Current Housing Situation in Mexico 2011

PREPARADO POR Fundación CIDOC y SHF con el apoyo de CONAVI, FOVISSSTE, INFONAVIT, SEDESOL y la participación de HIC y BBVA-BANCOMER.
Current Housing Situation in Mexico 2011
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Current Housing Situation in Mexico 2011

Prepared by Fundación CIDOC and SHF with the assistance of CONAVI, SEDESOL, Infonavit, and FOVISSTE, and with the participation of HIC and BBVA-Bancomer, as well as other housing sector-related institutions.
We are in the middle of a political situation that forces us to analyze housing sector policies, their instruments and operation ways, in order to generate a renewed inclusive proposal that fosters sector’s continuity and growth by addressing urgent challenges and an integral perspective strengthened by planning and sustainability.

During the last six-year period, we have worked in improving strategies for making housing, by modifying such strategies with a perspective of integration to the urban tissue so as to make a city. It is necessary to acknowledge that the achievements from the last ten years have swamped the construction for a specific sector of the population. Therefore, this sector needs to be restructured on its policies in order to address other segments and continue with good results, supporting the population in need, consolidating urban sprawls that make up our cities.

In current governorship, important efforts have been boosted that re-direct sector policies such as DUIS strategy, Social Housing Production (PSV) supported by CONAVI, boost to vertical housing and eco-technologies; all of them are examples that foster a change.

Current Housing Situation in Mexico is aimed at showing the results up to the first half of 2011, renewal of politics and new products and, mainly, expressing the efforts made by the institutions for monitoring the quality of housing complexes, improving users’ quality of housing and life.

During these eight consecutive years, this publication has been transforming and becoming richer. In this occasion, experts were invited to participate in the study. Using Delphi methodology, they identified short- and medium-term national guidelines, which could contribute to an integral design of management and follow-up instruments for improving the sector.

Due to an unmeasured growth of urban sprawls and a lack of control mechanisms for urban development, the urgency to encourage an ordered planning of Mexican cities becomes evident, under an integral and sustainable scheme, by coordinating urban and housing policies.

Some challenges expressed in former editions are still current; however, progresses and positive results are a clear demonstration of the commitment and will be taken on by every institution in the sector.

2010 General Population and Housing Census (Censo General de Población y Vivienda 2010) provided figures that modified, to a great extent, former estimations; thus reasserting some challenges and identifying new ones. The most relevant among them is the number of unoccupied dwellings, which gets to 14% of housing stock and reaches 23% in the border. This established a need to revert the causes behind housing non-occupation. Distance from employment or education sources and the lack of services are two of the main causes. It is necessary to modify current urbanization scheme in order to foster a better land and housing occupation, thus preventing figures from keeping increasing in the coming years.
We must foster construction in intra-urban areas, where there is an installed capacity for providing services, where social fabric construction perspectives and economic opportunities are more feasible, guiding purchasers in the criteria to choose a more appropriate dwelling for their family.

In 2011, Social Production of Housing was established as a subsidy subprogram, with $350 million pesos allocated. By means of a certification pilot project, seven Social Housing Developers (Desarrolladores Sociales de Vivienda, DSV) were certified. For the first time, the Census counted housing by its acquisition method, proving that 60% of the housing in Mexico is made through social production.

During 2010, 44% more green mortgages than the year before were financed, which also means a saving from 1 to 1.5 tons of carbon dioxide per dwelling. Residential Satisfaction Survey (Encuesta de Satisfacción Residencial, ESR) showed that housing consumers are more satisfied today than in 2009, but it also proved opportunity areas and deficiencies, such as deterioration in roofs, walls or floors in 20% of new dwellings, and overcrowding from small dwellings or a lack of space.

In current years, 1,106,674 households are expected to demand a dwelling, whether from backwardness, household formation, housing mobility, or loan origination resolutions.

The Inter-institutional group of Sustainable Integrated Urban Developments (Desarrollos Urbanos Integrales Sustentables, DUIS) continued the consolidation process. On-line assessment was automated. A vocation study was started in certified projects and the first intra-urban DUIS was approved.

We are facing challenges such as the lack of served land, the need of triggering secondary mortgage market and expanding the access to formal land, housing and credit markets for the families. A modification to the General Law on Human Settlements is being promoted to strengthen territorial planning and guarantee sustainable growth in the cities, through a better land use, location of settlements in suitable areas and no land speculation.

The current edition was coordinated by the Center of Housing Research and Documentation (Centro de Investigación y Documentación de la Casa, CIDOC), along with the Federal Mortgage Society (Sociedad Hipotecaria Federal, SHF) and the participation of the National Housing Commission (Comisión Nacional de Vivienda, CONAVI), the Secretariat of Social Development (Secretaría de Desarrollo Social, SEDESOL), the Institute of National Hosing Fund for Workers (Instituto del Fondo Nacional de la Vivienda para los Trabajadores, Infonavit), the National Housing Fund of the Institute of Security and Social Services for State Workers (Fondo de la Vivienda del Instituto de Seguridad y Servicios Sociales de los Trabajadores del Estado, FOVISSSTE), Habitat International Coalition Latin America (HIC-AL), and the Economic Studies Area of BBVA-Bancomer.

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We have focused efforts throughout these years on delivering an analysis of the sector that allows us to transform current model of housing and urban growth, with an integral and sustainable view, centered on community life so that Mexican cities become inclusive, competitive and human.

Sara Topelson de Grinberg
Sub-Secretariat of Urban Development and Territorial Planning
(Subsecretaria de Desarrollo Urbano y Ordenación del Territorio)
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Executive Summary

The eighth edition of Current Housing Situation in Mexico 2011 (EAVM 2011, in Spanish) provides an analysis of the housing sector situation in Mexico. This is a changing year due to the significance of the data gathered in the 2010 General Population and Housing Census and the end of some programs for the six-year period.

This document consists of six sections. The first section has current housing and urban development policies, which are intended to raise society’s wellbeing level, and reach acceptable levels of environmental and economic health. Likewise, some unwanted effects in the generation of dwellings, its causes and possible solutions are stated. As for policy in urban development matters, a list of works that are being carried out to solve anarchic growth of urban sprawls is provided. Among other actions, the need to propose reforms to several sections of the Political Constitution of the Mexican United States and make a new General Act on Human Settlements (Ley General de Asentamientos Humanos, LGAH). Regarding international obligations on housing rights, a critical analysis is made to programs “Piso firme” (Concrete floor) from SEDESOL and “Ciudades Rurales” (Rural cities), made by the government of Chiapas, which is intended to be implemented in other entities.

A best practices case is provided: Cooperativa Tosepan Titataniske, made by Nahua indigenous farmers, belonging to several municipalities in Sierra de Puebla. The great number of achievements of the cooperative throughout the years includes the acknowledgment as Social Housing Developer (DSV), by the National Housing Commission (CONAVI), which made it possible to carry out its housing program.

Section two provides an analysis of current housing market situation. This analysis shows families’ trust levels; incidents in credit acquisition; ability to pay, and housing price indexes of SHF and BBVA-Bancomer. A relevant topic is unoccupied and temporary-use housing, which — according to 2010 Census results — increased from 4.3 to 5 million of dwellings. On one side, this fact has forced to undertake actions to know the causes of that phenomenon. And on the other side, it is pointed as a
significant challenge to be solved. Regarding Social Production of Housing (SPH), certification progresses of Social Housing Developers (DSV) and training given individuals supporting it are shown. A series of indicators is also analyzed, such as the Residential Satisfaction Index, Quality of Life, and Environment (ECUVE), and Incomuv, among others.

Topics of land for housing, integral sustainable urban and housing development are addressed in Section three of this document. That Section provides the results from the works of the government entities to foster territorial planning, promoting sustainable housing development and ordered growth of the cities, since it is urgent to stop urban sprawl expansion and consolidate urbanized territories. Moreover, progresses achieved on risk prevention, program DUIS (Sustainable Integrated Urban Developments) and the actions made by the Infonavit, FOVISSTE and developers for a sustainable housing production are provided. A best practice case on urban development is provided: Bilbao Ría 2000 Partnership. Even if this project started in the 90s, it has had an exemplary operation and it is still receiving awards nowadays.

Section four provides a detailed analysis of the situation in housing financing. It shows how the behavior of public and private instances, and the market, affected the housing market. It stresses the increase on mortgage loan, around 17% in real terms, mostly oriented towards medium- and high-income segments, as well as the increase on credits for improvements and other type of products offering integral solutions. In this regards, it is important to observe the new credit product of the Infonavit, called "Renueva tu hogar" (Renovate Your Home). Moreover, the actions carried out by the Federal Mortgage Society (SHF) are provided to help to reduce housing backwardness by means of credits for improvement and assisted housing self-production, as well, as the actions carried out for financial education with innovating programs. Public Registries of Property, Urban Cadastre and achievements for their modernizations are a topic that is also discussed.

A case of best practice in relation to microfinancing is the one implemented by SHF in Campeche. In this part, an integral solution including financing and a finished housing solution, to population not subscribed in housing institutions and with incomes under three monthly minimum wages, is provided through assisted housing self-production.

Secondary housing financing market is discussed in Section five. It stresses, among other topics, how mortgage securitization —as an alternate funding tool— has allowed supporting housing market growth. Securities issuances for this market are provided and the actions carried out to encourage secondary mortgage market. An interesting case of income securitization is provided. In Estado de México, in 2010 it was decided to use this alternative funding mechanism and the incomes of it will be used for modernizing the RPP, as well as for financing several productive public infrastructure projects.

The last section, which in former editions is for findings and challenges, in this occasion provides the results of a study carried out with
the method called Delphi. This study was suggested by Ph.D. Ángel Mercado Moraga (UAM, Xochimilco) who coordinated —along with CIDOC and SEDESOL— its commissioning. By means of a questionnaire —which included three major topics of the sector: Housing and Territorial Reserve, Housing Product, and Environmental Culture; analyzed from three fields of analysis: social, economic/legal and sustainable territorial—, 64 experts from public and private institutions, and academicians, among others, were asked about short- and long-term challenges. The answers from experts were enthusiastic and relatively high, considering that it was the first time the study was made.

One of the most important findings from this exercise was the coincidence on proposals and actions to be carried out to improve the sector, which provide both a summary and some proposals taken verbatim from the questionnaires answered.
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National Housing and Urban Development Policies

1.1 HOUSING PUBLIC POLICY

Current housing policy of the Federal Government includes the relevance and economic, social and ecological impact of housing—caused by the experiences gained throughout the years by the participating players and by the development of new policies.

There are two processes preceding the new policy:

a) The transformation of the National Housing Agencies (Organismos Nacionales de Vivienda, ONAVIS) to become mainly financial entities without losing their social purpose (1993-2000), and
b) The boost of a restructuring process of the housing sector aimed at raising housing production and accelerating the pace of financing (2000-2007).

The year 2008 is watershed in the way of creating housing in the country. An economically, ecologically and socially sustainable view of housing construction is formally adopted on new housing projects and developments.

The 2008-2012 National Housing Program (Programa Nacional de Vivienda, PNV) stresses housing development from the view of caring the environment and rationally using energy in a sustainable manner. This implies developing new technologies, allowing an intelligent growth of our cities.

Modern view of housing development not only seeks raising society’s wellbeing levels, but is also concerned about the possibility of inheriting a country with acceptable levels of environmental and economic health to future generations. Hence, it forces to modify attitudes, redefine trends leading to an irreversible deterioration of the environment and affect the creation of the best options for the use of energy inside dwellings.

Unwanted Effects on Housing Creation

Attention towards housing demand focused its efforts mainly on a product: housing acquisition. However, the premise that creating housing is creating a city was not taken into account. The success of the sector’s growth was threatened by the anarchic horizontal growth of the country’s major cities, changes in family formation and a shortage in the provision of basic services.

The financing infrastructure directed its resources first and foremost towards solutions that distorted housing market. Stimulating a greater credit offer for buying single-family housing (mainly new one) favored a greater demand of land, basic services, transport, and transportation networks, which required increasingly larger investments on infrastructure by the local governments and an unwanted growth of large metropolis. The lack of a counterweight from the State—for directing and leading to an organized urban growth—caused a lack of development in services, faced to a growing, however anarchic, housing market.

There is a conflict in the regulation of this market, because it targets the occupation of private single-family housing, which fosters horizontal growth of urban sprawl.
Section 1. National Housing and Urban Development Policies

As of year 2009, housing policy sought to foster a deep target-oriented change. The target is no longer represented by quantitative indicators – number of granted credits and built dwellings –, but by having an actual bearing on improving Mexican people’s quality of life, in cities with a potential for an economic development that really conveys a higher level of well-being.

Moreover, unwanted effects – derived from an accelerated growth of the sector in the last 10 years – must be acknowledged, such as: the lack of a proper territorial planning, caused by the public policy separation in the three branches of government; a distortion on the land market, which increases its price and leads to speculation; longer distances from town center to new housing developments, which make providing urban infrastructure and services to the population more expensive, and create negative externalities for the population, such as transportation expenses and time.

In light of this situation, current housing policy focuses on performing projects and activities in order to consolidate a new sustainable view throughout the country. These projects and activities are to be done with the participation and collaboration of public and private sectors and the organized society, so that the construction of new dwellings, as well as the already existing housing stock, may be included in a sustainability environment which allows a healthy development of the population, with the highest life quality standards and, at the same time, making the cities and regions of the country a competitive ones.

Many of the dwellings to be financed in the coming years will be new ones. Therefore, this opportunity needs to be taken to lead to a change that is necessary in the construction.

Boost to Sustainable Housing Development

To achieve this target, three basic compounds of sustainable public housing are combined, which condition its implementation: territorial planning, urban planning and sustainable housing construction. Housing sustainability is understood from three aspects: Economic Sustainability, where housing is a factor mostly related to regional development and to city competition; Ecological Sustainability, where risk and protection zones are looked after so that there are no irregular housing settlements, and where a sustainable water use and energy saving are also looked after; and, above all, Social Sustainability, where housing is the individual and single-family development factor of Mexican people, by means of harmonious communities that really have an impact on a better quality of life.

- Sustainable Housing Construction

From 2009, there was a synergy of the Infonavit program “Hipoteca Verde” (Green Mortgage) with the eligibility criteria of the program “Ésta es tu casa” (This is your dwelling). Hence, the federal subsidy for new dwelling acquisition demanded the dwelling to have a basic eco-technology package for a water sustainable use and energy saving (electricity and gas). This initiative allowed that, during 2010, more than 151 thousand green mortgages were financed (89,718 subsidized by the program “Ésta es tu casa”; that is, 44% more than the dwellings financed in 2009, where 105 thousand mortgages of this type were granted (67,256 subsidized by program “Ésta es tu casa”). As for carbon dioxide (CO₂) emissions, it is estimated that each dwelling generates a saving between 1 and 1.5 tons. With these documents – including the Housing Building Code – it is sought that the very municipalities include these guidelines in local regulations for building licenses in the near future.

1.2 Public Policy for Urban Development

The concern of current management in relation to the anarchic growth of urban sprawls and to the lack of urban development mechanisms in the country has made the strategy fostered by SEDESOL to aim mainly at stimulating an organized city planning under an integrality and sustainability scheme. To achieve such strategy it is necessary to link urban policy and housing policy.
Meaningful progresses are observed in spite of not having been possible to publish, in the *Official Gazette of the Federation* (DOF), the urban development guidelines derived from Article 73. The application of the guidelines has been adopted as a whole or in fundamental topics by some ONAVIS, which by implementing them have found documents that improve guaranties of the credit or financing.

There are relevant topics with positive results to answer to country’s land issues. In May 2010, an inter-chamber board formed by five commissions from the Senate and five commissions from the Chamber of Deputies was created, to which SEDESOL joined actively.

In a participation process, which included four regional forums, one state forum and multiple consultation meetings, situations such as the strong centralization in the country’s capital, the dispersion of 190 thousand small rural localities, and the lacks, deterioration and disorder prevailing in many cities from the National Urban System (*Sistema Nacional Urbano*, SUN) were analyzed. The importance of urban development as land base for national progress and, in contrast to this reality, the limitation of its current legal framework, which bases on 1976 General Act on Human Settlements (*Ley General de Asentamientos Humanos*, LGAH), reformed for the last time 17 years ago, was stressed.

As a result of these works, the need to postpone the reforms to articles 4, 26, 27, 73, 115, 116, and 122 of the Political Constitution of the Mexican United States and to make the new General Law on Human Settlements, Urban Development and Territorial Planning was concluded.

These changes to the country’s territorial legal framework, which is on process of approval, are essentially directed towards:

- Acknowledging, particularly, the metropolis phenomenon that is vastly transcending in the globalization; developing a national intersectoral territorial strategy, and fostering urban structure for getting more human and compact cities.

### 1.3 INTERNATIONAL OBLIGATIONS ON HOUSING RIGHTS

One of the characteristics inherent in human rights is their universality, that is, that they belong to every individual, irrespective of their income level and the conditions, options and preferences that rule their lives.

The governing principles of human rights that stand out include free determination, non-discrimination, equality, equity (social and gender), priority attention to individuals and groups in a discrimination situation, and social participation.

Mexico, as a country adhered to the International Covenant on Economic, Social and Cultural Rights (ICESCR), is undertaken to take steps, “especially economic and technical, to the maximum of its available resources, with a view to achieving progressively the full realization of the rights recognized in the present Covenant by all appropriate means, including particularly the adoption of legislative measures”.

Besides respecting and protecting human rights, the states undertake to guarantee their full realization, which necessarily implies allocating resources, boosting policies and creating instruments and programs.²

Even though recent governments have made a huge effort on boosting a mass production of housing, business production of market urban housing has been privileged. Little effort has been made on supporting self-production and other modalities of Social Production of Housing (SPH) which is still performed by more than half of the

country’s population. This has caused the universality of habitat-related rights to be still far from being made effective, specially the right to housing.

For the low-income, non-wage-earning, lacking-of-benefits, urban population (35% of total population), a very low level of attention is kept. This situation gets worse on rural housing, since there is attention with very scarce programs and institutional supports.

In this study, some critical considerations are posed about the direction to rural housing, mainly through actions called “Piso firme” (Concrete Floor) fostered on a federal level by SEDESOL and the National Fund for Low-Income Housing (Fideicomiso Fondo Nacional para las Habitaciones Populares, FONHAPO) and the program “Ciudades Rurales” (Rural Cities), made by the government of Chiapas and which is intended to be copied in other entities.

Another option arisen from indigenous communities in Sierra de Puebla is provided in paragraph 1.5 —as an example of a good practice—, which is an experience of rural housing and territorial management were conditions have been built for a full realization of housing- and habitat-related human rights.

**Piso Firme (Concrete Floor)**

Deprivation, a characteristic of most of the country’s rural housing and which has been made worse in the last 20 years by several economic, climatic and public policy factors —mainly in farmer and indigenous communities—, is tackled by means of improvement actions, on which the actions of “Piso firme” by SEDESOL and FONHAPO stand out, in order of importance on its social coverage.

This type of public intervention contributes to improving farmer housing quality in an aspect that impacts not only on the right to housing but mainly on the right to health by beneficiary population.

The policy followed for carrying out “Piso firme” actions prevents, however, the deployment of the great potential that these actions have for providing other civil, economic, social, and cultural rights.

These actions are recorded in the subsidy programs implemented by the Federal Government: The Development of Priority Zones Program (which operates in the 125 municipalities of highest exclusion of the country) and the Temporary Employment Program, both managed directly by SEDESOL, and the Program “Tu Casa y Vivienda Rural” (Your Dwelling and Rural Housing) performed by FONHAPO.

Most of the actions, implemented through these programs, are contracted from construction companies. This prevents or restricts family participation.

Hence, the possibilities of rural communities to participate in decisions, in the very control of resources and of the production process that implies improving their dwellings are cancelled, which greatly limits exercising their civil and political rights.

This situation also restricts the distribution potential that these actions could have in case of directly grating the resources to participating communities and groups. This would allow creating productive projects that could stay in the communities, create temporary and permanent paid employments, and would have a bearing on the economic strengthening of the participants and on exercising their economic and labor rights.

During this administration, SEDESOL has supported the construction of 1.9 million concrete floors in 1,228 municipalities of the country, with an investment over $12 thousand million pesos, which shows the possibilities of these programs for creating economic activity in a field that is devastated and with little development of autonomous opportunities.

Schemes based on the lack of trust, rigid norms and the execution of works by third parties —foreigners to the communities— contribute little to the (re)construction of the social fabric in the country and the strengthening of local economy.

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3 Even though the CONAVI has made significant progress on acknowledging and supporting Social Production of Housing as a subsystem that is different but complementary to and convergent with the National Housing System, there’s still a lot to be done, especially on the field of financing and legal access to land, provided and affordable to those subjects that cannot offer security for acquiring a dwelling produced by the market. The progresses achieved during the period of this study are included in section 2, paragraph 2.2.3., and the challenges that are urgent to face for consolidating and giving scale to this form of production are included in section 6.

4 Torres Rino, La Producción Social de Vivienda en México: su importancia nacional y su impacto en la economía de los hogares pobres, HIC-AL, Mexico, 2006.

5 Just in 2010, around 585,000 “Piso firme” actions were carried out.

6 The impact of this program is verified with the data provided by the National Institute of Statistics and Geography (Instituto Nacional de Estadística y Geografía, INEGI), while reducing the total amount of dwellings with a dirt floor in Mexico in the last decade from 19.5% to 6.2%.
It is worth remembering that builders and people building our cities come from the country and many of them have knowledge not only on how to build floors, but also on structure elements and complex architectural components.

Social experience gained and the possibility of providing technical support to these processes would allow the communities to improve—with the same resources—other housing components that are more or equally critical in rural areas: roofs, plaster in walls, fume outlet, window opening and/or improvement on sanitary conditions and water management in the dwellings. It would also contribute to strengthen their organization, self-esteem and responsible management capacities in the community development processes.

As for cultural rights, letting the very beneficiaries decide on their own housing may turn housing more appropriate for the patterns and features of the different cultures that are still found in the Mexican country.

## Sustainable Rural Cities

As a consequence of the destruction of the town San Juan del Grijalva due to the rise of Grijalva river water levels, caused by the intense rains of 2007, the government of Chiapas implemented the “Programa de Ciudades Rurales Sustentables” (Sustainable Rural Cities Program) the aim of which was to bring disperse rural population together in new population centers with services and facilities for education, health and the development of economic activities.

The state government related this initiative to a compliance with the eight Millennium Development Goals (MDG) established by the United Nations (UN) and has received the support of the United Nations Development Programme representation in Mexico.

The construction of Nuevo Juan del Grijalva followed by Santiago el Pinar and other projects in process of implementation in Chiapas, and their equivalent ones to be started on Puebla with a pilot project in San Miguel Tenextatiloyan set the need to check, from a human rights perspective, the social, cultural and economic impacts of sustainable rural cities.

On his recent visit to Mexico, Mr. Olivier De Schutter, United Nations Special Rapporteur on the Right to Food, stated that even if at first the initiative to “improve access to healthcare and education, so that women and children will not have to travel long distances to attend healthcare centers and schools. And [to] allow the creation of off-farm jobs through the development of small processing facilities” can be plausible, it would still be necessary to perform and “independent assessment of Nuevo Juan del Grijalva and Santiago el Pinar prior to the establishment of new such towns.” Such assessment “should be conducted in a participatory manner to ensure an appropriate valuation of the disruptions created in livelihoods by the resettlement of the families concerned”.7

On December 2010, the Department of City and Regional Planning of the University of Cornell, in the United States, provided a detailed analysis on the “Programa de Ciudades Rurales Sustentables” that, in many aspects, complies with the Rapporteur’s proposals, both in participating methodology and in independent and comprehensive perception of the impacts of Nuevo Juan del Grijalva project.8 Some of its core observations for its analysis from the human rights point of view are taken.

It starts from a core issue: On what degree new rural cities comply with the different aspects that constitute the human right to housing?

Having a new 60 m² dwelling in a 300 m² land, with services and urban facilities satisfies enough, at first sight, the right to housing of the inhabitants of Nuevo Juan del Grijalva, but it is necessary to explore deeper on other aspects in the United Nations General Observation No. 4 on the right to a proper housing.9

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8 González Rivas, Marcela, et. al., “Analyzing the Sustainable Rural Cities Program”, Cornell University, Department of City and Regional Planning, 2010.
In relation to the land ownership security, property deeds are grated on the condition that they inhabit their new dwelling during 25 years. On such time they are not allowed to rent it or sell it. This is to ensure that they would stay on the new place, avoid that the huge investment made by the State is taken over by individuals and is left at the mercy of the speculators. In exchange for the conditioned ownership security of 300 m², relocated families may be losing the access to common goods, such as communal lands where they would carry out their productive activities, and furthermore to abandon their lands for good.

This is related to other components of the right to housing and the right to proper place, and to the need for a housing solution to match the cultural norms of affected population.

The analysis carried out by the University of Cornell notices that: “Relocation projects without participation and transparency may potentially raise the level of poverty of relocated people and lead to a disintegration of social and cultural networks and to serious psychological strain.” It also states that: “After the relocation, adapting to a new environment may be particularly difficult for indigenous population such as those found in Chiapas. Communities which are often located in isolated areas with strong and sacred links to their tongue, land and culture”.¹⁰

Likewise, as for the proper place topic, which is another of the components of the right to housing and a main argument for enforcing the concentration of the population to guarantee their access to services and facilities, it is important to take several things into consideration.

First, there is an issue of disperse population being forced to move, which may imply the loss of their place and even their lands, which would violate their human rights in several aspects.¹¹

In relation to indigenous communities, the relation to their land includes not only the lands on which they live but also natural resources and the areas on which they develop their economic, cultural and religious activities. It is worth observing that forcing —with the incentive of services— the movement and concentration of the population is against their secular patterns of disperse population, which makes sense in the close relation of indigenous communities with the land, their plots and the communal areas.

This could be violating their human right to territory, acknowledged in the Conventions 169 of the International Labour Organization (ILO). Even though the program considers the restitution of housing in the new town, its quality and its fitness to cultural features of resettled community, there are other important components to the right to housing.

In relation to affordability and economic sustainability, the “Programa de Ciudades Rurales Sustentables” is prone to cancel subsistence farm practices by inserting relocated population in the market economy. “The transition to an urban market economy creates the need to acquire basic goods —such as food— by purchasing them. Therefore, job creation and income generation are an essential part on the sustainability of the new city”.¹²

The productive projects imposed by the program, many of them cooperatives, do not work effectively, have lost partners, are not linked to consolidated markets or strengthen domestic market, and have been even abandoned.

As a consequence, most of interviewed inhabitants mentioned that: “to generate their main income many men go out to work to other places or come back for several days a week to work on their own plots.” This is contradictory to the purpose of the program of bringing people closer, when the facts tell that family cohesion and social fabric are being weakened. Many people told that they would like to go back to their former way of life.

Their civil rights are deeply affected due to the lack of social participation on the planning and on the decisions made; their cultural rights, due to the violation by the external imposition of new ways of life; their economic rights, due to being forced to compete and purchase in the market economy

¹⁰ González Rivas, Marcela, et. al., op. cit.
¹¹ The General Observation No. 7 of the United Nations Committee of Economic, Social and Cultural Rights establishes that forced population evacuations (that is, when forced without the effective population’s participation on the decision and/or without access to legal protection in case of rejection) constitute a prima facie violation to their right to housing.
¹² González Rivas, Marcela, et. al., op. cit. The following quotations belong to the same study.
Current Housing Status in Mexico 2011

without access to information as well as enough and proper training without consultancy that would make them easy to change from a communitarian farmer economy. This is in addition to the lack of transportation and contact with strong markets, “all of which threatens the sustainability and leads to abandonment.”

The rejection of a great deal of families victim to being moved to the new settlements and the will declared by many of the inhabitants of Nuevo Juan del Grijalva to return to their place of origin expresses these difficulties.

Other cultural pattern violated by the concentration is the role of the land for indigenous housing, by reducing it to an urban courtyard that is not enough to meet the different production functions complementary to constructed areas: areas for growing vegetables, medicine plants, fruit plants, shadow trees; areas for corral animals and for the development of handcraft activities.13

Before these impacts, which downplay by far the advantages of concentrating rural communities to make them easy to access to services, it is necessary to rethink the relevance of continuing with the program of new rural cities.

Several options are left to the consideration to the people fostering this type of programs:

- Using eco-technologies and technologies that allow today to automate services without connecting to centralized networks.
- Developing facilities that would help disperse communities and that would be strategically located to warrant quality and accessibility.
- Strengthening or expanding settlement services or small existing cities, avoiding relocating families.
- Using the same amount of subsidy involved in building new cities and dwellings for infrastructure, technology, soil preservation, sanitary protection, transportation, education, and health.

This last proposal, with which the University of Cornell ended, should be founded on a participating planning process that includes community intervention in the decision making and in the control of projects. This demands investing on training, social organization and consultancy in the different related fields.

1.4

GOOD PRACTICES

Cooperativa Tosepan Titataniske

Nahua indigenous farmers integrating the Sociedad Cooperativa Agropecuaria Regional Tosepan Titataniske, come from a wide territory in Sierra de Puebla, belonging to municipalities of Cuetzalan, Jonatla, Zoquiapan, Tuzamapan, Hueytamalco, and Tlatlauquitepec.

According to their cultural tradition, they keep a disperse patter of settlement that links their dwellings to the lands on which they grow several products for their subsistence and —since the middle of the former century, by the introduction of coffee and other crops— for selling outside the region.

Between 1977 and 1983, they started their organization, thus getting free from selfish people and abusive intermediaries. From 1984 to 1989, they began the introduction of community services, as well as the construction of their industrial and commercial infrastructure. In 1987, with other two cooperatives and the support of the mayor of Cuetzalan, they created a plan for the integral development of the region. They tell that the experience taught them that in order to tackle problems, problems have to be seen regionally, and to develop their region —for the benefit of the poorest ones— they need an integral program for the mountains. They also stress the importance on recovering their language, their history and their traditions, as a base of their development process.

From 1970 to 1995, the coffee crop expands and, thereafter, they move to implementing sustainable agriculture and a comprehensive family economy, which has allow them to improve their life and support. Thereby they seek to become more self-sufficient and autonomous for handling credits, technical support, supply, production, education, and training.

Another study that confirms these impacts is: ‘Poblaciones desplazadas por desastres y cambio climático’, by Joel Audefroy and Nelly Cabrera Sánchez, México, ESIA-TEC-IPN, 2011, which discusses the impacts of several types of population movements (including Nuevo Juan del Grijalva) on the economic, social and cultural rights of the communities.
From 1995, they boost their sustainable development program based on seven strategies: training promoters; diversifying crops and reforesting; fully leveraging coffee and its by-products from which they can benefit: compost, alcohol, base for making mushrooms, etc.; changing towards organic agriculture, certifying the coffee and other products; organizing a savings and loan union on which they support several programs, including housing; production projects handled by women; construction and operation of an excellent training center.

Currently, they have organized nine operating cooperatives that cover the fields of production, benefit and trading of their coffee and other products; the savings union; ecological tourism which includes a hotel; production of construction materials and bamboo processing; housing improvement; and a civil association that provides them with technical support on their different programs.

The National Housing Commission (Comisión Nacional de Vivienda, CONAVI) has acknowledged the cooperative as a Social Housing Developer (Desarrollador Social de Vivienda, DSV), which allowed them to start their housing program, adding the body’s subsidies to the credits granted by their own savings and loan union.

This exemplary experience shows a different path from the proposal from the colonial period consisting on concentrating the population as a solution to their problems of access to services, poverty and isolation. It is a constant and permanent process, developed by the very organized indigenous farmers, which has allowed them to manage a fully complex territory and which — according to a careful plan developed by them and supported by specialized technical consultancy in several fields— moves forward constantly to improve the population's individual, family and community life conditions.

Their dynamic program for improving and building new dwellings is not limited to building walls and roofs but include an assembly of eco-technologies and productive activities that strengthen their economy, and seek an environmental improvement and sustainability.

From their excellent facilities located in Cuetzalan, they assist their disperse members in the regional territory by means of services, supports and the execution of several programs they develop.

### 1.5 FINDINGS AND CHALLENGES

- Current housing policy focuses on performing projects and activities aimed at consolidating a new sustainable view throughout the country. These projects and activities are to be done with the participation and collaboration of public and private sectors and the organized society, so that the construction of new dwellings, as well as the already existing housing stock, may be included in a sustainability environment which allows a healthy development of the population, with the highest life quality standards and, at the same time, making the cities and regions of the country a competitive ones.

- Housing sustainability is understood from its three aspects. Economic Sustainability, where housing is a factor mostly related to regional development and to city competition; Ecological Sustainability, where risk and protection zones are looked after so that there are no irregular housing settlements, and where a sustainable use of water and energy saving are also looked after; and, above all, Social Sustainability, where housing is the individual and single-family development factor of Mexican-people, by means harmonious communities that really have an impact on a better quality of life.

- Changes to the country’s territorial legal framework, which is on process of approval, are essentially directed towards:
  - Fostering the organization of human rights with regional and urban development, and a usufruct equal to human settlements within democracy, equity, justice, social, and sustainability principles.
  - Consolidating the territorial planning and strengthening its documents, by emphasizing its importance as a foundation for coordinating actions among sectors and among branches of government, and ensuring coherence among different planning levels.
  - Acknowledging, particularly, the metropolis phenomenon that is vastly
transcending in the globalization; developing a national intersectoral territorial strategy, and fostering urban structure for getting more human and compact cities.

- Since year 2006, SEDESOL has supported the construction of 1.9 million concrete floors in 1,328 municipalities of the country, with an investment over $12 thousand million pesos.

- As a consequence of the destruction of the town San Juan del Grijalva, the government of Chiapas implemented the “Programa de Ciudades Rurales Sustentables” (Sustainable Rural Cities Program) the aim of which was to bring disperse rural population together in new population centers with services and facilities for education, health and the development of economic activities.

- The construction of Nuevo Juan del Grijalva followed by Santiago el Pinar and other projects in process of implementation in Chiapas, and their equivalent ones to be started on Puebla with a pilot project in San Miguel Tenextatiloyan set the need to check, from a human rights perspective, the social, cultural and economic impacts of sustainable rural cities.

- The “Programa de Ciudades Rurales Sustentables” is prone to cancel subsistence farm practices by inserting relocated population in the market economy. The productive projects imposed by the program, many of them cooperatives, do not work effectively, have lost partners, are not linked to consolidated markets or strengthen domestic market, and have been even abandoned.

- The "Programa de Ciudades Rurales Sustentables" should be founded on a participating planning process that includes community intervention in the decision making and in the control of projects. This demands investing on training, social organization and consultancy in the different related fields.
Current Housing Market Situation

2.1. ECONOMIC INDICATORS

In the second quarter of year 2011, Gross Domestic Product (GDP) recorded a 3.3% increase in real annual rate. GDP from secondary activities (mining, electricity, construction, and manufacture) increased 3.4%, GDP from tertiary activities (trade and services) grew 3.6%, and GDP from primary activities (agricultural, forestry and fishing) dropped (-) 3.7%.

Different degrees of growth were observed in activities related to housing sector such as construction industry, finance services, insurance, and real estate: Construction industry increased 3.4%, finance activities increased 2.4% and real estate increased 2.0%, in real terms and at annual rate. Taken jointly into consideration these large sectors represent 21.1% of Mexican economy at constant prices from 2003 (Table 1).

Aggregate Demand

Every component from aggregate demand increased the first quarter of 2011. Private consumption increased 4.9% at annual rate, government consumption increased 1.3%, Gross Fixed Capital Formation (fixed investment or GFCF) increased 7.7%, and exports of goods and services increased 14.1%. In turn, imports grew 10.8% (Table 2) compared to the same quarter the year before. On a component basis, household expenses represented 68.0% of GDP, followed by exports on 34.3%.

Table 1. GDP Divided by Economic Activities, 2011 II

<table>
<thead>
<tr>
<th>Economic Activity</th>
<th>Relative Price (%)</th>
<th>Annual Growth Rate at Constant Prices</th>
</tr>
</thead>
<tbody>
<tr>
<td>GDP</td>
<td>100.0</td>
<td>3.3</td>
</tr>
<tr>
<td>Agriculture, forestry and fishing</td>
<td>3.6</td>
<td>(-) 3.7</td>
</tr>
<tr>
<td>Mining</td>
<td>4.8</td>
<td>(-) 2.3</td>
</tr>
<tr>
<td>Electric power, gas and water</td>
<td>1.4</td>
<td>7.6</td>
</tr>
<tr>
<td>Construction</td>
<td>6.4</td>
<td>3.4</td>
</tr>
<tr>
<td>Manufacture industry</td>
<td>17.8</td>
<td>4.8</td>
</tr>
<tr>
<td>Trade</td>
<td>16.0</td>
<td>7.4</td>
</tr>
<tr>
<td>Transport, storage and communications</td>
<td>7.0</td>
<td>3.2</td>
</tr>
<tr>
<td>Finance and insurance services</td>
<td>4.5</td>
<td>2.4</td>
</tr>
<tr>
<td>Real estate</td>
<td>10.2</td>
<td>2.0</td>
</tr>
<tr>
<td>Health and social care services</td>
<td>2.6</td>
<td>2.0</td>
</tr>
<tr>
<td>Other tertiary activities</td>
<td>25.7</td>
<td>2.3</td>
</tr>
</tbody>
</table>

Table 2. Components of Aggregate Demand, 2011 I

<table>
<thead>
<tr>
<th>Component</th>
<th>Prices from 2003</th>
<th>Annual Growth Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>GDP</td>
<td>4.6</td>
<td></td>
</tr>
<tr>
<td>Private consumption</td>
<td>4.9</td>
<td></td>
</tr>
<tr>
<td>Government consumption</td>
<td>1.3</td>
<td></td>
</tr>
<tr>
<td>Gross Fixed Capital Formation</td>
<td>7.7</td>
<td></td>
</tr>
<tr>
<td>Stock variation</td>
<td>N.C.*</td>
<td></td>
</tr>
<tr>
<td>Exports of goods and services</td>
<td>14.1</td>
<td></td>
</tr>
<tr>
<td>(-) Imports of goods and services</td>
<td>10.9</td>
<td></td>
</tr>
</tbody>
</table>

Housing production requires basic and secondary infrastructure; therefore, it depends on Gross Fixed Capital Formation (GFCF) expenses. Machinery and equipment grew 15.6%. Table 3 indicates that during the first quarter of 2011, GFCF...
in construction increased 3.3% in real terms. According to the Report on Public Finances from the Secretariat of Finance and Public Credit (Secretaría de Hacienda y Crédito Público, SHCP) in the fourth quarter of 2010, GFCF expenditures increased 3.8% in real terms in relation to the same period the year before, and indicating that inside it, private investment increased in 1.8% and public investment increased in 9.0%.

### Table 3. FBCF, 2011.I

<table>
<thead>
<tr>
<th>Total Gross Fixed Capital Formation</th>
<th>7.7</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total machinery and equipment</td>
<td>16.6</td>
</tr>
<tr>
<td>National</td>
<td>20.2</td>
</tr>
<tr>
<td>Imported</td>
<td>13.7</td>
</tr>
<tr>
<td>Gross Fixed Capital Formation in construction</td>
<td>3.3</td>
</tr>
</tbody>
</table>

**Source:** BIE, INEGI

### Comparison of Industrial Activity between Mexico and United States

Mexico’s economic recovery depends greatly on United States economy, due to a high relation between both industries (a correlation coefficient of 82.5% between the rates from both countries). Chart 1 indicates that, in both countries, industries have been recovering; however, levels before 2008 have not been reached.

### Labor Market

By the end of the second quarter of 2011, Economically Active Population (EAP) counts 48.9 million of people. Within EAP, 5.2% represents open unemployment and 7.9% is underemployed (people who need to work more time). From employed population, 8.2% did not receive compensation. In spite of the fact that unemployment levels are relative low, wages and salaries have also kept low, which decreases families’ purchase power.

### Employment

To July 2011, around 15.1 millions of workers paid Mexican Social Security Institute (*Instituto Mexicano del Seguro Social*, IMSS), 86.6% were permanent. Employment recovery is obvious, where a growth of 3.5% is observed in 2011 in relation to the same month the year before (Chart 2).

However, the increase in percentage points has been greater in temporary employment, where annual rate in July this year was 9.2%. In contrast, for the same period, permanent employment increased only 3.5%. Employment trajectory will have a direct effect on Infonavit both in originated credits and in collection. Likewise, 46.3% of subordinated workers (14.2 millions) do not pay IMSS and, under this criterion, they are considered self-employed workers or belonging to informal sector.

### Customer Trust

Families’ view of their own economic situation and the possibility to acquire appliances, in relation to former year, indicates that
households have had greater home expectations after 2008; however, by July of current year, people seem to reduce their trust levels (Chart 3).

Final Considerations
- The temporary employment with less income has a negative incidence in credit acquisition and payment power.
- In spite of the growth of GDP, based on the information indicated, the households’ view on their economic situation and indebtedness in 2011 is moderate.
2.2

OFFER

2.2.1

Construction and Housing Sector in Mexico

Construction GDP

By the second quarter of 2011, construction GDP increased 3.4% (Table 4). Within construction, building increased 3.2%, construction works of civil engineering or heavy works increased 3.4 percentage points (pp), and specialized works for construction increased 5.7%. Hence, the sector has four quarters with positive real annual growth rates (Chart 4).

Table 4. GDP from Constructions and Components, 2011 II

<table>
<thead>
<tr>
<th></th>
<th>Relative price (%)</th>
<th>Annual growth rate (at constant prices)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Construction</td>
<td>100.0</td>
<td>3.4</td>
</tr>
<tr>
<td>Building</td>
<td>56.2</td>
<td>3.2</td>
</tr>
<tr>
<td>Construction of civil engineering works and heavy works</td>
<td>36.3</td>
<td>3.4</td>
</tr>
<tr>
<td>Specialized works for construction</td>
<td>7.5</td>
<td>5.7</td>
</tr>
</tbody>
</table>

SOURCE: QUARTER GDP, BIE, INEGI.


A higher dynamics is observed in the construction sector respect to the economy as a whole. However, 2008 volumes are not yet reached.

GDP from Housing

After the high economic slowdown in 2009, slowdown in housing construction (dwellings, housing complexes, departments) was less last year. With estimates for 2011, a housing construction recovery with an annual growth of 5.6% is expected. Hence, housing sector makes up for the 2.2% of the economy the first quarter of current year (Table 5).

Chart 5 GDP from Housing (2006-2011)

*ESTIMATES

SOURCE: NATIONAL COUNTS, INEGI.
Death of Construction Companies

Death rate of construction companies (around 4,370 in 2011) increased 2.4% by placing at 9.0 percent in September, 2010. By company size, the behavior was the following: 9.2% for very-large-sized companies, 7.7% for large- and medium-sized companies, and 6.8% and 8.0% for small and micro-sized companies, respectively (Table 5). Classification by size is according to annual income and employed staff.

Table 5. Death Rate of Construction Companies by Size (2006-2010)

<table>
<thead>
<tr>
<th>Year</th>
<th>Total</th>
<th>Very Large</th>
<th>Large</th>
<th>Medium</th>
<th>Small</th>
<th>Micro</th>
</tr>
</thead>
<tbody>
<tr>
<td>2006</td>
<td>3.4</td>
<td>5.2</td>
<td>4.1</td>
<td>2.8</td>
<td>2.6</td>
<td>3.3</td>
</tr>
<tr>
<td>2007</td>
<td>4.2</td>
<td>6.8</td>
<td>5.0</td>
<td>3.5</td>
<td>3.3</td>
<td>4.1</td>
</tr>
<tr>
<td>2008</td>
<td>5.3</td>
<td>6.7</td>
<td>5.6</td>
<td>4.9</td>
<td>4.8</td>
<td>5.3</td>
</tr>
<tr>
<td>2009</td>
<td>6.6</td>
<td>7.4</td>
<td>6.8</td>
<td>6.4</td>
<td>6.5</td>
<td>6.5</td>
</tr>
<tr>
<td>2010*</td>
<td>9.0</td>
<td>9.2</td>
<td>7.7</td>
<td>7.7</td>
<td>6.8</td>
<td>8.0</td>
</tr>
</tbody>
</table>

* TO SEPTEMBER, LAST DATA AVAILABLE FOR THE PUBLIC.

SOURCE: ENEC, INEGI.

Death rate of construction companies indicates the depuration in the housing market as a result of GDP slowdown.

2.2.2

Unoccupied and Abandoned Housing

The concept of unoccupied housing in 2010 Census is:

**Unoccupied housing.** Private housing that is completely built and available to be occupied and that at the time of the census has not regular occupants, it is not for temporary use and it is not used as premises for an economic activity.¹⁴

The results from the 2010 General Population and Housing Census (Censo General de Población y Vivienda, CGPV) reveal that, for unoccupied and temporary-use housing, the ratio of unoccupied housing stock raises to 21%. Without a doubt a significant estimate, even though it has to be seen from a broad context: the levels recorded in former years, the economic cycle, the international migration, the trend towards population concentration in urban centers and even the strong growth of construction in the last years, and the opportunities for acquiring a second dwelling are elements to be weighted in the evaluation made on the issue.

Namely, between 2005 and 2010, unoccupied housing remained without changes, around 14%. In absolute figures, the estimates went from 4.3 million to 5 million of dwellings, which is a difference of 721 thousand. This indicates that this is not a new issue and limited attention had been paid to it in the past.

When analyzing unoccupied housing, a distinction must be made between rural and urban environment, since factors are different. In rural locations (less than 15 thousand inhabitants), unoccupied housing reaches levels close to 20%. If excluded, the number of unoccupied dwellings in 2010 reduces to 4.6 million.

From a regional view, it is observed that the states of Baja California, Chihuahua, Zacatecas, and Tamaulipas have more than 18% of unoccupied dwellings. The common factor is that they are located in the border with United States (USA) or they are part of the group of entities from where labor is sent. Those located in the border suffer the effects of the global recession —more than any other part of the country— and this is partly helpful to explain the fact that almost one in four unoccupied dwellings in 2010 (23%) were located in this region.

In high emigration entities, levels of unoccupied dwellings are, like in urban environment, higher than the levels recorded in the rest of the country (Table 6).

Table 6. Unoccupied Dwellings Percentages, by State

<table>
<thead>
<tr>
<th>State</th>
<th>2010 Census</th>
<th>State</th>
<th>2010 Census</th>
<th>State</th>
<th>2010 Census</th>
<th>State</th>
<th>2010 Census</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chihuahua</td>
<td>19.2</td>
<td>Guerrero</td>
<td>16.4</td>
<td>Tlaxcala</td>
<td>12.9</td>
<td>Sinaloa</td>
<td>15.2</td>
</tr>
<tr>
<td>Baja California</td>
<td>19.0</td>
<td>Aguascalientes</td>
<td>15.7</td>
<td>Yucatán</td>
<td>12.3</td>
<td>Coahuila</td>
<td>14.8</td>
</tr>
<tr>
<td>Tamaulipas</td>
<td>18.7</td>
<td>Jalisco</td>
<td>15.6</td>
<td>México</td>
<td>12.1</td>
<td>Querétaro</td>
<td>14.7</td>
</tr>
<tr>
<td>Zacatecas</td>
<td>18.3</td>
<td>Sonora</td>
<td>15.6</td>
<td>Veracruz</td>
<td>12.0</td>
<td>Colima</td>
<td>14.6</td>
</tr>
<tr>
<td>Durango</td>
<td>18.0</td>
<td>Morelos</td>
<td>15.4</td>
<td>Tabasco</td>
<td>10.6</td>
<td>Nacional</td>
<td>14.2</td>
</tr>
<tr>
<td>Hidalgo</td>
<td>17.2</td>
<td>Baja California Sur</td>
<td>15.3</td>
<td>San Luis Potosí</td>
<td>14.1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Michoacán</td>
<td>17.0</td>
<td>Nuevo León</td>
<td>15.3</td>
<td>Campeche</td>
<td>9.9</td>
<td>Puebla</td>
<td>13.9</td>
</tr>
<tr>
<td>Quintana Roo</td>
<td>16.7</td>
<td>Guanajuato</td>
<td>15.2</td>
<td>Distrito Federal</td>
<td>7.9</td>
<td>Oaxaca</td>
<td>13.7</td>
</tr>
<tr>
<td>Nayarit</td>
<td>16.6</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

SOURCE: 2010 GENERAL POPULATION AND HOUSING CENSUS, INEGI.

According to the Census, there are 11 municipalities with at least 40% of unoccupied private dwellings. Three municipalities are in Chihuahua, two in Oaxaca, two in Puebla, and one in Estado de México, Nuevo León, Jalisco, and Zacatecas, each (Table 7).  

Table 7. Municipalities with More than 40% Unoccupied Dwellings

<table>
<thead>
<tr>
<th>Entity</th>
<th>Municipality</th>
<th>Unoccupied Dwellings %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chihuahua</td>
<td>Praxedis G. Guerrero</td>
<td>61.3</td>
</tr>
<tr>
<td>Chihuahua</td>
<td>Aquiles Serdán</td>
<td>54.5</td>
</tr>
<tr>
<td>Oaxaca</td>
<td>Ixpantepec Nieves</td>
<td>50.9</td>
</tr>
<tr>
<td>Puebla</td>
<td>Axutla</td>
<td>46.7</td>
</tr>
<tr>
<td>México</td>
<td>Huehueteoca</td>
<td>45.0</td>
</tr>
<tr>
<td>Nuevo León</td>
<td>Pesquería</td>
<td>44.8</td>
</tr>
<tr>
<td>Jalisco</td>
<td>Ixtlahuacán de los Membrillos</td>
<td>43.6</td>
</tr>
<tr>
<td>Chihuahua</td>
<td>Guadalupe</td>
<td>43.2</td>
</tr>
<tr>
<td>Oaxaca</td>
<td>Silacayoánam</td>
<td>40.6</td>
</tr>
<tr>
<td>Puebla</td>
<td>Cohetzala</td>
<td>40.6</td>
</tr>
<tr>
<td>Zacatecas</td>
<td>Atolinga</td>
<td>40.5</td>
</tr>
</tbody>
</table>

SOURCE: 2010 GENERAL POPULATION AND HOUSING CENSUS, INEGI.

Infonavit has begun a series of studies to learn in depth the magnitude and the causes of unoccupied housing, which includes a field analysis (more than four thousand visits), followed by a qualitative study, by means of which—besides studying in depth the causes—specific solutions to be implemented will be identified.

The findings of the field study include that unoccupied housing is larger among high-wage level borrowers. Likewise, non-occupied dwellings are more common in new dwellings than in used ones.

According to the same study, the main causes explaining a non-occupied dwelling are related to its location (far away from work or school) and the lack of conditioning (furniture, electric installation and water installations).

Borrowers whose previous dwelling was in overcrowding or bad quality conditions are the ones that moved to the acquired dwelling, different from the borrowers who rented or had a private dwelling in proper quality conditions.

Thus—having taken into consideration geographic, economic and social factors that can

15 These entities are notable for being a route for migrants.
16 A survey made by the Federal Mortgage Society (Sociedad Hipotecaria Federal) from 2006, in housing complexes nationwide.
17 The percentage is the same as 2009. The ESR takes into account both unoccupied dwellings and temporary-use dwellings located in housing complexes or in buildings; and it does not include private dwellings.
affect unoccupied housing—, there is an urban planning and coordination component among the different agents in the industry, which has not been fully dealt with.

Dialogue must be strengthened with the builders to promote the construction where there is better service provision and where economic growth views are more promising. Furthermore, more information must be obtained on the preferences and needs of the potential purchasers, so the dwelling meets their expectations. Additionally, in order to reduce the high levels of unoccupied dwellings in cities with a strong growth over the last years, programs guiding the purchasers on the criteria to be considered when choosing a dwelling must be boosted. At the end, this will contribute to a better design of public policies, planning of housing complexes and dwellings attributes, as well as improving the community and the social and natural environment.

2.2.3

Social Production of Housing (SPH)

It was good news for social production that the questionnaire applied for the 2010 General Population and Housing Census had taken into consideration for—for the first time—to count housing due to its acquisition method. The result proves what different actors indicated, without having officially recorded data on their hands yet, by ensuring that more than 60% of Mexican housing was being made by means of Social Production of Housing (SPH). As per the data from the Census (Chart 6):

This also allows accepting as a valid approximate the considerations in relation to the way the population addresses on their housing needs, even when not having a specific registry on it (Chart 7):

**Chart 6. Percentage Distribution of Private Housing According to the Acquisition Method**

<table>
<thead>
<tr>
<th>Commercial Production</th>
<th>Social Production</th>
</tr>
</thead>
<tbody>
<tr>
<td>It was bought built</td>
<td>It was made built</td>
</tr>
<tr>
<td>30.1</td>
<td>32.0</td>
</tr>
<tr>
<td>It was made built</td>
<td>It was built by the owner</td>
</tr>
<tr>
<td>33.3</td>
<td>4.1</td>
</tr>
<tr>
<td>It was acquired some other way</td>
<td></td>
</tr>
</tbody>
</table>

**Note:** Percentage distribution does not amount 100% because the value corresponding to non-specified is not graphed.

**Source:** Elaborated by CONAVI with data from the 2010 General Population and Housing Census.

**Chart 7. Type of Housing Production Related to the Access to a Credit and Population’s Payment Capacity.**

- Population with payment capacity: 10%
- Beneficiary population: 30%
- Non-beneficiary population with payment capacity:
  - GRAY ZONE: 10% - 20%
  - POVERTY: 40% - 50%
- Non-beneficiary population without payment capacity: 40% - 50%

**Source:** CGPSV, CONAVI.
Progress July 2010 — July 2011

During the second half of the year 2010 and the first half of the year 2011, there was a considerable progress in implementing and following up the strategy from CONAVI. This strategy is targeted to strengthen the Social Production of Housing (SPH) and to integrate a system of support instruments that foster the development in Mexico, this way of production and its gradual consolidation as a strategic component of the National Housing System (Sistema Nacional de Vivienda, SNV), stressing the following activities and results:

Certification

As a result of the implementation of the certification pilot, the instruments taken into consideration were adapted and validated —by the Commission of Social Production.

In the first of the two periods taken into account for 2011, seven Social Housing Developers (Desarrolladores Sociales de Vivienda, DSV) were certified. This period was targeted to institutions that scatter subsidy as Social Executors.

In September, the second certification period is to be opened, which will be openly targeted to DSV institutions meeting the requirements established.

For year 2012, it is expected that there will be around 20 certified DSV.

Training

In 2010, a Training Board was established. This Board is made up by 10 individuals, three of which come from the academic world, two from civil associations, four from public institutions, and one from private sector.

Through the participation of the members of this working group, a 2011 training program for people supporting the progress of Assisted Social Production of Housing (Producción Social de Vivienda Asistida, PSVA) was established. The purpose of this program is to help them to get professionalized using theoretical-methodological tools.

2011 program includes three stages:

1st Stage. Initial Training: For directors from institutions in initial stage in PSV and/or may support PSVA processes. It is targeted to provide integral knowledge on Social Production of Housing.

From May 18th to 20th, 2011, the first initial training was made, to which 32 members from 24 institutions attended. It was carried out in four modules:

Module I. Social Production of Housing

Objective: The participant distinguishes elements from PSV and understands PSVA as the Federal Government strategy for attending low-income population.

Module II. Technical Assistance: Design and Construction.

Objective: The participant will understand the importance and the relevance of including technical assistance in Social Production of Housing.

Module III. Proposal and Operating Process.

Objective: The participant will distinguish the minimum necessary elements for designing and implementing an attention model.

Module IV. Management, Accounting and Finances.

Objective: The participant will be able to understand the importance of establishing management processes, resource optimization and financial planning of the institution.

2nd Stage. Basic training: Targeted to coworkers in institutions already supporting PSVA processes. It is aimed at reinforcing and/or acquiring new knowledge. This training will help to support certification process.

3rd Stage. Diploma Course

It is intended for consolidated Social Housing Developers (DSV), State Housing Agencies (Organismos Estatales de Vivienda, OREVIS), professionals, technicians, and public officials in general. It is mainly aimed at professionalizing DSV. It is expected to be implemented in October.

Other Progresses:

During 2011, alliances between social developers and executors; and between them and different OREVIS were created, including: Durango, Jalisco, Tabasco, and Campeche.
The strengthening was started by training 10 new institutions supporting PSVS, which were contacted during 2010.

Likewise, from the 12 Savings Unions that began as Executors of the subsidy program “Ésta es tu casa”, 10 are already including technical assistance among their services and have already been certified as Social Housing Executors by the Commission of Social Production of Housing.

As for the subsidy program “Ésta es tu casa”, the following is considered a fundamental progress:

a) The establishment of a social production subprogram with resources allocated specifically to be scattered for actions to be made during social production.

b) Distinguishing as Social Executors from other program executors.

c) Considering Certified Social Developers, and institutions that scatter subsidy in actions made by the social production, as Social Executors, thus providing them consultancy and/or services at prices under market average.

d) Taking into consideration the possibility for Social Executors to create an alliance with other institutions for granting funding, when the Social Executor cannot do it.

As a requirement established in the Rules of Operation, a certification from the Commission of PSV of the National Housing Council is compulsory to be considered as Social Executor. The main requirements are: permanent work, prices under the market average for the services they provide, provided as a minimum, technical consultancy: design and construction.

Twelve institutions were certified —10 of which were Savings Unions— and there are 12 more to come.

**Funding**

Even though there are not proper and feasible funding schemes for supporting and boosting diversity on the types of institutions that consider PSVA, some proposals or projects have been set out. These proposals or projects are boosted by CONAVI and FONHAPO, involve institutions such as SHCP, SHF, FONAES (National Fund to Support Solidarity Firms) and FIRA (Trust Funds for Rural Development), and are being developed.

Specially, the National Fund of Guaranteeing for Rural Housing (FONAGAVI) is deemed as the closest fund for attending the segment that does not earn wages or is not considered for traditional credit, and it is expected to be implemented in the second half of the year.

**Subsidy**

From 2009, the establishment of a specific fund for PSV was reflected in a better and more equitable distribution of the resources and an extension of the territory coverage of this program to 100% federal entities (Map 1).

For 2010, the initial allocation was $300 million pesos, and ultimately $326 million pesos were applied (Chart 8). The application was mainly through Social Housing Developers as the closest and most integral attention mechanism for low-income population, and distribution criteria favoring growth and consolidation of most financially weak Social Developers were established.
Section 2. Current Housing Market Situation

Chart 8. 2010 PSV Subsidy Application

<table>
<thead>
<tr>
<th>Executors</th>
<th>Self-construction</th>
<th>Acquisition of land with services</th>
<th>Improvements</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Actions</td>
<td>Amount</td>
<td>Actions</td>
<td>Amount</td>
</tr>
<tr>
<td>22 Performing Institutions</td>
<td>5,799</td>
<td>$232,913,186.88</td>
<td>15</td>
<td>$262,017.60</td>
</tr>
</tbody>
</table>

Self-construction: Initial allocation of $300 million pesos for 2010.
Improvements: Additional 9% was due to reallocation.
Land with services: 32 federal entities were attended.

SOURCE: CONAVI.

In 2011, PSV was established as a subsidy subprogram, allocation was $350 million pesos (Tables 8 and 9). Its limit corresponds to the funding possibilities of Social Executors, as alliances are cemented and a funding scheme becomes available to these institutions, they will be able to raise their scattering capacity.

Table 8. PSV Subsidy Application Progress to June 30, 2011

<table>
<thead>
<tr>
<th>Performing entity</th>
<th>Self-construction</th>
<th>Improvements</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Actions</td>
<td>Amount</td>
<td>Actions</td>
</tr>
<tr>
<td>18 Executors</td>
<td>1,434</td>
<td>$60,498,577</td>
<td>2,120</td>
</tr>
</tbody>
</table>

SOURCE: CONAVI.
Table 9. PSVA Strategy Implementation Progress

<table>
<thead>
<tr>
<th>Social Production of Housing</th>
<th>Assisted Social Production of Housing</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2006</td>
</tr>
<tr>
<td>PSV positioning</td>
<td></td>
</tr>
<tr>
<td>• Housing Law</td>
<td></td>
</tr>
<tr>
<td>• Groups for attending social housing</td>
<td></td>
</tr>
<tr>
<td>• 1st PSV Meeting</td>
<td></td>
</tr>
<tr>
<td>• Installation.</td>
<td></td>
</tr>
<tr>
<td>• PSV Commission</td>
<td></td>
</tr>
<tr>
<td>• 1st Meeting of Social Producers of Housing (FODA)</td>
<td></td>
</tr>
<tr>
<td>• Definition.</td>
<td></td>
</tr>
<tr>
<td>• PSVA Strategy.</td>
<td></td>
</tr>
<tr>
<td>• 2nd PSV Meeting</td>
<td></td>
</tr>
<tr>
<td>• 6 Regional Workshops</td>
<td></td>
</tr>
<tr>
<td>• Participation in Forums</td>
<td></td>
</tr>
<tr>
<td>• Boost of Alliances</td>
<td></td>
</tr>
<tr>
<td>• 1st Regional Workshop</td>
<td></td>
</tr>
<tr>
<td>• 6 Planning Workshops</td>
<td></td>
</tr>
<tr>
<td>• DSV training</td>
<td></td>
</tr>
<tr>
<td>• PSV EE training</td>
<td></td>
</tr>
<tr>
<td>• PSV Measurement System Development</td>
<td></td>
</tr>
</tbody>
</table>

PSV Funding

| • 258 actions               | 285 actions       |       |       |       |       |            |
| • 4.2 million pesos         | 36.6 million pesos|       |       |       |       |            |
| • 2 Executors              | 10,002 actions    |       |       |       |       |            |
| • 2 States                 | 211.0 million pesos|       |       |       |       |            |
| • 7 Executors              | 27 States         |       |       |       |       |            |
| • 11 States                |                   |       |       |       |       |            |
| • Work group                |                   |       |       |       |       |            |
| • 13,688 actions            |                   |       |       |       |       |            |
| • 326.8 million pesos       |                   |       |       |       |       |            |
| • 18 Executors             |                   |       |       |       |       |            |
| • 6 Savings Unions          |                   |       |       |       |       |            |
| • 11 DSV                   |                   |       |       |       |       |            |
| • 32 States                |                   |       |       |       |       |            |
| • 350 million pesos         |                   |       |       |       |       |            |
| • 32 States                |                   |       |       |       |       |            |
| • Boost of Alliances        |                   |       |       |       |       |            |
| • Boost of feasible scheme  |                   |       |       |       |       |            |

Certification of DSV

| • Detection of institutions supporting PSV | • Definitions | • Evaluation of the certification process | • 2 stages of certification for DSV |
| • Application of ID                 | • Detection of training needs | • Creation of a manual |                       |
| • Pilot tests in 6 institutions     |                       | • 2 stages of certification for DSV |                       |

2.2.4

Dwelling Made by Developers Quoting on Mexican Stock Exchange

Behavior in the Financial Market

Corporación Geo, Desarrolladora Homex, Urbi, Consorcio Ara, Sare Holding, and Consorcio Hogar make up the Index Hábita (IH) of the Mexican Stock Exchange (Bolsa Mexicana de Valores, BMV). The sales volume of these six companies represents 1.4% of the GDP of the housing construction (dwellings, housing complexes, and departments) by the second quarter of 2011.

By comparing the Price and Quotes Index (Índice de Precios y Cotizaciones, IPC) to the IH, a recovery is observed in both indicators as of the first quarter of 2009, even if IPC has shown from the beginning of 2010 a greater dynamism by reaching the same level it had in 2008 (Chart 9). The increase, shown by the indicators in the last two quarters of 2010, was stable from January this year. From February, the IH is in a downward trend and a tendency to negative annual growth rates. Hence, during this year, the IPC has had a loss of (-) 10.1% and IH dropped (-) 38.6 percent (Chart 9).

Mortgage and Land Market Situation

By the second quarter 2011, Geo is the company with more registered dwellings: 12,724 and it is more than one third of the total amount. Homex has 12,574 registered dwellings, and encompasses the 30.0%, followed by Urbi, which registered almost 9 thousand dwellings. In descending order, Ara, Sara and Hogar have 4,387, 837 and 477 (Table 10).

As for territorial reserves, Homex is the one with the largest number of hectares (8,020), followed by Geo with 7,167 hectares, Urbi and Ara with 5,690 and 4,450 hectares, respectively. In turn, companies with the least reserves are Sare (862 ha) and Hogar with 762 ha. The four big developers have 90% of the territorial reserves held by IH participants.
Chart 9. Comparison between IPC and IH (August 2009 – 2011)

(May Index 2008 = 100)

Table 10. Dwellings and Territorial Reserves to 2Q in 2011
(Number and Hectares)

<table>
<thead>
<tr>
<th>Developer</th>
<th>Registered Dwellings</th>
<th>Territorial Reserve</th>
</tr>
</thead>
<tbody>
<tr>
<td>Geo²</td>
<td>14,742</td>
<td>7,167</td>
</tr>
<tr>
<td>Homex</td>
<td>12,576</td>
<td>8,020</td>
</tr>
<tr>
<td>Urbi</td>
<td>8,932</td>
<td>5,690</td>
</tr>
<tr>
<td>Ara</td>
<td>4,387</td>
<td>4,450</td>
</tr>
<tr>
<td>Sare²</td>
<td>837</td>
<td>862</td>
</tr>
<tr>
<td>Hogar³</td>
<td>477</td>
<td>726</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>41,951</strong></td>
<td><strong>26,915</strong></td>
</tr>
</tbody>
</table>

Source: Made by SHF using data from Bloomberg.

Table 10: Dwellings and Territorial Reserves to 2Q in 2011

Main Financial Ratios

The following information shows us the developers’ behavior on three different concepts (Table 11):

**Return:** On average, ROE¹⁸, weighted by the participation in the Mexican Stock Exchange, from said companies was 3.6%; Urbi was the company recording the highest ROE (4.2%) while Hogar mounts up negative returns from last year. As for ROA,¹⁹ this index was equal to 1.4% (average). Finally, EBITDA²⁰ margin positioned at 24.3% as a whole.

**Leverage:** Ara and Geo show a debt-to-capital ratio under the average (1.7 times); Hogar is the company with the highest leverage (2.6 times). When measuring net profits over paid interests, these companies’ weighted average is 0.1 times.

**Liquidity:** The ratio of circulating assets to circulating liabilities refers to these companies’ liquidity level to face their short-term obligations; the weighted average of this index is equal to 2.3 times. Considering most liquid assets of the company, the quotient between cash and temporary investments to circulating liabilities positions in 38.6%, the company with the highest level indicator (most liquid) is Urbi (53.0%), while the least liquid is Hogar (6.8%).

¹⁸ Return Over Equity
¹⁹ Return On Assets
²⁰ Earnings before Interest Taxes, Depreciation and Amortization.
Table 11. Financial Ratios for the Second Quarter of 2011

<table>
<thead>
<tr>
<th>Financial ratio</th>
<th>Ara</th>
<th>Hogar</th>
<th>Sare</th>
<th>Geo</th>
<th>Urbi</th>
<th>Homex</th>
<th>Weighted average</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Returns</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ROE</td>
<td>2.4</td>
<td>-7.3</td>
<td>0.8</td>
<td>3.9</td>
<td>4.2</td>
<td>3.6</td>
<td>3.6</td>
<td>%</td>
</tr>
<tr>
<td>ROA</td>
<td>1.4</td>
<td>-2.0</td>
<td>0.4</td>
<td>1.2</td>
<td>1.7</td>
<td>1.2</td>
<td>1.4</td>
<td>%</td>
</tr>
<tr>
<td>EBITDA Margin</td>
<td>20.7</td>
<td>-23.7</td>
<td>18.8</td>
<td>21.6</td>
<td>26.7</td>
<td>27.7</td>
<td>24.3</td>
<td>%</td>
</tr>
<tr>
<td><strong>Leverage</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Debit-to-capital</td>
<td>0.7</td>
<td>2.6</td>
<td>1.1</td>
<td>2.2</td>
<td>1.5</td>
<td>1.9</td>
<td>1.7</td>
<td>Times</td>
</tr>
<tr>
<td>Net Profits Interests Paid</td>
<td>3.4</td>
<td>41.1</td>
<td>1.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.1</td>
<td>Times</td>
</tr>
<tr>
<td><strong>Liquidity</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Circulating Assets to Liabilities</td>
<td>0.5</td>
<td>1.8</td>
<td>2.8</td>
<td>2.0</td>
<td>2.3</td>
<td>3.7</td>
<td>2.3</td>
<td>Times</td>
</tr>
<tr>
<td>Cash and Temporary Investments to Liabilities</td>
<td>44.8</td>
<td>6.8</td>
<td>10.8</td>
<td>19.0</td>
<td>53.0</td>
<td>38.4</td>
<td>38.6</td>
<td>%</td>
</tr>
</tbody>
</table>

*Source: Made by SHF using data from the Mexican Stock Exchange*

1/ This data is up to the first quarter since there is not more updated one.

2.3

DEMAND

2.3.1

Demographic Dividend:
Impacts on Housing Market

As shown in last year’s issue, the most striking aspects of Demographic Transition are the reduction in population growth rate and changes in population dynamics by age group.

The ratio of children and elderly among working-age population will decrease gradually, resulting in the Demographic Dividend (DD), which will allow higher income for the families and will make housing acquisition, enlargement and remodeling easier.

DD and its importance for housing financial sector are quantified below, in order to favor public policies and private strategies consistent with population dynamics in the following decades. Finally, the amount of funding required, the number of mortgage credits and land requirements are estimated.

Fertility
Marks the Change

Demographic Transition and DD are closely linked. The key variable is fecundity (number of children per woman in childbearing age), which determines the population’s volume, dynamics and composition. In the 1960s, the fertility rate peaked with 7.3 children per woman, and by 2005 was reduced to 2.1 (Chart 10); thus reaching the replacement rate which is one of the most important social changes in the country’s history: two children replace, demographically, two parents.

*Chart 10. Fertility rate (1950-2040)*

*Source: SHF,*
The Demographic Dividend and Its Potential

The Demographic Dividend (DD) can be observed in the reducing dependency ratio, which means that between 1950 and 2010 the Economically Active Population (EAP) multiplied by a factor of 5.7, being now 47.1 million people. This figure will increase gradually until the population stabilizes around 2040.

The DD is estimated at 3.2% of GDP in 2010, taking into consideration the full employment for the population aged 15 to 64 years old. The DD benefits can be lost, or even turn into a promissory note due to problems in the economy and the labor market, such as recessions, rising unemployment, declining middle class, and low labor productivity and investment. Therefore, industry players should consider the country’s macroeconomic conditions.

Population and Housing Projection

National population will increase from 112.3 million in 2010 to 128.4 million in 2040. This increase represents an average annual growth rate of 0.44%. The increase in population of 16.1 million over the next four decades is equivalent to the total population of Colima, Aguascalientes, Quintana Roo, Tlaxcala, Zacatecas, Querétaro, Yucatán, San Luis Potosí, Baja California, and Chihuahua, together.

The demographics of the housing market will experience major changes in the diverse segments (Table 12). It indicates that the population under 14 years will decrease (-) 26.0% between 1970 and 2040,

<table>
<thead>
<tr>
<th>Year</th>
<th>0 to 14 years old</th>
<th>15 to 64 years old</th>
<th>65 years old and older</th>
</tr>
</thead>
<tbody>
<tr>
<td>1970</td>
<td>46.2</td>
<td>50.1</td>
<td>3.7</td>
</tr>
<tr>
<td>1990</td>
<td>38.5</td>
<td>57.1</td>
<td>4.2</td>
</tr>
<tr>
<td>2010</td>
<td>32.5</td>
<td>71.5</td>
<td>6.3</td>
</tr>
<tr>
<td>2040</td>
<td>20.2</td>
<td>66.8</td>
<td>13.0</td>
</tr>
<tr>
<td>Var. 1970-2040</td>
<td>(-) 26.0</td>
<td>16.7</td>
<td>9.3</td>
</tr>
</tbody>
</table>

Chart 11. Mortgage Credit Funding

Between 2010 and 2040, the number of dwellings will increase by a factor of 1.5, going from 28.6 to 43.2 million, i.e. 486,000 dwellings per year. While that population between 15 and 64 years will increase by 16.7%; moreover, people over 65 will increase by 9.3%.

Considering that each dwelling requires 251 m², more than 351 thousand hectares of land suitable for construction will be needed, and the OREVIS (State Housing Agencies) and large developers have only 15% of the total land required.

Funding

Considering the increase of housing in the country, about 552,000 credits will be needed to meet the housing demand generated by demographic change. Funding required for dwelling acquisition in the next 30 years is $22.3 billion pesos. If current trends continue, the housing sector may finance 11.8 million dwellings, resulting in a gap of 4.8 million, for which funding is required (Chart 11).

Table 12. Total Population by Major Age Groups

(Percentage of Total Population)

<table>
<thead>
<tr>
<th>Year</th>
<th>0 to 14 years old</th>
<th>15 to 64 years old</th>
<th>65 years old and older</th>
</tr>
</thead>
<tbody>
<tr>
<td>1970</td>
<td>46.2</td>
<td>50.1</td>
<td>3.7</td>
</tr>
<tr>
<td>1990</td>
<td>38.5</td>
<td>57.1</td>
<td>4.2</td>
</tr>
<tr>
<td>2010</td>
<td>32.5</td>
<td>71.5</td>
<td>6.3</td>
</tr>
<tr>
<td>2040</td>
<td>20.2</td>
<td>66.8</td>
<td>13.0</td>
</tr>
<tr>
<td>Var. 1970-2040</td>
<td>(-) 26.0</td>
<td>16.7</td>
<td>9.3</td>
</tr>
</tbody>
</table>

SOURCE: SHF ESTATES WITH DATA FROM INEGI

21 The figures of the projections were adjusted with the final results of the 2010 General Population and Housing Census.

22 Besides the housing land, the common and urbanization areas are taken into account.
Funding for mortgage credits is obtained from four different sources. Currently, the main source is the workers' contributions funds, the loan collection or the interests charged by Infonavit or FOVISSSTE (58%), followed by commercial banking resources (20%), securitizations from different issuers (17%) and, finally, the resources obtained by Sofols / Sofoms (5%). In order to close the gap, the composition of funding must change, the ONAVIS will remain as the main source (with 44%), securitizations will reach 36% —this means an increase of 20 percentage points—, banking resources will be 15%, and Sofols and Sofoms will account for 4% (Chart 12).

Chart 12. Mortgage Funding Sources

<table>
<thead>
<tr>
<th>Source</th>
<th>Current</th>
<th>Estimate</th>
</tr>
</thead>
<tbody>
<tr>
<td>ONAVIS</td>
<td>58</td>
<td>44</td>
</tr>
<tr>
<td>Banking Resources</td>
<td>20</td>
<td>15</td>
</tr>
<tr>
<td>Sofols Resources</td>
<td>5</td>
<td>4</td>
</tr>
<tr>
<td>Securitizations</td>
<td>17</td>
<td>16</td>
</tr>
</tbody>
</table>

SOURCE: SHF ESTIMATES WITH DATA FROM INEGI.

It is important to highlight that, since 2003, the housing market has raised $154,000 million pesos in securitizations, which means 58,000 annual loans. To meet the funding needs, 19.2 million credits should be securitized from the present to 2040.

Opportunities:

- In the next four decades, the housing train will accelerate, and about 50% of current housing stock will be built.
- Working-age population will keep on increasing until mid-twentieth century, thus detonating the DD and spending on housing.
- Mortgage leverage may exceed 11% of GDP, thus strengthening the housing finance market.

Challenges:

- Starting the decade of 2040, the housing market will become one of niches: demand will come from the housing backwardness, from “move ups”, from loan origination resolutions and, to a lesser extent, from the formation of new households.
- Address the lack of served land. The excessive regulations and weak spatial planning leads to higher prices of urban land and housing, limiting families’ access to formal land markets, housing and credit.
- To obtain sufficient funds to finance housing market, it is essential to start the use of the secondary mortgage market.

2.3.2 Housing Demand

It shows the estimated demand for new or used housing in 2011. Moreover, and in order to have a broader view of the demand, the socio-demographic and economic characteristics of the households that make up the demand are taken into account. Such characteristics are: activity status, if the household has a mortgage, social security, geographic location, and income level. At the same time the information is provided by state.

It is estimated that this year, 1,106,674 households (on average, each household consists of four members, from which just over half have incomes) will demand housing, which means an increase of

23 In 2010, Infonavit made a new depth study on housing demand. Through it, it was possible to identify the beneficiaries’ and their families’ needs and preferences which determine the supply of specific products, as a first step, and their size depending on the creditworthiness of the Institute, as a second step. Likewise, the methodology for calculating current needs (housing backwardness and wanting a property —i.e. those households that do not own their homes and would like to purchase a property—) was updated for a more accurate approach, as well as for including future needs. Regarding the latter, besides considering the formation of new households, secondary uses related to temporary, inhabited or rented housing were identified. In particular, the concepts considered for calculating the housing backwardness, largely coincide with those for the methodology presented for the calculation of demand in 2011. In turn, the Demand Group of the Specialized Technical Committee on Housing, besides homologating the methodology for calculating the housing backwardness, is taking into account the methodology for housing projections.
10.1% over 2010. This demand is the result of the sum of four components:

1) Housing backwardness,24 this notion adds 692,000 dwellings (62% of total demand), an increase of 18% over 2010 and reflects the increase in the attention to this population group in vulnerable conditions paid by diverse market players (more subsidies for acquisition, physical improvement, and promotion of housing social production).

2) Creation of households, a total of 309 thousand in the year,25 i.e. (-) 3.1% less than in 2010 due to the demographic transition in Mexico, but also the ability to buy a dwelling (deterioration of labor market among people forming a household).

3) Housing mobility or households that will demand better housing than the one they currently have, which is estimated to add up to 80,000; the consumer confidence, especially in the segments of the population of medium and high income, is a direct effect on this component, and

4) Loan origination resolutions that sum up to 26,000 households, which comprise households that have improved their credit conditions and which can obtain a mortgage now (Table 13).

Table 13. Housing Demand by Component, 2011

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Housing backwardness</td>
<td>691,613</td>
<td>587,400</td>
<td>104,213</td>
<td>17.7</td>
<td>62.5</td>
</tr>
<tr>
<td>New household formation</td>
<td>309,027</td>
<td>319,029</td>
<td>(-) 10,002</td>
<td>(-)3.1</td>
<td>27.9</td>
</tr>
<tr>
<td>Mobility</td>
<td>79,700</td>
<td>77,008</td>
<td>2,692</td>
<td>3.5</td>
<td>7.2</td>
</tr>
<tr>
<td>Resolutions</td>
<td>26,334</td>
<td>21,505</td>
<td>4,829</td>
<td>22.5</td>
<td>2.4</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>1,106,674</strong></td>
<td><strong>1,004,942</strong></td>
<td><strong>101,732</strong></td>
<td><strong>10.1</strong></td>
<td><strong>100.0</strong></td>
</tr>
</tbody>
</table>

In comparison to the previous year, the estimated demand for housing in 2011 will involve 102,000 additional dwellings. It is also estimated that 74.3% of this demand will be located in urban areas, while the rest (25.7%) will be located in areas with population of less than 2,500 inhabitants. Moreover, 59% of the estimated demand for the present year corresponds to the population without access to social security. Finally, estimation includes 70,000 households that do not report having activity (Table 14).

Table 14. Socio-Demographic Characteristics and Demand, 2011

<table>
<thead>
<tr>
<th>Composition of demand 2011</th>
<th>With adjustable available income</th>
<th>Urban/In transition</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Active</td>
<td>Without mortgage</td>
</tr>
<tr>
<td></td>
<td>1,036,506</td>
<td>1,036,506</td>
</tr>
<tr>
<td></td>
<td>Inactive</td>
<td>Without adjustable available income</td>
</tr>
<tr>
<td></td>
<td>70,168</td>
<td>70,168</td>
</tr>
<tr>
<td></td>
<td>With mortgage</td>
<td>Not included in the demand</td>
</tr>
<tr>
<td></td>
<td>1,106,674</td>
<td>1,036,506</td>
</tr>
<tr>
<td></td>
<td>Active</td>
<td>Without mortgage</td>
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<tr>
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<td></td>
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<td>Without adjustable available income</td>
</tr>
<tr>
<td></td>
<td>70,168</td>
<td>70,168</td>
</tr>
<tr>
<td></td>
<td>With mortgage</td>
<td>Not included in the demand</td>
</tr>
<tr>
<td></td>
<td>1,106,674</td>
<td>1,036,506</td>
</tr>
</tbody>
</table>

Considering the type of housing solution, there will be 718,000 due to purchase, 285,000 due to improvement and 103 for Social Production of Housing. By state, Jalisco, Oaxaca, Veracruz have more than 40,000 families as demand this year, while the Southeast shows demand for 10 thousand families by state (Map 2).

In the estimates, the demographic factors play an important role, but there are also more favorable economic conditions, both in terms of activity

24 Substandard dwellings definition can be reviewed in the study Current Housing Situation in Mexico 2009, p. 38.

25 With information from the projections of the National Population Council (Consejo Nacional de Población, Conapo), made in 2005.
and in consumer confidence. However, some factors may have a negative impact in the conditions of housing demand in the short term, as interest rates, currently at 12.6% for financial intermediaries, and where key elements are the inflation and reference rates (linked in turn to the international financial environment). Employment is also another variable to be monitored, since its recovery has been largely supported in the eventual type of employment and with relatively low pay levels; this helps partially to explain why the unemployment rate, although with a downward trend (5.2% in 2Q11 vs. 6.3% in 3Q09), is still at levels above those before the crisis (3.5% in 2Q08).

2.3.3 Housing Backwardness: Households Situation and Housing in Mexico, 2010 Census

Under the Housing Specialized Technical Committee (Comité Técnico Especializado de Vivienda, CTEV) of the National Statistical and Geographical Information System (Sistema Nacional de Información Estadística y Geográfica, SNIEG-INEGI) began a discussion process and exchange of ideas with agencies, academia and other institutions interested in the topic, with the purpose of enhancing the calculation of the housing backwardness and housing needs, through elements that allow to improve the methodology of calculation of said indicators, so as to bring consistency with the Mexican reality and empower the various institutions responsible for developing the housing policy, in order to have estimates that provide greater certainty about the specific needs of the population regarding this matter.

As a result of this process, the lag was characterized in three dimensions:

1. Living space.
2. Housing materials quality.
3. Housing facilities.

Also, it was classified by type of housing solution:

1. Full dwelling which, in turn, is divided into self-construction of housing and housing for purchase or rent.

26 The number of temporary workers has increased at a faster pace than permanent workers (13.9% vs. 4.2%, in that order) so that they cannot have access to a credit because of the uncertainty of future income. In fact, the average duration of a temporary worker is 1.1 quarters, according to figures from the IMSS.

27 The figures correspond to the unemployment rate published by INEGI from ENOE.

28 Chaired by CONAVI and having as members the Secretariat of Social Development (SEDESOL), the Department of Agrarian Reform (SRA), the Secretariat of Environment and Natural Resources (SEMARNA), the Institute of the National Housing Fund for Workers (Infonavit), the Housing Fund of the Institute of Security and Social Services for State Workers (FOVISSSTE), the Federal Mortgage Society (SHF), the National Chamber of Industry and Promotion of Housing Development (CANADEVI), the Mexican Mortgage Association (AHM), and the Mexican Economic Digest Construction Industry (CEMIC).
2. Extension, where the possibility that independent living is built up to two additional rooms or baths in order to solve the problem of living space.

3. Improvement that can be of three types: only floor and ceiling materials, facilities or materials, and general facilities.

The living space dimension refers to the number of occupants per bedroom, the existence of a kitchen that is not used for sleeping, and exclusive bathroom not shared with another dwelling. The indicator that allows the classification of the living space as adequate or inadequate is the overcrowding, which refers to the ratio of number of people in a household and the space or number of rooms or bedrooms available (Table 15).

### Table 15. Living Space

<table>
<thead>
<tr>
<th>Living space.</th>
<th>Former</th>
<th>Current</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overcrowding</td>
<td>Two households share the same dwelling</td>
<td>More than three persons per room</td>
</tr>
<tr>
<td>Exclusive kitchen</td>
<td>It was not taken into account</td>
<td>The kitchen is not used as bedroom</td>
</tr>
<tr>
<td>Exclusive bathroom</td>
<td>It was not taken into account</td>
<td>The bathroom is not shared and is not used as bedroom</td>
</tr>
</tbody>
</table>

**Source:** CTEV, Demand Group.

The material dimension refers to the housing structural characteristics, i.e., materials that make up its ceilings, walls and floors. A residential structure is adequate when the materials used are classified as durable. For this methodology, a classification of said materials into efficient and replaceable was used, as shown below (Table 16):

### Table 16. Building Materials

<table>
<thead>
<tr>
<th>Materials</th>
<th>Previous</th>
<th>Current</th>
</tr>
</thead>
<tbody>
<tr>
<td>Replaceable walls</td>
<td>Deterioration</td>
<td>Waste material, Cardboard sheets, Reed, bamboo, palm, Mud or wattle &amp; daub.</td>
</tr>
<tr>
<td></td>
<td>Regular (duration)</td>
<td>Metal, asbestos, or Wood sheets and Adobe.</td>
</tr>
<tr>
<td>Replaceable roofs</td>
<td>Deterioration</td>
<td>Waste material, Cardboard sheets, Palm or straw.</td>
</tr>
<tr>
<td></td>
<td>Regular (duration)</td>
<td>Metal, asbestos or wood sheets, Metal Sheets.</td>
</tr>
<tr>
<td>Replaceable floors</td>
<td>Not taken into account</td>
<td>Soil</td>
</tr>
</tbody>
</table>

**Source:** CTEV, Demand Group.

The facilities dimension refers to the existence of basic services such as piped water inside the housing, electricity, adequate sanitation, and cooking facilities.

Thus, poor service facilities within the housing were classified as shown below (Table 17):

### Table 17. Poor facilities

<table>
<thead>
<tr>
<th>Facilities</th>
<th>Previous</th>
<th>Current</th>
</tr>
</thead>
<tbody>
<tr>
<td>Electricity</td>
<td>It was not taken into account</td>
<td>It does not have electricity.</td>
</tr>
<tr>
<td>Water</td>
<td>It was not taken into account</td>
<td>Piped water outside the dwelling but within the land.</td>
</tr>
<tr>
<td>Toilets</td>
<td>It was not taken into account</td>
<td>It does not have any drainage facilities and/or it does not have a toilet and/or it is not possible to pour water in it.</td>
</tr>
<tr>
<td>Kitchen</td>
<td>It was not taken into account</td>
<td>They cook with wood or coal and they do not have a fireplace.</td>
</tr>
</tbody>
</table>

**Source:** CTEV, Demand Group.

### Housing Solution

In order to link the living space indicator to the housing solution, it will be taken into account the type of action, such as the acquisition of new or used housing, rental housing, assisted or self-constructed housing, improvement and enlargement, can assist the household, plus family payment and debt capacity, as well as the family’s preferences. For example:

- If, in case of overcrowding, it can be solved with two additional rooms, and the housing is an independent dwelling, i.e. an independent private dwelling that can be enlarged because: it is the only dwelling in the land; it is a dwelling that shares the land; it is a dwelling that shares the land or construction: such as duplex or sow housing. If so, then the solution is an extension.29
- A new dwelling is needed when the overcrowding cannot be solved with two additional rooms or when the dwelling is not an independent one.

---

29 According to the CONAVI’s program *Ésta es tu casa*, which provides grants for acquisition or improvement of housing, aimed at enlarging two bedrooms of 6 m² at a cost of $32,000 pesos.
According to the materials combination in walls, ceilings and floors, two solutions are determined: the need for self-construction in owned land or dwelling improvement.

- The self-construction in owned land is defined as housing that is in poor conditions having replaceable material walls, which can be rebuilt on the same site where it currently exists and therefore does not require an allocation of land. In this sense, the walls are essential to identify whether they can support the roof or not. Therefore, this is the most important variable and it is considered that a dwelling that requires new walls needs to be reconstructed completely and, once rebuilt, the problem of ceilings and floors is also considered solved.

- Whereas, the improvement refers to the renewal of housing from enlargement, replacement of materials in floors or ceilings and improving or adding service connections.

Nowadays, with data from 2010 Census, from the National Survey of Household Incomes and Expenses (ENIGH) 2010 and from the socioeconomic conditions module of the same survey, the new methodology is being drafted, reason why figures are not provided yet. However, as a reference, we are showing the calculation using the previous methodology. According to data from the ENIGH 2010, there are 9,370,690 extended housing backwardness, representing 31.1% of all households in Mexico, i.e. 2.3 percentage points less than what they represented in 2008.30

2.4

MEASURING TOOLS

2.4.1

SHF Housing Price Indexes in Mexico: A Review of Economic Fundamentals

In early 2010, SHF began with the publication of the SHF housing price indexes for a selected set of municipalities and districts, starting the second stage of this important index for the housing market (single-family dwellings, condominiums and departments) and guaranteed mortgage loans in the country and in local housing markets. Thus, the Housing Price System provides information for a total of 70 individual indexes and their respective quarterly annualized variations: one national, 32 state and 37 municipal or district. In the first quarter of 2011, Zapopan and Toluca municipalities were included.

The SHF Index offers great benefits to the housing market as a whole, such as:

- Timely and accurate indicator of the trend of home values by geographic area.
- Basis for decision making for agents, potential buyers and investors.
- Timely information to all participants in the housing sector regarding the indexes, appreciation and/or depreciation rates and a press release published on the SHF website31 at the time of the release dates disclosed in advance in a calendar.
- Economic and statistical analysis of the behavior of dwelling values for the registration of housing market’s expansion or contraction, the identification of asset price bubbles, the establishment of the collateral value of the mortgage portfolio and the default rate, the update of the property loan/value (L/V) indicator as an aid in rating mortgage-backed emissions to rating agencies and the pricing policy of various financial instruments.

Currently, SHF aims to start a third phase of SHF Index; generating monthly indicators for the national level, as well as quarterly indexes that will include the new homologated classification of housing value.

30 The data should be used as reference only, as the result will be different with the new methodology since it includes new indicators that were not previously considered, such as living space and facilities.
31 www.shf.gob.mx/estadisticas/IndiceSHFPreciosViv/Paginas.
Section 2. Current Housing Market Situation

The increase in the SHF Index was a result of several factors, including changes in the composition of the housing market focused in medium and residential housing. While in the second quarter of 2010, 8.1% was economic housing, 68.5% social housing, 21.4% medium housing, and 2.0% residential housing, in 2011 the distribution was 6.5%, 68.1%, 23.1% and 2.3%, respectively. Furthermore, this expansion had as underlying factors the increase in the economic activity as measured by the IGAE or monthly GDP, an increase in the number of permanent insured and a reduction of the mortgage interest rates (Graph 14).

State Results

In the semester at issue, the SHF Index showed different results according to each state in Mexico. This was due to the composition of the market and to various economic, social and infrastructure conditions considering the place of residence shown by the population. Thus, in Tabasco SHF Index increased 8.5% over the same period last year, 8.1% in Tamaulipas, 7.7% in Coahuila, 7.7% in San Luis Potosi, 7.4% in Hidalgo, 7.2% in Chihuahua, 7.2% in Campeche, 7.0% in Michoacán, 6.9% in Sonora, 6.8% in Puebla, 6.7% in Baja California Sur, 6.5% in Veracruz, 6.5% in Oaxaca, 6.4% in Morelos, 6.3% in Chiapas, 6.0% in Tlaxcala, 5.9% in Nuevo León, and 5.4% in Baja California.

Results

- National

In the second quarter of this year, the SHF Housing Price Index showed a nominal variation of 4.7% at national level (single-family homes, housing complexes and departments) over the same quarter the last year (Chart 13).

Chart 13. SHF Housing Price Index (2008-2011) (Annual Variations %)

[Chart showing annual variations for SHF Housing Price Index from 2008 to 2011]

Source: Made using data from SHF.

State Results

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Chart 14. Underlying Indicators in the Housing Market (Variation % 2006-2011.II)

[Chart showing variation of underlying indicators from 2006 to 2011]

Source: Made using information from SHF, INEGI and Banco de México.
Meanwhile, SHF Index increased 5.1% in Guanajuato, 5.0% in Durango, 5.0% in Querétaro, 4.8% in Nayarit, 4.8% in Zacatecas, 4.6% in Aguascalientes, 4.6% in Yucatán, 4.2% in México, 3.8% in Jalisco, 3.5% in Colima, 3.1% in Quintana Roo, 3.1% in Sinaloa, 2.9% in Distrito Federal, and 1.4% in Guerrero. All these states showed nominal growths under the national average.

International

Internationally, the Indexes of Mexico, Germany and Canada showed nominal appreciations during the second quarter of 2011. Meanwhile, in USA and UK housing market, the price indexes displayed depreciations since 2007.III and 2011.I, respectively (see Chart 15)32, thus showing the problems faced by those markets due to the subprime crisis.


In summary, the results of SHF Index for the second quarter of 2011 show that the collateral value of mortgage loans appreciated in all states of the country and that the housing market is oriented towards social and medium housing. The growth shown was according to the general conditions of economic stability.

2.4.2

Bancomer Housing Price Index

Data on the evolution of housing prices is an essential tool so the various stakeholders in this industry, whether buyers, builders or financial intermediaries, can make decisions.

Section 2. Current Housing Market Situation

Section 2. Current Housing Market Situation

The current housing market situation is influenced by various factors, including the different housing segments, construction type (dwelling or apartment), and condition of use (new or used). Besides—and as the housing market moves in its development—a secondary market begins to emerge, where information about the resale value of properties is becoming more important.

The BBVA Index was created in order to help enrich the pool of indicators on housing prices, which is based, like that of SHF, on housing attributes (materials, architectural finishings, surfaces, bedrooms, location, housing type, and condition of use). In fact, they represent a subset of the universe of properties valued that SHF considers in order to calculate its own index. \(^{33}\) (Figure 16).

**Chart 16. Dwelling Prices in Mexico: SHF and BBVA**

![Graph showing Dwelling Prices in Mexico: SHF and BBVA](image)

Among the contributions of BBVA we can count the changes in the dwelling prices according to the dwellings’ attributes. If we consider the period 2006-2008 and compare it to the period 2009-2011 \(^{34}\) (first quarter), the change in housing prices, according to the BBVA Index is 11% (Chart 17). Nevertheless, there are important differences according to the attribute type under consideration. New housing is the one with the least appreciation and, in any case, housing location is an attribute valued as much as or even more than the condition of use. Dwellings with higher level of urban facilities (with nearby services, located on avenues and with access to public transport routes) show a slightly higher appreciation level to the national average. Finally, the evidence shows that people with high and low income regard the housing area as highly important: when comparing dwellings addressed to the same segment and with similar conditions, the appreciation substantially increases in larger dwellings.

**Chart 17. Appraisal of Housing by Attribute: Use, Location and Area.**

![Bar chart showing Appraisal of Housing by Attribute: Use, Location and Area](image)

Furthermore, it must be said that changes in housing prices do not follow exclusively to their attributes but also to economic conditions. Employment, financial stability, the availability of credit and even housing supply are also important variables that influence pricing. However, it is important to say that a high proportion (over 90% in the case of Infonavit and over 70% in the case of FOVISSSTE) of the Mexican mortgage market is

\[^{33}\] The appraisals made by BBVA Bancomer are included in the National Appraisals Database, managed by SHF, and from which its index is conformed. The main differences between both could be, besides the size and structure of the sample, the coverage and the attributes considered. In the appraisals carried out by BBVA Bancomer, the medium and high segments have a slightly higher share than the national total (although in both cases it is less than 20% of the total). In turn, SHF index incorporates more data in terms of geographic location with respect to the BBVA index, specifically in relation to geographic location (urban proximity, degree of state and municipal development, and population density).

\[^{34}\] This comparison makes sense due to several reasons: simplification, comparison before and after crisis, as well as to avoid volatility risks in variation rates that difficult comparisons.
focused on low-income segment, for which credits allocation is based partly on the availability of grants from the federal government (and the public institutions, through the interest rate); therefore, they are less dependent on the economic cycle. That is, the relationship between mortgage lending and economic activity is clear for only a share of the market: the middle and high income part.

2.4.3

Residential Satisfaction Index with the City, the Housing Complex, the Dwelling, and Financial Aspects

Residential Satisfaction Survey (ESR) assesses the degree of satisfaction on the population acquiring a new dwelling in housing complexes, where at least one dwelling has home credit insurance, and has been acquired through Limited Purpose Financial Institutions (Sofols), Banks, Infonavit, and FOVISSSTE. Besides, it provides information for public policies and private strategies for improving quality of dwelling, cities and final customer assistance.

1. Methodology:

• 5,692 questionnaires with a semantic differential type probabilistic survey were administered in 146 municipalities from the 32 federal entities.

• Slightly more than 7 of 10 sample households are social or economic dwellings, thus, 72% of surveyed homes have monthly incomes up to $10,690 pesos (6.28 minimum wages on 2010).

2. Satisfaction with the Dwelling

In this subsection, Housing Satisfaction Index is the weighted average of the grades on the construction physical characteristics; spatial and functional characteristics; adaptations and transformations; and environmental characteristics.

• The index in 2010 is 6.87, compared favorably to the year before. The increase is observed in 23 entities (Table 18).

• Most satisfied population with their dwelling is located in Baja California Sur, Colima, Tamaulipas, and Nuevo León, due to a better perception of their physical characteristics. In Campeche, it was the opposite.

• Environmental characteristics were the only attribute to reduce its grade in (-) 0.21 points (Chart 18).

• The remaining attributes increased in relation to the year before: physical characteristics, 1.15 points; space and functional characteristics, 1.26; and adaptations and transformations, 0.28 points (Chart 18).

Better assessed housing complexes (Table 19) were mostly built by local or regional builders.

Geo built 6 out of 15 social and economic type housing complexes that got low satisfaction levels (Table 20).

2.a. Enlargement and Remodeling

• 47% of the residents wish to remodel or enlarge their dwelling due to overcrowding increase (large families).

2.b. Neighborhood Organization

• Five out of 10 housing complexes are not organized and do not pay maintenance fees for common areas and services. This indicator improved in relation to 2009, when 7 out of 10 housing complexes were not organized.

• Monthly fees are $394 pesos, an average of $208 more than in 2009. In turn, fees for annual repairs almost tripled (Table 21).

Table 21. Monthly Fees

<table>
<thead>
<tr>
<th>Fees</th>
<th>Average 2010</th>
<th>Average 2009</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maintenance</td>
<td>$394</td>
<td>$186</td>
</tr>
<tr>
<td>Annual repairs</td>
<td>$1,414</td>
<td>$515</td>
</tr>
</tbody>
</table>


2.c. Transportation Expenses and Dwelling Repairs

• On average, transportation expenses to workplaces, schools, supply centers, health, and recreation centers are $3,268 pesos, which is 30% of monthly income (Table 22).

The dwelling resident calls on a range from 1 to 10, where 1 is equal to the 'lowest' satisfaction and 10 to the 'highest'.
## Table 18. Housing Satisfaction Index by State

<table>
<thead>
<tr>
<th>State</th>
<th>2009</th>
<th>2010</th>
</tr>
</thead>
<tbody>
<tr>
<td>NATIONWIDE</td>
<td>6.23</td>
<td>6.87</td>
</tr>
<tr>
<td>Aguascalientes</td>
<td>6.99</td>
<td>6.38</td>
</tr>
<tr>
<td>Baja California</td>
<td>5.62</td>
<td>7.07</td>
</tr>
<tr>
<td>Baja California Sur</td>
<td>6.37</td>
<td>8.05</td>
</tr>
<tr>
<td>Campeche</td>
<td>6.63</td>
<td>5.48</td>
</tr>
<tr>
<td>Chiapas</td>
<td>6.72</td>
<td>6.89</td>
</tr>
<tr>
<td>Chihuahua</td>
<td>5.94</td>
<td>7.07</td>
</tr>
<tr>
<td>Coahuila</td>
<td>6.26</td>
<td>7.08</td>
</tr>
<tr>
<td>Colima</td>
<td>6.78</td>
<td>8.04</td>
</tr>
<tr>
<td>Distrito Federal</td>
<td>6.46</td>
<td>7.37</td>
</tr>
<tr>
<td>Durango</td>
<td>5.34</td>
<td>6.00</td>
</tr>
<tr>
<td>Guanajuato</td>
<td>6.35</td>
<td>7.15</td>
</tr>
<tr>
<td>Guerrero</td>
<td>6.77</td>
<td>6.24</td>
</tr>
<tr>
<td>Hidalgo</td>
<td>6.39</td>
<td>7.33</td>
</tr>
<tr>
<td>Jalisco</td>
<td>5.41</td>
<td>7.26</td>
</tr>
<tr>
<td>Mexico</td>
<td>6.12</td>
<td>7.26</td>
</tr>
<tr>
<td>Michoacán</td>
<td>6.28</td>
<td>5.63</td>
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<tr>
<td>Morelos</td>
<td>6.42</td>
<td>6.33</td>
</tr>
<tr>
<td>Nayarit</td>
<td>6.42</td>
<td>6.92</td>
</tr>
<tr>
<td>Nuevo León</td>
<td>6.42</td>
<td>7.38</td>
</tr>
<tr>
<td>Oaxaca</td>
<td>5.52</td>
<td>6.10</td>
</tr>
<tr>
<td>Puebla</td>
<td>6.76</td>
<td>7.05</td>
</tr>
<tr>
<td>Querétaro</td>
<td>6.75</td>
<td>7.11</td>
</tr>
<tr>
<td>Quintana Roo</td>
<td>5.52</td>
<td>7.26</td>
</tr>
<tr>
<td>San Luis Potosí</td>
<td>5.97</td>
<td>5.61</td>
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<tr>
<td>Sinaloa</td>
<td>7.74</td>
<td>7.20</td>
</tr>
<tr>
<td>Sonora</td>
<td>5.34</td>
<td>7.25</td>
</tr>
<tr>
<td>Tabasco</td>
<td>6.16</td>
<td>6.85</td>
</tr>
<tr>
<td>Tamaulipas</td>
<td>5.91</td>
<td>7.42</td>
</tr>
<tr>
<td>Tlaxcala</td>
<td>6.89</td>
<td>6.24</td>
</tr>
<tr>
<td>Veracruz</td>
<td>4.92</td>
<td>7.16</td>
</tr>
<tr>
<td>Yucatán</td>
<td>6.82</td>
<td>6.94</td>
</tr>
<tr>
<td>Zacatecas</td>
<td>6.13</td>
<td>5.58</td>
</tr>
</tbody>
</table>

**Source:** SHF, Residential Satisfaction Survey, 2010.

## Chart 18. Components of the Housing Satisfaction Index

![Diagram showing components of the housing satisfaction index]

**Source:** SHF, Residential Satisfaction Survey, 2010.
### Table 19. The 15 Best Assessed Housing Complexes

<table>
<thead>
<tr>
<th>State</th>
<th>Municipality</th>
<th>Housing Complex</th>
<th>ISH</th>
<th>Developer</th>
<th>Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>Colima</td>
<td>Tecoman</td>
<td>Las Palmas</td>
<td>9.22</td>
<td>PROMOTORA E INMOBILIARIA TECOMENSE, S.A DE C.V</td>
<td>Economic</td>
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<tr>
<td>Nuevo León</td>
<td>Juárez</td>
<td>Villa Luz 1</td>
<td>9.13</td>
<td>FOMENTO EMPRESARIAL INMOBILIARIO, S.A DE C.V</td>
<td>Economic</td>
</tr>
<tr>
<td>Colima</td>
<td>Villa de Álvarez</td>
<td>Las Higueras</td>
<td>8.96</td>
<td>PROYECTO INMOBILIARIO PRC XXI, S.A. DE C.V</td>
<td>Social</td>
</tr>
<tr>
<td>Tabasco</td>
<td>Centro</td>
<td>Fraccionamiento Hacienda Buenavista</td>
<td>8.80</td>
<td>PROM. INM. Y CONST.TABASQUEÑA S.A DE C.V</td>
<td>Economic</td>
</tr>
<tr>
<td>Sinaloa</td>
<td>Mazatlán</td>
<td>Villa Carey</td>
<td>8.67</td>
<td>ARKO CONSULTORES, S.A. DE C.V</td>
<td>Economic</td>
</tr>
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<td>Sinaloa</td>
<td>Mazatlán</td>
<td>Valle del Sol 33 VT MZT</td>
<td>8.66</td>
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<td>Economic</td>
</tr>
<tr>
<td>Hidalgo</td>
<td>Tizayuca</td>
<td>Fuentes de Tizayuca la Etapa</td>
<td>8.61</td>
<td>CONSORCIO DE INGENIERÍA INTEGRAL S.A.C.V</td>
<td>Economic</td>
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<tr>
<td>Jalisco</td>
<td>Tlapalulco de Zurigá</td>
<td>Gerovillas Villa Luna E3: Sirius, Rigel, Altair</td>
<td>8.60</td>
<td>GEO JALISCO, S.A. DE C.V</td>
<td>Economic</td>
</tr>
<tr>
<td>Nuevo León</td>
<td>Apodaca</td>
<td>Cosmopolis</td>
<td>8.53</td>
<td>FOMENTO EMPRESARIAL INMOBILIARIO, S.A DE C.V</td>
<td>Economic</td>
</tr>
<tr>
<td>Coahuila</td>
<td>Saltillo</td>
<td>Colinas de San Lorenzo Egsa-8</td>
<td>8.50</td>
<td>CASAS RUBA S.A. DE C.V</td>
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<tr>
<td>México</td>
<td>Chalco</td>
<td>Hacienda Guadalupe la Etapa</td>
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<td>Nuevo León</td>
<td>Santa Catarina</td>
<td>Real de Santa Catarina</td>
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<td>COMPAÑÍA INMOBILIARIA HABITACIONAL, S.A. DE C.V</td>
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</tr>
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<td>Veracruz</td>
<td>Coaliznita</td>
<td>Fraccionamiento San Rafael</td>
<td>8.35</td>
<td>CONSTRUCTORA JAGRO, S.A. DE C.V</td>
<td>Economic</td>
</tr>
<tr>
<td>Puebla</td>
<td>Atlíxco</td>
<td>El Encanto del Cerril III</td>
<td>8.33</td>
<td>ASESORÍA CONSTRUY COMERC.DE VIVIENDA S.A. DE C.V</td>
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<td>Coahuila</td>
<td>Saltillo</td>
<td>Parajes de la Sierra Tradicional-224</td>
<td>8.30</td>
<td>CASAS RUBA S.A. DE C.V</td>
<td>Economic</td>
</tr>
</tbody>
</table>

**Source:** SHF, Residential Satisfaction Survey, 2010.

### Table 20. The 15 Worst Assessed Housing Complexes

<table>
<thead>
<tr>
<th>State</th>
<th>Municipality</th>
<th>Housing Complex</th>
<th>ISH</th>
<th>Developer</th>
<th>Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tamaulipas</td>
<td>Altamira</td>
<td>Villas de Altamira</td>
<td>3.34</td>
<td>GEO TAMPICO, S.A DE C.V</td>
<td>Economic</td>
</tr>
<tr>
<td>Morelos</td>
<td>Yautepec</td>
<td>La Morena</td>
<td>3.54</td>
<td>IDES CONSTRUCTORA, S.A. DE C.V</td>
<td>Economic</td>
</tr>
<tr>
<td>Nuevo León</td>
<td>García</td>
<td>Paraje San José Sector Las Flores</td>
<td>3.72</td>
<td>MARFIL DESARROLLO, S.A. DE C.V</td>
<td>Economic</td>
</tr>
<tr>
<td>Nayarit</td>
<td>Bahía de Banderas</td>
<td>Jardines del Porvenir</td>
<td>4.07</td>
<td>GRUPO CONSECA S.A. DE C.V</td>
<td>Social</td>
</tr>
<tr>
<td>Sonora</td>
<td>Nogales</td>
<td>San Nicolás</td>
<td>4.38</td>
<td>EDIFICACIONES HABITACIONALES DEL NOROESTE, S.A DE C.V</td>
<td>Economic</td>
</tr>
<tr>
<td>Nayarit</td>
<td>Bahía de Banderas</td>
<td>Santa Fe</td>
<td>4.50</td>
<td>PROYECTOS INMOBILIARIOS DE CUILACÁN, S.A DE C.V</td>
<td>Economic</td>
</tr>
<tr>
<td>Querétaro</td>
<td>Tariates</td>
<td>Eduardo Loarca</td>
<td>4.51</td>
<td>GRUPO APTA, S.A. DE C.V</td>
<td>Economic</td>
</tr>
<tr>
<td>Guerrero</td>
<td>Acapulco de Juárez</td>
<td>Marquesa XII</td>
<td>4.64</td>
<td>GEO GUERRERO, S.A. DE C.V</td>
<td>Economic</td>
</tr>
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<td>Guerrero</td>
<td>Acapulco de Juárez</td>
<td>Las Gaviotas III</td>
<td>4.83</td>
<td>GEO GUERRERO, S.A. DE C.V</td>
<td>Economic</td>
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<td>Coahuila</td>
<td>Torreón</td>
<td>La Amistad</td>
<td>4.89</td>
<td>GEO LAGUNA S.A. DE C.V</td>
<td>Economic</td>
</tr>
<tr>
<td>Tamaulipas</td>
<td>Reynosa</td>
<td>Sector Villa Las Flores</td>
<td>4.90</td>
<td>BIENES E INMUEBLES TRES PICOS, S.A. DE C.V</td>
<td>Economic</td>
</tr>
<tr>
<td>Querétaro</td>
<td>Querétaro</td>
<td>Jardines de Santiago Secc.Cinuelos</td>
<td>4.92</td>
<td>GEO CASAS DEL BAJIO, S.A. DE C.V</td>
<td>Social</td>
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<td>Zacatecas</td>
<td>Jeréz</td>
<td>Guadalajara</td>
<td>4.94</td>
<td>VERÓNICA ORTEGA GUERRERO</td>
<td>Economic</td>
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<td>Guerrero</td>
<td>Acapulco de Juárez</td>
<td>La Fortaleza</td>
<td>5.07</td>
<td>GEO GUERRERO, S.A. DE C.V</td>
<td>Social</td>
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<td>San Luis Potosi</td>
<td>San Luis Potosi</td>
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<td>5.09</td>
<td>PARQUE HABITACIONAL, S.A. DE C.V</td>
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<td>Michoacán</td>
<td>La Piedad</td>
<td>Las Cañadas</td>
<td>5.16</td>
<td>INMOBILIARIA Y CONSTRUCTORA SOLÓRZANO, S.A. DE C.V</td>
<td>Economic</td>
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<td>San Luis Potosi</td>
<td>San Luis Potosi</td>
<td>Haciendas de Santiago</td>
<td>5.17</td>
<td>POTOSINA DE CONSTRUCTORES, S.A. DE C.V</td>
<td>Economic</td>
</tr>
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</table>

**Source:** SHF, Residential Satisfaction Survey, 2010.

### Table 22. Transportation Expenses

<table>
<thead>
<tr>
<th>Expense</th>
<th>2010</th>
</tr>
</thead>
<tbody>
<tr>
<td>Work</td>
<td>$1,312</td>
</tr>
<tr>
<td>School</td>
<td>$592</td>
</tr>
<tr>
<td>Recreation areas</td>
<td>$468</td>
</tr>
<tr>
<td>Supplying center</td>
<td>$670</td>
</tr>
<tr>
<td>Health center</td>
<td>$227</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>$3,268</strong></td>
</tr>
</tbody>
</table>

**Source:** SHF, Residential Satisfaction Survey, 2010.
• Three out of 10 interviewed individuals have made some repairs to their dwelling.

• According to the residents, the last repair on their dwelling amounted to $8,499 pesos (average).

• Even when dwellings are three years old (average), 2 out of 10 have some spoilage in roofs, walls or floors.

2.d. Satisfaction on Financial Institutions

• Due to the credit characteristics, customer services and response time, Banks received a better assessment compared to other intermediaries (Chart 19).

Section 2. Current Housing Market Situation

3. Housing Complex and City

In 2010, the satisfaction with the housing complex and the city was 6.64, which is 0.44 percent points more than the grade given by the residents the year before (Chart 20).

• The housing complex characteristics (spaces, dwelling size and number of residents) are still badly perceived, they are systematically the worst assessed.

• The location is the attribute that improved the most compared to previous assessments; however, it remains below other attributes.

Chart 19. Housing Satisfaction Index by Institution

<table>
<thead>
<tr>
<th>Institution</th>
<th>Housing Satisfaction Index</th>
<th>Credit Characteristics</th>
<th>Response Time Characteristics</th>
<th>Service Characteristics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>6.87</td>
<td>7.36</td>
<td>7.19</td>
<td>7.07</td>
</tr>
<tr>
<td>Infonavit and FOVISSSTE</td>
<td>6.71</td>
<td>7.02</td>
<td>7.07</td>
<td>7.07</td>
</tr>
<tr>
<td>Banks</td>
<td>7.68</td>
<td>7.63</td>
<td>7.33</td>
<td>7.66</td>
</tr>
<tr>
<td>Sofols</td>
<td>7.64</td>
<td>7.54</td>
<td>7.96</td>
<td>7.61</td>
</tr>
</tbody>
</table>


Chart 20. Components of the Housing Complex and City Satisfaction Index

<table>
<thead>
<tr>
<th>Component</th>
<th>2006</th>
<th>2007</th>
<th>2008</th>
<th>2009</th>
<th>2010</th>
</tr>
</thead>
<tbody>
<tr>
<td>Location</td>
<td>6.25</td>
<td>5.99</td>
<td>6.11</td>
<td>6.64</td>
<td>6.64</td>
</tr>
<tr>
<td>Housing Complex Characteristics</td>
<td>5.32</td>
<td>4.92</td>
<td>5.81</td>
<td>6.73</td>
<td>6.73</td>
</tr>
<tr>
<td>Urbanization and Services</td>
<td>7.44</td>
<td>7.38</td>
<td>7.53</td>
<td>7.03</td>
<td>7.03</td>
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<tr>
<td>Perception on the Housing Complex</td>
<td>7.08</td>
<td>6.88</td>
<td>6.24</td>
<td>6.45</td>
<td>6.45</td>
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<tr>
<td>Social and Communitarian Facilities</td>
<td>6.31</td>
<td>6.37</td>
<td>6.63</td>
<td>6.81</td>
<td>6.54</td>
</tr>
<tr>
<td>Perception on the City</td>
<td>6.92</td>
<td>7.07</td>
<td>6.92</td>
<td>6.81</td>
<td>6.54</td>
</tr>
</tbody>
</table>

4. Finance

- The Financial Satisfaction Index increased from 7.3 to 7.5 in 2010 (Table 23).
- Tamaulipas is the best assessed entity is with 8.4, while Michoacán got the lowest grade (5.7), due to credit and service characteristics.
- Credit and service characteristics decreased slightly their grades compared to former years (Chart 21).

### Table 23. Financial Satisfaction Index by State

<table>
<thead>
<tr>
<th>State</th>
<th>2009</th>
<th>2010</th>
</tr>
</thead>
<tbody>
<tr>
<td>NATIONWIDE</td>
<td>7.3</td>
<td>7.5</td>
</tr>
<tr>
<td>Aguascalientes</td>
<td>8.1</td>
<td>6.6</td>
</tr>
<tr>
<td>Baja California</td>
<td>7.6</td>
<td>8.1</td>
</tr>
<tr>
<td>Baja California Sur</td>
<td>7.2</td>
<td>8.1</td>
</tr>
<tr>
<td>Campeche</td>
<td>8.0</td>
<td>7.6</td>
</tr>
<tr>
<td>Coahuila</td>
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<td>Colima</td>
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<td>Chiapas</td>
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<td>Jalisco</td>
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<td>Mexico</td>
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<td>Morelos</td>
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<td>7.5</td>
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<tr>
<td>Nayarit</td>
<td>8.2</td>
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<td>Querétaro</td>
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<td>Quintana Roo</td>
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<td>San Luis Potosí</td>
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<tr>
<td>Sinaloa</td>
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<td>Sonora</td>
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<tr>
<td>Tabasco</td>
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<td>Tamaulipas</td>
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<td>Tlaxcala</td>
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<td>Veracruz</td>
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<td>7.9</td>
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<tr>
<td>Yucatán</td>
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<td>8.3</td>
</tr>
<tr>
<td>Zacatecas</td>
<td>8.4</td>
<td>6.1</td>
</tr>
</tbody>
</table>

**SOURCE:** SHF, RESIDENTIAL SATISFACTION SURVEY, 2010.

5. Legal Module

- Complaints from residents decreased regarding the year before.
- The most common complaint is noncompliance of the housing delivery date.
- 60% of the complainants visited the builder or developer.
- The resolution of their complaint was qualified as inefficient.

As observed, housing consumers are more satisfied today than in 2009. However, the index level shows that there are still opportunity areas from which a better residential satisfaction can be achieved. For instance, despite the dwellings being new, at least 20% of them already have spoilage in roofs, walls or floors. Additionally, overcrowding is observed due to the small size of the dwellings or to the lack of space.

2.4.4. Indicators about Quality of Life Linked to Housing (ECUVE and ICVV)

**Quality of Life Linked to Housing and its Environment**

Infonavit designed two indicators that allow measuring the level and change in quality of life over
time: one evaluating the housing and its environment, regardless of who is occupying it — Qualitative Evaluation of Housing and its Environment (Evaluación Cualitativa de la Vivienda y su Entorno, ECUVE) —, and another considering the profile of the inhabitants regarding the housing attributes—Quality of Life Index Linked to Housing (Índice de Calidad de Vida Vinculado a la Vivienda, ICVV). Comparison of these two indicators will allow separating what is ascribable to housing and its environment (which mostly depends on industry and governments), from what corresponds to the beneficiaries’ decision. Thus, efforts and incentives to encourage a better quality of life can be addressed in a better way.

**Qualitative Evaluation of Housing and its Environment (ECUVE)**

ECUVE indicator emerges after the interest from CONAVI, SEDESOL and Infonavit in identifying and evaluating the elements for quality of life and sustainability linked to housing. The purpose of this indicator is to structure and schedule, in a coordinated and shared way, the efforts that encourage the application of such elements in developing cities. ECUVE allows assessing each dwelling and its environment individually, systematically, and instantly, based on existing attributes and with data available through official sources, and from the appraisal.

ECUVE considers 13 major elements (Chart 22), identified by importance and weighting through interviews, focus groups, and nationwide surveys; opinion of beneficiaries and borrowers, groups of experts and people responsible of public policy on housing. In turn, each of the major elements considered is divided in sub-elements, which are assessed by means of different available indicators, such as ISA, ICAVI, Incomuv, among others. Thus, ECUVE turns out to be an indicator of indicators that assess not only the dwelling and its urban and social environments, but also the regional variants.

Among the main features of ECUVE, the importance from elements related to the location stands out, such as sufficient and nearby urban facilities, nearby employment sources, public transport and surrounding roads, a living space and municipal services, and an efficient use of water and power.

When comparing the results during the first half of 2011 with the results corresponding to January-December 2010, ECUVE had an increase of 25%, ascribable mainly to the efforts from program Hipoteca Verde, combined with a higher number of used housing at the origination of the year.

Used housing has, in comparative terms, a better grade than new housing. The main difference is due to a larger living space, followed by location instances, such as urban facilities, roads and public transport. The qualitative gap between new and used housing is reduced when new housing has facilities with ecologic attributes, which makes up other attributes that are not present.

**Quality of Life Index Linked to Housing (ICVV)**

The ICVV not only seeks to assess housing and its environment, but also the compatibility with inhabitants. For this, the individual aspects of each claimant and their family have to be known in order to learn the impact a specific housing may represent for their quality of life. It intends to create informed decisions, by guiding the beneficiaries on how their quality of life changes when purchasing a dwelling.
with their loan, and also assessing if the quality level remains the same or changes after using their credit and during the payment period. Hence, the importance of linking this effort to the efforts intended for guiding the beneficiaries towards a better use of their credit and access to a subsidy.

**Methodology Considered to Constitute ICVV Includes Generally Five Consecutive Steps:**

1. **Literature review.**
2. **Interviews with experts and public employees from Infonavit; representatives of CONAVI, SEDESOL, the Autonomous Metropolitan University (Universidad Autónoma Metropolitana, UAM), the National Autonomous University of Mexico (Universidad Nacional Autónoma de México, UNAM), Mexican College (Colegio Mexiquense), Habitat International Coalition, SHF, the Housing Institute of Distrito Federal, as well as housing development companies, and consulting firms, such as McKinsey.**
3. **Focus Groups: one with public employees and 16 with beneficiaries and borrowers for gathering and filtering attributes that define quality of life.**
4. **National Survey on Quality of Life: 5,400 nationwide surveys for obtaining a statistic representation in eight regions of the country and 2 segments of beneficiaries (those earning less and more than 4 times the minimum wage) on the perception of people about quality of life linked to housing.**
5. **Sources and data mining: for defining the weights for each attribute.**

**For ICVV purposes, the definition of quality of life is:**

"Subjective assessment of objective elements that allows a dignified and sustainable life for individuals in the society, their full development and happiness, taking into consideration their context and expectancies."

It was also identified a list of attributes to include in the ICVV, linked to four sub-indexes, which are: housing, environment, community, and individual. Attributes evaluating quality of life linked to housing, and its weighting are intended to converge and be coherent with ECUVE, so that both indicators are comparable.

Among the most frequent attributes in a study performed to know beneficiaries’ opinion on what influences the most on their quality of life, we find security, space (in relation to the size of the dwelling) and quality of materials and facilities. While in interviews with experts, the most frequent attributes were: urban facilities, urban services and location. These groups were formed by individuals with the following features: men and women from 20 to 55 years old; single, married, living in couple, with and without children; with less than 2 years living in their dwelling, or more than 2 years living in their dwelling.

When classifying the surveys and importance given by the beneficiaries and borrowers, aspects inherent to housing as mainstay for quality of life and with almost 50% of importance for both, beneficiaries and borrowers, were identified. However, borrowers’ perception on aspects related to the environment is much higher (36%) than the beneficiaries’ (20%). Security is acknowledged as an integral housing, environment and community topic. It is closely related to the concept of concept quality of life, although it cannot be strictly related to the incidence that housing policies could have on it.

The pilot of the National Survey on Quality of Life in Distrito Federal metropolitan area confirms certain elements identified as priority for ECUVE, such as location and basic services, and establishes property value and privacy in third place of importance, over housing and security elements.

The sense of owning a property compensates the lack of some elements that the beneficiary had considered before moving to a new household as a homeowner. Without considering the significance of having a property and privacy (own dwelling), in some cases, quality of life is lower as compared to the housing situation (not own) from which a beneficiary comes.

**2.4.5 Index of Municipal Competitiveness in Matter of Housing (Incomuv)**

The Index of Municipal Competitiveness in Matter of Housing 2011 (Índice de Competitividad Municipal en Materia de Vivienda, Incomuv) is a tool resulting from the Municipal Competitiveness Program in Matter of...
Section 2. Current Housing Market Situation

Housing (Programa de Competitividad Municipal en Materia de Vivienda, PCMV). This tool aims at evaluating objectively the conditions in matter of housing and urban environment prevailing in Mexican municipalities, so as to increase the value of long-term investments in housing (added value).

Incomuv represents a clear and reliable indicator of the current situation on Mexican municipalities in matter of housing and urban development. It will allow having an easy-to-interpret tool for beneficiaries, borrowers, dwelling suppliers, financial entities, the three branches of government and other sector participants to make decisions on where to efficiently invest their estate.

Thus, the National Workers’ Housing Fund Institute (Instituto del Fondo Nacional de la Vivienda para los Trabajadores, Infonavit), along with the National Housing Commission (CONAVI) and the Federal Mortgage Society (SHF), requested the Mexican Institute for Competitiveness (Instituto Mexicano para la Competitividad, IMCO) the generation of an instrument that would contribute to an ordered and competitive growth of Mexican cities and the improvement of recently created housing environment conditions.

Features of Incomuv

Incomuv analyzes the features of the country’s 402 most important municipalities where the highest number of mortgage credits is generated, in which there are significant housing needs, or which have a high potential of urban growth for the following years. Moreover, these municipalities together constitute the 115 cities or urban areas in the country that concentrate the 66% of population, 92% of domestic production, 80% of demand, 75% of funding, and 64% of housing needs.

It is constituted by 78 indicators, most of them from official sources of information, which are grouped in three mainstays or sub-indexes:

Mainstay 1 – Housing Typology

- Housing construction rules.
- Capacity to provide the dwelling with basic services.
- Access to basic services in the dwelling.
- Maintenance of home equity value.

Mainstay 2 – Context of Housing in the City

- Urban development policies and regulations.
- Municipality financial capacity.
- Government management.
- Urban facilities.
- Mobility and transportation.
- Housing offering.

Mainstay 3 – Context of the City in the Country

- Potential housing demand.
- Competitive city dynamics.

Based on the indicator results, municipalities were classified in six competitiveness groups, with the following distribution (Chart 23):36

Chart 23. Distribution of Municipalities

<table>
<thead>
<tr>
<th>Group</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>High</td>
<td>7</td>
</tr>
<tr>
<td>Appropriate</td>
<td>55</td>
</tr>
<tr>
<td>Medium High</td>
<td>144</td>
</tr>
<tr>
<td>Medium Low</td>
<td>133</td>
</tr>
<tr>
<td>Low</td>
<td>50</td>
</tr>
<tr>
<td>Very Low</td>
<td>13</td>
</tr>
</tbody>
</table>

SOURCE: MEXICAN INSTITUTE FOR COMPETITIVENESS (INSTITUTO MEXICANO PARA LA COMPETITIVIDAD, IMCO).

For 2011 and the following years, Infonavit, CONAVI and SHF will implement a work strategy among institutions, seeking to trigger action plans along with municipalities, to make improvements in the areas of opportunity identified as per the competitive standard resulting from this model, and to keep enforcing Incomuv.

In this regard, and in order to promote the generation of local strategies that will prompt a sustainable and competitive housing development in Mexican cities, an incentives pool was designed for municipalities evaluated by Incomuv.

Among the incentives offered to municipalities evaluated by Incomuv, the most important include:

36 To learn more results on Incomuv 2011, please visit page: www.comparadondevives.org
By Infonavit:
• Property tax collection through the mortgage for municipalities with High and Appropriate Competitiveness.
• Training on High Direction to municipal presidents for municipalities with high competitiveness.
• Specialized consultancy from IMCO, for municipalities with Low and Very Low Competitiveness.
• A thousand scholarships to local public employees for the 402 municipalities.
• A fund for urban planning instruments for the 402 municipalities.
• Diagnosis and consultancy to improve local urban legislation for the 402 municipalities.
• Single window for Housing/Information Exchange Network for the 402 municipalities.

By Federal Mortgage Society:
SHF will dedicate resources for technical assistance to municipalities with a high housing backwardness, to identify actions aiming to reduce the competitiveness gap, as well as performing identified actions: providing housing-related municipal services; training public employees on housing competitiveness; commissioning municipal planning institutes; making changes to the legal framework on licenses and permissions, among others.

By CONAVI:
The National Housing Commission will work along with the municipalities that participate in the Index, through different programs for those with High and Appropriate Competitiveness, and those with Medium and Low Competitiveness:

- For municipalities with High and Appropriate Competitiveness, additional resources will be allocated to the subsidies program "Ésta es tu Casa", as this grade will be integrated to the State and Municipal Performance Indicators that CONAVI has.

For Municipalities with Medium and Low Competitiveness, CONAVI will:

- Contribute with resources from the program "Subsidios a Entidades Federativas y Municipios" (Subsidies for Federal Entities and Municipalities), to update the existing regulations and standards framework.

– Encourage the implementation of the National System of Housing Procedures (Sistema Nacional de Trámites para Vivienda, SINTRAV).

The consolidation of PCMV, through Incomuv, as a strategy to promote the best municipal practices related to housing and urban development, has allowed identifying the best local practices in this matter, allowing, in turn, to develop a Municipal Management Model that boosts these mechanisms for the growth of home equity value and Institute beneficiaries’ quality of life.

Thus, Incomuv allows identifying the best municipal practices linked to housing and urban development, in benefit of growth of home equity value and quality of life of the population.

2.5 FINDINGS AND CHALLENGES

- Even if labor market has recovered, the recovery has had lower compensation. Moreover, new employments created in the formal sector are mainly from temporary positions, and this reduces households’ indebtedness capacity.
- GDP from building—residential and non-residential—sums up four quarters with positive real annual growth rates.
- The results from the 2010 General Population and Housing Census (Censo General de Población y Vivienda, CGPV) reveal that, for unoccupied and temporary-use housing, the ratio of unoccupied housing stock raises to 21%. Unoccupied housing between 2005 and 2010 remained without changes, around 14%. In absolute numbers, figures increased from 4.3 million of dwellings to 5 million of dwellings.
- During the first half of 2011, seven Social Housing Developers (DSVs) were certified, which scatter subsidy as Social Executors. For year 2012, it is expected that there will be around 20 certified DSVs.
- A training program targeted to entities supporting Assisted Social Production of Housing (PSVA) was established, and aims at contributing to their professionalization through theoretical-methodological tools.
For 2010, the initial allocation of subsidies for PSV was $300 million pesos, and ultimately $326 million pesos were applied. The application was mainly through Social Housing Developers as the closest and most integral attention mechanism for low-income population, and distribution criteria favoring growth and consolidation of most financially weak Social Developers were established.

In 2011, subsidy allocation for PSV was of $350 million pesos. Its limit corresponds to the funding possibilities of Social Executors, as alliances are cemented and a funding scheme accessible to these institutions is available, they will be able to raise their scattering capacity.

From the beginning of this year, Index Hábita (IH) shows a strong slowdown related to current financial conditions. Such slowdown is almost four times greater than IPC’s.

Given the international financial situation, adjustments must be made to revert IH negative tendency for the second half of 2011; boosted, among other factors, by the seasonal effect of the last quarter of the year.

Working-age population will keep on increasing until mid-twenty-first century, thus detonating the Demographic Dividend and the expenditure on housing.

Starting the decade of 2040, the housing market will be of niche markets: demand will come from the housing backwardness, from "move ups", from loan origination resolutions and, to a lesser extent, from the formation of new dwellings.

Obtaining sufficient funding to finance housing market is essential to start again the use of the secondary mortgage market.

A housing demand 10.1% greater in relation to 2010 is estimated. This estimation is based on a better perspective for the country’s economy, with a GDP growth around 5%, as well as an improvement in future perspectives.

Inflation expectancy for 2011 could rise the interest rate charged by financial intermediaries, which currently is 12.7% (average)\(^3^7\). This would reduce the access for families to acquire a mortgage.

Up to this date, SHF Housing Price Index in Mexico provides information for a total of 70 individual indexes and their respective quarterly annualized variations: one national, 32 state and 37 municipal or district.

SHF Index showed, in the second quarter of this year, a nominal variation of 4.7% at national level in relation to the same quarter the year before, which is a growth according to general conditions of economy stability.

According to BBVA Index, changes in housing prices do not follow exclusively to their attributes but also to economic conditions. Employment, financial stability, credit availability and even housing supply are also important variables that influence pricing.

Mexican mortgage market focuses mostly on low-income segment, for which credit collocation supports partly in the availability of subsidies granted by the Federal Government and, therefore, depends less on the economic cycle.

According to Residential Satisfaction Survey (ESR), residents pay little more than two minimum wages a month (on average) for transportation. This indicates that housing complexes are very far away from big urban centers.

Developers must ensure new dwelling purchasers that, property on “presale” stage have quality floors and walls, since it has been observed that 20% of them, in a period no longer than five years, have strong deficiencies in their building.

The Infonavit designed two indicators that allow measuring the level and change in quality of life over time: one evaluating only the housing and its environment (Qualitative Evaluation of Housing and its Environment, ECUVE), regardless of who is occupying it, and another considering the profile of the inhabitants in relation to the housing attributes (Quality of Life Index Linked to Housing, ICVV).

• According to ECUVE, used dwellings have better grades than new dwellings, due to a larger living space, better location, facilities, and routes and public transport.

• Among the most frequent attributes mentioned in the ICVV by the beneficiaries on what influences the most on their quality of life, we find security, space (in relation to the size of the dwelling) and quality of materials and facilities. While in interviews with experts, the most frequent attributes were: urban facilities, urban services and location.

• Incomuv represents a clear and reliable indicator of the current situation on Mexican municipalities in matters of housing and urban development. It will allow having an easy-to-interpret tool for beneficiaries, borrowers, dwelling supplies, financial entities, the three branches of government and other sector participants to make decisions on where to efficiently invest their estate.

• For 2011 and following years, Infonavit, CONAVI and SHF will implement an inter-institutional work strategy for fostering action plans along with the municipalities. In that respect, and in order to favor the generation of local strategies that will prompt a sustainable and competitive development of housing in Mexican cities, an incentive pool was designed for municipalities evaluated by Incomuv.
Section 3.

Land for Housing. Sustainable Integrated Urban and Housing Development

3.1

INSTRUMENTS OF URBAN DEVELOPMENT MANAGEMENT LINKED TO HOUSING DEVELOPMENTS: REGULATORY FRAMEWORK FOR ACTION

During the past months, SEDESOL has worked, together with the Mexican Senate and Chamber of Deputies, in an initiative amending the General Law on Human Settlements (Ley General de Asentamientos Humanos, LGAH). As one of the results—derived from such work—, several instruments necessary for urban and land development management, essential to foster territorial planning and ensure sustainable growth of the cities, are proposed. Through the actions suggested, a better use of land and non-speculation will be guaranteed, and occupation of suitable areas will be favored, to mention just a few benefits.

Regarding training actors that help speed up and follow up the implementation of regulations, there is a proposal to create developing agencies, such as organizations that forecast the participation of diverse sectors for implementing public interest and benefit urban or property projects, as well as for providing services, construction or operation of urban infrastructure; and to create inter-municipal associations for providing public services or for coordinating public interest actions, works or joint investments.

In order to avoid the creation of settlements in non-suitable areas, an urban impact assessment will be mandatory. It is a procedure for analyzing causes and effects produced by a work or project that—due to its building process, operation or magnitude—exceeds infrastructure capacity, public services or urban facilities in a region consisting of two or more municipalities or in a population center, as related to its regional environment and in which the necessary mitigation or consideration measures are proposed, in order to eradicate or minimize such impacts or causes to the maximum extent possible.

As regards land matters, the expropriation—in accordance with applicable constitutional and legal provisions—for the acquisition of property to regulate public use, and the merger of land by voluntary or forced association, called land regrouping, to be subsequently subdivided, urbanized and adjudicated, through an equitable distribution of burdens and benefits among participants, will be fostered in order to carry out actions for the foundation or growth of population centers.

In relation to financial matters, trusts and funds of financial resources for urban development, within the framework of the existing regulations, as well as the collection of taxes and contributions on increased property value or for the financing of public works or services, are proposed. In addition to fostering special taxes for recovering totally or partially costs for public works, as per State fiscal laws.

As regards environmental matters, payment of services involving financial consideration for conserving, creating and maintaining environment will be fostered.

As part of the city consolidation, and to foster projects that regenerate obsolete areas, the concept of action areas will be implemented as a tool for
Section 3. Land for Housing and Urban Development

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carrying out actions, works, projects, and investments envisaged in urban development plans, through coordination and consultation between authorities and individuals, with a given geographical scope of validity.

Within the same framework of potential growth for the city, the concept of selling development rights is considered. And it consists in the creation of density bonuses or assignment of construction intensities, additional to the intensities laid down by zoning, for the benefit of funds earmarked for carrying out public interest actions, works and investments.

These are only some of the instruments and regulations that have been proposed before the Legislative Chambers. This is intended to exert greater control over the territory allowing —through urban planning and regulation— the generation of better cities for the benefit of their inhabitants.

3.1.1 Growth of cities of the National Urban System

Mexico, like the rest of the world, continues with the process of urbanizing its territory. Since 2007, 50% of the world’s population was already living in cities. Based on figures from the 2010 Census, in our country, urban population nowadays reaches more than 70% and 56% lives in the 56 metropolitan areas.

A worrying aspect, manifested in every Mexican city, is the dissociation between urban growth and population growth, which has generated a disproportionate territorial expansion with high economic, social and environmental costs. Disorganized, segregated and inconsistent growth of cities has helped increase, in many cases, the property poverty indexes and vulnerability to natural resources.

In recent years, SEDESOL has conducted an analysis of urban sprawl growth, in order to know and assess the transformation of territories and cities that constitute the National Urban System (Sistema Urbano Nacional, SUN). Information crisscrossing of population growth and territorial occupation, from 1980 to 2005, has made it possible to compare the way in which population has settled, decreasing densities and their space occupation, identifying scattered settlements, away from urban centers, services and facilities. Expiration of many instruments of urban planning in cities, as well as equivocal consolidation of the territory has been acknowledged.

The analysis above was carried out in 131 cities of more than 50,000 inhabitants that make up the SUN, and figures are alarming. Growth patterns were found. The best scenario is an increase of 1.96 to 1.44 times, i.e. the surface area grew 96% and the population 44% in a period of 25 years, and the worst-case scenario is where the population grew 1.53 times and the surface area 1,067 times. The average number of dissociation in the 131 cities analyzed resulted in 1.56 times the growth of the population while the urban sprawl grew 22.83 times, both in a period of 25 years. This is a key indicator of deficiencies in urban planning and in the processes of dispersion and diffuse occupation of the territory, manifested in every city throughout the country.

The disproportionate occupation of the territory—disassociated from population growth—significantly affects the municipal costs derived from the basic services that cities must provide their inhabitants with. It also affects high social and environmental costs, which have continually damaged our cities’ habitability. Settlements, increasingly further away from consolidated urban centers, are not an alternative that seeks to generate green and competitive cities.

The absence of a sustainable urban planning has been caused by a large number of factors. They include: transformation of common and unsuitable land to be urbanized; land which today accommodates housing developments disarticulated from urban areas and with a limited and fragmented connectivity. The lack of opportunities and regulation have fostered the incorporation of irregular settlements in unsuitable areas and, at times of high risk, considering that there is also an important housing backlog in a segment of the population that lacks social security and, therefore, access to decent housing subsidy and credit programs.

It is urgent to address this reality, stop the growth of urban sprawls and consolidate urbanized territories. This is by taking advantage of available

intra-urban and peri-urban areas which are unoccupied or have changed their development direction and intended uses that, as referred to in the 2008 EAVM, are sufficient to contain the growth and give ground to a production of more than 6 million dwellings.\textsuperscript{39} It is necessary to use the existing potential in the cities and make their occupation more efficient through public policies that stimulate densification, along with Integral Mobility Schemes.

### 3.2

**Human Settlements Risk Prevention Program (PRAH)**

Derived from the increasingly numerous and severe natural disasters, which occur annually in our territory, and from human and material losses resulting from them, SEDESOL has fostered the creation of a program to help reduce damage caused by the natural disasters to the population and in the national territory.

The proposal is to reduce the risk of disaster occurrences through the development of a Natural Hazard or Risk Atlas and through prevention and mitigation works in human settlements.


For the selection of projects, the municipality must prove that there are urgent and undeferrable risks or the projects are located in a high and very high global risk index area. Works and actions will result from a Risk Atlas, which will ensure that it is used as an instrument for planning.

In order to obtain federal resources, there shall be an equitable participation between state and municipality, and the amounts shall be fixed in accordance with the Program Operation Rules (\textit{Reglas de Operación del Programa}).\textsuperscript{40}

The works and actions supported by the program include: actions to reduce the occupation of land in risk areas; works and actions to reduce and mitigate risks; as well as actions to preserve natural systems.

Actions to reduce the occupation of land in risk areas include: developing or updating the Natural Hazard and/or Risk Atlas; making special studies for identifying, assessing, and analyzing hazards, vulnerabilities and risks derived from an Atlas and from construction regulations that establish the typology and building technique according to the hazard or risk of the area, as well as studies for relocating human settlements to suitable areas.

The works include actions for stabilization of slopes, hillsides and rocks; treatment of cracks or hollows in the subsoil; paving of evacuation routes in hazard areas, gabion dams, roughly-built dams; construction, enlargement or rehabilitation of storm and sanitary drainage; as well as coastal protection works.

The program includes courses, workshops, and strategies of dissemination, education, and awareness for the prevention of disasters and actions of reforestation for the conservation of natural systems.

Natural Hazard Atlases are instruments that must be taken into consideration as a basis for the development of an Urban Development Program. That is because using such Atlases will prevent population from settling in areas susceptible to flooding, landslides and other natural phenomena which may endanger their lives and property.

### 3.3

**Sustainable Integrated Urban Developments (DUIS)**

The Sustainable Integrated Urban Developments Promotion and Assessment Group (\textit{Grupo de Promoción y Evaluación de Desarrollos Urbanos Integrales Sustentables}, GPEDUIS) has been consolidated since its inception, with the participation of the Secretariat of Finance and Credit Public (\textit{Secretaría de Hacienda y Crédito Público}, SHCP), SEDESOL, Secretariat of the Environment and Natural Resources (\textit{Secretaría de Medio Ambiente y Recursos Naturales}, SEMARNAT), Secretariat of

\textsuperscript{39} \textit{Current Housing Situation in Mexico 2008}, p. 87.

\textsuperscript{40} \url{www.sedesol.gob.mx}
Energy (Secretaría de Energía, SENER), Secretariat of Economy (Secretaría de Economía, SE), CONAVI, Infonavit, FOVISSSTE, Banobras, National Infrastructure Fund (Fondo Nacional de Infraestructura, FONADIN), PROMEXICO, and SHF.

This group identified a public policy that boosts Sustainable Integrated Urban Development (Desarrollo Urbano Integral Sustentable, DUIS) to:

1. Define an orderly growth of the cities.
2. Use intra-urban land and foster verticality.
3. Generate more housing with sufficient infrastructure, services and transport, improving family quality of life.

Over the last year, the GPEDUIS worked on five Courses of Action supported by resources from the FONADIN and the Inter-American Development Bank (IDB):

First Course of Action: preparation of technical specifications for DUIS methodology and of criteria for assessment from the perspective of four areas: Regional, Urban, Neighborhood, and Architectural. DUIS consider, inter alia:

- Use of alternative energies, eco-technologies, bioclimatic architecture, management, and reuse of water, management and use of solid waste.
- Public spaces with more and better green, cultural, sporting and recreational areas that promote local integration, in accordance with article 73 of the Housing Act (Ley de Vivienda).
- Connectivity to services and employment sources through light rail train, subway and bikeways, and to the transit system of cities.
- Sustainable mobility based on bikeways, light rail train and pedestrian walkways.
- Consolidation of new development poles with vocation and facilities that foster employment sources, trade, and services.
- Strengthening of social fabric through the mixture of social, low-cost, medium-sized, residential, and predominantly vertical housing, which is near employment sources and services.

Second Course of Action: definition of a basket of incentives by the Federal Government, which includes: technical assistance in the field of transport, solid waste, urban development, environmental sustainability, drawing of companies for the generation of employment and industry, subsidies for housing acquisition, financing and/or guarantees for infrastructure and public services, financing schemes for housing production and mortgages for dwelling purchasing, among others.

Third Course of Action: creation of an automated assessment process via the Internet (www.duis.org.mx), as well as DUIS knowledge spillover to assess potential DUIS projects and follow up by the Federal, State and Municipal governments and citizens in general. Likewise, along with the UNAM and several private universities, DUIS Certification Courses for relevant players are being carried out.

This course of action is important because 17 potential DUIS projects are up-today assessed in 11 states of the country. They represent:

- 800,000 dwellings.
- 3,250,000 people benefited.
- Surface area of 20,500 hectares.
- Investment of $275 billion pesos.

Fourth Course of Action: prioritization of redensification projects. GPEDUIS considers that the most intelligent use for land is intra-urban use. For that use, urban regeneration has been promoted in local governments, by means of programs for rescuing areas that, by the passage of time and changes in land use, have been immersed in the city, with adequate infrastructure and services, but unused. . Puebla Historical Center Rehabilitation Project and Mérida Historical Center Rehabilitation Project are in review process; likewise, an inter-urban project was approved in municipalities of Guadalajara and Tlaquepaque.

Fifth Course of Action: study of development directions and facilities: a study with certified DUIS to define DUIS own direction, which will generate creativeness and employment sources at regional and urban level, was begun. Through these studies, parameters related to natural, population, productive, economic, and regulatory resources, which will be integrated into DUIS Methodology, will be defined.
Also, once the direction has been identified, public-private facilities will be determined, which must be developed according to DUIS direction: public transport, education, culture, health and social welfare, industry, trade and supply, public administration office, recreation, and sport.

**Certified DUIS**

Certified DUIS are five today, representing:

- 254,500 dwellings approximately.
- 1,020,500 people benefited.
- Surface area of 7,470 hectares.
- Estimated investment of $54 billion pesos.

GPEDUIS also works with governors from the states of Campeche, Guanajuato, Puebla, Durango, Oaxaca, and Aguascalientes to define the feasibility of their proposal for DUIS. Approved DUIS in September of 2011 are:

1. **Valle de San Pedro**: located in southwest Tijuana, Baja California, on a surface of 5,859 hectares, for 180,000 dwellings and 700,000 inhabitants. With the authorization of its Partial Development Plan, this DUIS will contribute to the orderly development of this region over the next 20 years.

2. **El Rehilete**: served-land type DUIS project, the purpose of which is to offer macro-lots with infrastructure and services to small and medium-sized developers. "El Rehilete" is located in Villagrán, Guanajuato, accommodating up to 11,688 dwellings for 47,400 inhabitants in 158 hectares.

3. **Puerta de Anza**: located in northeast Nogales, Sonora, with six adjacent miles to Arizona, on the border with the United States. The Urban Development Plan includes: uses of land to develop industry, trade, health, education and, of course, housing equipment. The project has a capacity for 28,700 dwellings, for 114,800 inhabitants in 1,032 hectares.

4. **El Cielo**: located in the municipality of Centro, Tabasco, in the metropolitan area of Villahermosa, adjacent to the industrial and commercial corridor in the south of the city. It already has the first stage of the Polytechnic University of Centro (Universidad Politécnica de Centro), which started operations in January 2010; with a capacity for 30,000 dwellings for 120,000 inhabitants in 340 hectares. For this Project, a hydrological study was conducted with the purpose of respecting natural water runoff to prevent dwellings and facilities to become flooded.

5. **Terralta**: first intra-urban certified DUIS located in the heart of the metropolitan area of Guadalajara, with a privileged location in relation to the Light Rail System (1,000 meters) and the Macrobús (800 m). Terralta will have a capacity of 4,800 dwellings that will benefit 20,000 inhabitants, in 74 hectares. The project will have a positive impact on the social integration of surrounding colonies by having more facilities and infrastructure.

### 3.4 Specific Sustainable Housing Development Program in View of Climate Change

There are challenges for achieving integrated sustainability in the residential sector, which include: the location of large housing developments, the increase in the average density of cities –through the use of vacant, underutilized or disused spaces and a higher density in new developments—, as well as the analysis and strategies for holding urban sprawl.

However, as mentioned in the 2010 EAVM, the scattered city prevails as a model of urban growth in our country. According to estimates by SEDESOL’s Sub-secretariat of Urban Development and Territorial Planning, the pace of urban expansion of our cities reached —in the last 30 years— the daily 50 hectares. This expansion has huge economic, social and environmental consequences. Firstly, it increases
the need for mobility and everything that it implies: demand for motorized transport, increased fossil fuel consumption and emission of greenhouse gases. Secondly, it increases household spending on transport to have a work position and services. Finally, it increases financial pressure at the municipal level because city’s scattered growth makes maintenance of infrastructure and provision of public services, including public security, more expensive; in addition to being a highly inefficient model in terms of personnel, equipment and energy consumption.

In the field of urban transport, important progress through strategies and support by SEDESOL have been taken, with promotion, training and technical assistance actions in projects for modernization of public transport in cities exceeding 100,000 inhabitants. Among these actions, the promotion for the development of confined lane systems (Bus Rapid Transit, BRT), measures for saving in diesel and gasoline consumption, inclusion of companies —transport and loading— in programs that promote energy efficiency, and the use of bicycles and other non-motorized modes of mobility stand out.

Since 2006, 36 cities exceeding 100,000 inhabitants have been trained, including Acapulco, Culiacán, Mérida, Ensenada, Aguascalientes, Puebla, Tuxtla Gutiérrez, Hermosillo, Salamanca, Tepic, and Zacatecas.

In terms of urban solid waste management and final disposal, important results of mitigation in the context of the 2009-2012 Special Program on Climate Change (Programa Especial de Cambio Climático, PECC) have been achieved. During 2010, methane exploitation or combustion in landfills, reported by SEDESOL caused a reduction of 1.1 million tons of equivalent CO2 which, added to the reduction accumulated since 2009, has made it possible to reduce a total of 2.26 million tons of equivalent CO2 coming from the landfills of Aguascalientes, Ciudad Juárez, Durango, Monterrey, Temixco, Mérida, and Cancún.

Landfills in cities such as Puebla, Leon, Culiacán, Nuevo Laredo, and Querétaro will be included in the next few years, joining the reduction of emissions referred to in the PECC for 2012.

With regard to the reduction of emissions in the rural environment, SEDESOL has actively participated in the replacement of open stoves for ecological stoves.

298,539 stoves have been installed since 2008, in equal numbers of rural dwellings in forest-intended and, above all, very highly marginalized areas. This represents an advance of 59.7% in SEDESOL’s goal formulated in the 2009-2012 PECC.

The program considers 105 aims and 294 goals, the policies of which include: Rule of Law and security, competitive and job-generating economy, equal opportunities, environmental sustainability, democracy and a responsible foreign policy. In turn, these policies involve four fundamental components —long-term vision, mitigation, adaptation, and transversal policy— aimed at promoting sustainable development, energy security, clean, efficient and competitive production processes, as well as natural resources preservation.

## 3.5

### Ecological Housing

**Infonavit Hipoteca Verde**

_Hipoteca Verde_ (Green Mortgage) is an integral strategy that arises from the need of offering Infonavit’s borrowers a better quality of life, to encourage the development of sustainable housing. As of 2010, this product had focused on new dwelling acquisition, built by developing and construction companies, and acquired using direct credit from the Institute, with or without support from the federal subsidy of the program _“Ésta es tu casa”_.

However, derived from the results obtained and the proven benefits, Infonavit’s Government Bodies approved the new green housing scheme, with the purpose of extending the benefits to all borrowers who acquire a dwelling starting in 2011, and of achieving greater impact on the sustainable cultural transformation, as well as the care and respect for the environment.

The incorporation of eco-technologies in dwellings will be mandatory when dwellings are financed through loans granted by the Institute for lines of credit II, III and IV (new or used dwelling, construction in own land, remodeling, and enlargement) with a mortgage guarantee, according to the following considerations:
The dwelling must include a flexible combination of eco-technologies. Its efficiency on water or energy consumption has been certified by bodies authorized by the competent regulatory authorities.

The eco-technologies incorporated into the dwelling may be chosen by the right holder among those which have been validated and in accordance with the savings measured by an acknowledged independent entity.

The eco-technologies incorporated in the dwelling wall ensure a progressive minimum savings linked to worker’s income level, in accordance with the following Table 1:

Table 1. Hipoteca Verde (Green Mortgage)

<table>
<thead>
<tr>
<th>Income (VSM = times the minimum wage)</th>
<th>Minimum Savings (pesos)</th>
<th>Maximum Credit Limit</th>
</tr>
</thead>
<tbody>
<tr>
<td>From 1 to 6.99 VSM</td>
<td>215</td>
<td>Up to 10 VSM (18,185 pesos)</td>
</tr>
<tr>
<td>From 7 to 10.99 VSM</td>
<td>290</td>
<td>Up to 15 VSM (27,277 pesos)</td>
</tr>
<tr>
<td>From 11 VSM</td>
<td>400</td>
<td>Up to 20 VSM (36,370 pesos)</td>
</tr>
</tbody>
</table>

The Institute ensures the availability of resources so that, as of 2011, all its right holders access the Hipoteca Verde. The main benefits of this new scheme include the flexibility with which it operates and the international cooperation framework in which it acts.

Previously, there was a package of eco-technologies established by bioclimatic zone. In this new scheme, developers and borrowers may choose which eco-technologies are the best suited to the needs of savings. There is also the agile and permanent updating of the eco-technologies catalogue participating in the program and, at the same time, their selection becomes more transparent.

In order to ensure the supply of eco-technologies in used and new dwellings—which is not registered in the Single Housing Registry (Registro Único de la Vivienda) when such eco-technologies are not available simultaneously to credit formalization—, Infonavit have signed since March 29, 2011, agreements with national, regional and/or local suppliers and distributors. The list of participants is published on the Infonavit’s Website.

Regarding international participation in the project, it should be indicated that the German Federal Ministry of Environment (BMUS) —entity that has funds for the International Climate Protection Initiative, which aims at fostering actions that promote the reduction of greenhouse gas emissions in emerging and developing countries and that, in turn, are exercised by the German Technical Cooperation Agency (GTZ)— signed a collaboration agreement with the Infonavit, in May 2010, by which the GTZ Agency gave a total subsidy of €2.5 million euros, which shall be used from 2010 to 2012 for the Hipoteca Verde, through the program “25 mil techos solares” (“25,000 solar roofs”), created from the signing of the aforementioned instrument.

This agreement will encourage the use of solar water heaters through a subsidy up to $2,100 pesos, approximately, for each borrower acquiring a dwelling with solar water heating, which benefits 25,000 borrowers of the Institute to reduce the cost to pay for this eco-technology.

Likewise, the Inter-American Development Bank (IDB) acknowledged the Infonavit program Hipoteca Verde as one of the winners of the 2010 Beyond Banking Awards. The award aims at acknowledging the environmental, social and corporate governance sustainability, projects implemented by financial intermediaries in Latin America and the Caribbean.

On the other hand, the U.S. Federal Independent Agency, which plans and administers humanitarian aid, is providing funds for the implementation of the Infonavit Practical Laboratory, while Canada’s Ministry of the Environment provides funds and consultancy for housing projects “Hacia Net Zero” (“Towards Net Zero”), in coordination with CONAVI and Association of Companies for Energy Efficiency in Buildings (Asociación de Empresas para el Ahorro de Energía en la Edificación, AEAEE).

FOVISSSTE’s Sustainable Actions

As of this year, credits given by FOVISSSTE will be aimed at dwellings which meet requirements for sustainability, in harmony with the care of the

41 Dwellings with Net Zero have benefits from their architectonic design, which follow bioclimatic criteria, technical efficiencies, and telemetry systems, among others, and save up to 90% of the total average power consumption.
environment, and it will be consolidated as an important driving force for the construction industry. Basic goals for 2011 are as follows: contributing to the creation of half a million jobs throughout the country; favoring the construction and acquisition of homes in competitive cities — which increases their value in the time— and the responsible use of resources and the preservation of the natural environment.

Today, there are some products that are already linked to sustainability criteria, and all products offered by the Fund are also sought to be incorporated, including:

- **Site Analysis**: legal status of the land (avoiding risk areas), basic infrastructure, drinking water and drainage, location and services.
- **Efficient Use of Water**: toilet and shower with an ecological degree awarded by the CONAGUA, sectioning valves for washbasins, toilets, sinks, heater, water tank, and cistern; hydrostatic test in household installation, water intake and flow meter for the dwelling, according to the Official Mexican Standards (NOMs).
- **Efficient Use of Power**: fluorescent lamps, insulating material on ceiling and walls in specific regions; use of local isolating materials, or textures according to bioclimatic region and type of slab; water heating system by solar energy in some regions, efficient use of gas by gas tankless water heater.
- **Proper waste management**: dwellings and housing complexes waste separation and waste management during the work.

### 3.6 RESULTS AND COMMITMENTS ARISING FROM COP16

Mexico has been directing its efforts to mitigate the impact of climate change on social development, economic growth and the environment. The strategies that it has drawn in relation to the subject are defined in the 2009-2012 Special Program on Climate Change (Programa Especial de Cambio Climático, PECC), aforementioned, which includes the 2007-2012 National Plan of Development (Plan Nacional de Desarrollo, PND).

**COP16: Sum of Efforts and Sample Results**

- **Combating Climate Change through Public Policies in Mexico**

On November 29, 2010, in Cancún, Quintana Roo, the 16th edition of the Conference of the Parties of the United Nations Framework Convention on Climate Change was opened, as well as the 6th Conference of the Member States, working as a Conference of the Parties of the Kyoto Protocol (COP16/CMP6). In those conferences, a series of commitments with various countries was established, aimed at slowing down the emission of pollutants and instituting a sustainable development plan, in addition to reaching agreements to reduce carbon emissions.

For 11 days, topics such as the reduction of pollutant emissions due to deforestation and forest degradation in developed and developing countries; adaptation, technology and financing; and sustainable housing, among others.

In the light of this scenario, Mexico committed to reduce, by 2050, 50% of its greenhouse gas emissions in relation to the year 2000. The coordinated participation of the Federal Government, the private sector and society are essential to achieve such goals and, thus, reduce the problems posed by climate change for the next years.

The agreements reached were focused on various segments such as financing, research, technology, low-carbon economic development, energy efficiency, reduction of emissions due to deforestation and forest degradation, as well as the development of sustainable housing.

In terms of financing, Mexico proposed the creation of a Green Fund by $28 billion dollars by 2012, made up of contributions from developed countries. The goal is to increase it to $100 billion dollars from 2020, with which projects and actions for mitigation and adaptation to climate change will be financed.

As for Green Technology an investment of more than $6,200 billion dollars was established and, in connection with the investigation, it was agreed to establish the Regional Centre for Research and Development in Mexico.

Sustainable housing was also included in the progress. Mexico announced that, as of 2011, all the
credits made available through the National Workers’ Housing Fund Institute (Infonavit) and subsidies from the National Housing Commission (Comisión Nacional de Vivienda, CONAVI) will be aimed at the sustainable housing, with which it is planned that all dwellings are equipped with eco-technologies that contribute to power, gas and water savings, thus generating a sustainable environment.

In 2010, within the Mexico-Canada Alliance Framework, the pilot project Zero Energy Housing was begun, driving the efficient use of resources from greater thermal efficiency in its design and construction, to the implementation of advanced telemetry systems, photovoltaic high-power generation systems through solar cells in homes.

**NAMA: More "Green Resources" Needed**

In COP15, Mexico assumed NAMA development 42 as a means to support the objectives established in the special program for the Climate Change Special Program. The program, called "Nationally Appropriate Energy Efficiency Measures in the Housing Sector in Mexico" ("Medidas Nacionalmente Apropiadas para la Eficiencia Energética en el Sector Vivienda en México") is a mechanism through which the creation of a general framework, allowed to generate the necessary policies to mitigate the effects of the climate change in our country, is supported. By means of the program NAMA, Mexico may obtain funding to foster housing sustainability.

Established commitments that will record progress in the short, medium and long term include:

- Strengthening of clean development mechanisms, emissions reduction projects, developing countries’ projects against climate change.
- Program for Emissions Reduction due to Deforestation and Forest Degradation (Programa para Reducción de Emisiones por Deforestación y Degradación Forestal, REDD+), which transmits resources to communities devoted to the conservation of forests, with rewards and incentives for successful actions.
- The French Development Agency (FDA), in the month of July 2011, provided financing to the Mexican Government in the amount of €300 million euros to promote "green and caring development" strategies.
- New Official Mexican Standard (NOM) to remove incandescent light bulbs from the domestic market, replacing them with efficient, energy-saving light bulbs.
- Agreement between the National Institute of Ecology (Instituto Nacional de Ecología, INE) and Ehime University in Japan, for main air pollutants monitoring in Mexico City, Monterrey and Guadalajara, in order to improve pollution-control policies and programs in these cities.

As of March 2011 the following progress was reported:

- Concerning the development of State Climate Action Plans, the goal planned for 2012 is that the 32 entities of the country have their respective studies. In March 22 plans were reported as completed.
- In reference to the Special Climate Change Program, the SEMARNAT reported—at the end of 2010—, a reduction of 22.0 MtCO\textsubscript{2}e per year.\footnote{43} In March 2011, it reported a progress of 43.4% with respect to the 2012 goal of mitigating 50.7 Mt-CO\textsubscript{2}e per year.

### 3.7 BEST PRACTICES

**Bilbao Ría 2000**

Bilbao is the municipality’s capital of a metropolis made up of several municipalities located along the banks of the estuary of the River Nervión. Bilbao was...
born as a city dedicated to maritime trade, where an important mining, steel and shipbuilding industry was developed, becoming a major port and industrial city. These activities are located along the river banks and condition the urban development of the metropolis. The industrial crisis of the 1980s greatly affected Bilbao. The closure and modernization of important industries had a great impact on the environment of the estuary, and at the same time, a chance to recover land of great value for urban development of the city.

The recovery of these former industrial spaces and the transfer of port activities towards the outer bay have made it possible for the city to show above its river front and start general process of urban transformation. The space previously occupied by shipyards, container beaches or blast furnaces, now become promenades, parks, outdoors art galleries, new neighborhoods, and business areas, where quality architecture is presented as one of the key factors of this renewal. The transformation of the city is creating an economic fabric focused on services, culture and new industries. The river banks are now in the service of an orderly urban, environmental and economic improvement strategy.

In order to guide the recovery of old industrial areas of the metropolis, in November 1992, the Company Bilbao Ría 2000 was created. It is a non-profit company, result of the commitment of collaboration of all the Public Administrations in a common task, aimed at the transformation of Metropolitan Bilbao. Bilbao RIA 2000 takes care of the coordination and execution of various actions incorporating urbanism, transport and environment. They are projects developed with a holistic approach and that conform to the urban planning guidelines determined by the planning authorities.

Bilbao Ría 2000’s mission is recovering degraded areas or industrial areas in decline in Metropolitan Bilbao, contributing to a balanced development, as well as the improvement of the urban cohesion with the participation and support of all governments and companies that make up society. The active commitment of everybody involved in Bilbao Ría 2000 has continued since the beginning of the company’s activities and allowed to carry out important works of urban transformation.

Bilbao Ría 2000 was created with a capital contribution amounting to €1.8 million euros. Company’s shareholders, all of them institutions or public undertakings, transfer the land owned in the central areas of Bilbao and Barakaldo, at the time that city councils reclassify land. On this basis, Bilbao RIA 2000 invests in the urbanization of these lands and sells the corresponding plots so that it may finance its actions.

Obtained capital gains are invested in the own regeneration of old industrial areas and other important actions for the development of the metropolis, such as the construction of rail infrastructure or the regeneration of other neighborhoods such as Bilbao La Vieja. Bilbao RIA 2000 has also grants from the European Union (EU), which in recent years reached approximately 9% of the investment budget.

Bilbao Ría 2000 is a limited liability company with share capital, constituted in equal parts by the State Administration, through its subsidiaries: SEPES –Public Business Organization for Land—, Bilbao Port Authority, the ADIF and Feve, as well as Basque Administrations (Basque Government, Biscay Provincial Council, and the city councils of Bilbao and Barakaldo).

The urban regeneration of Metropolitan Bilbao has awakened an undeniable interest among professionals of urbanism and architecture. References to the transformation of Bilbao are already common in forums of these disciplines.

Within this collective task, the work of Bilbao Ría 2000 has been the subject of major awards and acknowledgements, among them:

- 2010 ISOCARP (International Society of City and Regional Planners) Award of Excellence for urbanism.
- 2005 DZ Center of Design Award.
- 2004 Euskadi Tourism Award.

For further information on Bilbao Ría 2000, see the Company’s website:
FINDINGS AND CHALLENGES

• During the past months, SEDESOL has worked, together with the Mexican Senate and Chamber of Deputies, in an initiative amending the General Law on Human Settlements (Ley General de Asentamientos Humanos, LGAH) Derived from such work, several instruments necessary for urban and land development management, essential to foster territorial planning and ensure sustainable growth of the cities, are proposed.

• A worrying aspect, manifested in every Mexican city, is the dissociation between urban growth and population growth, which has generated a disproportionate territorial expansion with high economic, social and environmental costs. Growth patterns were found, where the best scenario is an increase of 1.96 to 1.44 times, in a period of 25 years, and the worst-case scenario found was that where the population grew 1.53 times and the surface 1067 times.

• The Human Settlements Risk Prevention Program (Programa de Prevención de Riesgos en los Asentamientos Humanos, PRA) serves people who live in municipalities and in the delegations of Distrito Federal, susceptible to the destructive effect of hydro-meteorological and geological phenomena.

• Natural Hazard Atlases are instruments that must be taken into consideration as a basis for the development of an Urban Development Program. Using such Atlases will prevent population from settling in areas susceptible to flooding, landslides and other natural phenomena which may endanger their lives and property.

• The Sustainable Integrated Urban Developments Promotion and Assessment Group (GPEDUIS) determined a Public Policy that fosters Sustainable Integrated Urban Development (DUIS) to define the orderly growth of the cities, take advantage of intra-urban land, foster verticality, and generate more housing with sufficient infrastructure, services and transport, thereby improving family quality of life.

• Today there are five DUIS, which represent approximately 254,500 dwellings; 1,020,500 people benefited; a surface area of 7,470 hectares and estimated investment of $54 billion dollars.

• During 2010, methane exploitation or combustion in landfills, reported by SEDESOL, allowed a reduction of 1.1 million tons of equivalent CO2.

• Hipoteca Verde is a comprehensive strategy that fosters sustainable housing development. The incorporation of eco-technologies in dwellings will be mandatory when dwellings are financed through loans granted by the Infonavit for lines of credit II, III and IV (new or used dwelling, construction in own land, remodeling, and enlargement) with a mortgage guarantee.

• The German Federal Ministry of Environment (BMU) signed a collaboration agreement with the Infonavit by which the GTZ Agency gave a total subsidy of €2.5 million euros, which shall be used from 2010 to 2012 for the Green Mortgage, through the program “25,000 techos solares” (25,000 solar roofs).

• The Inter-American Development Bank (IDB) acknowledged Infonavit program Hipoteca Verde as one of the winners of the 2010 Beyond Banking Awards.

• The U.S. Federal Independent Agency provides funds for the implementation of the Infonavit Practical Laboratory.


• As of this year, credits given by FOVISSSTE will be aimed at dwellings which meet requirements for sustainability, in harmony with the care of the environment, and it will be consolidated as an important driving force for the construction industry.

• Within the COP16 framework, Mexico committed to reduce, by 2050, 50% of its greenhouse gas emissions in relation to the year 2000.
The program, denominated "Nationally Appropriate Energy Efficiency Measures in the Housing Sector in Mexico" ("Medidas Nacionalmente Apropiadas para la Eficiencia Energética en el Sector Vivienda en México") is a mechanism through which the creation of a general framework, which is allowed to generate the necessary policies to mitigate the effects of the climate change in our country, is supported.

The French Development Agency (FDA), in the month of July 2011, provided financing to the Mexican Government in the amount of €300 million euros to promote "green and caring development" strategies.

Concerning the development of State Climate Action Plans, the goal planned for 2012 is that the 32 entities of the country have their respective studies. In March 22 of 2011 plans were reported as completed.
Section 4.

Housing Financing

4.1 HOLISTIC APPROACH TO HOUSING MARKET AND FINANCING CONTEXT IN MEXICO

Hand in hand with the economy, the housing market faces, in 2011, an outlook of higher growth. Even though it has not yet recovered the activity levels recorded in 2008 —before the start of the crisis— in general terms, the trend points to a clear recovery.

Circumstantial conditions, such as changes in operation rules of support programs by the Federal Government and public institutes, generated some lag in the market during the first half of the year. However, the availability of resources —a key element for the activity— has not been reduced and even shows better conditions to the recovery of employment (and hence, contributions to housing funds) and financial stability (in favor of interest rates and public institute portfolio placements in the secondary market), with which the environment favors the recovery of mortgage activity.

The credit granted by banks confirms the improvement above. In the first half of the year, financing reported an increase close to 17% in real terms. It is worth mentioning that this increase, partly, reflects the changes made by banks in the structure of their credits in recent years. As of 2008, nearly 50% corresponded to co-financings; by 2011 it was just 23%. So, the growth of credit given by banks has meant a greater trend towards medium and high income segments. This was a result of changes in the rules of operation of cofinancing programs by the Infonavit that, after years of strong boost to these credits, with the 2009 crisis refocused its strategies on the low-income segments.

It should be emphasized that, unlike credit from Infonavit and FOVISSSTE, that mainly depend on supply factors (credit objectives, available subsidies), the credit given by private financial intermediaries reflects more the conditions of demand. In other words, this credit is influenced primarily by economic activity and employment, financial conditions and consumer confidence. Thus, it is encouraging to note that banks’ credit recovery goes hand in hand with economic recovery (as of the first quarter of 2011, GDP had been accumulating seven quarters of growth and already exceeded the peak levels reached at the beginning of 2008) and consumer confidence (this indicator recorded in the first five months of the year an increase of 11% in comparison to 2010 levels).

In the balance sheet, pace of progress of the industry in the first half of 2011 means—in annualized terms—a placement of around 600,000 credits, which could reach 650,000 by the end of the year. This figure would be already close to the levels recorded in 2008 that were about 675,000 at its peak.

On the supply side, after a strong boost in the activity during the second half of 2010, figures at the beginning of 2011 mark a more moderate pace. In the case of the bridge loan, the growth rate went from levels of 15% in the second half of 2010 to 5% in the first months of 2011 (January-April).

In turn, regarding the commencement of the work—measured through construction records in the Registro Único de Vivienda (RUV), which includes all dwellings marketed with Infonavit or FOVISSSTE—
Section 4. Housing Financing

credits (which represents more than 90% of the credits placed at the national level)—, the trend points to a level of housing construction around 475,000 units annually, surely below what trends mark in mortgage credit. Comparing with the levels achieved in 2008, figures infer a decrease of nearly 30% in the number of dwellings built.

From the market point of view, it seems that it is a matter of time before housing construction starts getting back on track. Demand pressures should accelerate the construction of dwellings, but where needed and in a position to meet buyers' needs (in terms of materials and finishes). It is also true that in the past it has already happened that supply reacts with certain lag on demand trends; a potential explanation is found in inventory levels (both in the process of work completion and dwellings available for sale) and the acquisition of a greater number of used dwellings. Nonetheless, some of the progress which should take the industry forward is having major indicators, allowing builders to react in a timely manner to changes in demand trends.

Meanwhile, one part of the needs is being met with used dwellings. In the case of Infonavit, its participation in the total of credits given is around 26% (both in 2010 and early 2011) and with a growing trend in recent years (in 2007 its participation was 17%). This, in addition to being positive to provide versatility to the mortgage market and foster the development of a secondary housing market, highlights the new niches that are arising, such as remodeling and extension.

4.1.1 Mortgage Portfolio Evolution and Performance

In regards to portfolio evolution, elements that influence its performance may be associated with both demand and supply factors. In relation to the supply, availability of financing by public institutes and a still important volume (though to a minor extent) of right holders with possibility of exercising their credit, guarantee an inertial growth of the activity. At the same time, the risk of past-due portfolio for such credits (which represents little more than 90% of all mortgages generated in the country) is limited, given that repayments are made automatically via payroll.44

For private intermediaries, the growth of the portfolio is specially related to demand factors. In particular, in the case of banks,45 the growth of the mortgage portfolio over the last decade, at an average rate of 6% per year in real terms, widely exceeds the average growth of the economy over the same period, an actual annual rate of 1.8%. Simultaneously, standards for credit granting have not been eased and, an example of this is that, despite the growth of credit, past-due portfolio levels will have been declining consistently. Although this is partly a result of restructuring processes after the 1995 crisis (in 2001 levels of past-due portfolio were still about 15%), also reflects a strict control in credit policies. In 2008, prior to the start of the crisis, banks' past-due portfolio was close to 3%, and in the 2009 recession it modestly increased (if the magnitude of contraction in economic activity in the same year is considered) to 4.5%. By mid-2011, it had almost recovered completely, with levels of 3.4%.

Key elements to keep contained mortgage slowness in payment are best practices for credit granting. Indicators such as the proportion of monthly payment to income, a measure of the effort the borrower will make, will be disseminated broadly, as a guide to portfolio reliability and to ensure that it stays at limited levels despite the ups and downs of the economic cycle.

In regards to bridge loans, contrary to what happens with mortgage loans, banks’ past-due portfolio has increased, from levels of 3.2% in the second half of 2010; in 2011 (January-April period) it was 4.5%. In 2008, prior to the crisis, delinquencies in this portfolio averaged around 2%. Ensuring

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44 Though, this is applied when workers are currently active. Most of the problems of delinquency, both in Infonavit and FOVISSTE, are associated with workers who change jobs (because they change between the public and the private sector, moving from formal to informal sector). They become unemployed or retire and stop paying the credit.
45 Sofols performance has been different, although their participation in the market has been reduced significantly in recent years, and in 2011, they contributed less than 1% of all mortgages generated at the national level.
stabilization of this indicator could be a condition to achieve steady growth rates in bridge loans, in the medium term.

### 4.2 HOUSING SECTOR PROGRAMS

- **End 2010**

In 2010, the positive progress on housing reflected the effort of current administration, which aims at supporting financing programs that serve mainly the low-income sector of the population, thus leading to a recovery in dwellings of economic type and social interest, particularly dwellings equipped with technologies that support environmental sustainability criteria.

At the end of the year, and according to the previous closure, a total of 1,762,408 financings were recorded in several forms, out of which 48% corresponded to dwelling acquisition, whereas the remaining 52% to improvements and other types of credit. Once the cofinancings are deducted, the result is that 1,506,455 financings are equivalent to housing units. 43.1% of these units corresponded to dwelling acquisitions and 56.9% to improvements and other types of credit. Likewise, the housing financial body exercised in that year almost 247,848 million pesos (Table 24).

As a result from measures taken by the Federal Executive, during 2010, an investment of 2% was achieved on housing sector, as a proportion to the Gross Domestic Product (GDP).

- **2011 Financing Annual Program**

For this year, federal, estate, and municipal housing agencies, the commercial and development banks, as well as other entities that issue mortgage loans as a benefit to their employees expect to grant jointly 1,109,432 financings in different modalities, which are made up by 844,580 credits and 264,852 subsidies.

<table>
<thead>
<tr>
<th>Agency</th>
<th>Dwelling Acquisition 2/</th>
<th>Improvement and Infrastructure 3/</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Financings</td>
<td>Amount</td>
<td>Financings</td>
</tr>
<tr>
<td>2010</td>
<td>845,229</td>
<td>230,902.1</td>
<td>917,179</td>
</tr>
<tr>
<td>Infonavit</td>
<td>468,025</td>
<td>116,160.0</td>
<td>7,066</td>
</tr>
<tr>
<td>FOVISSSTE</td>
<td>91,050</td>
<td>40,593.1</td>
<td>0</td>
</tr>
<tr>
<td>SHF</td>
<td>5,617</td>
<td>2.1</td>
<td>34,561</td>
</tr>
<tr>
<td>Banks</td>
<td>86,734</td>
<td>51,916.1</td>
<td>8,367</td>
</tr>
<tr>
<td>Sofols</td>
<td>33,051</td>
<td>9,882.8</td>
<td>361</td>
</tr>
<tr>
<td>CONAVI</td>
<td>119,723</td>
<td>4,976.9</td>
<td>90,981</td>
</tr>
<tr>
<td>FONHAPO Tu Casa</td>
<td>19,936</td>
<td>1,013.7</td>
<td>89,573</td>
</tr>
<tr>
<td>FONHAPO Vivienda Rural</td>
<td>1,595</td>
<td>80.7</td>
<td>35,303</td>
</tr>
<tr>
<td>OREVIS</td>
<td>10,493</td>
<td>1,239.5</td>
<td>25,791</td>
</tr>
<tr>
<td>ISSFAM</td>
<td>2,389</td>
<td>739.4</td>
<td>187</td>
</tr>
<tr>
<td>Banjército</td>
<td>3,543</td>
<td>1,373.3</td>
<td>0</td>
</tr>
<tr>
<td>Pemex</td>
<td>0</td>
<td>0</td>
<td>1,457</td>
</tr>
<tr>
<td>CFE</td>
<td>1,617</td>
<td>710.0</td>
<td>620</td>
</tr>
<tr>
<td>PDZP SEDESOL</td>
<td>0.0</td>
<td>620,373</td>
<td>4,814.1</td>
</tr>
<tr>
<td>Hábitat México</td>
<td>1,456</td>
<td>36.5</td>
<td>2,539</td>
</tr>
<tr>
<td>Fonacot</td>
<td>0</td>
<td>0</td>
<td>799.1</td>
</tr>
</tbody>
</table>

**Note:** Amounts are shown in million pesos.

1 / Includes: the total granted credits and subsidies, as well as cofinancings, which means that a dwelling could be counted more than once.

2 / Includes: Initial and complete dwelling.

3 / Includes: Infrastructure, financing and fiscal improvements.

**SOURCE:** MADE BY THE GENERAL COORDINATION OF IT AND SAP SYSTEM, USING DATA FROM HOUSING AGENCIES
Likewise, in 2011, through the entities and agencies financing housing, an estimated investment of 259,413.9 million pesos will be made (Table 25).

Table 25. 2011 Housing Annual Program for Allowances and Credits 1/

<table>
<thead>
<tr>
<th>Agency</th>
<th>Dwelling Acquisition 2/</th>
<th>Improvements and Infrastructure 3/</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Financings</td>
<td>Amount</td>
<td>Financings</td>
</tr>
<tr>
<td>Infonavit</td>
<td>420,000</td>
<td>105,606.7</td>
<td>60,000</td>
</tr>
<tr>
<td>FOVISSSTE</td>
<td>90,000</td>
<td>30,262.0</td>
<td>0</td>
</tr>
<tr>
<td>Banks and Sofols</td>
<td>142,000</td>
<td>96,489.8</td>
<td>16,600</td>
</tr>
<tr>
<td>OREVIS</td>
<td>6,186</td>
<td>550.5</td>
<td>15,203</td>
</tr>
<tr>
<td>ISSFAM</td>
<td>2,010</td>
<td>613.7</td>
<td>157</td>
</tr>
<tr>
<td>Pemex</td>
<td>0</td>
<td>0.0</td>
<td>1,173</td>
</tr>
<tr>
<td>CFE</td>
<td>1,396</td>
<td>642.1</td>
<td>535</td>
</tr>
<tr>
<td>Habitat</td>
<td>1,000</td>
<td>25.4</td>
<td>1,745</td>
</tr>
<tr>
<td>Fonacot</td>
<td>0</td>
<td>0.0</td>
<td>705.0</td>
</tr>
<tr>
<td>Banjercito</td>
<td>5,000</td>
<td>231.6</td>
<td>0</td>
</tr>
<tr>
<td>Subtotal</td>
<td>667,591</td>
<td>234,421.7</td>
<td>95,414</td>
</tr>
<tr>
<td>CONAVI</td>
<td>96,595</td>
<td>4,589.3</td>
<td>73,405</td>
</tr>
<tr>
<td>FONHAPO</td>
<td>13,949</td>
<td>973.5</td>
<td>80,903</td>
</tr>
<tr>
<td>Subtotal</td>
<td>110,544</td>
<td>5,571.6</td>
<td>154,306</td>
</tr>
<tr>
<td>Total</td>
<td>776,135</td>
<td>239,993.5</td>
<td>249,722</td>
</tr>
<tr>
<td>SHF</td>
<td>10,850</td>
<td>5,070.6</td>
<td>70,725</td>
</tr>
<tr>
<td>TOTAL</td>
<td>766,966</td>
<td>245,064.1</td>
<td>320,446</td>
</tr>
</tbody>
</table>

Note: Amounts are shown in million pesos.
1 / Includes: the total granted credits and subsidies, as well as cofinancings, which means that a dwelling could be counted more than once.
2 / Includes: Initial and complete dwelling.
3 / Includes: Infrastructure, financing and fiscal improvements.

Once the goal is met, the number of financings considered for this year will be 0.6% greater than the one programmed the year before. However, in agreement with the preliminary end 2010, the number (figure) reached 1,762,408 financings that, discounting cofinancings, represent 1,506,455 dwellings, which means 159.8% of the financings’ original programmed goal.

- Progress to the First Half of 2011

In the first half of 2011, 424,691 financings were granted, from which 163,787 were subsidies that represent a progress of 38.3% of the annual goal. In turn, the investment amounted to $98,900 million pesos, i.e. 38.1% the amount programmed for the entire year and 0.01% greater, in real terms, to the amount exercised during the same period in 2010 (Table 26).

From the total of the financings registered in this period, 78% were for dwelling acquisition and 22% for dwelling improvement and other modalities. Infonavit granted 39.7% of the total of financings during the first half of the year; while FOVISSSTE took part with 6.4% and FONHAPO with 12.2%, other agencies and programs contributed 41.7%.

In general, mortgage loans granting shows a seasonal behavior throughout the year. It is during the second half of the year, when the majority of the credits are granted.
### Table 26. 2011 Housing Annual Program for Allowances and Credits

**National Housing Commission**

<table>
<thead>
<tr>
<th>Agency</th>
<th>Dwelling Acquisition 2/</th>
<th>Improvements and Infrastructure 3/</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Financing</td>
<td>Amount</td>
<td>Financing</td>
</tr>
<tr>
<td>2011</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Infonavit</td>
<td>166,042</td>
<td>42,831.9</td>
<td>2,568</td>
</tr>
<tr>
<td>FOVISSSTE</td>
<td>27,51.6</td>
<td>12,578.0</td>
<td>3,154</td>
</tr>
<tr>
<td>SHF</td>
<td>1,586</td>
<td>644.8</td>
<td>0</td>
</tr>
<tr>
<td>Banks</td>
<td>48,087</td>
<td>31,864.3</td>
<td>2,778</td>
</tr>
<tr>
<td>Sofos</td>
<td>532</td>
<td>167.7</td>
<td>0</td>
</tr>
<tr>
<td>CONAVI</td>
<td>73,479</td>
<td>3,328.9</td>
<td>38,615</td>
</tr>
<tr>
<td>FONHAPO Subsidies</td>
<td>7,638</td>
<td>417.7</td>
<td>25,022</td>
</tr>
<tr>
<td>FONHAPO Vivienda Rural</td>
<td>841</td>
<td>44.9</td>
<td>18,192</td>
</tr>
<tr>
<td>OREVIS</td>
<td>168</td>
<td>73.4</td>
<td>1,697</td>
</tr>
<tr>
<td>ISSSAM</td>
<td>730</td>
<td>284.7</td>
<td>508</td>
</tr>
<tr>
<td>Banjército</td>
<td>2,095</td>
<td>812.7</td>
<td>0</td>
</tr>
<tr>
<td>Pemex</td>
<td>0</td>
<td>0.0</td>
<td>960</td>
</tr>
<tr>
<td>CFE</td>
<td>887</td>
<td>398.7</td>
<td>338</td>
</tr>
<tr>
<td>Hábitat</td>
<td>526</td>
<td>13.8</td>
<td>732</td>
</tr>
<tr>
<td>Fonacot</td>
<td>0</td>
<td>0.0</td>
<td>297.6</td>
</tr>
</tbody>
</table>

**Note:** Amounts are shown in million pesos.

1 / Includes: the total granted credits and subsidies, as well as cofinancings, which means that a dwelling could be counted more than once.

2 / Includes: complete and initial dwelling.

3 / Includes: Physical and financial improvements and infrastructure.

### 4.3

**ATTENTION TO HOUSING BACKWARDNESS**

#### 4.3.1

**Used Housing**

The National Survey of Household Incomes and Expenses (ENIGH) indicates that, by 2010, housing stock had 28.5 million private inhabited dwellings (Table 27), among which, 20.2 million (71.2%) are owned property or are being paid by the owners.

From the owned property dwelling, 5.2 million (25.9%) were bought already built, the rest were built under request, built by the owner or acquired in other way (Table 28).

### Table 27. Housing Tenancy

<table>
<thead>
<tr>
<th>Tenancy</th>
<th>National</th>
<th>Weight (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rented</td>
<td>4,073,404</td>
<td>14.3</td>
</tr>
<tr>
<td>Lent</td>
<td>3,745,728</td>
<td>13.1</td>
</tr>
<tr>
<td>Owned property but in process of payment</td>
<td>1,672,103</td>
<td>5.9</td>
</tr>
<tr>
<td>Owned property</td>
<td>18,612,803</td>
<td>65.3</td>
</tr>
<tr>
<td>Intestate or in dispute</td>
<td>270,070</td>
<td>0.9</td>
</tr>
<tr>
<td>Other situation</td>
<td>138,930</td>
<td>0.5</td>
</tr>
</tbody>
</table>

**Source:** ENIGH, 2010.

### Table 28. Dwellings Bought Built

<table>
<thead>
<tr>
<th>Type</th>
<th>National</th>
<th>Weight (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Owned dwelling</td>
<td>20,264,906</td>
<td>100.0</td>
</tr>
<tr>
<td>It was bought built</td>
<td>5,254,409</td>
<td>25.9</td>
</tr>
<tr>
<td>It was made built</td>
<td>7,316,310</td>
<td>36.1</td>
</tr>
<tr>
<td>It was built by the owner</td>
<td>6,784,951</td>
<td>33.4</td>
</tr>
<tr>
<td>It was acquired some other way</td>
<td>929,236</td>
<td>4.6</td>
</tr>
</tbody>
</table>

**Source:** ENIGH, 2010.
Section 4. Housing Financing

From dwellings already built, the used ones represent 49.9% of the transactions or 2.6 million units. Most used dwellings are acquired with families’ own resources (55.3%), unlike the new ones, which in more than half of the cases are acquired with credits granted by Infonavit, FOVISSSTE or FONHAPO (Table 29).

### Table 29. Owned Dwellings (Paid or Being Paid)

<table>
<thead>
<tr>
<th>Funding</th>
<th>Used</th>
<th>New</th>
</tr>
</thead>
<tbody>
<tr>
<td>Non-specified</td>
<td>2,620,098</td>
<td>2,634,311</td>
</tr>
<tr>
<td>Infonavit, FOVISSSTE or FONHAPO</td>
<td>101,990</td>
<td>26,472</td>
</tr>
<tr>
<td>Bank, Sofol or Savings Union</td>
<td>577,469</td>
<td>1,512,577</td>
</tr>
<tr>
<td>Other institution</td>
<td>282,099</td>
<td>415,935</td>
</tr>
<tr>
<td>Loan from a family member, a friend or a moneylender</td>
<td>89,614</td>
<td>172,178</td>
</tr>
<tr>
<td>Own resources</td>
<td>1,447,703</td>
<td>473,052</td>
</tr>
</tbody>
</table>

**Source:** ENIGH, 2010.

Proportion of deeds in used dwellings under the name of other individuals is higher than in new dwellings, 8.7% and 4.5% respectively. Likewise, the percentage of used dwellings —acquired in rural and transition environment— is higher than in new ones. 19.6% in used ones and 4.4% in new ones, which indicates the lower supply of new buildings in towns with less than 15,000 inhabitants.

Another point to take into consideration is used housing age. The fourth part of used housing is hardly under 5 years old and, the fifth part, between 21 and 30 years old (Table 30).

### Table 30. Deeds, Location and Age of Used Dwellings

#### Deeds

<table>
<thead>
<tr>
<th>Deeds</th>
<th>Used</th>
<th>New</th>
</tr>
</thead>
<tbody>
<tr>
<td>Under the name of the owner</td>
<td>1,966,523</td>
<td>2,103,598</td>
</tr>
<tr>
<td>Under the name of someone else</td>
<td>227,771</td>
<td>119,036</td>
</tr>
<tr>
<td>Without a deed</td>
<td>402,666</td>
<td>400,060</td>
</tr>
<tr>
<td>Unknown</td>
<td>23,138</td>
<td>11,617</td>
</tr>
</tbody>
</table>

**Source:** ENIGH, 2010.

As for housing quality, considering the building materials related to the definition of housing backwardness, it is observed that the percentage of dwellings with deteriorating or regular materials is higher in used dwellings than in new dwellings, 27.8% and 5.1%, respectively (Table 31).

### Table 31. Building Materials in Used Housing

<table>
<thead>
<tr>
<th>Backwardness</th>
<th>Used</th>
<th>New</th>
</tr>
</thead>
<tbody>
<tr>
<td>Backwardness</td>
<td>583,929</td>
<td>128,369</td>
</tr>
<tr>
<td>Deterioration</td>
<td>34,683</td>
<td>3,838</td>
</tr>
<tr>
<td>Regular</td>
<td>549,246</td>
<td>124,531</td>
</tr>
<tr>
<td>Efficient</td>
<td>2,036,169</td>
<td>2,505,942</td>
</tr>
</tbody>
</table>

**Source:** ENIGH, 2010.

Hence, used housing is a choice for acquiring households, representing almost 13% of owned dwellings, especially for towns with less than 15,000 inhabitants where new housing supply that is not self-built or built at request is almost nonexistent.

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47 In the 2010 ENIGH questionnaire, it is specifically asked if the dwelling was bought used.
4.3.2

**Microfinancing: SHF and Infonavit Products**

4.3.2.1

**New SHF Products: Microfinancing and Assisted Production**

In order to attend no-wage-earning population’s needs and reduce housing backwardness, **Sociedad Hipotecaria Federal** has diversified the financial intermediary network that it uses for operations, as well as product supply. Currently, SHF works with financial entities with experience in the field of popular finances, such as microfinance companies or savings and popular sector entities, to offer final customer two types of credits:

1) **Microfinancing for housing**: short-term (up to three years) and low amount (up to $50,000 pesos) credits for housing improvement, enlargement or remodeling for families having an initial dwelling and need to improve it or enlarge it in accordance with their needs.

2) **Assisted self-production housing**: medium-term (up to 10 years) and larger amount (up to 102 SMGV48) credits for financing the production of housing made by families in their own land —assisted by a third party— to produce housing solutions suitable for their income, family needs, spaces and cultural conditions needs.

This product offers an integral solution comprising financial resources, through credit, for participating in a housing production scheme in their own land, as well as technical assistance in its design and production.

**Benefits by Receiving SHF Funding**

- Most entities working in popular finance sector acknowledge that they grant credits for financing housing even if they do not have a product labeled for that purpose. It is estimated that, around 20 or 30% of the credit portfolio of these entities is for housing, so SHF give these intermediaries access to a source of funding allowing them to release resources to increase its allocation as well as other type of credits.

- SHF is funding in the market; therefore, it offers a continuous and stable financing.

- SHF seeks to approach credit supply for housing solutions to its demand, through schemes of collaboration between financial intermediaries, local authorities, agencies offering technical assistance in the construction of housing solutions. Financing intermediaries receiving funding from SHF have the possibility to participate in these schemes, which leads to an increase in their credits.

- SHF offers assistance to financial intermediaries so that they can design credit products for housing, based on experiences and the best practices observed in the market.

**Estimated Amount for Microfinance Companies in 2011**

There is not a limit of allocation, because SHF has enough resources to satisfy occurring demand. For 2011, a placement goal of at least $600 million pesos was established in microfinancings for housing improvement and $50 million pesos for financing assisted self-production housing solutions, which are being promoted among financial intermediaries.

**Requirements to Be Met by Microfinance Companies to Acquire SHF Funding**

To start a funding request with SHF, it is necessary to have experience on granting credits and a good financial behavior. Each request needs a corporate, finance and procedure analysis to be submitted to a Credit Commission for approval.

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48 Current General Minimum Wages (**Salarios Mínimos Generales Vigentes**).
Many People Approach Microfinance Companies in Mexico

According to a study made by Prodesarrollo and by Microfinance Information Exchange (The Mix), in 2009, microfinance institutions attended 4.4 million people that demanded both productive credits and consumption and housing credits. In SHF, around 200,000 housing microcredits have been financed, and the allocation potential is still very large.

Importance of Microfinance Companies Requesting SHF Funding

In relation to granting financing for housing solution to the population that does not have access to credits offered by social security institution and commercial banking, microfinance institutions and savings and popular credit institutions— with experience on this sector— become strategic channels for SHF.

In Mexico, 8.9 million families live in housing backwardness either because they live in overcrowding conditions or because the dwelling in which they live is built with low-quality or short lasting materials. It is estimated that a great percentage of these families do not want or are not able to access a traditional mortgage credit so they seek other alternatives to improve their life conditions, such as remodeling or enlarging the dwelling they live in or build a good quality one in the family land.

For SHF, it is important to distribute financial resources through intermediaries that understand popular finance sector and may help reduced housing backwardness by means of credits for improvement and assisted housing self-production.

4.3.2.2
Infonavit’s "Renueva tu hogar" (Renovate Your Dwelling)

Description and Characteristics

It is a credit product aimed at offering beneficiaries a financing option in pesos to make a minor improvement (finishes, decoration, painting, and changes of carpets, floors and many other options) in the dwelling they live in, using as a guarantee their Housing Subaccount Balance.

The credit amount depends on the wage, the time and the savings in the Housing Subaccount. The time can be chosen by the worker among 12, 18, 24 or 30 months. Resources are withdrawn through a prepaid card that can be used in business related to construction and dwelling improvement materials selling.

The payment of this credit is through a discount on payroll by the employer. The condition of right to Institute’s credit is not lost; therefore, when paying the loan “Renueva tu hogar”, beneficiaries may renew it or request any other type of financing from Infonavit, in accordance with applicable rules.

Objective

During 2008, according to the National Survey of Household Incomes and Expenses (ENIGH), almost 500,000 beneficiaries acquired a dwelling, while 1.1 million made improvements, for which they allocated 5% of their income, mainly for buying materials.

Likewise, Infonavit estimates that over 20% of beneficiaries seek housing solutions, such as improvement, enlargement or construction, focusing mostly on lowest income segments; therefore, the objective is to offer a product allowing them to access financing focused on improving the dwelling they live in with accessible conditions supported by the Housing Subaccount Balance.

Implementation and Results

In April 2011, a pilot operation started in seven locations (Distrito Federal, Nuevo León, Baja California, Morelos, Puebla, Oaxaca, and Nayarit) so as to guarantee the proper operation of systems and processes.

In Mid-May, the operation started nationally, with the participation of two national financing institutions, Banco Monex and ABC Capital. An advertising campaign was implemented in 10 entities, which included radio, press, billboards, and urban transportation.

By the end of June, 2011, there are 7,019 approved credits and 1,371 to be approved. Average amount of these credits is $28,000 pesos, which represents an
approximate amount of $198 million pesos. 62% of the credits were requested by workers with incomes up to seven minimum wages.

4.4

INFRASTRUCTURES PROMOTING SECTOR EFFICIENCY

4.4.1

Progress in the Program for the Modernization of the Public Registries of Property (RPP) and its Relationship with the Urban and Rural Cadastral

The 2007-2012 National Development Plan (PND), defines among its primary objectives, to improve the regulation that protects property rights and thereby lay the foundation towards modernization and standardization of Public Registries of Property (registros públicos de la propiedad, RPP) and cadastral registries, as well as the compulsory public registering of real estate transactions, in order to ensure legal certainty needed by families to enhance the value of their property.

The implementation of this policy, issued by the Federal Executive Branch, has been largely crystallized in the Modernization of the Public Registries of Property (RPP), which began in 2007 when the Federation joined efforts and resources with the state governments, to carry out modernization measures in the RPP, since they relied on the Comprehensive Model of the Public Registry of Property.

Due to the success so far achieved with the inclusion of 27 states to the registry modernization program and the implementation of significant resources to these tasks in the period 2007-2010, the next step is to initiate specific actions in order to modernize the cadastre throughout Mexico, so that standards are set not only to share information between the cadastre and the RPP, but also to harmonize the functions of land use and urban development.

The modernization of the cadastre has been analyzed from different perspectives, with the Program for the Modernization of the National Agrarian Registry and Cadastre, driven by the National Agrarian Registry (RAN), and also the various efforts made by the National Bank of Public Works and Services (Banobras), the National Institute of Statistics and Geography (INEGI) and the Institute for Technical Development of Municipal Farms (INDETEC).

In late 2009, the Federal Executive Branch instructed the Secretariat of Social Development (SEDESOL)-through the Sub-Secretariat of Urban Development and Territorial Planning, to coordinate the cadastre modernization actions and provide new impetus to the relationship between RPP and national cadastres, taking advantage of SEDESOL participation in the Program Evaluation Committee for the Modernization of the Public Registries of Property, 2010, consisted of the Legal Counsel of the Federal Executive (Consejería Jurídica del Ejecutivo Federal, CJEF), the National Housing Commission (CONAVI) and Sociedad Hipotecaria Federal, S.N.C., the Development Banking Institution (SHF), and SEDESOL itself.

The Sub-secretariat for Urban Development and Territorial Regulation has been responsible for coordinating the works of this program, based on the attributions set in the Internal Regulations of SEDESOL, coupled with the fact that it coordinates the Program “Programa de Apoyo a los Vecindados en Condiciones de Pobreza Patrimonial para Regularizar Asentamientos Humanos Irregulares” (Support for Residents in Real Estate Poverty so as to Regularize Irregular Human Settlements), the Program “Programa para la Prevención de Riesgos en los Asentamientos Humanos” (Risk Prevention in Human Settlements), and the Programs Hábitat (Habitat) and Rescate de Espacios Públicos (Rescue of Public Spaces).

One of the objectives of the RPP and cadastre program is to create a link between the databases of these entities, and to load them into a viewer that is available to state governments. This in order to have access to a map that allows adding elements for the sake of urban planning, by incorporating a hazards and risks Atlas and thereby carrying out simulations to determine areas and populations that may be affected by events of different nature, such as fire, floods, earthquakes, or hurricanes.
In 2010, the Secretariat of Social Development, chairing the Program Evaluation Committee, published in the Official Gazette of the Federation (DOF) on March 17, 2010 the guidelines for the application of resources. Through this program, the Federal Government established among its priorities the achievement of a regular dwelling that gives legal certainty of ownership, favoring the transmission without conflicts for the benefit of the heirs, adding value to the family property and supporting its eventual marketing. Legal certainty derived from a modern, consistent and efficient RPP allows families to take advantage of costs and credits offered by a semi-new or used housing market. This program promotes the consolidation of the RPP and the cadastre in the states as efficient and effective institutions that provide legal security and certainty through the registration and advertising of acts that need to fulfill said requirement, by the proper identification of the properties and the compliance with registration principles and by improving the quality of its services to the public.

The program's strategy considered three areas of implementation: 1) Public Property Registry, 2) cadastre, and 3) integration of information from the National Agrarian Registry.

In 2010, SEDESOL granted federal funds for $368.3 million pesos to trigger projects for $750.1 million pesos, using the combined resources of the states. With this, it supported the development of the Programs for the Modernization of the Public Registries of Property approved by the Evaluation Committee in: Baja California Sur, Campeche, Chiapas, Chihuahua, Colima, Distrito Federal, Estado de México, Guanajuato, Guerrero, Jalisco, Michoacán, Morelos, Nuevo León, Querétaro, San Luis Potosí, Sonora, Tabasco and Yucatán. These resources enabled progress in the components set forth in the Comprehensive Model of the Public Registry of Property, stressing namely the following: legal framework, IT, registration processes, quality management, and documentary collection.

Additionally, SEDESOL developed the Cadastre Model, which is a benchmark for the design of policies aimed at its modernization. The first stage involved the states of Colima, Morelos, Sonora, and Yucatán. Their cadastres were diagnosed, as well as the degree of linkage between the databases of the Public Registry and the Cadastre. Due to the above said, Cadastre Model was released in December 2010 to the secretaries of finance and the states government, before the National Association of Mexican Notaries (Asociación Nacional del Notariado Mexicano, ANNM) and the Mexican Institute of Cadastre (Instituto Mexicano del Catastro, INMECA).

The main features of the Cadastre Registry Model are:

- Comprehensive Cadastral Information. So that the cadastral information is integrated and allows preservation and updating of records through an information system that takes into account the physical, technical, historical, administrative, geographic, statistical, fiscal, economic, legal, and social elements of the property in a single document identified by the cadastral code.
- Linked Cadastral Certificate. So that the cadastral certificate is linked to RPP, with RAN and the municipality areas, whose management involves the use and updating of cadastral information.
- Security. So that it has a pattern of physical and logical security to protect the information and control fundamental and institutional supporting processes.
- Security. So that it has a pattern of physical and logical security to protect the information and control fundamental and institutional supporting processes.
- Mobility. So that it facilitates the processes and the access to information, using the advantages offered by new technologies.
- Citizen’s attention. So that cadastral services are delivered to citizens in an efficient, simple, fast, secure, and affordable manner.
- Focus on processes. So that for the update, appraisal, certification, and consultation of real estate there are standardized and measurable processes that continuously improve the efficiency and effectiveness of the delivery of cadastral services.

The Cadastre Model proposes actions in seven components: 1) legal framework; 2) cadastral processes; 3) information technology; 4) association with RPP; 5) professionalism in the cadastral function; 6) quality management; and 7) Institutional policies.

The National Institute of Statistics and Geography (INEGI), through the platform “Mapa Digital de México” (Digital Map of Mexico) developed a display that can integrate the RPP databases, cadastres and information from the National Agrarian Registry (Registro Agrario Nacional, RAN). With this tool, the state governments can display the information mosaic on the properties in order to check the consistency between the cadastral number,
the single folio and the delimitation of urban and rural areas. The system is available to state governments through internal consultation.

The implementation of the program in 2011 was made based on guidelines published on February 24, 2011; and the INEGI was included as a member of the Evaluation Committee. Likewise, it sets out the commitment to make diagnoses of cadastres in all the states of the country that adhere to the program by creating two streams: one for the Modernization of the Public Registries of Property and one for the modernization of cadastres.

Support allocation promotes actions to:

- **a)** Ensure exchange of information between the functions of the Public Registry and cadastre, seeking a match between the property identification number and the cadastral code.
- **b)** Link the database information or documentary collections of the estate and/or municipal cadastres with the RPP, under the perspective of sharing key information on cadastral code and single cadastral warrant and property identification number.
- **c)** Modernize the RPP and cadastre based on reference models for each one.

In the aspect of cadastre, the following phases are taken into account:

- **Diagnosis.** It includes review of cadastral and registry information by state, cross mapping and process analysis (legal, technological and business).
- **Linking.** It takes into consideration the analysis, screening and cleaning of the information contained in databases.
- **Display.** It includes a system of consultation and display of the linked database.

As part of the measures to strengthen the program, national measurements will be carried out so as to determine the Baseline of the Cadastre, showing methodological consistency in the achievements in the RPP.

Regarding the aspect of public registry, the following stages are taken into account:

- Determine the operational modernity status of each RPP and its attachment to the Comprehensive Model of the Public Registry, as well as to generate recommendations that could help reduce the modernization gap.
- Creating and executing state plans for modernization, which will implement the RPP, aimed at identifying high impact actions in the provision of registry services for the users.
- Tracking the innovation progress, leading to the consolidation of results in the short term, as well as to reduce the modernity gaps, to implement good practices and spreading them to other entities in the country that need the transfer of knowledge obtained from those registry institutions that show advanced modernization status in this area.

For purposes of determining the gap in the RPP in comparison to the Comprehensive Public Registry Model, the Federal Mortgage Society has been supporting with its own resources the implementation of a methodology called "Diagnostics, Baseline and Periodic Measurements", which aims at determining the attachment per component of the model mentioned above, establishing the baseline and the recommendations to be followed by the RPP to implement modernization actions.

The Baseline and Periodic Measurements methodology has contributed among other things to:

- **a)** Evaluate the compliance with the modernity principles enlisted in the comprehensive model, through indicators that measure the status of modernity of the RPP.
- **b)** Generate the context of the evolution of Public Registries of Property at the national level, in terms of modernity.
- **c)** Establish, for each of the components and success factors set, the model, direction and vision of where the RPP should be directed to achieve modernity sought.
- **d)** Assist in the formulation of modernization plans through specific recommendations for
the implementation of actions to take in modernizing the registration.

c) Provide strategic information to the Evaluation Committee of the national program for the revision of the approaches proposed by the states, as well as for the decision making, aimed at allocating federal resources that support the implementation of modernization actions.

Chart 24 shows the results of the National Average Baseline by component to December 2010. It shows the major progress in the program’s vision, the legal framework, the registration processes, and IT, in which states have placed greater emphasis to ensure legal certainty for the families and to improve the quality in the services provided to citizens.

From 2006 to date, SHF has practiced a total of 198 measurements whose results have allowed the accumulation of experience regarding the national behavior of the RPP and, thus, the establishment of best practices for consolidating the advances in registry modernity. As a result, at the end of December 2010, there was an advance of 61.7% over a maximum of 100%, as shown in Chart 25.

The implementation of this methodology has also helped to identify areas of opportunity to promote modernization actions by model components, as detailed below:

- Commitment of the states to provide continuity to the efforts of modernity in registration.

Chart 24. Baseline Results

(National average by component)

<table>
<thead>
<tr>
<th>Component</th>
<th>National Average</th>
<th>Comprehensive view of the program</th>
<th>Legal framework</th>
<th>Registry processes</th>
<th>IT</th>
<th>Quality management</th>
<th>Professionalization of registry offices</th>
<th>Institutional policies</th>
<th>Management and document collection</th>
<th>Participation and linkage with other sectors</th>
<th>Performance indicators</th>
</tr>
</thead>
<tbody>
<tr>
<td>%</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>64.2%</td>
<td>61.7%</td>
<td>71.03%</td>
<td>66.92%</td>
<td>55.91%</td>
<td>50.96%</td>
<td>59.21%</td>
</tr>
</tbody>
</table>


Chart 25. National Average for Progress in the Program

• Acceptance for the use of electronic signature and folio.
• Increasing trend in the creation of decentralized registries.
• Upgrading of technological platforms focusing on online services.
• Improvement of important registration processes.
• Geographic approach of registry services to users.

Likewise, the continuity in the implementation of this policy has brought solid benefits to the registration institutions in the country, which can be summarized as follows:

• Strengthening of the registry operation for the benefit of its users.
• Increase in the number of transactions entries in the RPP, with consequent time and cost reduction in the services they provide.
• Fast return on investment in *pari passu* by the RPP and the Federation, with internal rates of return within five years, on average.
• Impact on state economic flow, caused by the registration of real estate transactions that have an impact on employment generation, infrastructure and basic services for the population.
• Greater emphasis on linking registration databases and cadastral registries, as the public policy of the Federal Executive to the states.

It is estimated that during 2011, $414 million pesos will be granted to support projects incorporated in the Expenditure Budget of the Federation. These resources will support the modernization of the Public Registries in Campeche, Colima, Chiapas, Distrito Federal, Durango, Guanajuato, Morelos, Oaxaca, Puebla, Querétaro, San Luis Potosí, Sonora, Tabasco, Tamaulipas, Tlaxcala, and Yucatán; as well as for the cadastrer in Campeche, Colima, Chiapas, Durango, Guanajuato, Morelos, Querétaro, San Luis Potosí, Sinaloa, Sonora, Tabasco, Tlaxcala, and Yucatán. However, it considers the inclusion of other states in the program, depending on budget availability and mix of resources proposed by the state governments.

4.4.2

Importance of Property Rights for Investment and Development of Housing Market

Property Rights (PR) and their effects on investments are core topics in public policies for development, because of the legal certainty they provide. And in turn, property rights get exchanged through contracts or title deeds allowing families to reduce the risk and mitigate uncertainty, to attenuate problems of irregular information and to direct participant’s behavior in the housing market towards preexisting rules more efficiently.

In Mexico, housing is the most important asset for families, which could be transferred to several generations, if title deeds are properly established. Therefore, during 2010 the “Assessment about the Impact of Title Deeds on Housing Investment in Mexico” (*Evaluación del Impacto del Título de Propiedad sobre la Inversión de Vivienda en México*) research was made, jointly financed by SHF and the World Bank (WB), with the purpose of knowing the effects of title deeds on the housing investment and the welfare of Mexican households.

Also, it is important to mention that this is the first empirical study in Mexico about the relation between title deeds and the housing investment.

Objective

From a housing probabilistic sample —taken in 36 cities of the country, where head offices of the Public Registries of Property (RPP) are settled for each federal entity and Distrito Federal— to determine if there were differences in the investment[^49] made by families for their housing, as a result of having title deeds, with the aim of defining public policies contributing to increase legal certainty in the housing market, and the households’ welfare.

[^49]: Expenditures made by any family member to purchase a new dwelling or to increase its lifetime, through an extension, or construction of new areas, or remodeling and self-building. Investment is measured with by square meters of construction, or the materials expenditure.
The research was addressed to the heads of the family with private dwellings and title deeds verified in the RPP of each city, and with private dwellings without a title deed, located in urban areas\(^50\) and/or suburban areas\(^51\), with monthly incomes less or equal to six monthly minimum wages ($10,172 pesos).

For the testing, the Propensity Score Method was used, adjusted with the Kernel algorithm, considering variables grouped in nine groups:

1. Household features.
2. Owner features.
3. Dwelling features.
4. Perception about PR.
5. Housing Investment.
6. Housing credits and support.
7. Credit for another housing or land.
8. Owner savings and income sources.
9. Level of modernization of the RPP and number of notaries.

Hypothesis to Be Proven

To prove that when holding a title deed, the investment in the property is higher than when the dwelling has not such document, i.e., the hypothesis to confirm is:

Investment in dwellings WITH A TITLE DEED > Investment in dwellings WITHOUT A TITLE DEED

Results

a) Effect of Title Deeds on Housing Investment

Results indicate that expenses in housing investment with a title deed are considerably greater than the dwellings without it. In percentage terms, dwellings with a title deed spend 28.0% more than those without it. This result is critical for the housing sector, when emphasizing relevance of title deeds (legal certainty) and of investment: households with a title deed invest more in their dwelling than those without it (Chart 32).

Table 32. Paring Investment Test Using Kernel Algorithm

<table>
<thead>
<tr>
<th>Variable</th>
<th>Test</th>
<th>S.E.</th>
<th>T-stat</th>
<th>P *</th>
</tr>
</thead>
<tbody>
<tr>
<td>Investment</td>
<td>Kernel</td>
<td>5,879</td>
<td>3.28</td>
<td>0.0011</td>
</tr>
</tbody>
</table>

\(^*\)95% CI. \(t=1.96\)

Dwellings holding a title deed are older (67% are more than 10 years old as compared to 62% dwellings that do not have such document). However, the age difference does not explain the difference in the investment (Chart 26).

Chart 26. Housing Age Distribution

75.4% of the dwellings with a title deed invested in construction for increasing its lifetime, while the ones without a title deed made mostly improvements. Surveyed households received some sort of government help or from other institution to improve them. And the monetary help received by the dwellings in the treatment group was twice the help provided to dwellings without a title deed (Chart 27).

\(^{50}\) Locations with more than 14,999 inhabitants.
\(^{51}\) Locations with 2,500 to 14,999 inhabitants.
83% of the families paid the housing improvements with their own savings and using income from their work (Chart 28).

The main reasons not to request a loan include (Chart 30):

A. High interests.
B. It has not been necessary.
C. It cannot be paid.
D. Savings are used.
E. Due to the requirements.

On average, the families with a title deed received the credit on 91.1% of the applications; opposite of households without the title deed on which it was received 84.3% of the times (Chart 30).
Households with a title deed have used their title deed to get a credit, whether for purchasing goods for the dwelling, to acquire an automobile or to get a mortgage loan in aforementioned financial institutions. Families without a title deed were requested a guarantee; i.e., more requirements to enlarge their dwelling or furnish it (Chart 31).

It is observed, however, that title deed mobility is still low. This could be caused by the lack of financial information on the use of this document as a support for several transactions.

**b) Effect of the Title Deed on Families’ Wellbeing**

Title Deed index nationwide is 45.2% and it varies regionally. The extreme cases are Campeche with 68.4% and Morelos with 32.8%.

Hence, the total housing stock, almost 6 of 10 dwellings do not have a title deed, which affects negatively the legal certainty and the secondary housing market (Chart 32).
Having a title deed increases the real estate value, around 37.1%, thus allowing a quotation at a higher price in the market. According to the sample design, dwellings with and without a title deed are geographically close, i.e. in a similar location.

- **Housing Materials**

Floor material in dwellings has changed since its purchase/construction, and there is a decrease in the ones with dirt floor in (-) 54% for the ones with a title deed and in (-) 48% for the ones without a title deed.

As for other types of floors, cement or concrete increased 36% for dwellings with a title deed and 35.1% for dwellings without it. Finally, dwellings with other floor coatings increased 18% in dwellings with a title deed and 13.7% in dwellings without a title deed (Chart 33).

**Chart 33. Improvements in Housing Materials (%)**

<table>
<thead>
<tr>
<th>Material Type</th>
<th>With a title deed</th>
<th>Without a title deed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dirt floor</td>
<td>-54</td>
<td>-48.8</td>
</tr>
<tr>
<td>Cement/concrete</td>
<td>36</td>
<td>25.1</td>
</tr>
<tr>
<td>Other coatings</td>
<td>17.9</td>
<td>13.7</td>
</tr>
</tbody>
</table>

Source: Made by SHF

In turn, 81.3% of the families without a title deed are interested in starting the procedures to acquire their title deed, but the main reasons for not doing it until now are: It is expensive or cannot be afforded, they do not know how to do it, paperwork is complicated, related costs are high, and it takes much time (Chart 35).

**Chart 35. Reasons Not to Start the Title Deed Procedures**

- It is expensive, unaffordable
- Complicated paperwork
- They do not know how to do it
- Related costs are high
- It takes much time
- Other

Source: Made by SHF

- **Perception of Property Rights**

25.3% of the families with a title deed consider property rights a property (Chart 34).
Likewise, having institutions such as notaries and Public Registries of Property is fundamental for moving towards a better legal certainty in the housing market. Thus, it is observed that:

i. Registering rate is related to the number of notaries per entity (Chart 36), and

ii. With the progress in the modernization of the RPP (Table 33).

**Chart 36. No. of Notaries and Registering Rate by State**

<table>
<thead>
<tr>
<th>Notaries per 100,000 inhabitants</th>
<th>Registering rate (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>AGS.</td>
<td></td>
</tr>
<tr>
<td>B.C.</td>
<td></td>
</tr>
<tr>
<td>B.C.S.</td>
<td></td>
</tr>
<tr>
<td>CAMP.</td>
<td></td>
</tr>
<tr>
<td>CHIB.</td>
<td></td>
</tr>
<tr>
<td>CHIS.</td>
<td></td>
</tr>
<tr>
<td>COAH.</td>
<td></td>
</tr>
<tr>
<td>COL.</td>
<td></td>
</tr>
<tr>
<td>D.F.</td>
<td></td>
</tr>
<tr>
<td>DGO.</td>
<td></td>
</tr>
<tr>
<td>QRO.</td>
<td></td>
</tr>
<tr>
<td>HGO.</td>
<td></td>
</tr>
<tr>
<td>JAL.</td>
<td></td>
</tr>
<tr>
<td>MEX.</td>
<td></td>
</tr>
<tr>
<td>MICH.</td>
<td></td>
</tr>
<tr>
<td>MOR.</td>
<td></td>
</tr>
<tr>
<td>NAY.</td>
<td></td>
</tr>
<tr>
<td>N.L.</td>
<td></td>
</tr>
<tr>
<td>OAX.</td>
<td></td>
</tr>
<tr>
<td>PUE.</td>
<td></td>
</tr>
<tr>
<td>PRQ.</td>
<td></td>
</tr>
<tr>
<td>Q.ROO.</td>
<td></td>
</tr>
<tr>
<td>SIN.</td>
<td></td>
</tr>
<tr>
<td>S.L.P.</td>
<td></td>
</tr>
<tr>
<td>SON.</td>
<td></td>
</tr>
<tr>
<td>TAB.</td>
<td></td>
</tr>
<tr>
<td>TAMPS.</td>
<td></td>
</tr>
<tr>
<td>TULAX.</td>
<td></td>
</tr>
<tr>
<td>VER.</td>
<td></td>
</tr>
<tr>
<td>YUC.</td>
<td></td>
</tr>
<tr>
<td>ZAC.</td>
<td></td>
</tr>
</tbody>
</table>

**Table 33. Rating Rate by Rage of Progress of RRP**

<table>
<thead>
<tr>
<th>Satisfactory / Enough</th>
<th>Unsatisfactory / Critical</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. of entities</td>
<td>20</td>
</tr>
<tr>
<td>Registering Rate</td>
<td>46.3</td>
</tr>
</tbody>
</table>

A summary can be made in the following items:

A positive difference is registered in the investment amounts between the dwellings with a title deed and the dwellings without it. Households with a title deed work, save, invest and have higher wellbeing indicators for the following reasons:

- Property rights protect the individual from evictions or dispossessing proceedings, reducing transactional costs.
- Title deeds make access credit to markets easier for economic agents, by operating like collaterals.
- Finally, investment increases if the individuals can trade these assets.

Therefore, property rights and wellbeing are absolutely inseparable; nevertheless, national registering rate is low, and as shown in Table 34, it is below other OECD member countries. For this reason, it is convenient to advance towards a public policy consisting on a National Registering Program...
that develops an efficient system of incentives, particularly for low income families in urban areas. The program shall include notarial and registry agencies for reducing transactional costs.

**Table 34. International Comparison**

<table>
<thead>
<tr>
<th>Country</th>
<th>Registering Rate (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mexico</td>
<td>45.2</td>
</tr>
<tr>
<td>Colombia</td>
<td>50.3</td>
</tr>
<tr>
<td>France</td>
<td>56.7</td>
</tr>
<tr>
<td>Holland</td>
<td>59.0</td>
</tr>
<tr>
<td>Peru</td>
<td>65.8</td>
</tr>
<tr>
<td>United States</td>
<td>67.4</td>
</tr>
<tr>
<td>Canada</td>
<td>68.4</td>
</tr>
</tbody>
</table>

Source: Made by SHF

4.4.3 Sole Housing Registry (RUV)

Sole Housing Registry *(Registro Único de Vivienda, RUV)* has been, since October 2006 — when it started operating —, an important tool integrating critical processes and information for housing sector in Mexico, through the register of developers, of supply, and the verification of construction progress.

RUV continues providing information to support decision making through the following three products:

1. Delivery of information to ONAVIS, which allows estimating if there is enough supply to satisfy beneficiaries’ needs of these organizations.
2. Information by state, housing type, volume registered in the RUV and its features to developers.
3. Product addressed to financial entities and specialized analysts, containing specific information to perform statistical analyses.

To increase the scope of this information, it is necessary, on one side, to integrate all relevant participants of the housing industry to RUV, and on the other side, to operate as an independent and neutral entity. Having this into account, Infonavit determined during 2010 the independence of RUV from Infonavit in order to have an autonomous operation and management.

RUV represents the opportunity to have a tool and the needed processes to give certainty to the individual loan initiator and to the buyer. It must offer appropriate processes and services for each group and segment of participants, which implies in some cases, to homologate criteria among the different users to adopt industry standards, as modular and flexible schemes to attend the different requirements.

Among the initiatives developed by RUV aimed to generate efficiencies for the housing sector, we have the Information Exchange Network *(Red de Intercambio de Información, RII)*, through which municipalities, state government authorities, housing construction companies, and RUV, can exchange information about the Registro de Ofertenete (Supplier Registry), Registro de Oferta (Supply Registry) and Verificación de Avance de Obra (Construction Progress Verification). Therefore, through a totally automated process, these procedures are transparent and the value chain might be more efficient.

RII as integral process is already a reality. Since two years ago, an initiative was developed in collaboration with the state government and the municipality of Aguascalientes. The operation of Housing development processes was analyzed, from the approval request for a development to the receipt and municipalization of the housing complex or development; with this, it was possible to know all processes for each participant and detect the inter-institutional linkage allowing the continuity of the process.

To continue boosting and improving RUV operation, the following actions are being considered: verification assisted by mobile devices, integration of risk analysis, diffusion and training through Internet, and bank integration to RUV. Thus, it’s possible to offer services and information boosting the sector and it will support Mexicans with their housing acquisition process.

4.4.4 Advances and Expectations in HiTo

Last four years have been very difficult for the bond market, backed by mortgage loans worldwide. Even now, the ravages of the crisis started in the United
States, which became evident during 2008, are present. In addition to the external environment, Mexico is also going through a mortgage financing crisis that even though it does not represent a risk to the financial system, it has caused a decrease of housing loans.

Although Mexican crisis was focused, it has proved that the business model of mortgage financial brokerage must be redesigned in order to become more stable and sustainable, lining up interests and incentives of all of the participants in order to generate a lasting balance.

In Mexico, Total Mortgage (Hipotecaria Total, HiTo) had started a mortgage financing model that has proved its efficiency for more than 200 years in Denmark. It is expected to grow and to provide important benefits to their borrowers, financial intermediaries and investors, becoming a new standard in Mexico.

The European Mortgage Federation has recently published an audiovisual document53 about financial system in Denmark, clearly explaining the system performance during this world crisis: "... the Danish mortgage system actually coped better than the systems in other countries. No mortgage banks went bankrupt, there were no government bailouts, or guarantees for issuances of covered bonds. And the effect on loan rates was less significant than in the rest of Europe"; and continues: "That gives food for thought, because even though Denmark is a small country, it has one of the largest and most liquid mortgage markets, with a value of some €320 billion Euro. Danish mortgage lending exceeds the Denmark’s GDP of around €230 billion Euro. It exceeds total bank lending of around €195 billion Euro, and it’s over four times higher the total issuance of Danish government bonds of just under a €100 billion Euro. The financial crisis demonstrated that the Danish mortgage system is unique in an international context, and this is also demonstrated by its history".54

Making this model to work in our country is a medium- and long-term task. The purpose of HiTo is to adjust this system to Mexican context, to generate mortgages in pesos, at a fix rate, and providing additional benefits for borrowers, investors and originators.

Current Situation of HiTo
During its brief history, HiTo has helped to place $13,633 million pesos in title deeds, supported by mortgages. Considering the total amount in circulation of $139,294 million pesos on May 31, 2011, HiTo participates with $11,866 million pesos, representing the 8.52%.

Chart 37 displays the amounts and operations supported by HiTo:

53 The audiovisual document can be watched in http://www.realkreditraadet.dk/Danish_Mortgage_Model/Information_film.aspx
54 Text taken from the above mentioned video document.
HiTotal

In December 2010, Infonavit made the first issuance using Infonavit Total portfolio, based and under the platform of securitization of Hipotecaria Total (HiTo), which is a model that—as mentioned above— is inspired in the Danish mortgage model, and has been adapted to Mexico and to the Institute portfolio.

Features offer a complementary issuance structure to CEDEVIS and constitute a different niche market in the strategy of investors’ portfolio. Differences between HiTotal and CEDEVIS are not only in the type of portfolio, but also in the structure of the bond.

Subscribing to HiTo allows workers with incomes of 4.5 times the minimum wage (VSM) or higher, and who fulfill the 116 points required, may have access to this financing. It is important to mention that with this program it is expected to potentially attend 536,000 beneficiaries who were no subject to this type of financing before.

During 2011 the first reopening of HiTotal bond took place. For Infonavit, this mechanism becomes a strategic ally to boost the mortgage loans funding. By June 2011, the HiTotal 10Ubond reaches an accrued amount of almost $4 billion pesos and it is expected to become the largest mortgage-backed bond (Bono Respaldado por Hipotecas, BRH) outstanding by the second half of 2011.

4.4.5
Financial Education

As the housing finance market in Mexico has been maturing, it has become more evident for public and private participants that, in order to keep the volumes required by economies of scale, to fulfill long-term business targets, and especially to reduce the housing backwardness, it becomes essential to attend the market segment composed by people not being registered to traditional social security systems (Infonavit and FOVISSSTE). More than 65% of housing backwardness is concentrated in this segment of the population.54

Financial Education: A Must

A lesson from the recent international financial crisis is that access to financial products and services must be accompanied with education. National and international financial institutions are aware that the sale of a financial product does not end with the signature of the contract and the salesperson gets a commission or a bonus. They have learned not to focus only on having more customers, but better clients, better “profiled”, with knowledge of their payment and purchase capacity, able to prepare a family budget and to have their finances under control; customers aware of the fact that the acquisition of a financial product is a decision that should not be taken by impulse. This lesson has been especially relevant for institutions in the housing finance market, as decisions on which housing solution is the most appropriate, and how to finance it, are the most important for most people, based on the amount and duration. Because of this, it is fundamental to make informed and careful decisions. A credit could become a financial instrument allowing Mexican families to consolidate their assets and improve their quality of life, depending on this decision, instead of generating uncountable economic and personal problems.

Access to Products, Financial Services and Financial Education

There are several factors that have historically impeded many Mexicans—especially low-income—to approach to financial institutions. On one side, there is an absence of bank entities in isolated populations, and, on the other side, there is a lack of products designed in accordance with the needs of population with no access to bank entities. But, there are also psychological and educative elements obstructing the access to financial institutions, like a lack of understanding of the most basic financial concepts, the belief that they cannot be considered bank customers, the distrust on banks, among other

54 Current Housing Situation in Mexico 2010, p. 46.
Section 4. Housing Financing

Factors which cause people to prefer to use informal financial systems. Financial education has proven to be a useful mechanism for banking population. The loan, in turn, is the trigger to get out of poverty and improve their life level, as long as it's possible to pay it back. If the loan payment becomes an overwhelming load, people fall into an overindebtedness, which has disastrous consequences for families, for financial institutions, and for the country. Thus, banking and financial education should always go hand in hand.

Financial Education in Housing
Topics: a Challenge for the Market

By the end of 2009, the Federal Mortgage Society aimed at researching into the knowledge and attitudes of population between 18 and 65 year old, non-salaried, and without access to social security systems, in relation to the following topics: a) their practices and habits of expenditure and savings; b) their conducts about expenditure, savings, and loans, specifically mortgage loans; and, c) their knowledge about savings and financial instruments for housing solutions. Outstanding results include:

1. More than 90% has never requested a loan to buy, remodel, extend, or build a dwelling or an apartment. The main reasons given for this include: not needed (27%); not having enough income (17%); not thinking they would get it (12%); not have considered (10%); and not fulfilling the requirements (9%).

2. More than 70% considers that if they requested a loan to buy, remodel, extend, or build a dwelling or an apartment, it would not be approved. Reasons: not fulfilling the requirements (41%); not able to prove incomes (32%); low wage (28%); not having a stable job (21%); not knowing the reason (17%).

3. Even though a high proportion replied that a loan would not be approved for not fulfilling the requirements, most of them stated, in fact, not knowing which the requirements are.

4. The most difficult topics related to housing loans are: interests and fees (25%); everything (20%); contracts (14%); payment forms (8%); and requirements (7%).

5. Almost 90% stated not having information in order to contract the most suitable housing loan.

6. And 96% would not know where to go to get information when hiring a housing loan.

The conclusions highlight that the population surveyed discarded themselves from the possibility of having access to a better housing solution: they do not even try to go in to it. And, another evident conclusion is of course, that people require information and advice on the matter.

SHF, as development bank of the Federal Government dedicated to housing financing, should offer information and tools to Mexican families that will allow them choose an appropriate housing solution and financing. That is why a Financial Education Program Specialized in Housing Solutions and Financing was created, with clear, standard, and exact information that will allow people to make better decisions on this matter.

This leads to the fact that financial intermediaries from public and private sectors should in general include information and basic tools with their financial products and services supply, to help users to choose the best option based on their needs and financial capacity. Regarding authorities, an effort should be made to also extend the coverage of

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Methodology for the study. To make this survey, three domains were defined:

North: Aguascalientes, Baja California, Baja California Sur, Chihuahua, Coahuila, Durango, Nuevo León, San Luis Potosí, Sinaloa, Sonora, Tamaulipas and Zacatecas.

Center: Colima, Distrito Federal, Estado de México, Guanajuato, Hidalgo, Jalisco, Michoacán, Morelos, Nayarit, and Querétaro.

South: Campeche, Chiapas, Guerrero, Oaxaca, Puebla, Quintana Roo, Tabasco, Tlaxcala, Veracruz, and Yucatán.

Target population: People with no access to social security systems like IMSS and ISSSTE, “non-salaried”, but with a periodical income in occupations like: domestic work, workers on their own, waiters, taxi drivers, public transport drivers, technician, bricklayers, plumbers, independent workers, storekeepers, small artisans, among others.

Sample: National survey of 2,400 interviews. The sample was distributed in equal sizes for each of the three study domains. The survey execution involved a total of 177 urban and 63 rural AGEBs. A random sample of particular dwellings was made, from which 10 complete interviews were made.
financial education among the different age groups, including basic concepts even in the education system. Also, it is very helpful to systematize information about the different products offered in the market (mortgages and other financial services) to ease comparison that users should make.

"Asesor, Tu Consejero Patrimonial" (Advisor, Your Property Consultant): the Financial Education Program from SHF

After a selection process, SHF selected the Escuela de Graduados en Administración y Dirección de Empresas of the Instituto Tecnológico de Estudios Superiores de Monterrey Campos Ciudad de México (EGADE CCM), in order to integrate a multidisciplinary team of academic experts in: personal finances, financial education, didactics, andragogy, law, graphic design, editorial design, communication, marketing, and management, in order to develop the editorial content of the program.

Given the academic methodology from EGADE CCM, all materials were tested with people from the target public segments, to guarantee their contents and language were appropriate and accessible to the audience.

The program was structured in 15 independent manuals, following a sequence of topics related to decisions and knowledge that a person will need before selecting a housing solution and its financing, during the acquisition and purchase process, and after that, identifying the time for dwelling maintenance and community life.

SOURCE: SHF.
The program was designed for autodidactic persons, as well as for those who require the help of a trainer. For the first ones, materials were designed to allow an autonomous learning, while for the second ones, “Training for Trainers” courses were considered, in order to train instructors to teach the contents of manuals face to face.

SHF is looking for capitalizing the interest of strategic associates on taking financial education to their current or potential customers or beneficiaries, without those associates having to develop a financial education program specialized on housing on their own. Under this modality of the program Asesor, the SHF prepares trainers who, in turn, will give face-to-face courses for audiences constituted mainly by potential customers or future beneficiaries from different institutions.

Each of the manuals for the program Asesor is available for free inquiry in different formats: printed, download as PDF, interactive multimedia, and audiovisual.57

It is important to stress that, by today, different companies and institutions, both public and private, have made projects with the aim of promoting a financial culture among the population. This is a reason to celebrate, since the more supply of this sort of projects, the better chances to foster a real financial culture among Mexican population. As every Mexican has access to an adequate financial education, we will be able, on one side, to make more convenient choices to create, take care, and increase the family property, and, on the other side, to lead financial institutions to compete for improving their products and services supply.

4.4.6 Social Collection:
Garantía Infonavit (Infonavit Guarantee)

In the framework of the National Agreement in Favor of Family Economy and Employment (Acuerdo Nacional a Favor de la Economía Familiar y el Empleo), announced on January 2009 by president Felipe Calderón, and implemented by the Secretariat of Labor and Social Welfare (Secretaría del Trabajo y Previsión Social, STPS), Infonavit has posed the option of offering several alternative solutions to the borrowers willing to pay after losing their employment. These alternatives were classified under the area of "Garantía Infonavit" (Chart 35), which is part of the model of social collection implemented by the Institute since 2005. These are the best international practices in the services market and are constituted as an original product in the Mexican mortgage market. Infonavit is maybe the only mortgage institution worldwide in starting a collection process with efforts aiming at boosting their borrowers to have an employment.


Table 35. "Garantía Infonavit"

<table>
<thead>
<tr>
<th>Garantía Infonavit</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Loss of employment</strong></td>
</tr>
<tr>
<td>- Total extension</td>
</tr>
<tr>
<td>- Partial extension</td>
</tr>
<tr>
<td>- Payment protection</td>
</tr>
<tr>
<td>- Job vacancies</td>
</tr>
<tr>
<td>- Sick leave</td>
</tr>
<tr>
<td>- Death</td>
</tr>
<tr>
<td><strong>Anticipated Settlement</strong></td>
</tr>
<tr>
<td>- 30% discount for loans originated before July 1, 1995</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>You have an employment, but family purchasing power was reduced?</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Support for technical slowdown</td>
</tr>
<tr>
<td>- Income variation</td>
</tr>
<tr>
<td>- Economic pressure</td>
</tr>
<tr>
<td>- Pending monthly payments</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Fulfilled Loans</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Draw of monthly installments</td>
</tr>
<tr>
<td>- 10% discount on settlement for punctual borrowers with more than 10 years</td>
</tr>
<tr>
<td>- Offers and discounts</td>
</tr>
</tbody>
</table>

SOURCE: INFONAVIT.
Due to the loss of employment, extensions, payment protection insurance for credits given in 2007-2008; payment protection fund for credits given in 2009-2010 and job vacancies, including “Contrátalos con incentivos” (Hire Them with Incentives) are considered. This program invites contributing companies to prefer unemployed borrowers in the selection, recruitment, and hiring, and returns employers 5% of their employer obligations on rehired workers.

In case of variation in the family purchasing power, "Garantía Infonavit" includes the reduction of payment for technical slowdown, for reduction of payment resulted from a working instability and economic pressure, as well as automatic restructuring of pending debts to borrowers with employment and restructuring through solution and new account (33 different options), disability, insurance, disability, or death, as well as socioeconomic studies allowing identifying and attending borrowers with economic or health problems, to whom payments are offered based on their actual purchasing power.

For those willing to have an anticipated settlement of their loan, “Garantía Infonavit” offers a 30% discount for loans originated before July 31, 1995 and discounts of up to 10% for loans older than two years. Punctual borrowers are awarded and offered the possibility of taking part in a draw of monthly installments, total balances and different offers and discounts grouped in the strategy “Recompensas Mi Infonavit” (Rewards “My Infonavit”). At the end of December 2010 (Chart 36), "Garantía Infonavit" had attended 365,885 cases for all solutions, while from January to July of this year; the figure gets to 249,668 cases.

### Contrátalos con incentivos Progress by April 30, 2011:

- A refund equal to the contribution of 5% from companies hiring unemployed borrowers for more than 4 and less than 24 months; 18,722 benefits have been given to 3,420 borrowers in this program.
- Vacancies are available for unemployed borrowers, 38,623 workers have been rehired.
- 19 modules of Seguro Popular (Popular Insurance) have been installed at Infonavit offices throughout the country: 269,510 borrowers with no formal employment have Seguro Popular.

#### Table 36. Cases Attended “Garantía Infonavit”

<table>
<thead>
<tr>
<th></th>
<th>2009</th>
<th>2010</th>
<th>2011</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total extension</td>
<td>139,139</td>
<td>146,949</td>
<td>59,284</td>
<td>345,372</td>
</tr>
<tr>
<td>Partial Extension</td>
<td>13,330</td>
<td>16,654</td>
<td>1,373</td>
<td>43,723</td>
</tr>
<tr>
<td>Solution and new account</td>
<td>147,983</td>
<td>166,199</td>
<td>153,732</td>
<td>467,914</td>
</tr>
<tr>
<td>Technical slowdowns</td>
<td>17,809</td>
<td>389</td>
<td>627</td>
<td>18,825</td>
</tr>
<tr>
<td>Payment Protection Insurance</td>
<td>15,092</td>
<td>9,429</td>
<td>5,916</td>
<td>30,437</td>
</tr>
<tr>
<td>Settlement up to 1 %</td>
<td>6,858</td>
<td>12,435</td>
<td>7,586</td>
<td>26,879</td>
</tr>
<tr>
<td>Settlement 10 %</td>
<td>779</td>
<td>1,533</td>
<td>866</td>
<td>3,176</td>
</tr>
<tr>
<td>Settlement 30 %</td>
<td>1,711</td>
<td>5,028</td>
<td>2,631</td>
<td>9,370</td>
</tr>
<tr>
<td>Death Settlement Loans</td>
<td>3,918</td>
<td>6,734</td>
<td>4,014</td>
<td>14,666</td>
</tr>
<tr>
<td>Disability Settlement Loans</td>
<td>191</td>
<td>535</td>
<td>1,273</td>
<td>1,999</td>
</tr>
<tr>
<td>Total</td>
<td>346,810</td>
<td>365,885</td>
<td>249,668</td>
<td>962,363</td>
</tr>
</tbody>
</table>

Source: Infonavit

### 4.5 Comparison of Housing Affordability: 2000-2010

According to the information of the National Survey on Household Incomes and Expenses (ENIGH) raised by INEGI, household economic capacity to acquire a dwelling in 2000, 2005 and 2010 is measured based on two criteria:
1. Enough funds are available to purchase it. That is, access to a mortgage credit.
2. If housing prices are affordable based on the household’s income.


Requirements for mortgage vary depending on the financial intermediaries, but in general are:

- To be currently employed and have social security registration (IMSS, ISSSTE, Pemex, among others).
- Seniority of at least one year without interruptions.
- Family income of over two monthly minimum wages.57
- To be aged over 17 and under 50 years old.
- To have savings in the housing subaccount.
- To have a positive credit bureau rating.

As it can be seen in Chart 37, households in which the family head is between 20 and 39 year old (household formation), are in a better situation to acquire a dwelling, followed by those who rent, and finally, the segment with less access to a loan is the one of families in backwardness situation.

Moreover, it can be noticed that nationwide and by segments, in 2010, a lower ratio of household can get a mortgage loan, partly because the loss of family wealth during the Great Recession, and secondly, because of the recent trend in the work subscribed at social security institutions, characterized by lower incomes and temporary jobs.

Second Approach. Housing affordability

The affordability limit (LA) is the maximum loan amount that a family could have based on its income. A dwelling is affordable if the quotient housing price / household’s monetary annual income is less or equal to LA.

LA considers monetary income proportion dedicated to the mortgage loan payment (α), the down payment as a proportion to the housing price (β), the interest rate of the mortgage market to a fixed date (i), and the loan term (N).58

With information of the Total Annual Cost (Costo Anual Total, CAT) of May 2011, values are: α = 32.2%, β = 15.6 %, y N = 15 years, the interest rate changes based on the year that is being analyzed. In year 2000, the average mortgage rate was of 17.6%, in 2005 13.3%, and finally in 2010 of 12.3%.

LA increased in the decade from 2.0 to 2.6, i.e. while in the year 2000, families could acquire a dwelling for the double of their monetary income, in

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57 Both General Minimum Wages at costant prices for December 2010 were equivalent to: $3,491.80 pesos in 2010; $3,386.40 in 2005; and, $3,442.71 pesos in 2000.

58 Current Housing Situation in Mexico 2010, p. 119.

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Table 37. Households with Access to a Mortgage Loan

<table>
<thead>
<tr>
<th>Data</th>
<th>2010</th>
<th>2005</th>
<th>2000</th>
</tr>
</thead>
<tbody>
<tr>
<td>Economically Active Population (EAP)</td>
<td>47,131,536</td>
<td>43,632,583</td>
<td>39,483,703</td>
</tr>
<tr>
<td>Households</td>
<td>29,074,332</td>
<td>25,710,325</td>
<td>23,667,478</td>
</tr>
<tr>
<td>Households that can access to a mortgage loan</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nationwide</td>
<td>4,712,787</td>
<td>5,215,277</td>
<td>4,575,270</td>
</tr>
<tr>
<td>% of total households</td>
<td>16.2%</td>
<td>20.3%</td>
<td>19.3%</td>
</tr>
<tr>
<td>Households in which the family head is between 20 and 39 year old</td>
<td>2,377,088</td>
<td>2,935,377</td>
<td>2,725,006</td>
</tr>
<tr>
<td>% of total households in this age range</td>
<td>28.0%</td>
<td>36.0%</td>
<td>33.6%</td>
</tr>
<tr>
<td>Households renting a dwelling</td>
<td>974,020</td>
<td>1,152,691</td>
<td>543,403</td>
</tr>
<tr>
<td>% of total households renting</td>
<td>23.9%</td>
<td>32.6%</td>
<td>22.8%</td>
</tr>
<tr>
<td>Households in backwardness situation</td>
<td>793,495</td>
<td>1,18,622</td>
<td>1,008,694</td>
</tr>
<tr>
<td>% of total households in backwardness</td>
<td>8.8%</td>
<td>12.9%</td>
<td>11.5%</td>
</tr>
</tbody>
</table>


Note: Percentages do not sum 100% because they are from different segments.
2010, the value of the dwelling they could pay is 2.6 times their monetary income.

Chart 38 shows that in 2010 almost 7 of every 10 families can have access to an economical dwelling, while in 2005 the rate was of 6 of 10. In general, from 2000 to 2005 there was an improvement in families’ affordability conditions, while in 2010 the income depreciation was more important than the improvement in the mortgage market (interest rate, products, and intermediaries).

**Table 38. Household Distribution by Housing Type that can be Acquired**

<table>
<thead>
<tr>
<th>Type</th>
<th>Price in minimum wages</th>
<th>% of households</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>From</td>
<td>To</td>
</tr>
<tr>
<td>Affordability Limit</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Social Interest</td>
<td>118</td>
<td>183</td>
</tr>
<tr>
<td>Economic</td>
<td>118</td>
<td>200</td>
</tr>
<tr>
<td>Popular</td>
<td>200</td>
<td>350</td>
</tr>
<tr>
<td>Traditional</td>
<td>350</td>
<td>750</td>
</tr>
<tr>
<td>Medium</td>
<td>750</td>
<td>1,500</td>
</tr>
<tr>
<td>Residential</td>
<td>1,500</td>
<td>2,000</td>
</tr>
</tbody>
</table>


It is important to emphasize:

Mortgage market conditions are better in 2010 than in year 2000; however, housing affordability was affected by the recent economic recession and the increase of unemployment.

**Table 39. Origination of Individual Payments: Comparison 1S11 vs. 1S10**

<table>
<thead>
<tr>
<th>Sector / Financial Entity</th>
<th>Individual Loans Position</th>
<th>Variation (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>ISI1 credits</td>
<td>ISI0 (million pesos)</td>
</tr>
<tr>
<td>Banks</td>
<td>30,305</td>
<td>25,501</td>
</tr>
<tr>
<td>Total Infonavit</td>
<td>17,590</td>
<td>6,083</td>
</tr>
<tr>
<td>Sofols/Sofoms</td>
<td>4,785</td>
<td>3,584</td>
</tr>
<tr>
<td>Subtotal private</td>
<td>49,503</td>
<td>32,389</td>
</tr>
<tr>
<td>Infonavit</td>
<td>215,192</td>
<td>55,600</td>
</tr>
<tr>
<td>Subtotal excl. FOVISSSTE</td>
<td>264,695</td>
<td>87,989</td>
</tr>
<tr>
<td>FOVISSSTE</td>
<td>27,517</td>
<td>12,469</td>
</tr>
<tr>
<td>General Total</td>
<td>292,212</td>
<td>100,457</td>
</tr>
</tbody>
</table>

Source: Mexican Mortgage Association
The due payment index of individual credits for the first half of 2011 (Banks, Sofols/Sofoms and Infonavit) is of 6.64%, an increase of 30 base points with respect to the first quarter of 2011, which even though it is still reasonable—considering the unemployment levels registered—it demands special attention from the financial entities, which are already offering to their customers payment schemes to ease their regularization.

It is important to consider that the performance of the Mexican economy during the second half of the year will be directly related to the magnitude of deterioration of the macroeconomic conditions in the United States, with which there is a high integration level. As long as the domestic demand is able to maintain the growth observed during the last quarters, it will be possible to mitigate the negative impact in the Mexican economy.

On the other hand, in the framework of the International Sustainability Forum, organized by Infonavit, the AHM entered into a cooperation agreement to substantially push loan origination for housing projects including eco-technologies and those who produce them, understanding this not only as a cost savings topic for people purchasing dwellings, but as a commitment with planet sustainability.

4.7 BEST PRACTICES

Assisted Housing Self-Production: Campeche Case

In the state of Campeche, 25% of the housing backwardness is concentrated on population not subscribed to Infonavit or FOVISSSTE, with incomes lower than three minimum monthly wages, living in rural areas. Families inhabiting in this housing have typically financed them with their own savings, which implies problems, such as: long construction periods, increase on material costs and storing, material transportation, and in many cases, also low quality housing due to the lack of technical consultancy.

Federal Mortgage Society aims at offering appropriate housing solutions to low-income families with no subscription to Infonavit or FOVISSSTE and established in rural or semi-urban areas. The product Assisted Self-Production Housing (Autoproducción de Vivienda Asistida) came up from this. The purposes of this product are to finance organized family efforts, with the support of a third party to generate housing solutions suitable to their income level, family needs, spaces, and cultural conditions. Assisted Self-Production Housing offers an integral solution including the financing and the completed housing solution.

For this, an alliance is required between the Federal Mortgage Society, a financial intermediary and a Housing Producer Agency (Agencia Productora de Vivienda, APV), where state and municipal governments’ participation is quite important, because of both the economic support they give and the coordination of all these efforts.

The way to operate this program is as follows:

- SHF provides the funding to the financial intermediaries currently attending low-resources population, as microfinance institutions or savings and popular loan entities.
- Housing solution is offered by an APV, which could be a company, a non-governmental organization or a housing social producer registered at SHF. Housing producers offer integral housing solutions including materials, community organization, and technical assistance during the construction process.
- Families must prove the possession of the lot where they are going to build, and they take part in the construction design and its supervision.

Scopes of the Project:

The program in Campeche is divided in two stages. In the first one, Alianza Financiera Social (Grameen) takes part as financial intermediary and the housing producers Cemex Vivienda and Échale a tu casa. In the second stage, the financial intermediary Alternativa 19 del Sur and the social producers Mexvi and Habvita are also included.

There were subsidies from the Federal Government, through the program “Ésta es tu casa”

59 Location with less than 2,500 inhabitants.
from CONAVI, subsidies from the state government though the State Commission for Land and Housing Development (Comisión Estatal de Desarrollo de Suelo y Vivienda, CODESVI), as well as a guarantee fund in which APVs and state government participate, and previous savings the incumbent families made, plus the credit offered by means of the financial intermediaries with the funding of the Federal Mortgage Society.

First Stage:
The first stage of the state program, which considers 704 actions, has by the end of August 2011, 515 dwellings finished in the municipalities of Calakmul and Escárcega, and 189 are under construction. In Calakmul, Échale a tu casa completed the construction of 242 dwellings and is building 68 more, to complete 310. In Escárcega, Cemex Vivienda, built 273 dwellings and is going to complete 121 more, for a total of 394.

Second Stage:
In this stage, to be started on September 2011, the self-building of 1,364 dwellings in owned lots, distributed in seven municipalities of this entity (Calakmul, Calkini, Campeche, Candelaria, Carmen, Champotón, and Escárcega), in 58 communities is expected; with the participation of two financial intermediaries (Alianza Financiera Social and Alternativa 19 del Sur) and three APVs (Échale a tu Casa, Mexvi and Habvita). Solutions will be offered with a value of $115 thousand pesos, and to be finished in March 2012. There solutions consider again a loan, savings from the borrower, federal and state subsidies, as well as liquid guarantee funds by the state government, the Housing Producer Agencies and the borrowers themselves.

4.8 FINDINGS AND CHALLENGES

- Hand in hand with the economy, the housing market faces, in 2011, an outlook of higher growth. Even though it has not yet recovered the activity levels recorded in 2008, in general terms, the trend points to a clear recovery.
- Mortgage loan granted by the bank detailed an increase close to 17% in real terms, implying a greater tendency towards medium- and high-income segments.
- In the case of the bridge loan, the growth rate went from levels of 15% in the second half of 2010 to 5% in the first months of 2011 (January-April). The trend aims at a level of housing construction of 475,000 annual units, below trends in mortgage credit.
- In 2008, before the beginning of the crisis, banks’ past-due portfolio was close to 3%, and in 2009 recession it increased to 4.5%. By mid-2011, it had almost recovered completely, with levels of 3.4%.
- As for bridge loan, opposite to mortgage credit, bank’s past-due portfolio has increased. Ensuring stabilization of this indicator could be a condition to achieve steady growth rates in the medium term.
- By the end of 2010, a total of 1,762,408 financings were recorded, 48% of which corresponded to housing acquisition and 52% to improvements and other types of loans.
- For this year, the national, estate, and municipal housing agencies, the commercial and development bank, as well as other entities that issue mortgage loans as a benefit to their employees expect to grant 1,109,432 financings.
- By 2010, housing stock had 28.5 million private inhabited dwellings, among them, 20.2 million (71.2%) are owned or are being paid by the owners.
- Used housing is a choice for households acquiring them, being almost 13% owned dwellings, especially for communities with less than 15,000 inhabitants where new housing supply that is not self-built or built at request is almost nonexistent.
- Assisted self-production product offers an integral solution comprising credit for participating in a housing production scheme in owner’s land, as well as technical assistance in its design and production.
According to a study made by Prodesarrollo and by Microfinance Information Exchange (The Mix), in 2009, microfinance institutions attended 4.4 million people that both demanded productive credits as well as consumption and housing credits.

For SHF, it is important to distribute financial resources through intermediaries that understand popular finance sector and may help to reduce housing backwardness by means of credits for improvement and assisted housing self-production.

Infonavit’s “Renueva tu hogar” is a credit product aimed at offering beneficiaries a financing option in pesos to make a minor improvement (finishes, decoration, painting, and changes of carpets, floors) in the dwelling they live in, using as a guarantee the Housing Subaccount Balance.

The condition of right to Institute’s credit is not lost; therefore, when paying the loan “Renueva tu hogar”, beneficiaries may request it again or request any other type of financing from Infonavit.

By the end of June, 2011, there are 7,019 approved credits by “Renueva tu hogar” and 1,371 to be approved. Average amount of these credits is $28,000 pesos, which represents an approximate amount of $198 million pesos. 62% of these credits have been requested by workers with incomes up to seven minimum wages.

In late 2009, the Federal Executive Branch instructed the Secretariat of Social Development (SEDESOL) to coordinate the cadastral modernization actions and provide new impetus to the relationship between RPP (Public Registries of Property) and national cadastres, using SEDESOL participation in the Program Evaluation Committee for the Modernization of the Public Registries of Property.

The program's strategy considered three areas of implementation: Public Property Registry, cadastre and, integration of information from the National Agrarian Registry. In 2010, SEDESOL granted federal funds for $368.3 million pesos to trigger projects for $750.1 million pesos, using the combined resources of the states.

Additionally, SEDESOL developed the Cadastre Model, which is a benchmark for the design of policies aimed at its modernization. Cadastre Model was released in December 2010 to the secretaries of finance and the states government, before the National Association of Mexican Notaries (ANNM) and the Mexican Institute of Cadastre (INMECA).

The Cadastre Model proposes actions in seven components: legal framework, cadastral processes, IT, association with RPP, professionalism in the cadastral function, quality management, and institutional policies.

Up to date, 27 states have a modernization executive project —in line with the Public Registry of Property Integral Model and have obtained federal resources of carrying it out— authorized by the Assessment Commission.

Given the publication of Program for the Modernization of the Public Registries of Property and Cadastres, for 2011, it has been established, as a priority, to make RPP homologation to municipal and rural cadastres, so as to offer required legal certainty to boost the value of real estate, access formal financing sources and contribute to the economic development of country’s states.

During 2010 the “Assessment about the Impact of Title Deeds on Housing Investment in Mexico” (Evaluación del Impacto del Título de Propiedad sobre la Inversión de Vivienda en México) research was made with the purpose of knowing the effects of title deeds on the housing investment and the welfare of Mexican households.

Results indicate that expenses in dwellings investment with a title deed are considerably greater than the dwellings without it. In percentage terms, dwellings with a title deed spend 28.0% more than those without it.

81.3% of the families without a title deed are interested in acquiring it, but the main reasons for not doing it until now are: it is expensive or cannot be afforded; they do not know how to do it, paperwork is
complicated, related costs are high, and it takes much time.

- Registering rate is related to the number of notaries of each state and to the progress of modernization of the RPP.

- Sole Housing Registry (RUV) has been since October 2006 an important tool integrating critical processes and information for housing sector in Mexico, through the register of developers, of supply, and the verification of construction progress.

- Mexico is going through a mortgage financing crisis that has caused a rationing of credit in the housing sector.

- Mexican crisis has proven that the business model of mortgage financial brokerage must be redesigned to a more stable and sustainable on, lining up with interests and incentives of all of the participants, in order to generate a lasting balance.

- In Mexico, Total Mortgage (Hipotecaria Total, HiTo) is starting a mortgage financing model that has proved its efficiency for more than 200 years in Denmark.

- HiTo has helped to allocate $13,633 million pesos in title deeds, supported by mortgages.

- In December 2010, Infonavit made the first issuance using Infonavit Total portfolio, under the platform of securitization of HiTo.

- By June 2011, the HiTotal 10Ubond reaches an accrued amount of almost $4 billion pesos and it is expected to become the largest BRH outstanding by the second half of 2011.

- Financial education has proved to be a useful mechanism for banking population.

- SHF made in 2009 the research over financial education, which indicates that more than 90% of the individuals surveyed have never requested a loan to buy, remodel, extend, or build a dwelling or an apartment, besides more than 70% of people think that if they were to request a credit for such ends, it would not be granted.

- From this, the program was structured in 15 independent manuals, following a sequence of topics related to decisions and knowledge that a person will need before selecting a housing solution and its financing, during the acquisition and purchase process, and after that, identifying the time for dwelling maintenance and community life.

- Infonavit’s social collection program rewards punctual borrowers and offers them the possibility of taking part in a draw of monthly installments, total balances and different offers and discounts grouped in the strategy “Recompensas Mi Infonavit” (Rewards “My Infonavit”). At the end of December 2010, “Garantía Infonavit” had attended 365,885 cases for all solutions, while from January to July of this year; the figure gets to 249,668 cases.

- In 2010, a lower ratio of household can get a mortgage loan, partly because the loss of family wealth during the Great Recession, and secondly, because of the recent trend in the work subscribed at social security institutions, characterized by lower incomes and temporary jobs.

- In year 2000, families could acquire a dwelling by the twice of their monetary income. In 2010, the value of the dwelling they could pay is 2.6 times their monetary income. It can be observed that in 2010 only seven out of 10 families can get an economic dwelling.
Section 5.

Secondary Market of Housing Financing

5.1

SITUATION OF THE SECONDARY MARKET AND NEW HOUSING-RELATED PRACTICES

Current Debt Securities Issuances in the Market

From 2003, mortgage securitization has been used as an alternative funding tool, which has allowed supporting housing market growth and complementing traditional funding mechanisms.

By June 30, 2001, total accrued amount of mortgage-backed debt security issuances, as originally valuated, reached around $186,855 million pesos (Chart 28 and Table 40).

Chart 38. Total Accrued Amount of Mortgage-Backed Debt Security Issuances, Figures at the Time of Issuance (BORHIs. HiTo, CEDEVIS, TFOVIS, and other issuances)

Source: SHF – Department of Market Development and Securitization 2011, using data from the supplements of mortgage-backed issuances. Figures for the cutoff date of June 30, 2011
Table 40. Issued Amount of BORHIs, HiTo, CEDEVIS, TFOVIS and Other Mortgage-Backed Issuances (Figures at the Time of Issuance) and Current Balances

<table>
<thead>
<tr>
<th>Year</th>
<th>BORHIs</th>
<th>HiTo</th>
<th>Other issuances</th>
<th>CEDEVIS</th>
<th>TFOVIS</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>2003</td>
<td>$ 596</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>$ 596</td>
</tr>
<tr>
<td>2004</td>
<td>2,749</td>
<td>1,959</td>
<td>4,708</td>
<td></td>
<td></td>
<td>4,708</td>
</tr>
<tr>
<td>2005</td>
<td>2,859</td>
<td>3,274</td>
<td>6,133</td>
<td></td>
<td></td>
<td>6,133</td>
</tr>
<tr>
<td>2006</td>
<td>12,497</td>
<td>5,998</td>
<td>18,495</td>
<td></td>
<td></td>
<td>18,495</td>
</tr>
<tr>
<td>2007</td>
<td>22,420</td>
<td>10</td>
<td>2,792</td>
<td>9,798</td>
<td></td>
<td>35,020</td>
</tr>
<tr>
<td>2008</td>
<td>15,956</td>
<td>59</td>
<td>4,830</td>
<td>14,443</td>
<td></td>
<td>35,288</td>
</tr>
<tr>
<td>2009</td>
<td>5,910</td>
<td>7,065</td>
<td>12,005</td>
<td>18,501</td>
<td></td>
<td>36,181</td>
</tr>
<tr>
<td>2010</td>
<td>3,999</td>
<td>2,500</td>
<td>6,500</td>
<td>36,127</td>
<td></td>
<td>36,127</td>
</tr>
<tr>
<td>2011</td>
<td>$ 62,987</td>
<td>$ 13,633</td>
<td>7,622</td>
<td>$ 67,999</td>
<td>$ 34,614</td>
<td>$ 186,855</td>
</tr>
<tr>
<td>Current Balance</td>
<td>$ 40,709</td>
<td>$ 11,602</td>
<td>$ 4,892</td>
<td>$ 57,733</td>
<td>$ 29,437</td>
<td>$ 144,373</td>
</tr>
</tbody>
</table>

Source: SHF – Department of Market Development and Securitization 2011, using data from the supplements of mortgage-backed issuances.

Notes:
1) In 2007, other issuances correspond to the cross border issuance made by Hipotecaria Su Casita (Class A on USD $232,532,000 equal to a $2,565,665,075 pesos, exchange rate at the time of issuance: $11.0336 and Class B on $226,501,400 pesos). Also, that year, a BORHIs packaging was made, known as BORHI of BORHIs, by an amount close to $617 million pesos, which is not counted in this table. The issuances that back such re-packaging are counted in this table in the corresponding years of issuance.
2) Accrued valued figures at the time of issuance; 3) current balance corresponds to issuance unpaid balance, published by VALMER; as for cross border issuance by Hipotecaria Su Casita, current balance published by the issuance Trustee was used. Figures are up to the cutoff date of June 30, 2011.

Chart 39. Public Mortgage-Baked Issuances (Distribution by Type of Instrument)


**Actions for Encouraging Secondary Mortgage Market**

In order to encourage secondary mortgage market, public and private entities, participating in the mortgage sector (SHF, Infonavit, FOVISSSTE, portfolio managers, issuers, etc.) have made several efforts for fostering mortgage market through investor meetings and participation in national and international forums where the following have been stated, among others:

- The way Mexican housing sector is shaped up and the country’s economic environment:
− The main economic indicators of the country in the last years.
− Demand factors and housing backwardness.
− Main public policies implemented in housing matters.
− Main players involved in housing sector: authorities, housing agencies, financial intermediaries, developers, associations, etc.
− Housing market evolution over the last years.

• Investment opportunities that can arise on each one of the main housing sector stages (land acquisition, basic infrastructure, facilities and acquisition of macro lots, urbanization and construction, individualization and maintenance, and conservation), using schemes of financing/investment of debt, capital, guarantees, structured, etc.
• Current situation of mortgage-backed issuances, indicating market evolution from its beginning, its strengths and the improvement points it has shown, as well as upgrading actions that have been made jointly with every market participant to reinforce issuance structures and inspire confidence in investors.

Securitization of Incomes from the Public Registry of Property of Estado de México

The modernization of the Public Registries or Property (RPP) of the states has created a recurring demand from main involved sectors, agents and institutions, which seek to pull down historical backwardness in this role of the government. Its main benefit is to grant legal certainty on the operations made by these institutions, as established in the public policy of the Federal Executive, provided in the National Program for the Modernization of the RPP.

Even if there are progresses, there are also limitations than can diminish the path for the modernization of registries, such as changes in state governorship, and economic eventualities having an impact on the direction of implemented projects and on the development of registry actions.

By virtue of this, it is necessary to include alternative mechanisms for obtaining additional resources, through which the modernization of RPP can be fostered and continued. One of the alternative funding mechanisms identified is securitization, which has allowed supporting the growth in other housing market sectors.

The main benefits to be expected on the modernization of the RPP, through securitization, are:

• Provide economic and financial solvency for RPP, by means of transparent resource administration mechanisms, different from the ones included in the Program for the Modernization fostered by the Federal Executive.
• Ensure continuity of modernity in registries considering changes of governorship, and generate, as a public policy, a detailed follow-up of the actions implemented by RPP in order to get legal certainty of housing-related operations.
• Allow an ordered and effective planning in the resources management needed by each RPP to fund their operation and administration, without risk of future reallocations of financial resources favoring other government actions.
• Contribute with fresh resources on the generation of infrastructure needed by the states and allowing the modernization of the RPP, by channeling supports towards an improvement in their financial and administrative performance.

In August 2010, the Institute of Registry Function of Estado de México (Instituto de la Función Registral del Estado de México, IFREM) decided to use this alternative funding mechanism, through long-term issuance of a type of debt security called Certificados Bursátiles (CB) for an amount of $4,065 million pesos, in two classes: Class A on $2,765 million pesos and Class B on $1,300 million pesos.

Such CB will be backed by incomes —current and future— of the RPP of Estado de México, derived from the rights collected from rendering this public service.
Resources received by the IFREM from the CB issuance will be used for funding the modernization of the RPP, as well as for financing several productive public infrastructure projects of Estado de México.

In order to ensure investors’ equity, several mechanisms were added to strengthen this issuance:

- Signature of a Stabilizer Global Agreement by which, IFREM and Estado de México take on a series of obligations to do or not to do, aimed at guaranteeing the stability of the operation. In case of noncompliance, the payment of direct compensation to the trusteeship would proceed to address caused damages and perjuries.
- Credit support to Class A, through a financial guarantee granted by Overseas Private Investment Corporation (OPIC), which guarantees a total timely payment of the interest and main payment, accrued under CBs Class A, on each given payment date. The maximum liability amount is $250 million dollars.
- Credit support to Class B, through a financial guarantee granted by Corporación Andina de Fomento (CAF), which guarantees a total timely payment of the interest and main payment, accrued under CBs Class B, on each given payment date.
- Subsidiary payment guarantee of IFREM for Class A and Class B CBs, in relation to the total and timely payment, on its maturity (scheduled or anticipated), of the owed principal and interests accrued under CBs, once trust estate and financial guarantees have been applied, in terms of the Financial Code of Estado de México.

The main features are shown below:

<table>
<thead>
<tr>
<th>General Features of the Issuance</th>
<th>Series A</th>
<th>Series B</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bid-to-cover ratio MXN:</td>
<td>$2,765,000,000</td>
<td>$1,300,000,000</td>
</tr>
<tr>
<td>Ticker symbol</td>
<td>PROIN 10</td>
<td>PROIN 10-2</td>
</tr>
<tr>
<td>Term:</td>
<td>7,310 days (20 years)</td>
<td>7,310 days (20 years)</td>
</tr>
<tr>
<td>Interest rate:</td>
<td>7.86 %</td>
<td>10.13 %</td>
</tr>
<tr>
<td>Guarantor:</td>
<td>OPIC</td>
<td>CAF</td>
</tr>
<tr>
<td>Fitch/S&amp;P rating</td>
<td>AAA(mex)/ mxAAA</td>
<td>AA(mex)/ mxAA</td>
</tr>
</tbody>
</table>

SOURCE: ISSUANCE PROSPECTUS OF PROIN-10 PUBLISHED IN THE WEB PAGE OF THE NATIONAL BANKING AND SECURITIES COMMISSION (CNBV).

Moreover, in March 2011, IFREM acquired, indirectly —through a trusteeship—a bank credit contingent upon Class A and B issuances in UDIS (Units of Investment), for an amount equal to $3 million pesos, with el Banco Nacional de Obras y Servicios Públicos, S.N.C. (Banobras), which shall have a term of up to 240 months. Resources provided will be used for covering the cost of execution of productive public investments executed through the Trusteeship of Infrastructure Development of Estado de México (Fideicomiso para el Desarrollo de Infraestructura del Estado de México, FIDEIEM62).

The credit will have, as a source of payment, future residual cash flows generated by the RPP of Estado de México, in a contingent way, after paying existing Class A and B CBs, and a reserve fund from the beginning of the operation, equal to the payment of the following six months of principal and credit interests. Such fund will be kept and returned by a contingent additional credit line of around $60 million pesos, granted as well by Banobras, and backed by federal shares and resources from the Revenue-Sharing Fund for Strengthening Federative Entities (Fondo de Aportaciones para el Fortalecimiento de las Entidades Federativas, FAFEF) of Estado de México.

5.1.1 CEDEVIS: Status of Primary and Secondary Market

CEDEVIS is the structure of mortgage-backed securities (BRH) issued by Infonavit since 2004, backed by traditional mortgages. To this date, these...
Instruments are widely recognized in the BRH market in Mexico.

CEDEVIS program represents an alternative financing source that allows Infonavit to meet its lending goals and, with the payment of its obligations, such as pension funds, contributes to its dual social responsibility.

In addition to issuing CEDEVIS, from 2010, Infonavit included alternative structured products, such as HiTotal bonds, which are securitized under the HiTo platform, and CEDEVIS Total, which is backed by InfonavitTotal loans co-financed by banks (Charts 40 and 41).

Infonavit has remained the most active issuer in the BRH market with $72,000 million pesos, issued the first half of 2011, which represents about 40% market share.

The BRH Mexican market has had several cycles throughout its short life. Nevertheless, it was after the 2008 crisis that it was affected: as a result of specific problems arising from the mortgage industry in Mexico, as Sofols crisis, the BRH issuance

**Chart 40. Infonavit Mortgage-Backed Issuances**

(Figures in millions)

![Infonavit Mortgage-Backed Issuances](source: Infonavit)

**Chart 41. RMRS Primary Issuances in the Mexican Market**

![RMRS Primary Issuances in the Mexican Market](source: Infonavit)
represented fewer participants. Given this, in 2010, issuers were limited to nine FOVISSSTE and Infonavit issuances, so this was the first year that the amount issued was reduced: it dropped 24%.\textsuperscript{64} This decrease was mainly due to the absence of banks, Sofols and Sofoms as issuers, and the pressure on margins on interest rates.

During the first half of 2011, Infonavit and FOVISSSTE remained as the only institutions that issued BRH, with a total of $13,623 million pesos in four issuances, where Infonavit participates with 74%.

During 2010, the government rates dropped due to the economic recovery perspective, which allowed Infonavit to cause its greater amount in one year and reach $15,181 million pesos in five issuances, including the launch of the HiTotal product (Chart 42). It is worth mentioning that the low level reached by the real government rates caused an increase in the surcharge as compensation; however, the coupon rate of the last issuance of CEDEVIS in the year was the lowest in history.\textsuperscript{65}

Nevertheless, the trend of rates in 2010, later that year and early 2011, began to increase as a result of higher inflation expectations worldwide. This took the reference rates to the levels seen in early 2010, which led to a reduction in the surcharge of the first issuances. During the first half of 2011, rates began to decline allowing Infonavit to reduce lending rates and allocating just over $10,000 million pesos in the period.

In the secondary market, there was a major operation towards the second quarter of the year due to falling rates and the issuance of a new type of products by the Institute, which caused that some investors changed from type of issuance.

\begin{chart}
\caption{Infonavit Mortgage-Backed HiTo Issuances}
\centering
\includegraphics[width=\textwidth]{chart}
\end{chart}

\textsuperscript{64} Standard & Poor’s (S&P). Mexican RMBS Index. February 2011.
\textsuperscript{65} The rates of the first two issues are weighted since they consisted of two series.
During 2011, there has been more participation from investors, differently from Afores, and shows a greater sophistication and search for yield by them. Insurers, private and property banking, as well as private pension funds, among others have been incorporated.

Outlook 2011

The CEDEVIS emission target for this year is $16,000 million pesos: $10,000 million under the traditional format and $6,000 million for issuances backed by Infonavit Total loan product, including HiTotal, and the CEDEVIS Total product.

By its nature, Infonavit Total funding is carried out in two ways: through co-financing with a financial institution or bank, where Infonavit originates and manages the credit, and gives a portion of it to a bank about 30 months after origination- and, through securitization, three months after the loan origination through HiTo platform. CEDEVIS Total will include, as collateral, the portfolio financed under the first scheme, whereas HiTotal operates under the second scheme. Regarding the second half of the year, the first issuance of CEDEVIS Total was carried out in July, in the amount of $2,000 million pesos, backed by the portfolio financed in partnership with Banamex (Chart 41).

Table 41.CEDEVIS Total Issuances

<table>
<thead>
<tr>
<th>Bond amortization</th>
<th>CEDEVIS</th>
<th>HiTotal</th>
<th>CEDEVIS Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bond amortization</td>
<td>Full turbo/accelerated amortization</td>
<td>Linear schedule in 15 years</td>
<td>Pass through with target capacity</td>
</tr>
<tr>
<td>Coupon payment</td>
<td>Biannually</td>
<td>Bimonthly</td>
<td>Biannually</td>
</tr>
<tr>
<td>Trust</td>
<td>Closed</td>
<td>Open</td>
<td>Closed</td>
</tr>
<tr>
<td>Rate definition</td>
<td>At the issuance</td>
<td>Before the issuance</td>
<td>At the issuance</td>
</tr>
<tr>
<td>Nominal value</td>
<td>Adjusted according to the amortization</td>
<td>Constant</td>
<td>Adjusted according to the amortization</td>
</tr>
</tbody>
</table>

SOURCE: INFONAVIT.

Table 42.2010 FOVISSSTE Issuances

<table>
<thead>
<tr>
<th>Key</th>
<th>Amount (million pesos)</th>
<th>Denomination</th>
<th>Term</th>
<th>Interest Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>BONHITO 09UR</td>
<td>2,492</td>
<td>UDIS</td>
<td>30 años</td>
<td>5.00 %</td>
</tr>
<tr>
<td>TFOVIS 10 U</td>
<td>4,500</td>
<td>UDIS</td>
<td>30 años</td>
<td>5.25 %</td>
</tr>
<tr>
<td>TFOVIS 10 2U</td>
<td>6,000</td>
<td>UDIS</td>
<td>30 años</td>
<td>5.04 %</td>
</tr>
<tr>
<td>TFOVIS 10 3U</td>
<td>4,500</td>
<td>UDIS</td>
<td>30 años</td>
<td>5.00 %</td>
</tr>
<tr>
<td>TFOVIS 10 4U</td>
<td>3,500</td>
<td>UDIS</td>
<td>30 años</td>
<td>4.96 %</td>
</tr>
</tbody>
</table>

SOURCE: FOVISSSTE.

Current economic situations face important challenges; however, market has recognized FOVISSSTE by means of a high share, excellent demand conditions and yield rate.

5.1.2 FOVISSTE Mortgages Securitization Program

During 2010, the Fund issued more than $17,000 million pesos on its TFOVIS instrument, which added to its other FOVIHITS instrument66, reached $21,000 million pesos (Table 42). This positions it as the third largest issuer in volume in the national market. The four credit rating agencies in Mexico (Standard & Poors, Moody’s, Fitch, and HR Ratings) granted this operation the highest rating, considering FOVISSTE to be an asset manager with a rating “Above Average”.

Names or tickers, used by FOVISSTE CBs have been: TFOVIS 9u, TFOVIS 9 2u, TFOVIS 10u, etc.; therefore, they have been called FOVIS. Las dos emisiones que se realizaron con Hipotecaria Total tuvieron como clave de pizarra FOVIHIT; hasta el momento solamente han sido dos con estas características y 10 de TFOVIS. Both issuances made by Hipotecaria Total used ticker FOVIHIT. Only two of them have had these features, and 10 TFOVIS.
5.2 FINDINGS AND CHALLENGES

- From 2003, mortgage securitization has been used as an alternative funding tool, which has allowed supporting housing market growth and complementing traditional funding mechanisms.
- By June 30, 2001, total accrued amount of issuances backed by mortgages, as originally valuated, reached around $186,855 million pesos (Chart 28 and Table 40).
- In August 2010, the Institute of Registry Function of Estado de México (Instituto de la Función Registral del Estado de México, IFREM) decided to use this alternative funding mechanism, through long-term issuance of a type of debt security called Certificados Bursátiles (CB) in an amount of $4,065 million pesos.
- Resources received by IFREM from the CB issuance will be used for funding the modernization of the RPP, as well as for financing several productive public infrastructure projects of Estado de México.
- CEDEVIS program represents an alternative financing source that allows Infonavit to meet its lending goals and, with the payment of its obligations, such as pension funds, contribute to its dual social responsibility.
- In the secondary market, there was a major operation towards the second quarter of the year due to falling rates and the issuance of a new type of products by Infonavit, which caused that some investors changed from type of issuance.
- The CEDEVIS emission target for this year is $16,000 million pesos: $10,000 under the traditional format and $6,000 for issuances backed by Infonavit Total loan product, including HiTotal, and the CEDEVIS Total product.
- During 2010, FOVISSSTE issued more than $17,000 million pesos on its TFOVIS instrument, added to other FOVIHITS instrument, reached $21,000 million pesos.
In a reflection of our current situation in the end of governorship and in order to know the key challenges and findings of the sector, a group of experts was invited for an opinion on what to do in the eighth edition of this document, so that it could establish clear guidelines for the next governorship. Derived from this, during one of the first meetings for making the Current Housing Situation 2011 study, PhD. Ángel Mercado Moraga was invited, who, after an analysis of the key challenges and findings of the seven former studies, established the possibility of including Delphi Method in the challenges section. This method consists of:

...consulting experts on the future situation of one or more interrelated issues, based on the supposition that experts have experience, privileged information and more solid opinions than non-experts, [with the purpose of exploring] challenges to be faced between 2011-2012 (short term) and 2020 (medium term), taking into account the important changes in housing matters shown by the 2010 General Population and Housing Census and that the exploration of the future is a very useful tool for users, analysts and decision makers.

In order to carry out this query, a questionnaire was prepared, which included three important issues: Housing and Territorial Reservation, Housing Product and Environmental Culture; these issues were analyzed from three fields of analysis: Social, Economic / Legal and Sustainable / Territorial. The following table shows the questionnaire sent to the specialists.

The questionnaire was simultaneously sent to 64 experts of different public, private and social institutions; academicians and housing developers. The final response was 30%; a high participation if considered it is the first time that it is included in this study and that publishing deadlines forced to accelerate the time intended for the questionnaires reception.

The answers received turn out to be very representative by virtue of the number and variety of sources, which include the main institutions of

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67 Architect, Ph.D. in Social Sciences, full-time tenured professor class “C” in UAM-Xochimilco and winner of the 2007 Award of Economy Mexico City, granted by the Government of Distrito Federal.

68 Delphi Method takes its name from an old Greek city at the foot of the Parnassus, which is known for the oracles and predictions made by the god Apollo through a fortuneteller. In that city, Apollo’s temple was built. Inside it, there was the omphalos, a conic stone symbolizing the center of the world and of the universe. Apollo, known for his skill to foretell the future would express his oracles using the mouth of the fortuneteller. Delphi is considered the most known oracle of Ancient Greek. The method, as many others, started in the military strategy. In 1944, a year before the Second World War ended, American high military command asked an advice to their consultants about the possibility to foretell future technological developments, which later, in 1946, lead to the creation of the RAND (Research and Development Corporation), a sort of think tank created to detect, anticipate and solve problems and future possibilities. The first non-military Delphi study, published in the mid-70s the last century with scientific and technological predictions for year 2000, became the best seller, having a great influence on practically every means (political, intellectual, corporate, etc.). Since then, thousand Delphi studies have been developed on very varied topics ranging from technological prediction to the future of religion, going through the future of the family, the epidemiological study, the space exploration, etc. Governments, companies, institutions, and individuals throughout the world use Delphi Method regularly to guide their decision making processes. Currently, Delphi Method is deemed the qualitative technique most widely used in prospective studies. ("Propuesta de Estudio Delfos para el EAVM 2011" [Delphi Study Proposal for Current Housing Situation in Mexico 2011], written by Ph.D. Ángel Mercado Moraga for Fundación CIDOC, A. C., June 2011, p. 4)

69 "Propuesta..."(Proposal), doc. cit., p. 3
Table 43. Questionnaire Structure

<table>
<thead>
<tr>
<th>ISSUES</th>
<th>QUESTIONS</th>
<th>AREAS OF ANALYSIS</th>
<th>Social</th>
<th>Economic/Financial</th>
<th>Territorial/Sustainable</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Every question takes into account two timeframes: short term (2011-2012) and long term (this decade, 2011 - 2020).</td>
<td>(it is advisable to mark all the boxes; however you can select the ones that you are more interested on or you can include several areas in one answer).</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>According to Census 2010, about five million dwellings in the country are unoccupied, two million dwellings are for temporary use and 50% of the housing stock has a problem of obsolescence, aging or potential risk: What would you propose to reverse this phenomenon?</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>1. Housing and Territorial Reserve</td>
<td>Which new housing schemes would you propose as an answer to different housing needs resulting from demographic changes in population, the new composition of the family, the increasing participation of women in economic life, and the relative improvement in the income of the employed population who receive up to 3 minimum wages and between 3 and 5 minimum wages?</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td></td>
<td>How can the sustainable use of intra-urban land and buildings potentially available by their status of public land, underused, damaged or with incompatible use be encouraged?</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>2. Housing Products</td>
<td>What actions would you promote so as to encourage the middle-income and social housing renewal by offering innovative, high quality and affordable housing products?</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>3. Environmental Culture</td>
<td>What policies or actions would you propose in order to strengthen an environmentally sustainable culture among communities that strongly influence on the quality of housing and urban environment associated with it?</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
</tbody>
</table>


Section 6. Challenges of the Sector. Results of Delphi Study

Housing and Territorial Reserve

Promoting Programs or Instruments:

- For boosting and developing the used housing market:
  - Selling and buying.
  - Rental of housing: contributions to the housing fund that can be useful for the payment of rent. Improvement of decaying dwellings, through subsidies or credits to dwelling holders.
  - Lease-then-purchase modality.
  - Recovery of abandoned or unoccupied real estate.

- Housing maintenance, extension, remodeling, revamping, and improvement, as well as self-production and progressive housing. Individual or cooperative self-improvement. Advising and training of the occupants to carry out improvement actions on their own account. To keep the existing housing inventory in habitability conditions.

- Credit portability in conformity with home needs.

- Link between housing development and
Current Housing Situation in Mexico 2011

employment.

- **Social Housing Production (SHP):**
  - Access to credits for low-income population; preference for social housing. Assistance to the unemployed.
  - Social Assisted Housing Production (SAHP), with qualified advising of professionals, constructors, social, or private developers; with technical, financial, organizational, training, and management aspects suitable for the process and users characteristics.
  - Increasing public resources aimed at meeting SHP financial requirements.
  - Creation of housing financing that includes women as head of the family.

- **Reducing costs of transaction for the acquisition of a real state:** making procedures easier, making the costs of public deed financially accessible. Local organization and civil participation. Encouraging civic collaboration in the dwelling and housing complexes design (processes of participative design).

- **Use of underused inter-city spaces. Access to lands with suitable services. Expropriation of useless lands to offer low cost housing.**

- **Availability of suitable land for housing construction, taking into account the reuse of existing urban infrastructure and facilities, to benefit the owners with the available services and to eliminate construction costs for new infrastructure in places away from the urban spots and less populated places.**

- **Progressive taxes to owners of uninhabited real estate.**

- **Implementing the concept of selling development rights, creation of density bonuses or assignment of construction intensities.**

- **Establishing tax incentives for the developing lands with services. Development of land banks and specific financial products for marketing them.**

- **Improving the paperwork for lands and intestate real estate and establishing the option of expropriation when a certain time limit is exceeded, they continue unoccupied or they have incompatible land use.**

- **Changing land use to housing unit, where possible.**

- **Redefining the target for subsidy and its suitable implementation.**

- **Identifying zones of action as a means for carrying out expected actions, works, projects, and investments in urban development plans or programs.**

- **Developing housing projects that, in exchange of a larger population concentration, offer larger green and open areas, with full urban facilities and services, which include the use and benefit of emerging technologies.**

- **Creating a Secretariat of Housing and Urban Development that allows establishing the attributions of every level of government for both planning and urban development.**

- **Creating a consumer culture to demand better quality and differentiated products, with better areas, location and services.**

- **Strengthening the instruments in order to guide buyers in their decision making when acquiring a dwelling, and to complete this decision with customized advice to get the dwelling that better adjusts to their needs.**

- **Rescuing the housing promoting role of the Mexican state that recovers its social vocation.**

- **Developing housing projects that bear in mind cultural, population, and climatic characteristics of the different regions.**

- **Identifying the reasons for which dwellings are unoccupied, and creating the conditions to reassign families most in need, through legal mechanisms.**

- **Territorial reserves, for promoted projects, as a way self-management community.**

- **Establishing progressive and transparent subsidies from programs devoted to addressing poverty.**

### Avoiding or discouraging:

The financing or purchase of second dwellings.

- **Uncontrolled growth of urban sprawl.**
- **The tendency for smaller dwellings, farther from town centers, and without services and urban infrastructure.**
- **Maintaining unoccupied dwellings, using fiscal penalties.**

- **Subsidies and credits for the construction of...**
new housing in those entities where there are high indexes of unoccupied housing.

- Reverting the processes of constant urbanization in the city’s periphery.
- The current forms of housing production that boost an extensive use of peripheral urban land, with financial, social and environmental costs which are less and less sustainable.

### Housing Product

- Housing units that allow an efficient use of land, combining housing prototypes so that the most expensive ones finance those from a vulnerable social level.
- More inhabitable and friendly housing developments, with more facilities, sport, green and recreation areas, and better transportation services. Integrating housing developments connected to the city or to areas that solve the basic needs (transport and highways). Interconnection highway works.
- Social housing development within cities.
- Flexible housing development based on households’ constitution, family income, families’ changing conditions; occupants’ age, and existence of disabled occupants, among others.
- Regeneration of declining urban housing zones, renovating spaces and enabling infrastructure and facilities. Raising lands’ added value.
- Creating public spaces encouraging a desire for immigrating—or settling—and stay as citizens.
- Developing occupation strategies, based on intended use and territorial vision.
- Relocating dwellings in high risk areas.
- Reassessing the extent of supply and demand in housing.
- Finding new dwelling financing and production alternatives to make it more accessible to the majority of Mexicans.
- Reducing uneven distribution of resources in finished dwelling programs for a creditworthy minority, and progressive dwelling programs available to large impoverished population.

### Environmental Culture

- A compliance with sustainable criteria will be demanded before granting any credit.
- Granting credits for a sustainable improvement of housing.
- Changes to the construction guidelines, to include sustainable environmental characteristics (solar panels, rainwater use, garbage recycling, etc.). Likewise, changing operation rules in housing-related programs.
- Carrying out campaigns and workshops to raise local authorities’, financiers’ development companies’ and constructor’s awareness. Social impact on housing and urban environment. Public participation.
- Providing fiscal incentives to those who construct housing and environments that comply with sustainable standards, or to penalize those who break them.
- Creation of sustainable garbage dumps, wastewater treatment plants and absorption wells for collecting rainwater. Defining procedures and standards.
- Making subsidies to public services transparent, including electricity, water and garbage collection, and reducing them gradually.
- Providing basic education, through the Secretariat of Public Education (Secretaría de Educación Pública, SEP), contributing to care, protect and preserve the environment; at the same time to improve the quality of life and the protection of the natural resources, in order to attain an awareness from the early age and strengthened in the family, social circle.

### Urban Development

- Improving urban development planning; links to housing.
- Redensifying cities and reconstructing urban fabric continuity. Privileging a compact city.
- Incentives to optimize an efficient use available land and punishing land
speculation.

- Encouraging the use of unoccupied land.
- Progressing in the cadastre modernization and updating land use values, adjusted to commercial value.
- Setting property tax rates that encourage a more appropriate land use.
- Strengthening basic services (health, education, security, and urban infrastructure), family income and the social and cultural environment so that people have a sense of belonging to their communities.
- Encouraging the sense of belonging and identity of the people to their communities.
- Rearranging occupied territories.
- Updating the municipal development plans aligned with the development plans set by the Federal Government.

While knowing the existence of consensus on the challenges faced by the sector is rewarding, we consider important to include some of the specific proposals of the experts consulted.

Habitat International Coalition (HIC-AL) and a member of the academy\(^70\) agree on the need for adjustments in housing policy:

...in business practice, according to the criteria for funding, and the need for a land policy based on principles of equity, social redistribution of land rent and protection of common goods and both environmental and built heritage. This requires political will and it calls for a need to open spaces for social participation at the highest level for determining policies and instruments, for monitoring and controlling its application and the actual execution of programs and projects.\(^71\)

Another proposal from the academy is to conduct interdisciplinary studies "to build appropriate proposals than can be owned by the different players who may involve in the solutions [...] And to provide funds from the National Council of Science and Technology (Consejo Nacional de Ciencia y Tecnología, CONACYT), CONAVI Infonavit, FOVISSSTE, OREVIS, and large real estate companies so as to carry out the studies."\(^72\)

In the same of recover previous studies, but specifically regarding how can sustainable use of potentially available intraurban land and buildings be encouraged, SEDESOL states that:

...in the short term, it is necessary to discourage the authorization of large housing projects in zones far away from the urban areas [and] encourage the use of intraurban areas [...] They already have the necessary infrastructure for their development [...] It should be noted that in recent years the creation of a progressive tax on unoccupied real state has been proposed, which, in a period of time yet to be determined, has not been developed. Nevertheless, the resistance to such measures by the owners has resulted in legal disputes. Therefore, it is necessary to reform the regulatory framework in which the right to build is above the right of ownership, thus giving rise to an acknowledgment of the social and ecological function of the property. There are several previous studies than can be updated in order to determine the feasibility of the proposal.\(^73\)

Moreover, the National Federation of Municipalities of Mexico (Federación Nacional de Municipios, FNMM) proposes, as to the different housing needs, the creation of "a seed program for developing savings", so the youngsters can have incentives to start saving throughout their studies and, as a result, acquire a home during their early working years.\(^74\) Likewise, FOVISSSTE points to the need "to promote mortgages for young people (between 22 and 25 years).\(^75\)

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\(^70\) Ph.D. Rene Coulomb Bosc, research professor at the UAM Azcapotzalco, provided us with an unpublished text (to be published by the UNAM, as part of a book) which answers some of the topics in the questionnaire.

\(^71\) Questionnaire answered by Architect. Enrique Ortiz, member of the 'HIC Wisdom Keepers' (http://www.hic-net.org/hic-faces.php).

\(^72\) Questionnaire answered by Architect. Gustavo Romero, UNAM.

\(^73\) Questionnaire answered by Architect José Luis Llovera, General Director of Urban Development and Land, at the Sub-secretariat of Urban Development and Territorial Planning, SEDESOL.

\(^74\) Questionnaire answered by the President of the FNMM, Architect Angélica Araujo.

\(^75\) Questionnaire answered by the Head of Housing Offer Analysis Department of FOVISSSTE, Rosa María Escobar Briones.
The National Fund for Popular Homes (FONHAPO) in relation to population densities, said: "In urban and semi-urban areas, compact cities must be favored. Vertical housing must be encouraged and a program of information and awareness for the population on the need to compact cities and learn to live in vertical housing should be implemented, which could be supported by spreading the Condominium Act for a healthy living." 76

The National Population Council (Conapo) believes that, regarding the high level of temporary use and unoccupied housing, the issue focuses on the separation between housing and employment. Therefore, the option would be to offer affordable housing in areas of highest metropolitan employment incidence so as to decrease the likelihood of people to acquire housing in places far away from their current work and place of residence. 77

Another proposed solution to the same problem is the one offered by the Federal Mortgage Society (SHF), which states: "It is necessary to have a better understanding of the reasons why dwellings are not occupied and if there is a natural unoccupied dwellings ratio, i.e. a percentage of households that remain unoccupied due to inventory turnover. It also highlights its complexity by stating that "a study of this nature is extremely difficult to carry out because the empty/unoccupied dwellings have owners, who are very difficult to locate". 78

On the other hand, and regarding the actions taken to encourage the possibility to renew middle income housing and social housing by offering innovative, high quality and affordable housing products, the National Housing Commission (CONAVI) proposes:

...boosting the production of differentiated products, fostering a larger variety in housing types, which is difficult if the same "funding boxes" (regarding social housing) are still maintained. It is essential to teach consumers to demand products of better quality, differentiated, with better spaces, better locations, better services, with an incentive that will attract the buyer, and reversing the trends that dwellings are becoming smaller, further away from the town centers of the cities, without urban services and infrastructure. 79

The National Chamber of Industry and Promotion of Housing Development (Cámara Nacional de la Industria de Desarrollo y Promoción de Vivienda, CANADEVI) proposes as a solution to the different housing needs "to find mechanisms to make a quality selection of people seeking access to financing. The development of the rental market can be a good option. The schemes must address the needs of all stakeholders (builder, funder, and acquirer) to be successful and achieve a volume movement." 80 In this matter, BBVA-Bancomer states that:

The transaction costs for the acquisition of a real state or the replacement of a mortgage must be reduced, as in more developed markets. This requires making the process easier and having financially accessible title deed costs, not only regarding taxes but especially notary fees, which should be regulated better and should be a fixed amount and not a percentage of the value of the operation. With lower costs and expedite procedures the secondary housing market would be boosted and would allow the people to have adequate housing according to their needs as their income level or family cycle changes. 81

Within this private sector, it is important to note the proposal of a specialist regarding a fourth issue not included in the questionnaire: "The Urban Development Plan Administrative Institution", in this section sets the following: "The Executive requires a proper Administrative Structure, a Secretariat of State enforcing the legal institutional framework to attain Urban Order. This urban order is the one that generates less expenses"

76 Questionnaire answered by the General Director of FONHAPO, Mr. Salvador López Orduña.
77 Questionnaire answered by the General Secretary of Conapo, Mr. Félix Vélez Fernández Varela.
78 Questionnaire answered by Ms. Paloma Silva de Anzorena, Deputy General Director of Housing Market Promotion and Development of the Federal Mortgage Society.
79 Questionnaire answered by Assistant Director of Housing Policies at the CONAVI, Mr. Víctor Santillán Meneses.
80 Questionnaire answered by the National President of CANADEVI, Mr. Flavio Torres Ramírez.
81 Questionnaire answered by the Senior Economist of BBVA Bancomer-BBVA Research, Mr. Eduardo Torres Villanueva.
and greater recovery of the economy, which are key issues for the harmonious development of the Country”.\textsuperscript{82}

Moreover, and regarding the general issues of the questionnaire, the expert concludes: “Mexican housing is not a Promoters’ Business, whether industrialists, funders, planners, architects, engineers, producers of materials, etc., but the commitment of the Federal Government’s commitment, in the first place, and the State and Municipal Governments commitment’s, to create a City, which is inhabited by all of us, so as to fulfill the Aristotle’s Happiness ideal”.\textsuperscript{83}

Finally, the participation of housing sector experts in this first study was both an enthusiastic and a valuable one; hence, from this initial list of proposals, the CIDOC will hold regular meetings during the following months in order to deepen on the scope and set the basis for calling to a second Delphi activity in 2012.

\textsuperscript{82} Questionnaire answered by Architect Enrique Ávila Riquelme.Freelance.

\textsuperscript{83} Ibid.
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Table 43. Questionnaire Structure
# Acronyms and Abbreviations

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<thead>
<tr>
<th>A</th>
<th>CJEF</th>
<th>Legal Counsel of the Federal Executive (Consejería Jurídica del Ejecutivo Federal)</th>
</tr>
</thead>
<tbody>
<tr>
<td>ADIF</td>
<td>Railway Infrastructure Manager (Administrador de Infraestructuras Ferroviarias)</td>
<td></td>
</tr>
<tr>
<td>AEAEE</td>
<td>Association of Companies for Energy Efficiency in Buildings (Asociación de Empresas para el Ahorro de Energía en la Edificación)</td>
<td></td>
</tr>
<tr>
<td>AGB</td>
<td>Basic Geostatistical Areas</td>
<td></td>
</tr>
<tr>
<td>AHM</td>
<td>Mexican Mortgage Association (Asociación Hipotecaria Mexicana)</td>
<td></td>
</tr>
<tr>
<td>ANNM</td>
<td>National Association of Mexican Notaries (Asociación Nacional del Notariado Mexicano)</td>
<td></td>
</tr>
<tr>
<td>B</td>
<td>Banobras</td>
<td>National Bank of Public Works and Services (Banco Nacional de Obras y Servicios Públicos, S.N.C.)</td>
</tr>
<tr>
<td>BMU</td>
<td>German Federal Ministry of Environment (Bundesministerium für Umwelt, Naturschutz und Reaktorsicherheit)</td>
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<tr>
<td>BMV</td>
<td>Mexican Stock Exchange (Bolsa Mexicana de Valores)</td>
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<tr>
<td>BORHIs</td>
<td>Mortgage-backed bond (Bonos Respaldados por Hipotecas)</td>
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<tr>
<td>BRT</td>
<td>Bus Rapid Transit</td>
<td></td>
</tr>
<tr>
<td>C</td>
<td>CAF</td>
<td>Latin American development bank (Corporación Andina de Fomento)</td>
</tr>
<tr>
<td>CANADEVI</td>
<td>National Chamber of Industry and Promotion of Housing Development (Cámara Nacional de la Industria de Desarrollo y Promoción de Vivienda)</td>
<td></td>
</tr>
<tr>
<td>CAT</td>
<td>Total Annual Costo (Costo Anual Total)</td>
<td></td>
</tr>
<tr>
<td>CB</td>
<td>Certificados Bursátiles (a Mexican type of debt security)</td>
<td></td>
</tr>
<tr>
<td>CEDEVIS</td>
<td>Housing certificates</td>
<td></td>
</tr>
<tr>
<td>CGPV</td>
<td>General Population and Housing Census (Censo General de Población y Vivienda)</td>
<td></td>
</tr>
<tr>
<td>CIDOC</td>
<td>Center of Housing Research and Documentation (Centro de Investigación y Documentación de la Casa, A.C.)</td>
<td></td>
</tr>
<tr>
<td>DOF</td>
<td>Official Gazette of the Federation (Diario Oficial de la Federación)</td>
<td></td>
</tr>
<tr>
<td>DSV</td>
<td>Social Housing Developer (Desarrollador Social de Vivienda)</td>
<td></td>
</tr>
<tr>
<td>DUIS</td>
<td>Sustainable Integrated Urban Development (Desarrollo Urbano Integral Sustentable)</td>
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<td>Qualitative Evaluation of Housing and its Environment (Evaluación Cualitativa de la Vivienda y su Entorno)</td>
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<td>Acronimo</td>
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<td>National Survey of Household Incomes and Expenses (Encuesta Nacional de Ingresos y Gastos de los Hogares)</td>
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<td>Residential Satisfaction Survey (Encuesta de Satisfacción Residencial)</td>
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<td>Spain Narrow-Gauge Railways (Ferrocarriles Españoles de Vía Estrecha)</td>
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<td>GDP</td>
<td>Gross Domestic Product</td>
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<td>HiTo</td>
<td>Hipotecaria Total (lit. Total Mortgage)</td>
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<td>Quality of Life Index Linked to Housing (Índice de Calidad de Vida vinculado a la Vivienda)</td>
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<td>Inter-American Development Bank</td>
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<td>Global Indicator of Economic Activity (Indicador Global de Actividad Económica)</td>
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<td>Mexican Social Security Institute (Instituto Mexicano del Seguro Social)</td>
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<td>Index of Municipal Competitiveness in Matter of Housing (Índice de competitividad Municipal en Materia de Vivienda)</td>
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<td>INDETEC</td>
<td>Institute for Technical Development of Municipal Farms (Instituto para el Desarrollo Técnico de las Haciendas Municipales)</td>
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<td>National Consumer Price Index for Mexico (Índice Nacional de Precios al Consumidor)</td>
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<td>ISOCARP</td>
<td>International Society of City and Regional Planners</td>
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<td>LA</td>
<td>Affordability Limit</td>
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<td>General Act on Human Settlements (Ley General de Asentamientos Humanos)</td>
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<td>LTV</td>
<td>Loan to Value</td>
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<td>Millennium Development Goals</td>
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<td>NOM</td>
<td>Official Mexican Standard (Norma Oficial Mexicana)</td>
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OECD Organisation for Economic Co-operation and Development
ONAVIS National Housing Agencies (Organismos Nacionales de Vivienda)
OPIC Overseas Private Investment Corporation
OREVIS State Housing Agencies (Organismos Nacionales de Vivienda)

PCMV Program of Municipal Competitiveness in Matter of Housing (Programa de Competitividad Municipal en Materia de Vivienda)
PEDHSCC Specific Sustainable Housing Development Program in View of Climate Change (Programa Específico de Desarrollo Habitacional Sustentable ante el Cambio Climático)
PECC Special Program on Climate Change (Programa Especial de Cambio Climático)
PEMEX Petróleos Mexicanos (“Mexican Petroleums”) company
PNDU Urban National Development Plan (Programa Nacional de Desarrollo Urbano)
PNV National Housing Program (Programa Nacional de Vivienda)
PP Percentage Points
PR Property Rights
PRAH Human Settlements Risk Prevention Program (Programa de Prevención de Riesgos en los Asentamientos Humanos)
PSV Social Production of Housing (Producción Social de Vivienda)
PSVA Assisted Social Production of Housing (Producción Social de Vivienda Asistida)

RAN National Agrarian Registry (Registro Agrario Nacional)
REDD+ Program for Emissions Reduction due to Deforestation and Forest Degradation (Programa para Reducción de Emisiones por Deforestación y Degradación Forestal)
RH Housing backwardness
RHA Amplified Housing Backwardness
ROA Return On Assets
ROE Return On Equity
RPP Public Registry of Property (Registro Público de la Propiedad)
RUV Sole Housing Registry (Registro Único de Vivienda)
SAR Retirement Saving System (Sistema de Ahorro para el Retiro)

SE Secretariat of Economy (Secretaría de Economía)
SEDESOL Secretariat of Social Development (Secretaría de Desarrollo Social)
SEMARNAT Secretariat of Environment and Natural Resources (Secretaría del Medio Ambiente y Recursos Naturales)
SENER Secretariat of Energy (Secretaría de Energía)
SEPES Public Business Organization for Land (by its Basque acronym)
SHCP Secretariat of Finance and Credit Public (Secretaría de Hacienda y Crédito Público)
SHF Federal Mortgage Society (Sociedad Hipotecaria Federal, S. N. C.)
SINTRA National System of Housing Procedures (Sistema Nacional de Trámites para Vivienda)
SM Minimum wages (Salarios Mínimos)
SMGM Monthly General Minimum Wages (Salarios Mínimos Generales Mensuales)
SMGV Current General Minimum Wages (Salarios Mínimos Generales Vigentes)
SMMDF Monthly Minimum Wage of Distrito Federal (Salario Mínimo Mensual del Distrito Federal)
SNV National Housing System (Sistema Nacional de Vivienda)
SOFOLs Limited Object Financial Societies (Sociedades Financieras de Objeto Limitado)
SOFOMs Multiple Object Financial Societies (Sociedades Financieras de Objeto Múltiple)
STPS Secretariat of Labor and Social Welfare (Secretaría del Trabajo y Previsión Social)
SUN National Urban System (Sistema Urbano Nacional)

TFOVIS Mortgage-backed Certificados Bursátiles (debt securities) issued by FOVISSSTE
UAFIDA Utilidad Antes de ingresos netos financieros, impuestos, depreciación y amortización (Earnings before Interest Taxes, Depreciation and Amortization)
UAM Autonomous Metropolitan University (Universidad Autónoma Metropolitana)
UDIS Units of Investment (Unidades De Inversión)
UN United Nations
UNAM National Autonomous University of Mexico (Universidad Nacional Autónoma de México)
USA United States of America

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