and adjustment (*Unidad de Medida y Actualización*, UMAs)⁹ (US\$539 per month) as established in the Program's OR. 'Affordable Housing' (known as *vivienda económica*) was defined as the cheapest formal house produced by the market with at a cost of approximately Mex\$225,230 (about US\$17,000) that was affordable for households earning around 3 Monthly Minimum Wages (MW) per month or more¹⁰. Due to high land costs in urban areas, this type of housing represented only 13 percent of the total units formally produced. More than half of all the formal units produced were priced around of Mex\$301,946 (about US\$23,000). These were known as *vivienda popular* and were only affordable to households earning more than 4.1 MW, those at or above the fifth income decile.

⁷ Although this PDO indicator was not included in the Project Appraisal Document (PAD) main text (Table 1 of the PAD), it was indeed included in the Results Framework in the PAD and tracked throughout Project implementation.

⁸ As defined in the Results Framework in the PAD. There is a discrepancy in the PAD main text where the indicator is named as "Percentage of direct housing supports to informal (non-affiliated) beneficiaries." However, it aims to monitor the same target as "Percentage of beneficiaries from the informal sector" is defined as percentage of beneficiaries under components 1 and 2 who were not affiliated to a housing provident fund such as the National Workers' Housing Fund Institute (*Instituto del Fondo Nacional de la Vivienda para los Trabajadores*, INFONAVIT), the Housing Fund of the Institute of Social Security and Services of Government Employees (*Fondo de la Vivienda del Instituto de Seguridad Social y Servicios Sociales de los Trabajadores del Estado*, FOVISSSTE) or the Social Security Institute of the Armed Forces of Mexico (*Instituto de Seguridad Social de las Fuerzas Armadas de México*, ISSFAM).

⁹ In December 2016, the Government of Mexico issued a new unit of value to be used to denominate all federal obligations and programs: the "Unidad de Medida de Actualización" (UMA). For 2021, one UMA is equivalent to MX\$89.62 per day (the minimum wage is equivalent to MX\$141.7 per day). The UMA is updated annually by the National Statistical Institute (INEGI) considering the inter-annual variation of the national Consumer Price Index (CPI).

¹⁰ Minimum affordable Income was the income needed for a household to afford a home at the average price in that category, paying less than 30 percent of income, repaying a 20-year fixed rate mortgage with an 80 percent loan to value and 11.1 percent market interest rate (Data source: Housing Registry [*Registro Único de Vivienda*, RUV] and CONAVI). Housing typology in Mexico was grouped in six categories that vary substantially by price, size, and quality. The six categories were, in increasing average price: Affordable (*Económica*), Popular (*Popular*), Traditional (*Tradicional*), Mid-range (*Media*), Residential (*Residencial*), and Residential+ (*Residencial+*). This categorization was developed by INFONAVIT. While not official, these categories were widely used to reflect the different market segments.



‘Eligible locations’ were defined as U1 and U2 contornos¹¹ as designated by the National Urban and Housing Policy and utilized by CONAVI under the Program as well as being located in an authorized area under the Urban Development Plan and not being located in risk-prone areas.

Component 2: Self-production of Housing Units (estimated allocation at appraisal: US\$50.00 million, actual allocation at closing: US\$66.61 million)

14. Under this component, the Project financed housing support to assist low-income beneficiaries in the design and construction of their housing units. Self-production involves the design and construction process—in the beneficiary’s own plot—of a housing solution under the direct control of the beneficiary, through self-construction or contracting of a third party. Households also received technical assistance (TA) on construction techniques, contract management, and basic financial literacy. The direct housing support was paired with one or multiple micro-credits typically provided by microfinance institutions, social housing developers, cooperatives, or multiple purpose financing institutions (*Sociedades Financieras de Objeto Múltiple*). Under this modality, beneficiaries also contributed their own savings, either in kind or through their own labor. This component reached informal sector workers who were not eligible to receive mortgage loans from INFONAVIT. Selected housing units had to comply with minimum quality and environmental requirements, be in an authorized area under the Urban Development Plan, and not be located in risk-prone areas.

Component 3: Strengthening Urban Management (estimated allocation at appraisal: US\$1.0 million, actual allocation at closing: US\$0)

15. This component was designed to be implemented in parallel with Components 1 and 2 to catalyze the development of well-located affordable housing projects in municipalities across the country through financing technical studies to inform urban planning instruments. Activities under this component planned to include (a) technical and analytical studies to assist in the formulation/revision of selected municipal urban planning instruments, such as (i) housing demand diagnostics, (ii) infrastructure requirement analysis to inform master plans for urban renovation and/or densification, (iii) technical pre-feasibility studies, (iv) architecture urban design studies, and (v) financial structuring for affordable housing investments; and (b) citizen awareness campaigns and other dissemination/communication activities.

B. SIGNIFICANT CHANGES DURING IMPLEMENTATION

16. **Funds were reallocated among components.** A Level 2 restructuring was approved on April 13, 2020, to reallocate remaining funds from Components 1 and 3 to Component 2, to reflect the Government’s new policy priorities in the housing sector and expand support provided for self-production processes and to low-income households not affiliated with housing provident funds like INFONAVIT. It also modified the Results Framework (see paragraph 20).

¹¹ U1 and U2 contornos refer to urban areas characterized by proximity to job centers and urban services.



17. **Extension of the closing date.** A Level 2 restructuring to extend the loan closing date by three months was approved on May 12, 2021, to allow the borrower to allocate the remaining Project resources (US\$6.1 million).

Revised PDOs and Outcome Targets

18. The PDO remained unchanged during implementation.

Revised PDO Indicators

19. Minor adjustments were made to the Results Framework through the first restructuring to correct errors identified in the PAD and to reflect the reallocation of funds between components approved in the restructuring.

20. The following changes were made to the PDO-level results indicators.

Table 1. Changes in PDO-Level Indicators

| PDO Indicator | Changes |
|---|---|
| Number of direct supports allocated to low-income beneficiaries | The description of the indicator was revised to delete the incorrect reference to U1 and U2 contornos. ¹² The target of this indicator was originally defined as “all the direct housing supports expected to be disbursed under Components 1 and 2,” but the allocation of support under Component 2 was not limited to U1 and U2 contornos. Furthermore, it was specified that the indicator would measure housing purchase, expansion, and home improvements. |
| Percentage of beneficiaries from the informal sector ¹³ | The target of this indicator was revised upwards from 5 percent to 60 percent, correcting a typographic error in the PAD which set the original target at 5 percent instead of 50 percent. In the context of the restructuring, it was decided to set the target for this indicator at 60 percent since all beneficiaries under Component 2 were non-affiliated workers. |
| Number of cities that take concrete steps or actions to increase density or relieve regulatory bottlenecks for affordable housing provision | The indicator was deleted to reflect the reallocation of funds from Component 3 to Component 2, whereby the US\$1 million originally allocated to Component 3 was reallocated to Component 2 (see paragraph 25). |

Revised Components

21. **Change in components and costs.** Through the Project restructuring in 2020, US\$15,715,620.45 from Component 1 and US\$1,000,000.00 from Component 3 were reallocated to Component 2, so that the costs under Component 1 would amount to US\$33,034,379.55, whereas the costs under Component 2 would increase to US\$66,610,624.47, and costs under Component 3 would be zero.

Other Changes

¹² U1 and U2 contornos refer to urban areas characterized by proximity to job centers and urban services.

¹³ Named as “Percentage of direct housing supports to informal (non-affiliated) beneficiaries” on Table 1 of the PAD.



22. **Changes in income thresholds and direct housing support amounts.** The Project was designed to support the implementation of CONAVI's Access to Financing for Housing Solutions Program and thus provided the flexibility to adjust certain parameters, including income thresholds and direct housing support amounts to ensure alignment with the OR of the Program, provided that any such changes are established in the Project Operations Manual (POM) against the 'no objection' of the Task Team Leader (TTL). During Project implementation, two revisions of the POM were approved by the TTL. Among the most important adjustments that were undertaken are the following:

- (a) Decrease of income threshold for beneficiaries of direct housing support under Component 1 from 4 UMAs to 2.8 UMAs, equivalent to the extreme poverty line, in 2018
- (b) Increase of income threshold of beneficiaries of direct housing support under Component 2 from 4 UMAs to 5 UMAs in 2018 (equivalent to the poverty line)
- (c) Under Component 2, changes to the POM stipulated that the housing support could be allocated under two modalities: (i) complementary investment activities by an executing entity, plus CONAVI housing support and beneficiaries' savings, and (ii) microloan allocated by an executing entity, plus CONAVI housing support and beneficiaries' savings.

Rationale for Changes and Their Implication on the Original Theory of Change

23. **The restructuring in 2020 responded to the new Government's shift in priorities in the urban and housing sector.** A new federal administration took office in December 2018 with the social policy objective to strengthen policy interventions to help the poor and vulnerable groups. With the institutional realignment and the modification of the National Housing Law in 2019, all competencies related to the formulation of urban and housing policy were anchored in the Ministry for Agrarian, Territorial, and Urban Development (*Secretaría de Desarrollo Agrario, Territorial y Urbano, SEDATU*), whereas CONAVI was given the role of an implementing agency of these policies. While the previous Government considered CONAVI's housing support program as a lever to influence urban policy, to incentivize more compact and sustainable urban development patterns, the new Government prioritized inclusion and better targeting of informal sector workers, the poor, and vulnerable groups, as the main objective of the housing program.

24. **Reallocation of funds from Component 1 to Component 2.** This reallocation was justified to expand housing support to reach the poorest and most vulnerable population segment, including informal sector workers and households that rely on housing self-production. Given the relative strength of federal support provided through national housing finance institutions like INFONAVIT, the new housing policy proposed the reduction of federal direct housing supports provided by CONAVI and linked to mortgage loans issued by a federal housing fund, and instead prioritize housing support modalities that better target poor families not eligible for housing finance provided by INFONAVIT. Most of these families rely on self-production of their homes. The original design of the Project allowed the World Bank to support these new Government priorities by reallocating remaining funds from Component 1 to Component 2, as Component 2 was already designed to target informal sector workers for self-production of homes. The adjustment did not affect the PDO achievement but reinforced the Project's objectives and outcomes, by increasing access to affordable housing for informal sector workers who tend to lack access to housing finance and assistance and increasing the corresponding target indicator to 60 percent.



25. **The reallocation of funds from Component 3 to Component 2 reflected both the shift in policy priorities and competencies that took place with the new administration.** Although significant progress was made to start the implementation of activities under Component 3, the renewed focus of the Government and its decision to delegate to SEDATU all competencies related to urban policy led to the modification of the Project before any disbursements were made under Component 3. The reallocation of funds from Component 3 to Component 2 made it possible to expand the support provided to the most vulnerable groups as well as communities in remote regions of the country, and to help CONAVI achieve its targets in the allocation of support to self-production processes and low-income beneficiaries not affiliated to a housing provident fund, expanding the self-production modality to include support for home improvement and expansion. However, before urban policy responsibilities were transferred to SEDATU, relevant activities to strengthen urban management under Component 3 were carried out by CONAVI with its own resources, some of which received TA from the World Bank funded by the Korea Green Growth Trust Fund (KGGTF) and the Energy Sector Management Assistance Program (ESMAP). This included a technical report prepared in collaboration with the Municipality of Merida to identify the necessary regulatory changes and financing structures needed to make inner-city affordable housing feasible¹⁴ and the development of the ‘Metropolitan Profile Tool’, a practical tool for municipal governments to model future urban expansion scenarios depending on different policy measures. Due to the transfer of responsibilities from CONAVI to SEDATU, in 2019, the World Bank began engaging directly with SEDATU to strengthen urban management and urban sector policy in the country and provided technical assistance to the elaboration of the National Housing Program (*Programa Nacional de Vivienda*) 2021–2024 and SEDATU’s Sector Program for Agrarian, Territorial, and Urban Development (*Programa Sectorial de Desarrollo Agrario, Territorial y Urbano*) 2020–2024. Although these activities were not financed with the loan resources, they were carried by SEDATU with the support of World Bank technical assistance and were, ultimately, part of Component 3 of the Project. Relevant policy advice in the housing and urban sector also informed the Environmental Sustainability and Urban Resilience Development Policy Financing (P174000), particularly Pillar 2: Expanding Access to Resilient Urban Infrastructure and Social Housing. This engagement created the opportunity to continue working via technical assistance with SEDATU in the implementation of the National Upgrading Program under a new operation under preparation.

26. **Adjustments were made to the Results Framework to better measure the achievement of the PDO.** The changes were made to correct errors identified in the PAD and to reflect the reallocation of funds between components as described above. The reallocation of resources from Component 3 to Component 2, which aimed to catalyze the development of well-located affordable housing in municipalities across the country, did not interfere with the achievement of the PDO. Although the corresponding PDO-indicator “Number of cities that take concrete steps or actions to increase density or relieve regulatory bottlenecks for affordable housing provision” was removed to reflect such reallocation of resources, technical studies to inform urban planning instruments that were planned under Component 3, were supported by the Bank through KGGTF, ESMAP, and through the Bank’s engagement with SEDATU.

27. **Extension of closing date.** As mentioned earlier, the three-month extension of the closing date from May 31, 2021 to August 31, 2021 was approved to allow the Borrower to allocate and disburse the remaining 6.1 percent of resources under the Project.

¹⁴ *Proyecto de Vivienda económica en la centralidad urbana de Mérida*. Report produced by Steer for the World Bank, September 2018.



II. OUTCOME

A. RELEVANCE OF PDOs

Assessment of Relevance of PDOs and Rating

Rating: High

28. **The Project remains consistent with the Country Partnership Framework (CPF) for Mexico for the period 2020-2025 (Report No. 137429-MX)**, in particular Focus Area C: Enabling sustainable infrastructure and climate action and Objective 6: Provide more inclusive and sustainable infrastructure services. The Project Restructuring in 2020 reinforced the Project's relevance, by expanding support to the most vulnerable, non-affiliated households, as well as communities in more remote regions of the country, including the south and southeast, in line with one of two cross-cutting themes identified in the CPF, i.e., reducing regional inequalities across the country, with a focus on the south.

29. **The Project remains in alignment with the new Government sector strategies as well as the National Development Plan 2019–2024 which prioritize better targeting of housing programs to the poorest.** Both the Sector Strategy for Agrarian, Territorial, and Urban Development (*Programa Sectorial de Desarrollo Agrario, Territorial y Urbano*) 2020–2024 as well as the National Housing Program (*Programa Nacional de Vivienda*) 2021–2024 highlight the need to focus housing supports on the most vulnerable populations as well as municipalities and states with the highest deficit and adopted new and more expansive standards for what is considered adequate housing, which proved especially relevant in the context of the COVID-19 pandemic (see paragraph 35 c).

30. **The Project also contributed to achieving Sustainable Development Goal 11 “Make cities inclusive, safe, resilient, and sustainable”,** and is aligned to the Government's commitment to the New Urban Agenda and the Declaration of the United Nations Conference on Housing and Sustainable Urban Development (HABITAT III) signed in Quito, Ecuador, in October 2016, particularly in its focus on strengthening housing programs to address the needs of vulnerable populations which was subsequently reflected in the design of CONAVI's Social Housing Program.

31. **In the context of the COVID-19 pandemic, the Project design remained highly relevant in supporting the Government's emergency response strategy and aligning with the World Bank's COVID-19 response.** During the pandemic, housing moved to center stage as a tool to improve living conditions, prevent the spread of the disease, and contribute to economic recovery. As protection from COVID-19 is a function of being able to 'stay home', social distancing, access to services, and poor housing emerged as particular concerns. The Government's COVID-19 response strategy to support economic reactivation included significant public investment in the housing sector which important knock-on effects in terms of employment generation and economic activity in associated sectors such as construction and real estate services. Through the restructuring in 2020, the Project was aligned to support the Government's COVID-19 response strategy, by expanding housing supports to the poorest households. Thus, the Project is also aligned to the 'World Bank Group COVID-19 Crisis Response Approach Paper: Saving Lives, Scaling-Up Impact and Getting Back on Track', particularly the objectives of Pillar 2: “Protecting Poor and Vulnerable People.”



B. ACHIEVEMENT OF PDOs (EFFICACY)

Assessment of Achievement of Each Objective/Outcome

Rating: High

32. **The PDO of increasing access to affordable housing for low-income beneficiaries was successfully achieved** by targeting 100 percent of direct housing support to beneficiaries with income below 5 UMAs, equivalent to US\$22 per day and in line with Mexico’s poverty threshold¹⁵. Through the Project, access to affordable housing increased, reaching 28,864 low-income households who received direct housing supports, exceeding the target of 28,700 beneficiaries. Of this total, 52 percent were female beneficiaries, also exceeding the 50 percent target. Moreover, 64 percent of direct housing supports reached informal households, exceeding the target of 60 percent adjusted upwards during the 2020 Restructuring. According to the Loan Agreement, “direct support” refers to a non-reimbursable contribution made to any given low-income beneficiary under Components 1 and 2 while “low-income beneficiary” means any low-income individual selected to receive a direct support under Components 1 and 2 of the Project¹⁶. Table 2 summarizes the achievement of each PDO indicator target.

Table 2. Status of Achievement of PDO-Level Indicator Targets¹⁷

| PDO Indicator | Baseline | Original Target | Formally Revised Target | Actual August 31, 2021 | Status of Achievement |
|---|----------|-----------------|-------------------------|------------------------|-----------------------|
| Number of direct supports allocated to low-income beneficiaries | 0 | 28,700 | N/A | 28,864 | Exceeded |
| Percentage of beneficiaries from the informal sector | 0 | 5 | 60 | 64 | Exceeded |
| Number of Direct Project Beneficiaries | 0 | 28,700 | N/A | 28,864 | Exceeded |
| Percentage of Female beneficiaries | 0 | 50 | N/A | 52 | Exceeded |

33. **The allocation of direct housing supports for well-located housing units and self-production of housing units led to improved access to housing finance for low-income beneficiaries, informal sector workers, and improved affordability of housing solutions.** Direct supports provided by the Project made housing affordable for households living below the poverty line and created access to housing for low-income beneficiaries previously excluded from receiving support. Although Mexico has a long history of expanding housing supply in the country, most well-established housing finance schemes target the

¹⁵ Although the PAD defined the maximum income threshold for beneficiaries under the Project at 4 UMAs, in 2018 this was adjusted in the Project Operations Manual (POM) to 5 UMAs to ensure full alignment with CONAVI’s Operational Rules and to ensure the Project would reach the poorest. Both the PAD and the Loan Agreement allowed for the flexibility to adjust income thresholds and housing support amounts of the Project “pursuant to the criteria and procedures established in the POM”. For 2021, one UMA is equivalent to MX\$89.62 (i.e., US\$4.4).

¹⁶ Pursuant to the criteria and procedures established in the POM.

¹⁷ The PDO-Level indicator “Number of cities that take concrete steps or actions to increase density or relieve regulatory bottlenecks for affordable housing provision” was deleted from the Results Framework as the result of the Restructuring.



population with formal employment and enough income to obtain a mortgage. To qualify for a mortgage loan for a new home from public and private institutions, households must have an income more than five times the minimum salary in 2016 (Mex\$10,956 or US\$441 per month). Most Mexicans earning below this amount (73 million people or 57 percent of the population) need direct government support in the form of direct housing support as financed by the Project, to acquire a new home in the formal housing market. Moreover, most poor and informal sector workers targeted by the Project rely on self-production for the construction, expansion and improvement of housing units to address their housing needs. However, it was not until 2020 that INFONAVIT began to make mortgage financing available to low-income households who seek to build their homes on their own land (instead of only offering financing for the purchase of previously built homes). Providing housing support for low-income formal sector workers who required a direct housing support to access housing finance (Component 1), as well as informal sector workers who seek to build or improve their own homes (Component 2), allowed the Project to close an important gap in terms of the housing support provision in Mexico:

- (a) By focusing housing support under Component 1 on the population living below the poverty line and the extreme poverty line (from 2018), the Project targeted the population segment that without a housing support would have not been able to access and pay back a mortgage loan including from INFONAVIT. The totality of direct housing supports allocated under this component supported the purchase of well-located low-income housing, that is, housing located in U1 and U2.
- (b) Component 2 created the opportunity to access affordable housing solutions to a population previously excluded altogether from receiving housing support. Given their extremely low-income levels and informal employment status, the poorest households in Mexico, many of which are headed by women, largely lack access to housing finance or credit.¹⁸ Unlike the population targeted under Component 1, informal sector workers lack access to formal employment and social security, depend on irregular incomes, and seek to leverage the only asset they have, which is a plot of land and their own labor. The co-financing modality supported under the Project provided housing support and facilitated access to microloans from dedicated microfinance institutions, savings banks, and cooperatives to informal sector workers and self-builders for the first time.
- (c) By allocating 70 percent of Project direct housing supports to households living below the extreme poverty line (under 2.6 UMAs), 64 percent of direct housing supports to households that work and live in the informal sector, and 52 percent of direct housing supports to women, the Project was highly successful in improving housing affordability and access for the country's low-income population.

34. By providing and scaling up support for self-production, the Project ensured that housing solutions are designed and constructed under the direct control of beneficiaries, thus encouraging local ownership, community participation, and respect for local customs. Under the self-production modality,

¹⁸ About 97 percent of the poorest 10 percent of households do not have access to public mortgage loans from INFONAVIT or the FOVISSSTE, public housing finance institutions. Among informal sector workers or irregular income earners, only 13.5 percent have access to financing through microfinance institutions or cooperatives. Importantly, the monthly incomes among the poorest households are so low that even if they had access to lending instruments, they would lack the ability to repay without a housing support. Moreover, only 17.5 percent of working age women have access to housing finance.



beneficiaries themselves make decisions on the design of the housing intervention, with TA and advice provided by the works executing agencies (*Organismos Ejecutores de Obra*, OEOs) which are a non-profit or social housing developer, state or municipal housing authority or similar organization approved by CONAVI and registered in CONAVI's OEO registry. This ensures that housing programs are adapted to the needs of each beneficiary family, the specific characteristics of the territory and bioclimatic region, and the sociocultural conditions of each vulnerable group, with particular attention paid to customs and traditions of indigenous peoples (IP). Reports from field visits conducted in the context of the Project's midterm review (MTR) in January 2020 as well as for this ICR (see annex 7) corroborated the satisfaction of beneficiaries as agents of the housing design and construction process under the self-production modality. Moreover, since 2019, CONAVI's Social Housing Program promotes Social Accountability Committees (*Comités de Contraloría Social*, CCSs) as a key mechanism for stakeholder participation. Organized at the community level, the CCS comprise beneficiaries entrusted with monitoring the execution of the housing supports in their local area, ensuring the quality of the housing intervention, guiding beneficiaries throughout the housing support implementation process, and mitigating any potential tensions that may arise in the housing support allocation process.

35. **By providing specialized TA for individual housing interventions, the Project contributed to improvements of low-income housing quality and sustainability.** Specifically, the Project contributed to greater resilience of the housing stock and greenhouse gas (GHG) mitigation and ensured high housing quality and the adequacy of the standards of each housing intervention:

- (a) **Greater resilience of the housing stock.** The Project contributed to greater resilience of the housing stock, especially among poor and vulnerable populations by (i) focusing support on municipalities with high climate vulnerabilities and (ii) financing targeted interventions to reduce, mitigate, or anticipate climate impacts. An analysis of the allocation of direct housing supports found that 65.4 percent of direct housing supports (18,890) were allocated to improve and build homes in municipalities with high climate vulnerability. Each housing intervention support financed under the Project adhered to strict resilience standards that go beyond standard building codes and construction standards, by prescribing the use of materials and construction methods that have been proven resilient to natural and climate-related hazards, including financing passive design solutions to regulate indoor temperature in municipalities exposed to heat, rainwater harvesting systems in municipalities experiencing high water stress, waterproofing foundations and walls in areas exposed to floods, and reinforcing structures and roofs to withstand hurricanes. The World Bank provided TA financed by ESMAP to CONAVI to strengthen the capacities of OEOs and awareness among beneficiaries about the importance of these design characteristics. Importantly, each housing solution is located in areas suitable for construction as evidenced by updated land use plans or risk studies. Field visits and interviews conducted with beneficiaries for this ICR highlight the importance of improving housing quality and resilience, especially among a population segment that is generally more likely to live in precarious housing and highly vulnerable to natural hazards and climate impacts (see annex 7).
- (b) **The Project made significant contributions to energy and resource efficiency of homes as well as in emission reductions.** The Project required that resource and energy efficiency measures be incorporated in housing design and construction to boost the climate



mitigation and adaptation potential of all housing solutions financed under the Project, far exceeding the target defined in the PAD of 10 percent of housing units purchased with direct support meeting energy efficiency standards. Under Component 1, all direct housing supports were combined with a 'green mortgage' product provided by INFONAVIT that established the incorporation of energy-efficient design and appliances as a mandatory baseline for all housing solutions. This led to at least a 20 percent reduction in energy and resource consumption of the homes financed under this component compared to a business-as-usual scenario. Under both Component 1 and 2, CONAVI offered a higher housing support to incentivize the installation of energy efficiency measures, including rainwater harvesting systems, resource-efficient faucets and toilets, energy-efficient appliances, solar water heaters, and reflective walls, as established in the Operations Rules. In 2021, CONAVI also mandated the incorporation of energy-efficient and passive housing design measures in each housing intervention financed under Component 2 (similar to the mandatory baseline established for housing solutions financed under Component 1). CONAVI further sought to maximize energy and resource efficiency by promoting the use of local, sustainable materials and bioclimatic design through capacity building for TA providers and awareness raising among beneficiaries, supported by World Bank TA financed by ESMAP (for further details see paragraph 68).

As part of the TA funded by ESMAP, the World Bank conducted a range of analyses to estimate the expected energy use and emission reductions achieved by the Project. While Mexico has in place a robust system for measuring energy use reductions achieved through the production of new housing such as those financed under Component 1, no such system exists to account for the energy and emission reductions achieved through the measures promoted under Component 2 for self-builders. The main reason for this is that whereas new housing produced at scale is based on standardized prototypes, whose energy consumption data can be easily aggregated, no such standardization exists for self-production of homes where each case is different and unique. Through dedicated TA, the World Bank worked closely with CONAVI during Project implementation to arrive at reasonable estimations of the mitigation achieved under self-production. Depending on the climate and the use of air conditioning, energy use per housing solution financed under Component 2 was reduced by 13.7–36.8 percent compared to a business-as-usual scenario. Applying passive-cooling design measures alone was estimated to yield household savings of between US\$90 and US\$323 per year, depending on the climate. In terms of GHG mitigation, it is estimated that the Project contributed to a reduction of 22,530 tons of carbon dioxide (CO₂) every year and 447,660 CO₂ tons in all, if calculated over a 20-year horizon. These emissions account for the introduction of energy-efficient technologies under the Project. In the long run, under Component 1, a total of 333,440 CO₂ tons are mitigated, representing yearly energy savings per household between US\$90 and US\$323 (Mex\$100–400 per month) depending on the climate conditions. Component 2 is expected to contribute a total of 91.83 gigawatt hours (GWh) in electricity savings and 155.09 GWh in timber, amounting to an estimated total mitigation of 117,220 CO₂ tons.

- (c) **Each housing solution financed under the Project adhered to high housing quality standards.** Housing quality in Mexico was historically evaluated on four parameters: (i) adequate floor materials; (ii) adequate roof materials; (iii) adequate wall materials; and (iv)



uncrowded spaces, with no more than 2.5 people per room. Since the adoption of standards for the Adequate Housing in the National Housing Plan 2021—2024, CONAVI has established that new housing actions must additionally also comply with the following: (v) adequate location, banning construction in non-mitigable risk areas or non-developable land; (vi) structural safety, adopting construction systems resistant to earthquakes or other hazards; (vii) higher habitability and accessibility parameters, adopting standards according to each household's needs; and (viii) cultural adequacy.

36. **The Project was particularly effective in targeting women and female-headed households as beneficiaries of the housing support.** About 52 percent of Project beneficiaries receiving direct housing support from CONAVI were women, and 59 percent of the beneficiaries of direct housing support allocated under Component 2 were women. This is particularly important as in Mexico, only 18.8 percent of homes are owned by women.¹⁹ Further, only 17.5 percent of working age women have access to housing finance (compared to 26.5 percent of men). Among informal sector workers, where women predominate, access is even lower, with only 9.5 percent of women (compared to 13.5 percent of men) having access to financing—including through informal financing channels—to buy, repair, or expand their homes. This may explain why the design of Component 2, with its focus on targeting informal sector workers, was particularly successful in reaching women.

37. **The number of direct housing supports granted within municipalities with indigenous population represents six percent of the total provided under the Project.** In 2019, the OR recognized people who live in areas with a predominantly indigenous population as a priority population. Thus, of the total 28,864 direct housing supports granted during the implementation of the Project, 1,626 (6% of the total of direct housing supports) were granted in municipalities with a majority of indigenous population²⁰.

38. **The Project was designed to leverage private sector financing through the allocation of direct housing supports in combination with a mortgage loan, financed through either a public housing finance institution (INFONAVIT) or a microfinance institution registered by CONAVI.** As described in paragraph 33, the Project enabled previously excluded groups from accessing housing finance, by providing housing support for the extremely poor and poor population that otherwise would not be eligible for a mortgage and facilitating access to microloans for informal sector workers and self-builders who had not previously had access to housing finance.

Justification of Overall Efficacy Rating

39. Overall efficacy is rated as High. The rationale for the assessment is based on the level of achievement of the Project's outcomes against the PDO statement, indicators, and targets. As showed above all PDO indicators' targets were exceeded. Also, as mentioned and explained in more detail on the next section on efficiency, the Project is expected to have positive long-term impacts on multiple

¹⁹ *Encuesta Nacional de Ingresos y Gastos de los Hogares (ENIGH) 2020.*

²⁰ According to the Catalog of Indigenous Localities 2010 (*Catálogo de Localidades Indígenas*) of the National Institute of Indigenous People (Instituto Nacional de Pueblos Indígenas, INPI). From 2020, CONAVI started to register socio-economic information from beneficiaries through the Socioeconomic Information Certificate (CIS). According to that information, 584 beneficiaries of housing supports identified themselves as indigenous people (2% of the total of housing supports financed by the Project).



dimensions such as reduction of vulnerability to diseases and improvement in the overall health indicators of the targeted population, positive impacts on education and gender equality, and reduction of multidimensional poverty. The Project is also expected to have positive impacts on climate change adaptation and mitigation due to the incorporation of sustainability measures in housing design and construction, the maximization of energy efficiency gains, and the reduction of GHG emissions.

C. EFFICIENCY

Assessment of Efficiency and Rating

Rating: Substantial

40. **Cost-benefit analysis.** An economic analysis was conducted for the different components of the Project at completion and was compared with the results estimated at appraisal. The methodology used replicated to the extent possible the methodology used for the cost-benefit analysis in the PAD. According to the data on cost of the direct housing supports and the benefits calculated for households (as described in Annex 4 for each component), the overall Project yields a return of 95.7 percent and discounted net benefits of US\$109 million, compared to the PAD estimates of a 30 percent return and a net benefit of US\$122 million. Details of the analysis are provided in Annex 4.

Table 3. Comparison of Estimated Results at Appraisal and Completion

| | Estimated Results (PAD) | Estimates at Completion |
|--|-------------------------|-------------------------|
| Internal rate of return (IRR) (%) | 30 | 95.7 |
| Discounted net benefits (US\$, millions) | 122 | 109 |

41. **The assumptions and estimates applied for this economic analysis are more conservative than the economic analysis presented in the PAD,** due to lack of data and clarity regarding the sources and data originally used. For example, the analysis for this ICR does not include other benefits such as the reduction of vulnerability to diseases and improvement in the overall health indicators of the targeted population, the impacts on gender equality (see paragraphs 36 and 45), the climate benefits (see paragraph 35), and the reduction of multidimensional poverty. Official household survey data was used to verify the improvement in housing conditions and deprivations on housing rights, which accounts for the reduction in poverty. In addition, official data was used to calculate the average value increase of a 'low-cost' home (*'vivienda económica'* according to CONAVI's categories), while the financial costs of mortgages were checked with different commercial banks.

42. **The benefits of the Project are expected to be higher when considering the increase of disposable income, which allows investments in health and education.** Based on the variables and information collected from the implementation of the Project, it was not possible to assess the impacts on health, education, or gender equality, as it required a more specific research design. However, based on similar experiences, improving housing conditions positively impact on gender equality²¹ by reducing

²¹ Women and the right to adequate housing, Housing, Your Human Rights, United Nations Human Rights Office of the High Commissioner, accessed August 2021, <https://www.ohchr.org/en/issues/housing/pages/womenandhousing.aspx>.



time spent on unpaid care and housework²², which is carried mostly by women, and is an obstacle to spend more time on education or search for a paid job. Quantitative estimation of benefits is complex to calculate, but research shows that earnings and employment improve significantly²³. Health benefits from similar projects are significant, including the reduction of gastrointestinal diseases, respiratory and cardiovascular illnesses, and the improvement of mental health. Health inequalities can also be reduced by improving the socioeconomic determinants of health²⁴.

Design and Implementation Efficiency

43. The project design proved robust and was implemented with only minor modifications to account for exogenous factors (such as the change in government policies and in institutional responsibilities). To ensure targeting the most vulnerable population, a prioritization criteria to identify eligible beneficiaries was included in the Operations Manual of the Project and maintained throughout Project implementation. The Project required only a three-month extension of the loan closing date to the four-year implementation period. Almost the entire US\$100 million loan was disbursed.

D. JUSTIFICATION OF OVERALL OUTCOME RATING

Rating: Satisfactory

44. Based on the ratings of high for relevance and efficacy, and substantial for efficiency, the overall outcome is rated as Satisfactory.

E. OTHER OUTCOMES AND IMPACTS

Gender

45. **As mentioned in Paragraph 36, the Project was particularly effective in targeting women and female-headed households as beneficiaries of the housing support.** This is particularly noteworthy as women largely lack access to (housing) finance, and the Project was able to close an important gap by providing direct housing supports and facilitating access to credit. Other factors also contributed to the Project's positive impact on gender inclusion:

- (a) The Program's operational rules established requirements for proof of ownership and title (or de facto proof of possession of the land where the intervention will take place), which may also benefit women disproportionately as they are more likely to be informally employed and less likely to be official title holders.

²² Women Empowerment and Economic Development, Duflo, 2012; "The Effects of Rural Electrification on Employment: New Evidence from South Africa" Dinkelman, 2011.;

²³ Enabled to Work: The Impact of Government Housing on Slum Dwellers in South Africa, Simon Franklin, 2020, Journal of Urban Economics 118: article 103265, doi:10.1016/j.jue.2020.103265

²⁴ The Health Impacts of Housing Improvement: A Systematic Review of Intervention Studies From 1887 to 2007. American Journal of Public Health, Thomson, H., Thomas, S., Sellstrom, E., & Petticrew, M., 2009, 99(S3), S681-S692. <https://doi.org/10.2105/AJPH.2008.143909>



- (b) Since 2019, the Project supported CONAVI in the creation of locally based Social Accountability Groups (*Comités de Contraloría Social*). Organized at the community level, as a tool for citizen engagement, these groups comprise beneficiaries that are entrusted with monitoring the execution of housing programs in their local area and ensuring its quality as well as mitigating any potential tensions that may arise in the housing support allocation process. These groups are trained to ensure that women's concerns are adequately addressed, and most constituents of these groups are women.
- (c) The beneficiary's participation in managing the home improvement and/or construction process under the self-production modality—from financial administration to the structural design of the solution, the purchase of materials, and the supervision of the construction process—contributes in important ways to the empowerment of the homeowner. She is not only the recipient of the housing solution, but she participated as an active agent in its production.
- (d) There is extensive literature that shows that improvements in home technologies, such as energy-efficient cookstoves, can significantly improve health outcomes for women in Mexico and increase their labor supply by freeing up time previously spent in the home.

Institutional Strengthening

46. **As the institution with the most extensive operational experience in providing direct housing supports for self-producers and incremental home improvement, CONAVI plays a leading role in disseminating technical expertise and best practices in the sector through the Self-Production Platform (*Plataforma de Autoproducción Decide y Construye*) launched by the Government in 2020.**²⁵ The platform convenes all major housing agencies and stakeholders in Mexico to streamline and systematize housing support for self-producers and self-builders. During the implementation of the Project, CONAVI carried out a series of trainings and capacity-building workshops for staff and service providers. The trainings focused on the main operational, technical, administrative, and social aspects of the Social Housing Program, including modules on participatory design processes and an emphasis on adequate housing design adapted to bioclimatic regions and cultural adequacy; the right to adequate housing and housing quality standards; and structural integrity and housing resilience, among others. Over 80 such trainings were reported during the implementation of Components 1 and 2 of the Project, reaching more than 3,800 CONAVI staff and service providers. The training and capacity building of OEOs were also a requirement stipulated in the Indigenous Peoples Plan (IPP) (Action Line 1), which was satisfactorily complied with. Additionally, the World Bank worked with CONAVI in the production of a series of manuals for self-builders, technical assistants and OEOs to promote resilient and energy-efficient construction methods, the use of sustainable materials, and the installation of energy-efficient appliances among beneficiaries of Component 2 some of which were supported by the World Bank through TA. The manuals are available on CONAVI's website, and the printed versions (with compass) are used by CONAVI's staff and service providers in their work with beneficiaries.

47. **The task team organized high-level knowledge exchange workshops between Project management staff within CONAVI and housing experts from the Republic of Korea in the framework of the TA with the KGGTF.** These focused on regulatory and institutional reforms to incentivize inner-city

²⁵ <https://decideyconstruye.gob.mx/>



affordable housing developments and housing in the context of the COVID-19 pandemic. An additional virtual high-level exchange was organized among Housing Ministers of the Latin American Region in June 2020 to exchange experiences and lessons learned on housing programs as an effective response mechanism in the context of the COVID-19 pandemic. CONAVI expressed satisfaction with the opportunities for the South-South knowledge exchange, learning, and networking provided by the World Bank.

Mobilizing Private Sector Financing

48. **The Project was designed to leverage private sector financing through the allocation of direct housing supports in combination with a mortgage loan, financed through either a public housing finance institution (INFONAVIT) or a microfinance institution registered by CONAVI.** Specifically, for the acquisition of new housing (Component 1), complementing mortgage loans were almost entirely allocated through a public housing institution (INFONAVIT) while in the case of self-production (Component 2), loans were provided by microfinance institutions. The economic analysis conducted for this ICR revealed that a total of Mex\$3,447,042,886 (US\$168,486,637) in housing financed was leveraged based on the direct housing supports allocated; the average loan amount of Mex\$119,681 (US\$5,849) was linked to an average direct housing support of Mex\$66,939 (US\$3,271). For the acquisition of new housing, the average housing support amounted to Mex\$60,677 (US\$2,965) and was linked to an average loan amount of Mex\$282,079 (US\$13,787), with an interest rate of 12 percent for an amortization period of 20 years. For the self-production of housing, the average direct support was Mex\$79,925 (US\$3,906) and was linked to a microloan of Mex\$30,120 (US\$1,472) with an average interest rate of 10.02 percent and an amortization period of 22.17 years. This is particularly noteworthy in the context of Mexico, where low-income segments of the population pay on average 50 percent in interest rates on available credits and loans.²⁶ The low levels of interest charged for housing loans linked to CONAVI's direct support is a result of CONAVI actively seeking to work with and empower social housing cooperatives and savings banks that specialize in supporting this lower-income segment.

Poverty Reduction and Shared Prosperity

49. **The Project contributed to the reduction of multidimensional poverty in Mexico, by improving housing conditions of the poorest households.** The Project contributed to close an important gap in terms of the housing support provision in Mexico, making housing affordable for households living below the poverty line and created access to housing for low-income beneficiaries previously excluded from receiving support (see paragraph 33). The official methodology used in Mexico to measure multidimensional poverty in Mexico considers two housing indicators: (i) quality and room of the house and (ii) access to basic housing services.²⁷ By reducing the housing deficit in Mexico, the Project supported the government efforts to reduce poverty, especially if indirect benefits of improving housing quality and increasing housing affordability are considered (for example, health improvements and more disposable income to invest in health, schooling, or economic opportunities).

²⁶<https://www.banxico.org.mx/publicaciones-y-prensa/rib-tarjetas-de-credito/%7B903591A9-442B-799D-45C6-FFEE43157EA2%7D.pdf>

²⁷<https://www.coneval.org.mx/InformesPublicaciones/FolletosInstitucionales/Documents/Medicion-multidimensional-de-la-pobreza-en-Mexico.pdf>



III. KEY FACTORS THAT AFFECTED IMPLEMENTATION AND OUTCOME

A. KEY FACTORS DURING PREPARATION

50. **Robust dialogue and strong technical and analytical work.** Project preparation drew on a series of high-quality technical and analytical products developed with Government counterparts in the years before Project approval. This includes the Mexico Urbanization Review Report (P133243) and the Housing Policy and Financing RAS (P150380), which was implemented with CONAVI. Both reports provided critical recommendations and orientation for Project design on the inclusion of informal sector workers as beneficiaries (Component 2) and on the importance of leveraging direct housing supports to promote more sustainable urban development (Component 3). Given the robust analytical work leading up to Project preparation, CONAVI had already incorporated some of the recommendations in its annual adjustments of the OR in 2017 with a view to strengthening and improving the operability of the program.

51. **Soundness of Project design.** The design of the Project was clear, with the PDO well formulated and a Results Framework for monitoring and evaluation (M&E) which only required minor revisions during Project implementation. The design of the Project proved sufficiently flexible to allow the Project to respond to new Government priorities which focused on housing affordability for low-income households and moved away from trying to leverage the housing support program as an instrument of urban planning. The Project followed the prioritization criteria for both beneficiaries and geographic areas established in the POM which were in line with the OR. The experience of a long Bank engagement with Mexico including the three development policy loans implemented between 2001 and 2012 informed the Project design incorporating key lessons learned such as: (i) the importance of selecting an Investment Project Financing as the adequate financing instrument to address technical issues requiring significant investment; (ii) the importance of ensuring precise targeting on the poor; (iii) the relevance of designing a robust M&E to assess Project's achievements; and (iv) the importance of focusing on a sustained commitment with the selected implementing agency, avoiding the involvement of too many institutions that may cause overlaps and inefficiencies. The overall risk to achieving the PDO was appropriately assessed as Moderate.

52. **Adequacy of the Government's commitment and readiness for implementation.** The Government demonstrated strong commitment and ownership of the Project. CONAVI's Project team demonstrated capability and dedication and effectively collaborated with the World Bank team during the preparation, which contributed to sound project design. The Project built on an ongoing program with robust implementation arrangements in place, thus ensuring readiness for implementation. The Project was approved in the last year of the 2012-2018 Government term, which led to minor delays and adjustments in Project activities after the transition to a new administration, as reflected in the first restructuring in 2020.

B. KEY FACTORS DURING IMPLEMENTATION

53. **Change in Government and response to new priorities.** The Project was approved in the last year of the previous administration. The Government transition that took place in 2018 resulted in a significant adjustment of Government priorities, including in the housing and urban sectors. In particular, the Government sought to improve the targeting of CONAVI's direct housing support programs, strengthen assisted self-production of housing, and move away from subsidizing housing loans allocated by



INFONAVIT. CONAVI also moved away from its previous focus of using direct housing supports as a tool to incentivize more compact urban development. As all competencies related to urban policy were delegated to SEDATU in 2019, eligible activities under Component 3 no longer fell under CONAVI's institutional mandate. The incoming Government also made important changes in the public administration, among which was the approval of the Federal Republican Austerity Law (*Ley Federal de Austeridad Republicana*) 2019²⁸. The Law restricted the ability of public agencies to contract consultants and consulting firms for technical studies that also affected the feasibility of implementing the activities planned under Component 3. Resources under Component 3 subsequently had to be reallocated to Component 2.

54. **Staff turnover.** As a result of the change in Government, a substantial staff turnover took place within CONAVI in early 2019. At the same time, the World Bank task team also changed. The changes among CONAVI staff added to a delay in the preparation of the ex-post safeguards evaluation which was scheduled to take place after the first year of implementation. The Bank task team was successful in rapidly gaining the trust of the new Government authorities. In 2019 alone, the task team organized seven technical and supervision missions to Mexico, to ensure the continuous alignment of CONAVI's operational model and priorities with those of the Project and build capacities among incoming staff in the implementation of safeguards requirements. The close dialogue with the Government also led to its request to provide technical advice and assistance in the drafting of the New Housing Law 2019 and the development of the National Housing Program 2021–2024.

IV. BANK PERFORMANCE, COMPLIANCE ISSUES, AND RISK TO DEVELOPMENT OUTCOME

A. QUALITY OF MONITORING AND EVALUATION (M&E)

M&E Design

55. **The PDO was clearly stated, specified the targeted beneficiaries, and was set at an appropriate level.** The PDO indicators used were specific, measurable, and attributable to Project activities. Although PDO indicators were defined at the output level, they captured the Project's objective of increasing affordable housing to low-income beneficiaries. The impact was to be measured by the total number of beneficiaries receiving housing supports enabled by the Project. This indicator was disaggregated to measure vulnerable sectors of the population, including women and informal sector (non-affiliated) workers. The Results Framework could have benefitted from the addition of an outcome-oriented indicator such as "Number of low-income beneficiaries with improved access to affordable housing".

56. **The M&E framework of the Project was well designed and integrated in CONAVI's monitoring and reporting systems.** Under this framework, CONAVI was responsible for collecting information on direct supports and characteristics of beneficiary households, which were made readily available to the task team for further analysis, M&E, and reporting requirements.

²⁸ http://www.diputados.gob.mx/LeyesBiblio/pdf/LFAR_191119.pdf



M&E Implementation

57. **CONAVI's biannual reports were well presented in a consistent, comprehensive format and enabled Project implementation to be tracked.** Relevant gaps in the indicators and issues that were reported on (for example, more information on safeguards implementation) were quickly addressed by CONAVI in subsequent reports. Moreover, the Government was able to successfully measure additional impacts of the Project by providing supplemental quantitative and qualitative results as described in the Efficacy section.

58. **The implementation of the M&E framework was facilitated by the ready availability of data from CONAVI, the Housing Registry (*Registro Único de Vivienda*), and the National Housing Information System (*Sistema Nacional de Información e Indicadores de Vivienda*),** which could be triangulated and used for additional analysis.

59. **The Project benefited from the restructuring to correct minor errors in the Results Framework.** Minor errors including a typo in the target and description of PDO Indicator 2 (“Percentage of beneficiaries from the informal sector”) were identified and corrected during the restructuring in 2020.

60. **CONAVI prepared a comprehensive midterm report in time for the January 2020²⁹ MTR mission and participated in the organization of stakeholder interviews and visits to the homes of beneficiaries to assess progress in the implementation of the Project.** Targeted analysis prepared for and presented during the MTR confirmed satisfactory progress in Project implementation, particularly the improved targeting of Component 1 to the population living in extreme poverty, and better geographic prioritization in direct housing support allocation from 2019 to states and regions with a concentration of housing deficit. These prioritization criteria were maintained throughout Project implementation.

M&E Utilization

61. **The M&E system provided regular management reports and a platform for real-time Project monitoring and tracking of results.** M&E data on performance and results progress were used to inform project management and decision-making. Based on the MTR recommendations, the Results Framework was adjusted in the 2020 restructuring to reflect scaled-up activities and increased targets (related to Component 2) and to correct minor errors.

Justification of Overall Rating of Quality of M&E

62. **The overall quality of M&E is rated Substantial.** The M&E system as designed and implemented was sufficient to assess the achievement of the objectives. The quality of reporting continued to improve during Project implementation and provided evidence of the achievement of outcomes. M&E staff was qualified, collaborated well with the task team including in the revision of Project indicators, and facilitated the availability of all Project-relevant data for additional analyses, especially related to the MTR and the final evaluation.

²⁹ The MTR mission was originally planned for 2019; however, it got delayed due to the government transition.



B. ENVIRONMENTAL, SOCIAL, AND FIDUCIARY COMPLIANCE

Procurement

63. **No procurable activities were identified under Component 1 and self-production activities under Component 2 were executed satisfactorily under commercial practices, which were considered acceptable to the World Bank as described in the World Bank's procurement guidelines.** TA activities expected to be financed by the Project under Component 3 were not conducted due to the reallocation of resources to Component 2 as explained earlier. At Project closing, there were no pending procurement activities.

Financial Management

64. **Financial management (FM) performance of the Project was generally Satisfactory.** CONAVI appointed qualified staff to ensure compliance with FM-related arrangements and requirements. The Project's unaudited interim financial reports were submitted to the World Bank in due time, allowing for timely financial and disbursement monitoring. Audited financial statements were also submitted to the World Bank in due time and included unmodified (clean) opinions on the Project's financial statements. As a result of these audits, no findings were reported by the independent auditor.³⁰

Environmental and Social Safeguards

65. **The Project's overall compliance with Bank environmental and social safeguard policies was Satisfactory.** The Project was classified as Category B under the Bank's Environmental Assessment Policy (OP/BP 4.01), as any environmental risks and impacts were expected to be localized, short-term, and straightforward to mitigate. Another safeguard policy triggered was Indigenous Peoples (OP/BP 4.10), given IP presence in the Project areas as well as their importance as Project beneficiaries. The Project environmental and social risks were rated Low during most of the implementation period.

66. **An Environmental and Social Management Framework (ESMF) and an IPP were prepared by the borrower prior to appraisal to ensure compliance with the relevant Mexican regulatory framework and the applicable World Bank safeguards and outline the necessary environmental and social good practices.** The IPP outlined actions related to culturally appropriate communications on Project support as well as capacity-building activities for relevant actors that accompany beneficiaries during the construction process (see paragraph 67 for more details). An ex-post safeguards evaluation after 12 months of implementation was stipulated to take stock of the initial safeguards performance of the Project to identify and guide any necessary improvements.

67. **CONAVI provided evidence of the implementation of the Project's IPP, including trainings delivered in local languages to OEOs and beneficiaries.** CONAVI provided trainings to OEOs and beneficiaries in nontechnical language on participatory housing design, housing adequacy, and the use of local, traditional material and design. Such trainings reached more than 3,800 technical staff and continue to be implemented by the technical assistance providers beyond Project completion. CONAVI developed radio jingles in collaboration with SEDATU and the National Institute of Indigenous Peoples (INPI) to reach

³⁰ The last audit report covering January 1, 2020, to August 31, 2021 (closing period) has not been submitted to the World Bank and is due by February 28, 2022.



indigenous communities and facilitate their access to CONAVI's housing programs. By 2020, the radio jingles in 23 languages had reached 843 municipalities.³¹ CONAVI used social media, the web and the telephone as well as other accessible channels to receive questions and complaints on CONAVI's programs. CONAVI reported that during Project implementation only three complaints were received and investigated, of which two were considered invalid (the complainant turned out to not be a beneficiary of the program) and the other complaint was regarding a case not financed under the Project.³²

68. **Throughout implementation, CONAVI continued to strengthen its work on promoting the use of ecotechnologies under self-production of housing units.** Until 2019, the incorporation of low-cost ecotechnologies under Component 2 was incentivized through the direct housing support design (higher investments in energy efficient appliances and passive design led to higher housing supports). In 2020, CONAVI made the incorporation of ecotechnologies mandatory by allocating 10 percent of the housing support to financing specific sustainability measures. In 2021, CONAVI moved towards instituting a baseline requirement of energy efficiency and passive design that all housing interventions financed under the Project needed to comply with, aiming to incorporate resource and energy-efficiency measures in housing design and construction, thus further increasing the environmental ambition of the Social Housing Program. These energy-efficient and passive housing design measures include the use of more affordable features such as energy-efficient lighting, efficient faucets and toilets, energy-efficient heating, roof insulation, and passive cooling³³. Since 2019, the World Bank has worked closely with CONAVI in the implementation of an ESMAP-financed Technical Assistance on Sustainable Housing Interventions for Low Income Families, which focused on the development of 15 manuals for technical assistants, OEOs, and beneficiaries to provide targeted guidance on the implementation of adequate passive design measures, resource-efficient appliances, and sustainable materials in housing interventions in 15 different climatic regions of the country. In addition, CONAVI disclosed a feasibility tool accessible through CONAVI's website for beneficiaries to select appropriate ecotechnologies for their climatic zone and housing needs.

C. BANK PERFORMANCE

Quality at Entry

69. **The Project was prepared based on the experiences and lessons learned from housing projects in Mexico and the region.** The preparation/appraisal team had substantial expertise in the Mexican housing finance sector, which, combined with the robust analytical work that predated Project appraisal, contributed to effective and well-substantiated Project design.

70. **The PDO was linked to the Project components and the corresponding indicators.** Components 1 and 2 were well designed and directly contributed to the achievement of the PDO. The emphasis on strengthening urban management (Component 3), while being an innovative and potentially

³¹ In 2021, the radio jingles were discontinued due to local elections and a corresponding law that bars government agencies from most advertising and communication activities.

³² The complaint was about a housing construction not completed and was addressed by CONAVI.

³³ Passive cooling measures focus on the physical attributes of a home to regulate indoor temperature and other domestic environmental conditions more efficiently. The aim is to build homes adapted to the climate without the need for mechanical heating and cooling. A comparative analysis of houses built according to passive design standards in Cardenas, Tabasco (Revisión de medidas y herramientas para la vivienda sustentable de Autoproducción. Esquivel I., & Tamés, E., 2021, World Bank), indicates that passively cooled households were 40 percent less likely to buy an Air Conditioning (AC) unit than those without passive design standards, and even households with AC ended up using it 33 percent less frequently.



transformational activity under the Project, manifested some design weaknesses (it was neither a core competency of CONAVI nor enjoyed a dedicated funding stream), which led to the eventual reallocation of Component 3 resources to Component 2. As discussed in Section IV.A, the M&E system was appropriate to monitor progress in Project implementation, and the Results Framework was well designed, with only minor shortcomings.

71. Safeguards and fiduciary arrangements were adequately designed with due regard to compliance with World Bank requirements. Safeguards instruments acceptable to the World Bank were prepared and disclosed. Capacity building was carried out and an ex-post evaluation during Project implementation confirmed adequate environmental and social performance. Risk assessments and mitigation measures are considered adequate; fiduciary risks, considered Substantial at appraisal, were mitigated appropriately.

72. Implementation arrangements were appropriate. The Project built on an ecosystem of housing support providers that had proven adequate and effective, particularly for Component 1. For the implementation of Component 2, the Project contributed to strengthening locally and regionally based microfinance and housing assistance providers, including through additional capacity-building and training opportunities provided to service providers throughout Project implementation.

Quality of Supervision

73. Supervision missions were held at least twice a year as per the norm, with additional missions conducted after the new Government took office in late 2018. The core supervision team included fiduciary management and environmental and social safeguards specialists, and this aided in ensuring compliance with World Bank requirements, especially during the Government transition. The supervision missions included field visits to discuss issues with the implementing agencies and beneficiaries. Continuity of task team leadership was maintained throughout the Project, with only one significant change in the task team during the lifetime of the Project. Despite COVID-19 travel restrictions, virtual World Bank oversight was maintained by the supervision team from early 2020. Training on safeguards management was delivered to CONAVI's new staff after the Government transition.

74. The January 2020 MTR comprised participatory workshops with CONAVI and other stakeholders, including implementing agencies under Components 1 and 2, as well as field trips to beneficiaries, to discuss Project progress, action plans, good practices, lessons learned, and the possibility of a restructuring. Overall implementation and progress toward PDO achievement were assessed as Satisfactory, and additional analytical work prepared for the MTR confirmed improved targeting of direct housing supports achieved through the scaling up of self-production activities under the new Government, which subsequently led to the restructuring in 2020.

75. Implementation Status and Results Reports (ISRs) were archived biannually and documented Project status and issues. The ISRs updated overall Project ratings, component ratings, and other implementation ratings based on the issues identified during regular supervision missions. In particular, the rating for environmental safeguards management was downgraded to Moderately Satisfactory in 2019 due to the delay in the ex-post evaluation of the Project's safeguards performance, caused by the change in CONAVI's operational personnel in late 2018. The rating was upgraded in August 2020 after CONAVI presented a revised, more detailed version of its ex-post safeguards assessment and response



matrix addressing the World Bank's previous comments. The report included details of the positive impacts generated through the promotion of housing-related ecotechnologies and the positive results of field visits conducted to collect first-hand information.

76. **Flexibility to respond to Government priorities and sustainability of Project outcomes.** As a result of new Government priorities, the Bank reallocated the remaining funds under Components 1 and 3 to Component 2, in order to scale up housing support to informal sector workers (Level 2 restructuring in 2020). Given the alignment of the Project with Government priorities, reinforced through the Project restructuring, the sustainability of Project outcomes is not considered at risk. The Government remains strongly committed to the right to adequate housing and the prioritization of Government funds to target housing assistance to the poorest and most vulnerable groups. The World Bank added value to CONAVI's programs, particularly in terms of strengthening the sustainability of housing interventions through the TA provided to self-builders, which is firmly anchored in CONAVI's operational processes and will continue to receive World Bank support in the context of a new housing operation currently under discussion with the authorities.

77. **Mobilization of additional TA resources.** The ICR notes that the task team secured technical assistance funds to support CONAVI in strengthening urban management (ESMAP I), promote inner-city affordable housing (KGTTF), and scale up the incorporation of resource and energy efficiency elements in the self-production of housing (ESMAP II). These contributed to support the achievement of Component 3, despite loan funds being reallocated from Component 3.

Justification of Overall Rating of Bank Performance

Rating: Satisfactory

78. **Bank performance is rated Satisfactory.** At entry, the Project was realistic and well designed, building on a strong analytical basis to justify Project design. During implementation, the World Bank was proactive in providing guidance to CONAVI to ensure successful Project implementation.

D. RISK TO DEVELOPMENT OUTCOME

79. **The Project was successful in its objective to increase access to affordable housing for low-income beneficiaries.** Risks to development outcomes are considered low given CONAVI's commitment to continue and strengthen the implementation of its Social Housing Program. Institutional risks were considered low, given that the program has been a Government priority. CONAVI draws on a roster of approximately 900 well-trained and certified service providers (technical assistants and OEOs) to ensure technical standards and the operability of the program. By Project closing, CONAVI and the World Bank were discussing a potential new operation to continue providing support to the Social Housing Program and design interventions that are more ambitious in terms of targeting the most vulnerable population.

V. LESSONS AND RECOMMENDATIONS

80. **The World Bank's added value in a middle-income country like Mexico with robust institutions in place, particularly in the housing sector, must be clearly defined.** The ICR found the contribution of the Project to lie in its focus on (i) solving last-mile challenges in ensuring access to housing for population



groups previously excluded from receiving housing assistance, including informal sector workers and people living in extreme poverty; and (ii) maximizing co-benefits related to climate, gender, and citizen engagement. In both cases, the World Bank was able to build on an already strong foundation or interest from the client to do more, which the World Bank team capitalized on to promote innovation, best practices, and experimentation, as it relates, for example, to the design of sustainability manuals for self-builders.

81. High-quality technical and analytical work to complement Project design and implementation is key to engaging middle-income clients like Mexico. Mexico, which already have a sophisticated operational framework in place for Project implementation, appreciated in particular the World Bank's ability to draw on global expertise and best practices and mobilize relevant resources to respond flexibly to its request for analytical and technical support. In this regard, the Bank conducted substantive analytical work before and during Project preparation to support CONAVI to calibrate housing supports and address opportunities to strengthen the design of them, including to reach previously excluded groups and mitigate urban expansion. Results from this work informed the annual adjustment of the OR of the Social Housing Program supported by the Project, including before Project appraisal. Throughout Project implementation, TA resources were also deployed strategically to reinforce innovative Project activities; the most noteworthy being those to promote energy efficiency, resilience, and sustainability in self-produced homes and to respond to Government requests for support in the elaboration of national policy frameworks, including the National Housing Program 2021–2024.

82. World Bank support in the housing sector, especially in countries like Mexico with sophisticated markets in place for housing finance, must have a strong poverty orientation.³⁴ At Project appraisal, market-based housing finance was available to most middle-income people but was still out of reach for the poorest people who tended to lack access to basic banking services, much less mortgages. The Project demonstrated the importance of specifically targeting those excluded from the housing finance market, including informal sector workers and those relying on self-production, by easing the regulatory environment and involving local organizations, such as nongovernmental organizations, saving banks, and cooperatives. Microloans and specialized TA that complemented the allocation of federal direct housing supports increased access to housing finance and ensured the appropriate use of resources and housing quality.

83. World Bank support in the housing sector must focus on climate change mitigation and adaptation. The building and housing sector contributes up to 40 percent of global GHG emissions and energy use. Designing homes that maximize energy efficiency gains, reduce emissions, and are resilient to climate impacts and natural hazards is key to preparing for a low-carbon, resilient future. Climate change is posing threats to poor people living in precarious, overcrowded homes, built with inadequate materials and lack of technical expertise, leading to exposure not only to climate impacts but also to adverse health impacts, such as those caused by water leaks, poor ventilation, overheating, and dirt floors. The Project demonstrated the benefits of incorporating sustainability measures in housing design and construction, in terms of reducing energy consumption and emissions, reducing electricity bills, and leading to greater indoor temperature comfort. Many of these measures can be implemented with the right technical expertise without additional costs, by focusing on bioclimatic or passive design. The TA provided under the Project was critical in building technical capacities to apply sustainable housing

³⁴ Buckley, Robert M., Kalarickal, Jerry. 2006. *Thirty Years of World Bank Shelter Lending: What Have We Learned?* World Bank, Washington, DC.



solutions in CONAVI's direct housing support programs for self-builders (Component 2) and providing relevant data to begin measuring their impact.

84. **Successful Project implementation relies on a strong relationship between the client and the World Bank.** The Government transition led to substantial changes in Government priorities in the sector and to staff turnover. To build trust with the new authorities, the task team invested substantial effort and time, evidenced in a high number of technical and supervision missions and capacity-building workshops. The task team also worked closely with CONAVI in the preparation of the MTR and the corresponding evaluation prepared by CONAVI, and (as mentioned earlier) provided critical TA and resources in response to requests by CONAVI and SEDATU.



ANNEX 1. RESULTS FRAMEWORK AND KEY OUTPUTS

A. RESULTS INDICATORS

A.1 PDO Indicators

Objective/Outcome: Improve access to affordable housing

| Indicator Name | Unit of Measure | Baseline | Original Target | Formally Revised Target | Actual Achieved at Completion |
|------------------------------|-----------------|-------------|-----------------|-------------------------|-------------------------------|
| Direct project beneficiaries | Number | 0.00 | 28,700.00 | 28,700.00 | 28,864.00 |
| | | 30-Jun-2017 | 31-May-2021 | 31-Aug-2021 | 31-Aug-2021 |
| Female beneficiaries | Percentage | 0.00 | 50.00 | 50.00 | 52.00 |

Comments (achievements against targets):

Target achieved. The target was actually exceeded by 164 beneficiaries, resulting in a total of 28,864. In line with the Level 2 Restructuring approved in May 2021 to extend the closing date of the Project, the End Target date was moved to August 31, 2021.

| Indicator Name | Unit of Measure | Baseline | Original Target | Formally Revised Target | Actual Achieved at Completion |
|---|-----------------|-------------|-----------------|-------------------------|-------------------------------|
| Number of direct supports allocated to low-income beneficiaries | Number | 0.00 | 28,700.00 | 28,700.00 | 28,864.00 |
| | | 30-Jun-2017 | 31-May-2021 | 31-Aug-2021 | 31-Aug-2021 |



Comments (achievements against targets):

Target achieved. The target was exceeded by 164 beneficiaries, resulting in a total of 28,864. In line with the Level 2 Restructuring approved in May 2021 to extend the closing date of the Project, the End Target date was moved to August 31, 2021.

| Indicator Name | Unit of Measure | Baseline | Original Target | Formally Revised Target | Actual Achieved at Completion |
|--|-----------------|-------------|-----------------|-------------------------|-------------------------------|
| Percentage of beneficiaries from the informal sector | Percentage | 0.00 | 5.00 | 60.00 | 64.00 |
| | | 30-Jun-2017 | 31-May-2021 | 31-Aug-2021 | 31-Aug-2021 |

Comments (achievements against targets):

Target achieved. As part of the restructuring, the target for this indicator was revised upwards from 5 percent to 60 percent. As agreed during the MTR, this change aimed to correct a typographic error in the PAD which set the original target at 5 percent instead of 50 percent. In the context of the restructuring, it was decided to set the target for this indicator at 60% since all beneficiaries under Component 2 were non-affiliated workers and therefore the achievement of the target was likely to exceed 50%, Actually, the Project surpassed the end target, reaching 64% of beneficiaries from the informal sector.

A.2 Intermediate Results Indicators

Component: Access to Housing Solutions

| Indicator Name | Unit of Measure | Baseline | Original Target | Formally Revised Target | Actual Achieved at Completion |
|----------------------|-----------------|----------|-----------------|-------------------------|-------------------------------|
| Percentage of direct | Percentage | 0.00 | 50.00 | 50.00 | 70.00 |



| | | | | | |
|---|--|-------------|-------------|-------------|-------------|
| supports allocated for beneficiaries below 2.6 UMAs | | 30-Jun-2017 | 31-May-2021 | 31-Aug-2021 | 31-Aug-2021 |
|---|--|-------------|-------------|-------------|-------------|

Comments (achievements against targets):

Target achieved. The final percentage of direct supports allocated to beneficiaries below 2.6 UMAs reached 70%, surpassing the end target that was set at 50%.

| Indicator Name | Unit of Measure | Baseline | Original Target | Formally Revised Target | Actual Achieved at Completion |
|---|-----------------|-------------------|--------------------|-------------------------|-------------------------------|
| An empowerment system for beneficiaries is designed and implemented | Yes/No | No 30-Jun-2017 | Yes 31-May-2021 | Yes 31-Aug-2021 | Yes 31-Aug-2021 |

Comments (achievements against targets):

Target achieved. A web-based empowerment system, as initially envisioned, was developed by CONAVI and was complemented by a call center and proactive outreach via social media like facebook, twitter and whatsapp.

| Indicator Name | Unit of Measure | Baseline | Original Target | Formally Revised Target | Actual Achieved at Completion |
|--|-----------------|-------------------|--------------------|-------------------------|-------------------------------|
| A community dissemination campaign targeting indigenous populations designed and implemented | Yes/No | No 30-Jun-2017 | Yes 31-May-2021 | Yes 31-Aug-2021 | Yes 31-Aug-2021 |



Comments (achievements against targets):

Target achieved. CONAVI developed radio jingles in collaboration with SEDATU and the National Institute of Indigenous People (INPI) specifically to reach indigenous communities and facilitate their access to the housing programs. Since October 2019, these radio jingles were transmitted through community radio stations in six different indigenous languages, most prominently in Oaxaca and Chiapas.

| Indicator Name | Unit of Measure | Baseline | Original Target | Formally Revised Target | Actual Achieved at Completion |
|--|-----------------|-------------|-----------------|-------------------------|-------------------------------|
| Training workshops carried out on: construction best practices; workers safety and security; local and culturally adequate design; and/or participatory planning, especially towards women | Number | 0.00 | 5.00 | 5.00 | 87.00 |
| | | 30-Jun-2017 | 31-May-2021 | 31-Aug-2021 | 31-Aug-2021 |

Comments (achievements against targets):

Target achieved. CONAVI carried out a comprehensive training program targeted at CONAVI technical staff, technical assistance providers and OEOs. All technical assistance providers and implementing partners of CONAVI ("Prestadores de Servicio") completed a training program ("Fomacion de Induccion") that focused on the main operational, administrative, technical as well as social aspects of the program. CONAVI organized 87 training workshops that included dedicated modules on participatory design, traditional architecture and culturally sensitive practices. During the COVID-19 pandemic, CONAVI continued offering the trainings in a virtual format, with no impact achievement of this indicator. CONAVI also worked with the Bank team to strengthen capacity in participatory design and culturally adequate communication and dissemination strategies, in the context of the technical assistance provided for the incorporation of sustainability aspects in housing programs. The original definition of this indicator was "training workshops carried out on: construction best practices; workers safety and security; local and culturally adequate design; and/or participatory planning, especially towards women and indigenous peoples. Included in the IPP action plan". However, the original target -set at 5 training workshops - was largely exceeded as a comprehensive training program from CONAVI to technical staff, technical assistance providers and OEOs was considered.



B. KEY OUTPUTS BY COMPONENT

| PDO: To increase access to affordable housing for low-income beneficiaries -Components 1 & 2 | |
|--|---|
| Outcome Indicators | <ol style="list-style-type: none"> 1. Number of direct housing supports allocated to low-income beneficiaries. 2. Direct Project beneficiaries, of which are female. 3. Percentage of direct housing supports to informal (non-affiliated) beneficiaries. |
| Intermediate Results Indicators | <ol style="list-style-type: none"> 1. Percentage of direct housing supports allocated for beneficiaries below 2.6 UMAs. 2. An empowerment system for beneficiaries is designed and implemented. 3. A community dissemination campaign targeting indigenous populations designed and implemented. 4. Training workshops carried out on construction best practices; workers safety and security; local and culturally adequate design; and/or participatory planning, especially towards women. |
| Key Outputs – Components 1 & 2 (linked to the achievement of the PDO) | <ol style="list-style-type: none"> 1. 28,864 direct housing supports allocated to low-income beneficiaries. 2. 28,864 Project beneficiaries, of which 52 percent are female. 3. 64 percent of beneficiaries from the informal sector. 4. 70 percent of direct housing supports allocated to beneficiaries below 2.6 UMAs. 5. Yes, an empowerment system for beneficiaries was designed and implemented. 6. Yes, a community dissemination campaign targeting indigenous populations was designed and implemented. 7. 87 training workshops were carried out on construction best practices, workers safety and security, local and culturally adequate design, and participatory planning, especially towards women. |

**ANNEX 2. BANK LENDING AND IMPLEMENTATION SUPPORT/SUPERVISION****A. TASK TEAM MEMBERS**

| Name | Role |
|---|---------------------------------|
| Preparation | |
| Angelica Nunez del Campo, Horacio Cristian Terraza, Ondina Francisca Rocca | Task Team Leader(s) |
| Gabriel Penalzoa | Procurement Specialist(s) |
| Daniel Chalupowicz | Financial Management Specialist |
| Arelija Jacive Lopez Castaneda | Social Specialist |
| Vanessa Alexandra Velasco Bernal | Team Member |
| Nadya Selene Alencastro Larios | Team Member |
| Felipe Targa Rodriguez | Team Member |
| David Mason | Team Member |
| Ondina Francisca Rocca | Team Member |
| Michael J. Darr | Social Specialist |
| Oscar Anil Ishizawa Escudero | Team Member |
| Elena Segura Labadia | Counsel |
| Fabio Pittaluga | Social Specialist |
| Nancy Lozano Gracia | Team Member |
| Jose C. Janeiro | Window Manager |
| Supervision/ICR | |
| Luis Miguel Triveno Chan Jan, Horacio Cristian Terraza | Task Team Leader(s) |
| Carina Lakovits | Team Member |
| Gisela Ferrari | Team Member |
| Francisco Rodriguez | Procurement Specialist |
| Jose M. Martinez | Procurement Team |



| | |
|----------------------------------|---------------------------------|
| Luis Barajas Gonzalez | Financial Management Specialist |
| Juan Pablo Rivero Zanatta | Team Member |
| Pilar Gonzalez | Senior Counsel |
| Ramiro Ignacio Jauregui-Zabalaga | Team Member |
| Tuuli Johanna Bernardini | Environmental Specialist |
| Maria Virginia Hormazabal | Team Member |
| Rosa Maria Martinez | Social Specialist |
| Sarah Antos | Team Member |
| Claudia Soto Orozco | Team Member |
| Armando Rosales | Team Member |
| Claudia Patricia Pacheco Florez | Team Member |
| Diana Jimenez Cruz | Team Member |
| Beatriz Elena Franco | Team Member |

B. STAFF TIME AND COST

| Stage of Project Cycle | Staff Time and Cost | |
|------------------------|---------------------|--|
| | No. of staff weeks | US\$ (including travel and consultant costs) |
| Preparation | | |
| FY16 | 7.700 | 53,726.58 |
| FY17 | 47.471 | 392,078.79 |
| FY18 | 0 | 342.84 |
| Total | 55.17 | 446,148.21 |
| Supervision/ICR | | |
| FY18 | 44.071 | 498,691.29 |
| FY19 | 22.964 | 463,050.29 |
| FY20 | 23.360 | 431,063.09 |
| FY21 | 0 | 2,499.90 |
| Total | 90.40 | 1,395,304.57 |



ANNEX 3. PROJECT COST BY COMPONENT

| Components | Amount at Approval (US\$, millions) | Actual at Project Closing (US\$, millions) | Percentage of Approval |
|--------------------------------------|--|---|-----------------------------------|
| 1. Acquisition of Housing Units | 48.75 | 33.03 | 67.75 |
| 2. Self-production of Housing Units | 50.00 | 66.61 | 133.44 |
| 3. Strengthening Urban Management | 1.00 | 0.00 | 0.00 |
| Front-End-Fee | 0.25 | 0.25 | 100.00 |
| Total | 100.00 | 99.89 | 99.89 |



ANNEX 4. EFFICIENCY ANALYSIS

1. **Cost-benefit analysis.** An economic analysis was conducted for the different components of the Project. According to the data on cost of the direct housing supports and the benefits calculated for households (as described below for each component), the overall Project yields a 95.7 percent return and discounted net benefits of US\$109 million.

Table 4.1. Total Cost-Benefit Analysis (US\$, millions)

| | Costs | Benefits | Net Benefits | Net Benefits (discounted) | IRR (%) |
|-----------------|-------|----------|--------------|---------------------------|---------|
| New or used | 31.9 | 58.7 | 26.8 | 15.7 | 42.4 |
| Self-production | 56.0 | 200.1 | 144.1 | 85.3 | 187.8 |
| House improving | 9.7 | 29.5 | 19.8 | 7.7 | 30.5 |
| Total | 97.7 | 288.3 | 190.6 | 108.7 | 95.7 |

2. **For Component 1 (Acquisition of Housing Units)** which represents 33.03 percent of the Project funds, and following the methodology used in the PAD for the cost-benefit analysis, the benefits were estimated to be the savings resulting from the difference between paying a mortgage on the market (US\$650 monthly for 2.5 years³⁵) and payments for loans acquired complementing direct housing supports of the Project (average of US\$552 monthly for 2.5 years³⁶). The data used on inflation of prices are from 2017–2021 (4.4 percent on average), and it is assumed that this increase in prices will continue for the following years. Total benefits estimated were the result of the average benefit applied for the 10,394 direct housing supports. Total cost was the sum of supports allocated for this component (US\$32 million).

3. **Based on this analysis, Component 1 has a net present value (NPV) of US\$15.7 million and an IRR of 43 percent** (see table 4.2). These estimates are conservative, as they do not include the other benefits of avoiding mortgage payment and surpassing housing deficit, such as (a) the reduction of vulnerability to diseases and improvement in the overall health indicators of the targeted population, (b) the impacts on gender equality, and (c) the reduction of multidimensional poverty. Another indirect benefit not taken into account was that increase of disposable income leaves households free to invest financially or in health or education.

Table 4.2. Cost-Benefit Analysis (Component 1): Allocation of Direct Housing Support for Acquisition of Housing Units (US\$, millions)

| Year | 2017 | 2018 | 2019 | 2020 | 2021 |
|-----------------------------------|-------|-------|-------|-------|-------|
| Time | 1 | 2 | 3 | 4 | 5 |
| Cost, C | 10.41 | 21.53 | 0.00 | 0.00 | 0.00 |
| Benefits, B | 4.70 | 12.74 | 13.14 | 13.68 | 14.44 |
| Net, B–C | -5.71 | -8.78 | 13.14 | 13.68 | 14.44 |
| Discounted, $(B - C) / (1 + i)^t$ | -5.19 | -7.26 | 9.88 | 9.34 | 8.97 |

³⁵ Payment required for the average cost of housing acquired by households' beneficiaries of the Project, equivalent to US\$17,324 (MX\$342,757) with an interest rate of 9.35 percent.

³⁶ Average financing cost for a loan of US\$14,257 (MX\$282,079) and an interest rate of 12 percent acquired with INFONAVIT, according to Project information.



| Year | 2017 | 2018 | 2019 | 2020 | 2021 |
|---|-------|------|------|------|------|
| Economic NPV, Σ (Discounted) | 15.73 | | | | |
| Economic IRR (%), rate (i) at which NPV = US\$0 | 42.36 | | | | |

Source: Own elaboration.

Note: IRR and NPV use a 10 percent discount rate.

4. **Cost-benefit analysis for Component 2 (Self-production of Housing Units)**, which represents 66.61 percent of Project funds), used the same assumptions as Component 1: (a) savings resulting from the difference between a mortgage on the market and payments on loans acquired for complementing the direct housing supports received,³⁷ (b) inflation of 4.4 percent, and (c) total benefits were calculated 13,874 direct housing supports allocated between 2017 and 2021, according to CONAVI data. Cost estimates include the sum of supports. Results show that the NPV is US\$85 million, and the IRR is 188 percent. As with Component 1, this is a conservative estimate since it does not take into account indirect benefits.

Table 4.3. Cost-Benefit Analysis (Component 2): Allocation of Direct Support for Self-production of Housing Units (US\$, millions)

| Year | 2017 | 2018 | 2019 | 2020 | 2021 | 2022–2026 (average per year) |
|---|--------|-------|-------|-------|-------|---------------------------------|
| Time | 1 | 2 | 3 | 4 | 5 | 6–13 |
| Cost, C | 8.43 | 16.16 | 13.34 | 10.20 | 7.91 | 0.00 |
| Benefits, B | 5.73 | 16.79 | 26.72 | 32.85 | 37.65 | 16.08 |
| Net, B – C | -2.71 | 0.63 | 13.38 | 22.65 | 29.75 | 16.08 |
| Discounted, $(B - C) / (1 + i)^t$ | -2.46 | 0.52 | 10.05 | 15.47 | 18.47 | 8.65 |
| Economic NPV, Σ (Discounted) | 85.32 | | | | | |
| Economic IRR (%), rate (i) at which NPV = US\$0 | 187.84 | | | | | |

Source: Own elaboration.

Note: IRR and NPV use a 10 percent discount rate.

5. For house improvement direct supports (which represent only 10 percent of Project funds), the benefits were estimated to be an annual increase of 6.5 percent in the value of real estate over 10 years after housing improvements or expansions are carried out, assuming an average value of a ‘low-cost’ home (*‘vivienda económica’* according to CONAVI’s categories), equivalent to US\$13,687 (Mex\$270,798). The annual increase in the housing value that is used comes from data on increase of low-cost houses from the Federal Mortgage Society (*Sociedad Hipotecaria Federal, SHF*)³⁸ between 2017 and 2021 (6.5 percent on average), and it is assumed that this increase in house prices will continue for the following years.

³⁷ In this case, the average housing support was US\$4,040, and the average loan that households acquired for completing this support was US\$1,522. With this information, a monthly benefit of US\$190 per household for a total of two years was estimated (average period of loans within the Project data for this component).

³⁸ Data on housing prices from SHF is available at <https://transparencia.shf.gob.mx/SitePages/IndicePV.aspx>



6. Based on this analysis, cost-benefit analysis shows that house improvement direct supports have an NPV of US\$8 million and an IRR of 31 percent.

Table 4.4. Cost-Benefit Analysis: Allocation of Direct Housing Support for House Improving (US\$, millions)

| Year | 2017 | 2018 | 2019 | 2020 | 2021 | 2022–2026 (average per year) |
|---|-------|------|------|-------|------|---------------------------------|
| Time | 1 | 2 | 3 | 4 | 5 | 6–10 |
| Cost, C | 0.00 | 0.00 | 0.00 | 8.87 | 0.84 | 0.00 |
| Benefits, B | 0.00 | 0.00 | 0.00 | 1.89 | 2.35 | 5.05 |
| Net, B–C | 0.00 | 0.00 | 0.00 | –6.98 | 1.52 | 5.05 |
| Discounted, $(B - C) / (1 + i)^t$ | 0.00 | 0.00 | 0.00 | –4.76 | 0.94 | 2.30 |
| Economic NPV, Σ (Discounted) | 7.68 | | | | | |
| Economic IRR (%), rate (i) at which NPV = US\$0 | 30.52 | | | | | |

Source: Own elaboration.

Note: IRR and NPV use a 10 percent discount rate.



ANNEX 5. BORROWER, CO-FINANCIER, AND OTHER PARTNER/STAKEHOLDER COMMENTS

Completion Report submitted by the Government of Mexico

1. The Government of Mexico submitted a document summarizing the main results and conclusions from the Project. The document includes (i) general information of the Project and results achievements, (ii) Project execution, (iii) key factors during implementation, (iv) description of the direct housing support financed by the Project, (v) environmental and social aspects, (vi) economic analysis, (vii) medium and long-term impacts of the Project, (viii) Bank performance during Project implementation, (ix) conclusions and recommendations. The original in Spanish is in the Project Files. The main conclusions of it are translated below:
2. The Improving Access to Affordable Housing Project was prepared recognizing the importance of the national urban policy framework that included compact development and densification of cities, as well as Mexico's housing deficit in the face of a rapidly urbanizing process. The Loan Agreement (8764-MX) was signed by the Government of Mexico and the World Bank on October 26, 2017, for a total amount of US\$100 million. The Project closing date was August 31, 2021.
3. The Project Development Objective was to increase access to affordable housing for low-income beneficiaries and it had three components: Component 1 - Acquisition of Housing Units; Component 2 - Self-production of Housing Units; and Component 3 - Strengthening Urban Management.
4. The main factors that impacted the implementation of the Project were the following: (a) changes in the housing policy established by the new federal administration; (b) reduction of resources allocated to the Social Housing Program for co-financing modalities; (c) reforms to the regulations on housing and public procurement procedures that limited the possibility of carrying out actions related to Component 3; (d) budget adjustments procedures for the Social Housing Program carried out by CONAVI; and (e) effects caused by the COVID-19 pandemic, which affected the operation of the Social Housing Program and therefore the Project.
5. Despite the factors indicated above, the overall implementation of the Project was successful. Two restructurings were carried out during the implementation of the Project to reflect the following changes: (a) a redistribution of resources originally planned for each of the components, where undisbursed funds from Component 3 were allocated to Component 2. As a result, the new distribution of resources was as follows: Component 1: Acquisition of Housing Units, US\$33,034,380; Component 2: Self-production of Housing Units, US\$66,715,620; and Component 3: Strengthening Urban Management, US\$0; (b) inclusion of home expansion and improvement as self-production modalities under Component 2; and (c) extension of the closing date from May 31, 2021, to August 31, 2021.
6. The Project's main goal to increase access to affordable housing for low-income beneficiaries was successfully achieved and all the Project's indicators were fully met or exceeded. Housing supports were granted to low-income and vulnerable households and equitable benefitted men and women, including households located in indigenous municipalities or identifying themselves as indigenous people.



Table 5.1. Resources and number of housing supports allocated per Component by the end of the Project

| Category | Component | Housing supports | Total amount in US\$ |
|---|---|-------------------------|-----------------------------|
| Number of direct supports allocated to low-income beneficiaries | Component 1: Acquisition of Housing Units | 10,394 | 33,034,379.55 |
| | Component 2: Self-production of Housing Units | 18,470 | 66,610,624.47 |
| Front-end-Fee | N/A | N/A | 250,000.00 |
| Total | | 28,864 | 99,895,004.02 |



ANNEX 6. SUPPORTING DOCUMENTS

- Country Partnership Framework (CPF) for Mexico for the period 2020-2025 (Report No. 137429-MX)
<https://documents1.worldbank.org/curated/en/927991583031630169/pdf/Mexico-Country-Partnership-Framework.pdf>
- Mexico Urbanization Review
<https://openknowledge.worldbank.org/handle/10986/24930>
- Loan Agreement for Loan No.8764-MX
<https://documents.worldbank.org/en/publication/documents-reports/documentdetail/338671512761538761/official-documents-loan-agreement-for-loan-8764-mx-closing-package>
- Project Appraisal Document for the Improving Access to Affordable Housing Project (P157932)
<https://documents1.worldbank.org/curated/es/764471497664879252/pdf/Mexico-PAD-05252017.pdf>
- Restructuring Paper
<https://documents.worldbank.org/en/publication/documents-reports/documentdetail/426541620849868629/disclosable-restructuring-paper-improving-access-to-affordable-housing-project-p157932>
- Restructuring Paper
<https://documents.worldbank.org/en/publication/documents-reports/documentdetail/129781586788235783/disclosable-restructuring-paper-improving-access-to-affordable-housing-project-p157932>
- Implementation Status and Results Reports 2017-2021
- Aide Memoires
- National Development Plan 2019–2024
<https://presidente.gob.mx/plan-nacional-de-desarrollo-2019-2024/>
- National Housing Program 2021-2024
<https://www.gob.mx/sedatu/documentos/programa-nacional-de-vivienda-2021-2024>
- CONAVI’s Programs and Rules of Operations
<https://www.gob.mx/conavi#1328>
- Completion Report submitted by the Government of Mexico



ANNEX 7. BENEFICIARY SURVEY

7. **Field visits and interviews with beneficiaries were conducted in October–November 2021 to assess the conditions of and level of satisfaction with their housing solutions.** Field visits and interviews were conducted with 42 beneficiaries who received support under Component 1 (20) and Component 2 (22) of the Project. The interviews were conducted in four localities (Tijuana, Baja California; Estado de Mexico; Puebla and San Francisco de Campeche, Yucatán) to ensure regional and bioclimatic diversity and a balance between beneficiaries of Components 1 and 2. For both components a greater number of women beneficiaries were included in the interviews. Key results are summarized in the following paragraphs.

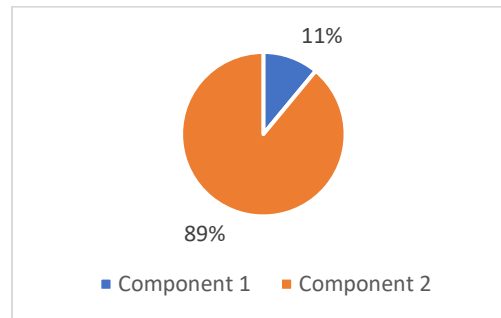
8. **Monthly income and age distribution.** For Component 1 the monthly income of the selected beneficiaries was on average US\$290–380 while for Component 2 it ranged from US\$207 to US\$264. In terms of age distribution, most beneficiaries of Component 1 were between 30 and 40 years old, making it a more homogeneous group, while those in Component 2 ranged from 30 to 80 years old with an average age of 50. Beneficiaries of INFONAVIT tend to be young as they either have a formal job or aspire to do so and therefore can pay a long-term loan. For Component 2, the conditions for co-financing schemes are defined by the OEO, making access to credit less flexible and with shorter terms.

9. **Level of satisfaction with the housing solution.** Of the 42 beneficiaries interviewed, 36 (85 percent) expressed high levels of satisfaction with their housing solutions and indicated that their housing situation had markedly improved in terms of the materials and conditions of the home and sufficient living space. In fact, many beneficiaries indicated that they previously had to share living space with other families, leading to significant overcrowding and lack of privacy. Six beneficiaries (under Component 1) indicated that they had more space, were closer to urban services, and felt safer in their original home.

10. **All housing solutions adhered to minimum quality standards as described in paragraph 35 of the main text.** All housing solutions of beneficiaries interviewed had confirmed access to water and sanitation services and an indoor bathroom. All housing solutions had also confirmed access to electricity. Satisfied beneficiaries were quoted saying, “When I have to go to the bathroom at night, I no longer have to go out in the cold and I am no longer afraid of falling” (María Silvana, 64-year-old, Puebla). It is important to note that before the interventions, 89 percent of beneficiaries in Component 2 did not have a bathroom with a sewage connection, as shown in figure 5.1.



Figure 5.1. Before Housing Interventions: Bathroom without Sewage Connection



Source: World Bank

11. **Use of ecotechnologies.** Beneficiaries with a lack of water supply, such as an indigenous community in Xocoyolo, Puebla, used rainwater storage with community leaders pumping it every third day. Four out of seven interviewees used this ecotechnology. In Jilotzingo, Mexico, all the beneficiaries used solar heaters to reduce their fuel consumption.

12. **Housing adequacy.** In all cases, the houses had finished floors, non-precarious materials for walls and ceilings, and adequate doors and windows. All the interventions under Component 1 had finishes, whereas in some cases under Component 2, the families decided to prioritize other interventions (for example, extra room) with the available funds and postponed nonessential finishes for later.

13. **Particularities.** Particular cases were found, such as beneficiaries in Tijuana who have the stove and gas installation in one of the rooms, which is why they expressed the need to have a separated area for the kitchen. The reason for this is that they have family coming over due to the proximity to the United States. In some indigenous communities, gas is rarely used, and firewood is used instead for cooking in a space next to the house, to save money on gas.

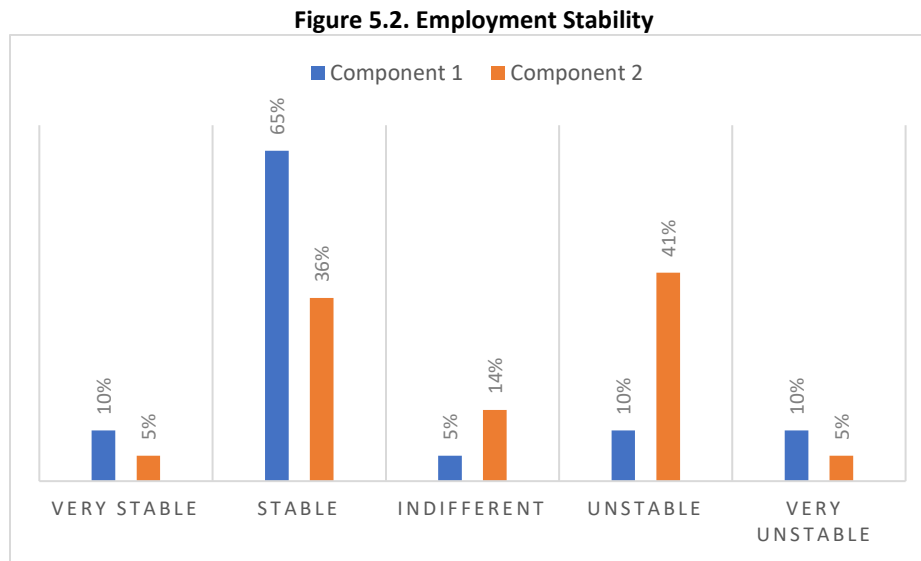
14. **Housing materials.** The cooperative operated a housing program with CONAVI direct housing support from 2007 to 2020. During this period, 18,700 families were helped to build or improve their homes in 438 towns in 39 municipalities. To know the degree of impacts of Hurricane Grace³⁹ on the homes of its members, the cooperative carried out a census in September 2021 which registered a total of 572 families affected. It is noteworthy that for 7,502 members who received support for their homes, the damage was slight. In 1999, there was a tropical depression of great dimensions that caused strong damages. Now such damages due to disasters have lessened due to a consistent housing improvement program, as stated by one of the beneficiaries, “I was used to having to rebuild my house with every disaster. This time only a little water entered my house” (Doña Josefa, 81 years old, Xocoloyo, Puebla).

15. **Financing.** About 50 percent of the interviewed beneficiaries confirmed that it was easy to pay back the mortgage loan. For beneficiaries under Component 1, this was because the payback was deducted from their monthly salary. Beneficiaries of Component 2 confirmed that the amount and amortization period were well planned in advance, and they counted on help from other family members. The remaining beneficiaries indicated that their difficulty in complying with the loan

³⁹ Hurricane Grace was the strongest tropical cyclone to make landfall in the Mexican state of Veracruz in August 2021.



repayment was linked to unexpected impacts from the COVID-19 pandemic, including employment and income losses. As shown in figure 5.2, 65 percent of beneficiaries under Component 1 perceive a stable employment condition while 41 percent under Component 2 feel unstable or very unstable about their employment.



Source: World Bank

16. **Considering the characteristics of direct housing supports allocated for the purchase of a home and linked to a formal mortgage loan provided by INFONAVIT (Component 1), compared to the self-production modality supported under Component 2, the following differences were also highlighted:**

- (a) **Location of the housing solution.** Whereas beneficiaries of housing support under Component 1 confirmed the selection of the housing development in which to purchase the house, beneficiaries of housing support under Component 2 were self-producers who built or improved their homes on previously owned land or land provided by family members. As a result, all 19 beneficiaries of housing support for the purchase of a new home (Component 1) moved to a new housing location, of which 70 percent interviewed indicated that the location was close or very close to where they lived before. On the other hand, 66 percent of beneficiaries of Component 2 remained in their prior location, with the remaining moving to a location very close to their original home in the same town.
- (b) **Size of the housing solution.** All beneficiaries under Component 2 confirmed satisfaction with the size of the housing solution. In the case of Component 1, 10 beneficiaries interviewed indicated that the housing solution is smaller than expected.

17. **Social participation.** Overall, the high level of satisfaction of the beneficiaries of Component 2 is due to the participatory mechanisms implemented by the OEOs. For example, a cooperative granted the loan in Jilotzingo and deposited the funds in the beneficiaries' accounts for them to buy the materials and hire the workers. In other cases, foundations administer the resources, buy the



materials, and provide the machinery necessary for the households to self-produce their homes. The cooperative and the Esperanza Foundation in Mexico are part of community organizations that support families in vulnerable situations— those with elderly family members or members with disabilities—by carrying out fundraising activities when credit and direct supports are insufficient. This integrated and collaborative approach during the self-production process empowers and gives a sense of belonging to the beneficiaries: “I loved the house, it is a dream come true” (Rosa del Carmen, Tijuana). “How can I not like my house if it is mine? I never thought I could have something like this!” (Maria Silvana, Puebla).

18. **Modifications after the interventions.** About 68 percent of beneficiaries in Component 2 continued doing housing improvements after the first phase. Moreover, when asked about the ease of modifying their housing over time based on the Project, 100 percent of the beneficiaries of Component 2 mentioned it would be easy, while 95 percent of Component 1 interviewees answered it would be difficult.

Quality of Life

19. **Material satisfaction.** In all cases of Component 2 and 14 out of 20 under Component 1, there is a perception of accomplishment and tranquility as well as an overall sense of improved quality of life.

20. **Emotional satisfaction.** For beneficiaries of Component 1, emotional satisfaction responses are related to pride of homeownership, as stated by one of the beneficiaries, “I never thought I would have something of my own, I feel that I am doing something, that there is something I can leave to my son and it continues to be an achievement because I take care of my job to be able to continue paying for it” (Martha, 44 years old, Tecámac, State of Mexico). Beneficiaries of Component 2 recognize the positive impact that the process of self-production had on their lives: “It was a form of self-improvement, personal growth and a better life” (Joaquín, 53 years old, Jilotzongo). In general, households reported having more space, except for four cases under Component 1 that reported having more space in their previous homes. Most of the beneficiaries of both components reported having improved family relationships due to privacy and everyone in the family having his/her own space. This was the case of most families that had reported overcrowding: “We lived at my parents’ house; there we were with them and my sister’s family. We had a room where we had everything and the five of us (the couple and three children) slept right there” (Adriana Beatriz, 32 years old, Xilochico de Rafael Ávila Camacho, Cuetzalan).

21. Neighborhood relations were strengthened mainly under Component 2 as they developed small communities. In Jilotzongo and the indigenous communities, most of the houses were built on family lots.

Conclusions

22. Preliminary conclusions point to the importance of incremental housing progress and climate adequacy of housing design. Interviews and field visits point to the high value that families place on building their homes incrementally, which can be accommodated under the self-production modality (Component 2). On the other hand, new homes purchased under Component



1 are typically based on prototypes and part of a larger housing development, which did not allow for the possibility of home expansions or improvements in the medium to long term. Families also pointed to the importance of housing quality in the face of natural hazards and climate impacts. This was made evident in interviews with beneficiaries in San Francisco de Campeche, which was hit by Hurricane Grace in August 2021. Whereas families remembered significant adverse impacts from tropical storms in previous decades, they noted that this year's hurricane barely affected their homes owing to the high quality of the new construction and improvements. Under Component 1, the most satisfied beneficiaries were those who were well connected through public transportation and close to urban services.