



International
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DECENT WORK AND ADEQUATE HOUSING FOR HOUSEHOLDS AT THE BASE OF THE PYRAMID (BOP)

CAN MARKET
OPPORTUNITIES ADDRESS
THE HOUSING DEFICIT?



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Executive summary

This study is the result of a collaboration between Habitat for Humanity's (HFH) Terwilliger Center for Innovation in Shelter and the International Labor Organization's (ILO) Lab Project. Its main objective is to better understand the factors that limit access to decent work in the BoP housing construction services sector and understand the relationship between decent work and housing quality. The specific objectives are: a) to identify the key players in the BoP housing construction services sector; b) to identify the salary conditions of workers¹ who provide housing construction services; c) to identify their level of legal security and job stability; d) to identify health and safety conditions at work; and e) to propose intervention opportunities to improve decent work for construction workers and housing quality for their clients.

The study first identified a set of stakeholders in the housing construction services value chain, categorized into two modalities. The first, understood as “self-build” or “owner-driven” construction refers to the housing construction processes that occur in stages without the assistance or supervision of an engineer or architect, but with the support of a master builder. This modality is financed entirely by the household (Bráñez, García Calderón, Miyashiro, Riofrío, & Tokeshi, 2007, p. 364). The second modality, commonly known as the “formal” process, involves professional technical assistance. Currently, this modality is largely reserved for households participating in the Peruvian government's *Techo Propio* program. As seen in previous HFH studies, this is mainly because the cost of skilled labor and professional technical assistance exceeds the investment that households are willing to make for these services. Consequently, the BoP population continues to favor the self-build modality.

In addition, the study identified 957,000 workers in the construction sector, representing 5.8% of the employed population nationwide (INEI, 2018). In 2016, there were 55,087 businesses registered in Peru, primarily independent companies and micro-enterprises (these representing 85% of all companies). It should be noted that 79% of these businesses represent self-employed individuals—illustrating the sector's level of self-employment (INEI, 2017). This correlates with the fact that 79.1% of employment in the construction sector is considered informal. Regarding salaries, formal construction workers earn more than employees in other economic sectors. However, this is not the case for roughly 60% of informal workers, who earn less than the minimum wage. Moreover, 44% of workers earn between PEN 1,510 and 2,516 (Peruvian soles), indicating that the number of workers earning below minimum wage could be even higher (Hábitat para la Humanidad, 2018).

A total of 72.5% of salaried construction workers do not have a contract, so are at risk of not being paid for their labor (INEI, 2017). Likewise, in the segment of the housing construction services that serves the BoP, the contract can be a direct verbal negotiation with the master builder (around 50% of the cases) who calls his team of collaborating masons to work on the project. Construction workers are typically employed about seven months of the year (CTGP, 2018). Regarding health and safety conditions, more than half of the workers (57%) report having suffered or known someone who suffered an injury or accident at work. In 23% of these cases, the accident disabled the worker, either due to a serious injury or a fatal accident.

1 Regarding types of construction workers, their responsibilities and jobs, these include: workers (masons, carpenters, landscape graders, painters, electricians, plumbers, and workers with specialized skills); officers (assistant operators) and laborers (unskilled workers who perform various tasks).

Regarding supporting functions and regulations that facilitate access to adequate housing and qualified technical assistance, the study found that formal programs providing access to subsidies and loans for adequate housing serve only a small fraction of the eligible population. Most people resolve housing issues through alternative channels and self-build processes, and just 28.3% of new urban housing (2007-2017) has been built with some kind of technical assistance. Furthermore, training for construction workers is extremely limited, which in turn affects housing quality. This is partly because much of the training provided is for workers in the formal private sector.

This study identified the existence of productive units composed of master builders and masons who function as businesses. These productive units, although informal, utilize labor contracts and provide workers with health insurance and savings funds. The study revealed a significant gap in the provision of business training in the housing construction sector. This suggests an opportunity for two improvements: to advance self-employed worker co-operatives, and to promote entrepreneurial skills through training. In addition, health insurance schemes are not easily accessible to BoP workers. The affiliation to the Social Health Insurance, or the SCTR, is still low, since workers consider it an additional expense. The few workers who were affiliated with Social Health Insurance expressed that they do not use the insurance due to their distance from participating medical centers.

Based on these findings, this study proposes to intervene in the market system in three areas: a) education, training, and certification of construction workers; b) workers' networks and associations; and c) access to information, training, and awareness for BoP households. This includes the following actions:

- Provide business development and management training.
- Develop a feedback tool for the private sector and training institutes to continually identify needed skills in the sector.
- Create self-employed worker cooperatives.
- Design an accessible health insurance scheme as an incentive to formalize informal work.
- Facilitate access to services and social security schemes as an incentive for registration in the National Registry of Construction Workers (RETCC).
- Promote the involvement of college and graduate level students in financial and technical assistance for BoP households.

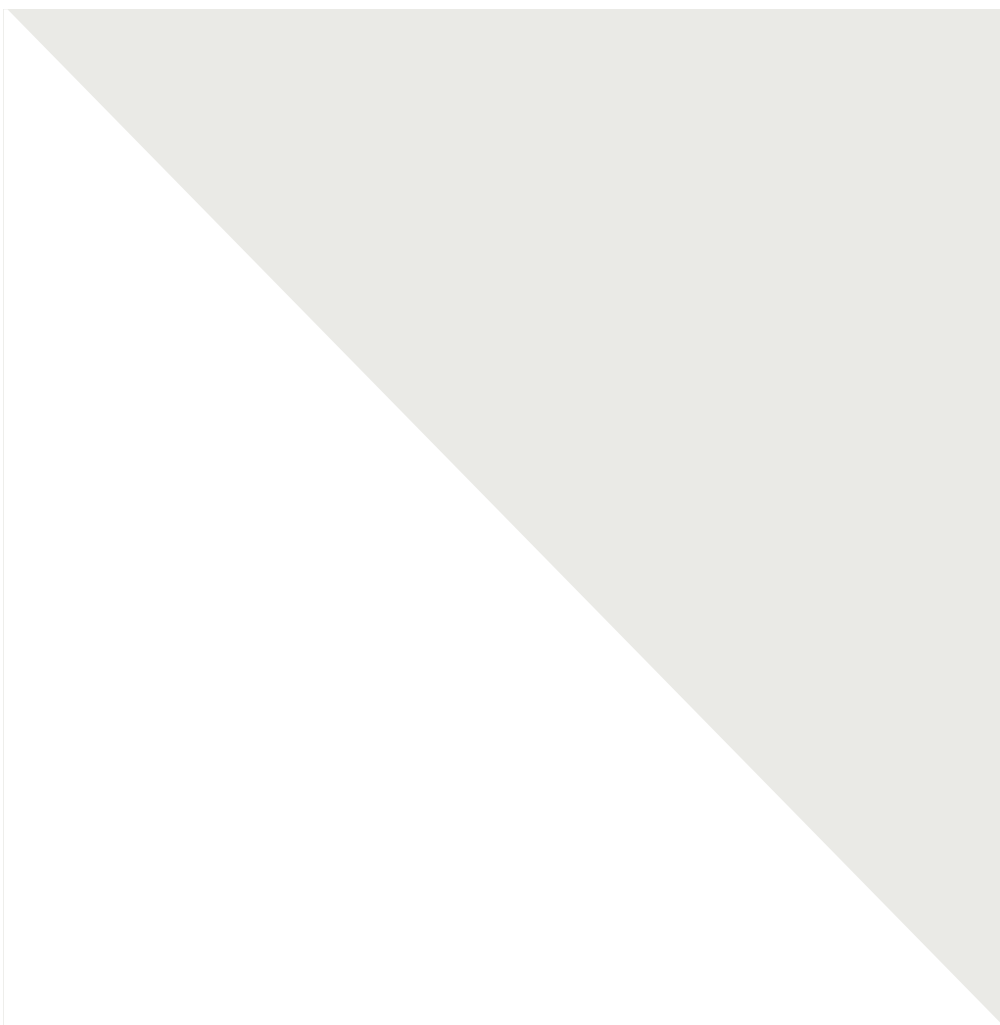
1

Introduction

HFH's Terwilliger Center for Innovation in Shelter aims to significantly reduce the overall housing deficit and, thus, help improve quality of life for households at the Base of the Pyramid (BoP). The Terwilliger Center's intervention approach is based on promoting competitive, inclusive and resilient housing market systems (Terwilliger Center for Innovation in Shelter, 2018). The purpose of the International Labour Organization (ILO) is to promote decent work. Like HFH, ILO believes that properly designed and implemented interventions in market systems can achieve greater impact in terms of scale and sustainability (International Labour Organization, 2016). The two organizations joined efforts to better understand the relationship between working conditions in the construction sector and housing quality for households of the BoP, while also exploring opportunities for interventions that might positively impact Peru's labor conditions and the housing deficit. To this end, Daniela Martinez (ILO Technical Officer in Value Chains and Market Systems) and Guido Borasino (HFH Consultant) authored the present study.

The objective of the study is to better understand the factors that limit access to decent work in the BoP housing construction services sector and understand the relationship between the decent work deficit and housing quality. The importance of studying decent work in the BoP construction sector lies in its significance to the economy, the generation of employment, and the provision of housing for a large part of the population. Current statistics illustrate the magnitude of the problem. The construction sector has a share of 5.79% of Peru's Gross Domestic Product (Banco Central de Reserva, 2018) and the average annual growth rate of the sector between 2007 and 2017 was 4.1% (Instituto Nacional de Estadística e Informática, 2018, pág. 50). Likewise, by 2017, a total of 957,000 workers were registered in the construction sector, representing 5.8% of the employed population nationwide (Ibid.). A whopping 79.1% of employment generated by the construction sector, however, is informal, making it second only to the agriculture, fishing and mining sectors (Instituto Nacional de Estadística e Informática, 2018, pág. 122).

Much of the building activity is to meet the housing needs of the BoP population. Estimates from the Ministry of Housing, Construction and Sanitation (MVCS) indicate that roughly 70% of housing construction in Peru is done informally (Ministerio de Vivienda, Construcción y Saneamiento, 2016, p. 37). Likewise, other sources based on limited data regarding the magnitude of informality in the construction sector reveal that nearly two-thirds of the cement sold annually is used for private residences built without technical assistance (Instituto Metropolitano de Planificación, 2014). Continuing this trend, this study revealed that only 28.3% of the housing units built between 2007 and 2017 used formal loan mechanisms or government support channels (*Techo Propio* and *Nuevo Crédito Mi Vivienda*). For this reason, researching the link between decent work and housing construction for the BoP in Peru could potentially generate evidence for the development of interventions to improve the access to both decent work and adequate housing.



2

Research approach

The study's objectives, scope, analytical framework and methodology are described below.

2.1 Objectives

The main objective of this study is to better understand the factors that limit the access to decent work in the BoP housing construction services sector and understand the relationship between the decent work deficit and housing quality. This includes the following specific objectives:

- to identify the key players in the BoP housing construction services sector;
- to identify the salary conditions of workers² who provide housing construction services;
- to identify their level of legal security and job stability;
- to identify health and safety conditions at work; and,
- to propose intervention opportunities to improve access to adequate housing and decent work for construction workers.

² Regarding types of construction workers, their responsibilities and jobs, these include: workers (masons, carpenters, landscape graders, painters, electricians, plumbers, and workers with specialized skills); officers (assistant operators) and laborers (unskilled workers who perform various tasks).

2.2 Scope

Due to time and resources constraints, the study restricted its analysis to a specific set of components of decent work and adequate housing. To define these components, the authors have used ILO's concept of "decent work" (2016, p. 5), understood as "productive work for women and men in conditions of freedom, equity, security and human dignity," in which the following conditions are met:

Chart 01: Conditions for decent work and research focus

Conditions for decent work	Research focus
Productive work opportunities that provide a fair wage	Yes
Stability and legal labor security	Yes
Workplace safety and health	Yes
Workplace equal treatment	Yes
Work hours	No
Ability to combine and balance work, family and personal life	No
Kinds of work that must be abolished	No
Freedom to express your thoughts by representing workers	No
Social security	No

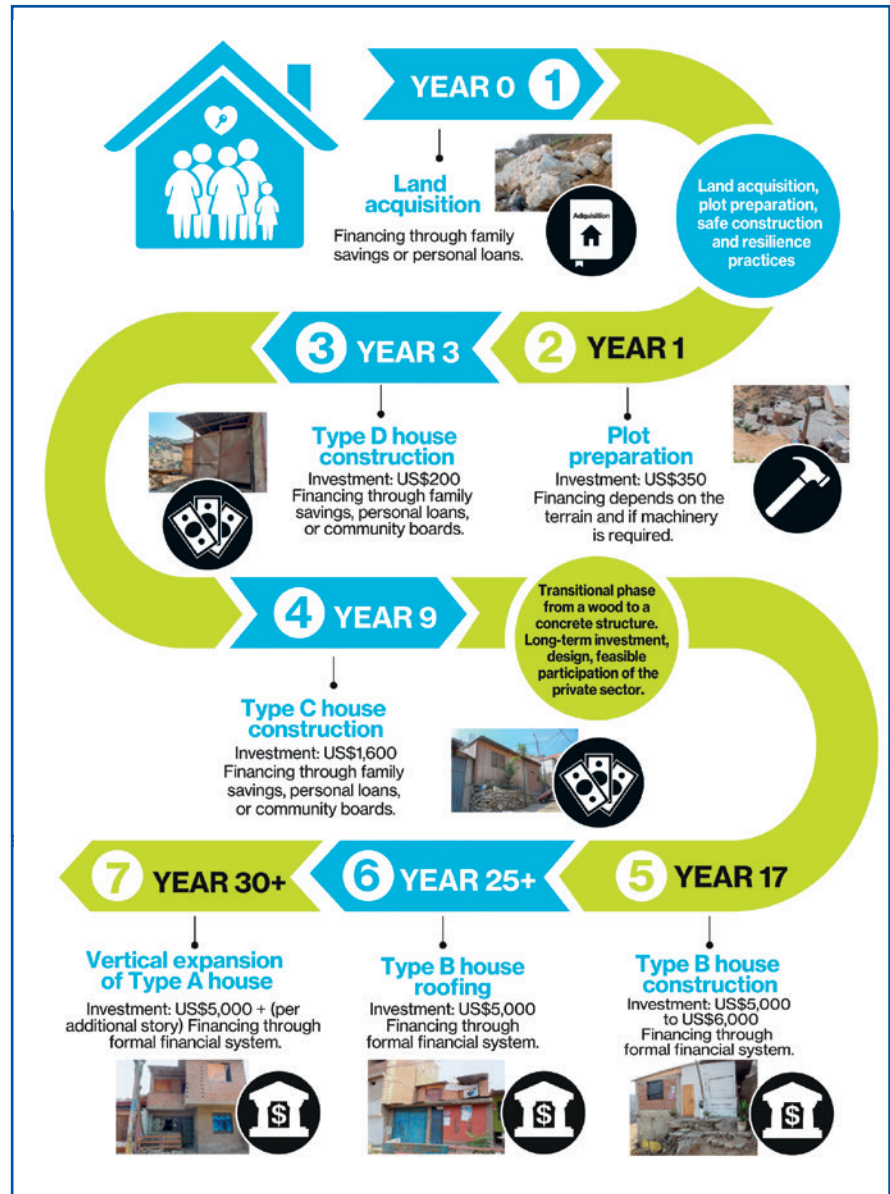
Source: Prepared by the author based on (International Labour Organization, 2016)

Regarding the analysis of housing quality, the study includes strategic components of the concept of adequate housing as defined by the United Nations (UN), which defines housing quality by the following conditions (Naciones Unidas Comité de Derechos Económicos, Sociales y Culturales CDESC, 1991):

- Legal security of tenure
- Availability of services, materials, facilities and infrastructure
- Affordability
- Habitability
- Accessibility
- Location
- Cultural adequacy

Considering this study's subject of analysis (housing construction and assistance for construction workers serving BoP households), the study includes only "materials," "affordability" and "habitability" when referring to adequate housing. The remaining components comprise factors that are not included in the construction process and are not directly linked to services provided by construction workers. Based on research previously carried out by HFH in Peru, this study focuses on the transition from Type C housing to Type B and/or A housing (Fig. 1), at which time households are transitioning from a more temporary to permanent house.

Figure 01: Incremental housing and housing life cycle for BoP households

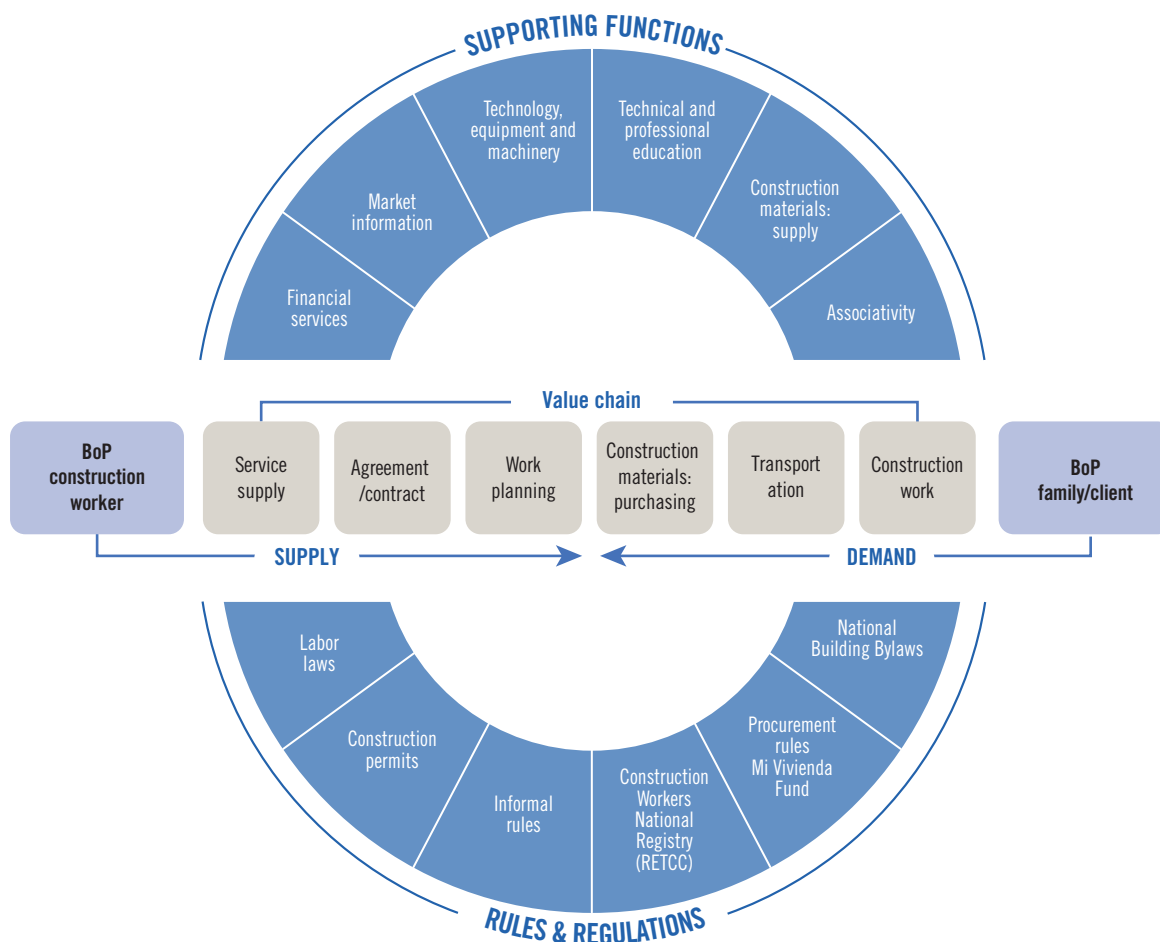


Source: *Estudio del Consumidor* (Centro Terwilliger de Innovación en Vivienda / Hábitat para la Humanidad, 2018, pág. 6)

2.3 Analytical framework

The study's analytical framework is based on a market systems approach. This approach views the market system as a "multi-function, multi-player arrangement comprising the core function of exchange by which goods and services are delivered and the supporting functions and rules which are performed and shaped by a variety of market players" (The Springfield Center, 2015, page 3). In this way, the study begins by defining the market system's main function: the housing construction services value chain for the BoP. A value chain "describes the full range of activities that are required to bring a product or service from conception, through the intermediary phases of production and delivery to final consumers, and final disposal after use" (ILO, 2016, page 3). This includes activities such as design, production, marketing, distribution and support services, through to the final consumer (Ibid.).

Figure 02: Analytical framework for the BoP construction services market system



Source: Prepared by the author based on (International Labour Organization, 2018); (The Springfield Centre, 2015); and (Terwilliger Center for Innovation in Shelter, 2018).

2.4 Methodology

The methodology for this study included interviews with construction workers, public and private sector officials, representatives of guilds and associations, hardware dealers and BoP households. However, research was primarily based on the review of secondary sources from the labor, education, production, construction and housing sectors in order to provide an overview of the situation of decent work in the BoP housing construction services sector.

3

Decent work market system in the BoP housing construction services sector

3.1 Housing construction services value chain for the BoP

The construction sector has a share of 5.79% on the Gross Domestic Product (Banco Central de Reserva, 2018). Between 2007 and 2017, the sector's average annual growth rate of was 4.1% (INEI, 2018), showing a positive trend for growth.

What is informal housing?

- Low quality, non-certified materials.
- No professional technical assistance.
- No building permits.

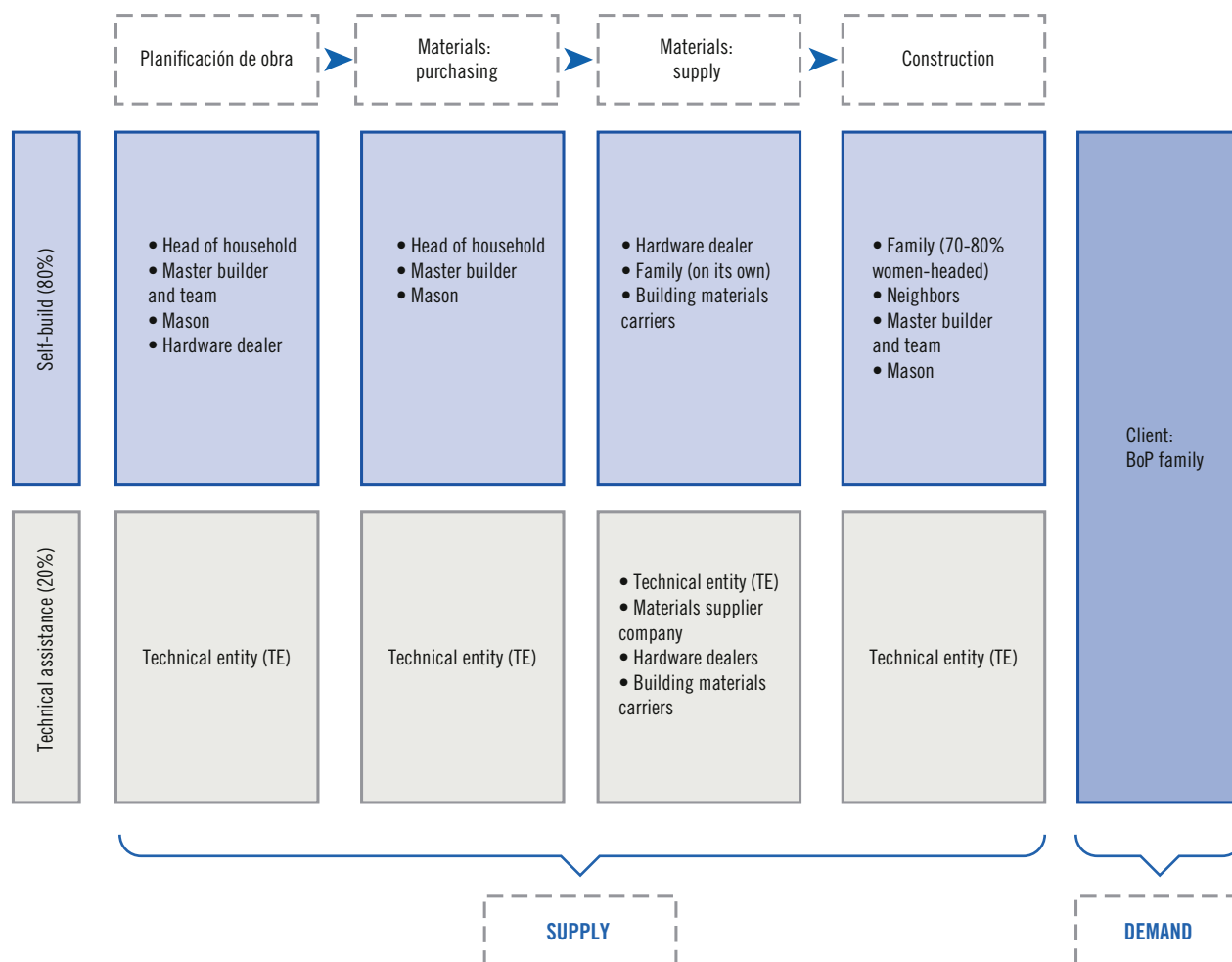
Estimates from the Ministry of Housing, Construction and Sanitation (MVCS) indicate that roughly 70% of housing construction in Peru is done informally (Ministerio de Vivienda, Construcción y Saneamiento, 2016). Between 2007 and 2014, it is estimated that 68.5% of housing units in Metropolitan Lima were built informally (CAPECO, 2018). Households built their shelters in inappropriate or unsafe locations, without building permits from the authorities, using poor-quality materials and without following the established quality standards. Due to a lack of resources and appropriate enforcement, these households resort to informal processes,

leading to the proliferation of the self-build or owner-driven construction process. Today, some 80% of housing units in Peru are self-built, without technical assistance or services provided by construction professionals. According to the Peruvian Construction Chamber (CAPECO), in the long term, the self-build modality could cost a household 40% more than a professionally constructed housing unit (El Comercio, 2018).

The following figure shows the two modalities BoP households use to build their housing units: **self-build** or **professional technical assistance**. In each scenario, households must resort to different services that assist them in the construction process, from the planning stages (blueprint design, construction timeline, materials selection, quotes, materials purchasing, transportation) to the final construction process. Private and public stakeholders are different at each stage of the value chain; therefore, there are more stakeholders

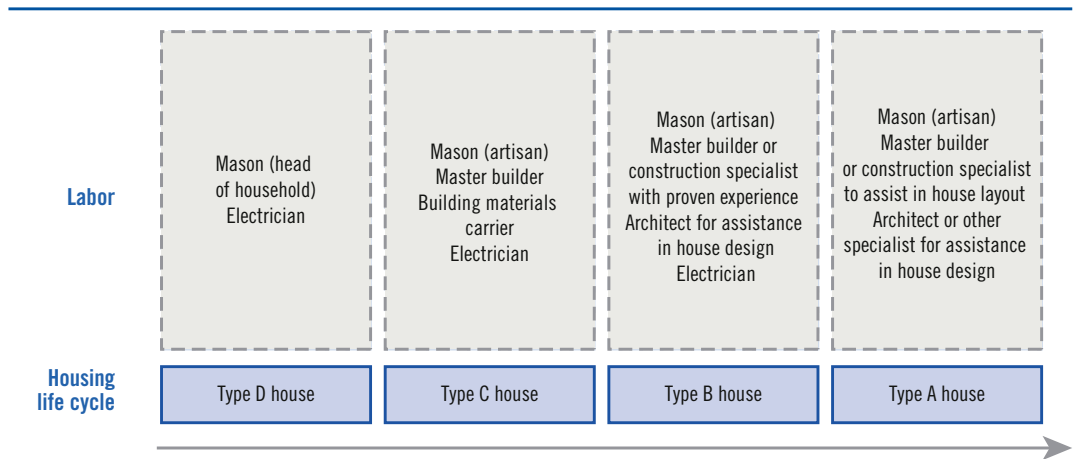
in the self-build modality than in the second modality, in which decisions and implementation depend on a single stakeholder, usually construction companies or technical entities.

Figure 03: Main BoP housing construction services value chain (processes and stakeholders)



In the self-build modality, households (the demand) either complete construction themselves or collaborate with informal suppliers (the supply). In the latter scenario, master builders and their respective labor teams play a central role. Households pay these master builders directly for their services. According to data gathered by the study, this contract may be verbal or written and negotiations take place between the head of household and the master builder who, in turn, calls upon his team of collaborating masons to complete the job.

Figure 04. Housing life cycle for BoP households and their relationship to the housing construction labor force

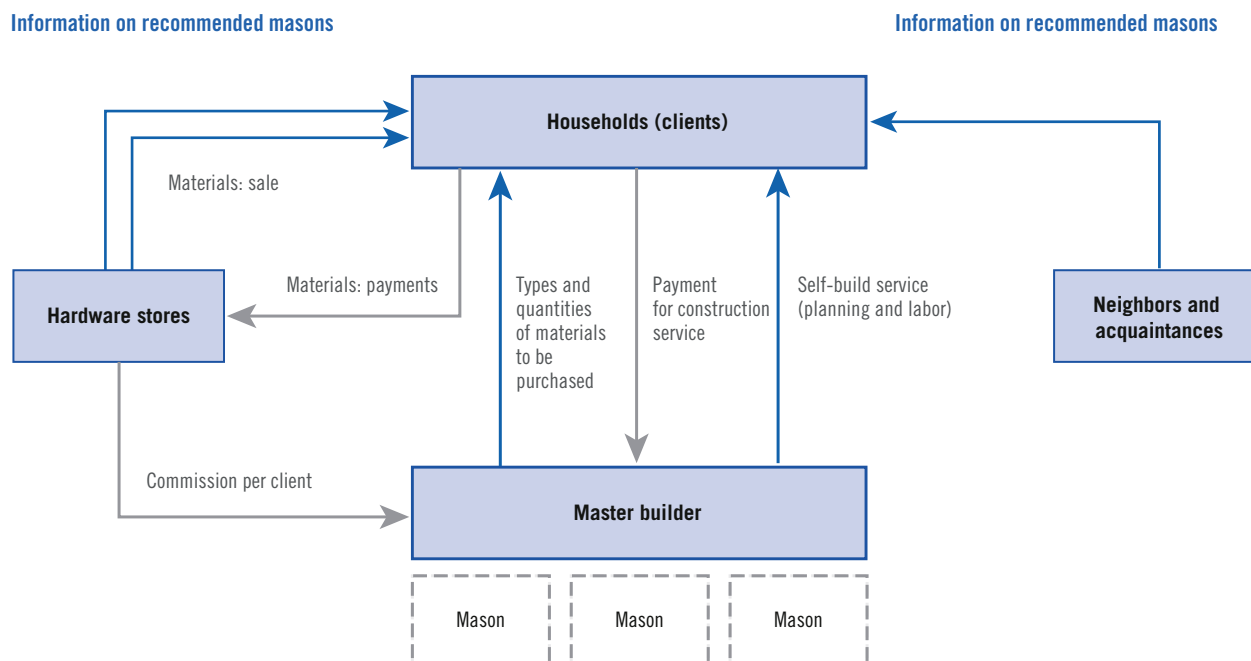


Master builders typically have a team of one to five employees, depending on the size of the project. In the context of this study, the master builder is responsible for hiring each mason and is responsible for the final quality of work and for hiring additional labor if a team member is unavailable or fails to comply with the contract. The master builder helps with the construction design and planning, although most decisions at this stage are made by the household. This is an informal work structure; it does not possess legal business status but does function similarly in the sense that the master builder coordinates various productive units (masons) towards a business purpose. This structure can take the form of a cooperative, in which masons and master builders can organize themselves as service providers.

It is worth stressing that in the context of this study the master builder position is achieved through years of experience, proven quality of work, and the ability to manage people and resources. This definition differs from that of the formal construction market (construction companies in particular), where “master builders” are masons who have completed a training program and have been certified by a technical entity such as the National Training Service for the Construction Industry (SENCICO).

Households find masons either through personal references (especially for housing units Type C through A) or hardware dealers, who often provide information on local masons. The master builder then advises the household and provides a list with the types and quantities of construction materials needed. The household then purchases these materials directly from hardware stores. The master builder typically refers the household to available hardware stores in the area, which pay builders a commission for each customer referred. Upon finishing construction, the master builder and his team are paid in cash. Heads of households play a key role in the power dynamics at the construction site, which may limit the workers’ level of adherence to good construction practices. The stakeholders interviewed for this study recognize this issue, and emphasize the need to raise households’ awareness regarding the benefits of adhering to good construction practices.

Figure 05: Mapping of demand and supply interactions in self-build services



3.1.1 BoP housing construction services supply chain

By 2017, there were 957,000 workers registered in the construction sector, representing 5.8% of the employed population nationwide (INEI, 2018). Between 2017 and 2016, the number of workers in the construction sector dropped by 4%. In terms of business activity, there were 55,087 businesses registered, mostly independent companies and micro-enterprises (85% of all companies). It should be noted that 79% of these businesses were self-employed individuals, illustrating the level of self-employment in the sector (INEI, 2017).

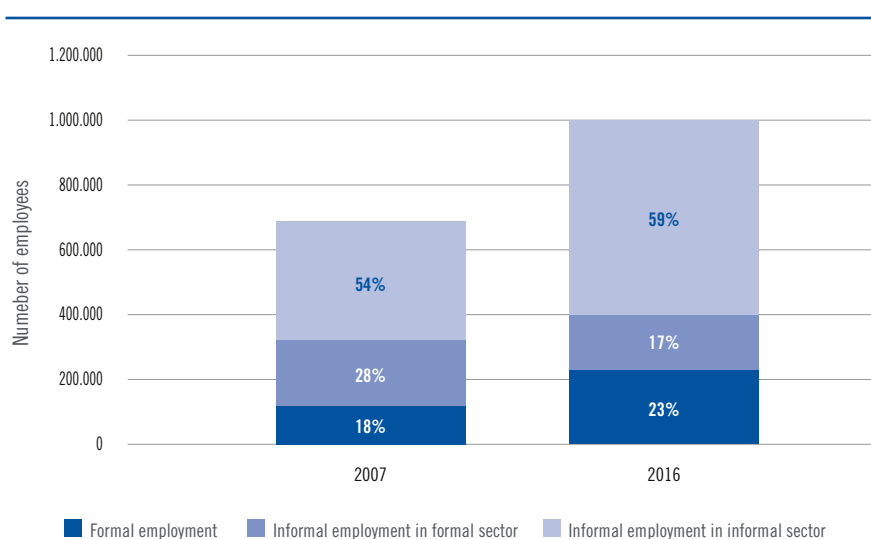
Table 01: Employed population per activity in Peru, 2008, 2016, 2017

Activity	2008	2016	2017	Average annual increase 2008- 2017 (thousands of people)	Annual average growth rate 2008-2017 (%)	Average increase 2016-2017 (thousands of people)	Percentage change 2017-2016 (%)
Total	14 459.6	16197.1	16511.0	227.9	1.5	313.9	1.9
Agriculture	3 900.6	4001.6	3974.0	8.2	0.2	-37.6	-0.9
Fishing	84.7	92.3	94.9	1.1	1.3	2.6	2.8
Mining	167.7	188.7	197.6	3.3	1.8	8.9	4.7
Manufacturing	1593.1	1541.7	1551.7	-4.6	-0.3	10.0	0.6
Construction	665.4	997.3	957.1	32.4	4.1	-40.2	-4.0
Commerce	2649.4	2965.0	3109.6	51.1	1.8	144.6	4.9
Transportation and communications	1153.9	1361.7	1413.2	28.8	2.3	51.5	3.8
Public administration, defense, social security	563.8	713.3	711.1	16.4	2.6	-2.2	-0.3
Hotels and restaurants	866.3	1105.1	1185.1	35.4	3.5	80.0	7.2
Real estate and rentals	590.3	770.8	847.3	28.6	4.1	76.5	9.9
Teaching	769.0	855.0	844.9	8.4	1.1	-10.1	-1.2
Other services	1455.4	1594.5	1624.4	18.8	1.2	29.9	1.9

Source: (INEI, 2018)

However, with 79.1% of the employment generated by the construction sector being informal, second only to the agriculture, fishing and mining sector (INEI, 2018), figures do not yet reflect the reality of employment in the construction sector.

Diagram 01: Formal and informal employment in the construction sector



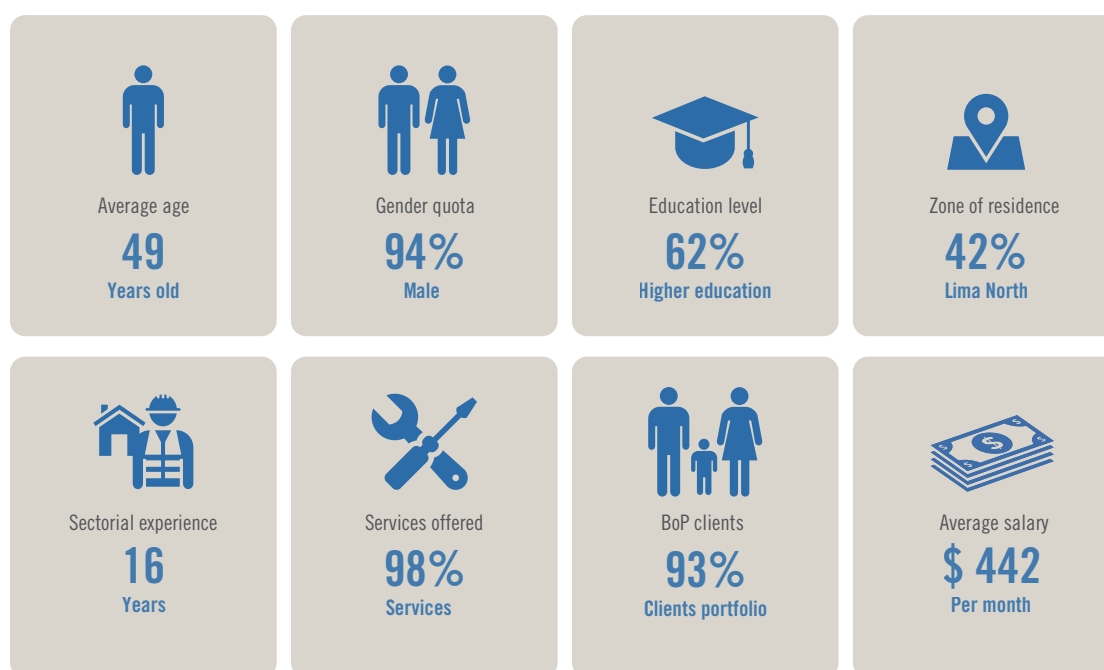
Source: (INEI, 2017)

Workers in the BoP housing construction sector vary from formally hired short-term employees to informal hires. Typically, self-build modalities represent the first step to improving access to employment.

Construction labor and technical assistance cover two market segments: self-building and the contracting of technical assistance services (the latter of which includes interactions between architects and construction professionals). In a survey conducted by HFH for the SODIMAC Fair (October 2018), it was found that a large proportion of workers who serve BoP households are men (94%), although field visits indicate that women participate in 80% to 100% of self-build activities. Since women usually remain in the house throughout the building process, these activities may include observing or “supervising” the work (Habitat para la Humanidad, 2018). However, since most women do not have the required technical training, this supervisory task is limited to guaranteeing that the housing unit meets their needs in terms of type and size of living spaces.

Thus, the HFH survey shows that the construction services market is dominated by male workers (94%)³, with a skill level of technical education or higher (62%), providing an average of 2.5 different types of services, most often including masonry services (98% of workers provide this service).

Figure 06: Workers' profiles



Source: Participants survey at SODIMAC Fair (Oct. 12, 2018)

³ In this context, it is necessary to clarify that the population present during SODIMAC fairs is composed mainly of men since they are the ones that have greater access to technical training in the area.

Mason: A person who performs various construction tasks such as building walls, applying mortar, concrete, and ceramic tiling in single-family, multifamily and commercial buildings. The mason is directly supervised by the **master builder**. Masonry work is usually carried out by the head of household. For the masons who participated in this study, all skills were acquired through hands-on experience (i.e., teacher-apprentice training). Although apprentices learn by doing—without formal technical training—a few companies do offer free trainings in this subject matter.

The masons' main task is to erect housing structures. Their main clients include BoP households. They have no real influence in the housing design or the purchasing of construction materials. Their work is limited to suggesting guidelines and preparing a list of materials according to the household's requirements. The households then typically purchase these materials themselves.

Civil engineer and architect: As evidenced by HFH's 2018 study, the main risk in housing construction is building inadequate units due to poor masonry practices and/or insufficient skills. Households know that adequate construction requires the participation of architects and engineers; however, their investment capacity is far from being able to make this a reality. One of the main barriers households face in transitioning from a Type C to a Type B house, or even carrying out home improvements, is access to a) construction assistance in the design of their future housing unit, and b) construction specialists (masons) with demonstrable experience. The main barrier faced by households transitioning from a Type B to a Type A house is access to specialized advice for the house's design, distribution and layout.

Formwork and structural specialist: A skilled operator who places reinforcements and formwork in the form of footings, columns, beams, lightweight and solid slabs,

concrete slabs, and stairs, and operates special construction systems and equipment. Based on technical criteria, these specialists select the materials, instruments, tools and equipment needed to carry out the work according to blueprints and safety and quality standards.

Electrician: A qualified operator who performs tasks such as installing electrical networks, lighting equipment and panels; wiring circuits; and connecting accessories, special systems and equipment. Based on technical criteria, electricians select the materials, tools and equipment needed to carry out the work according to electrical installation plans and safety and quality standards.

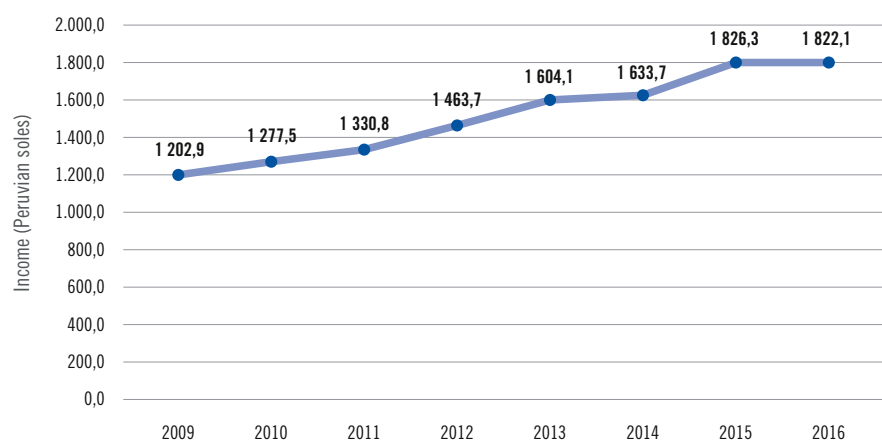
Painter and carpenter: An operational-level technician who paints concrete, wood and metal surfaces, and/or makes metal or melamine doors, finishing and other accessories.

3.1.1.1 Salaries

For fifteen years, the Peruvian Federation of Civil Construction Workers (FTCCP) and CAPECO have established salaries and other labor benefits for construction workers at the national level. Recently, a salary increase of the basic wage for operators (PEN 2.90), master builders (PEN 1.70) and masons (PEN 1.60) was approved, representing an increase from 3.2% to 4.5%, somewhat higher than the 0.93% inflation registered between 2017 and 2018 (CONAFOVICER, 2018).

To date, construction workers have increased their actual income by more than 50%, a benefit that only a small selection of labor unions in productive sectors have achieved. Among productive activities, construction work represents the second highest income, though revenue has decreased since 2015.

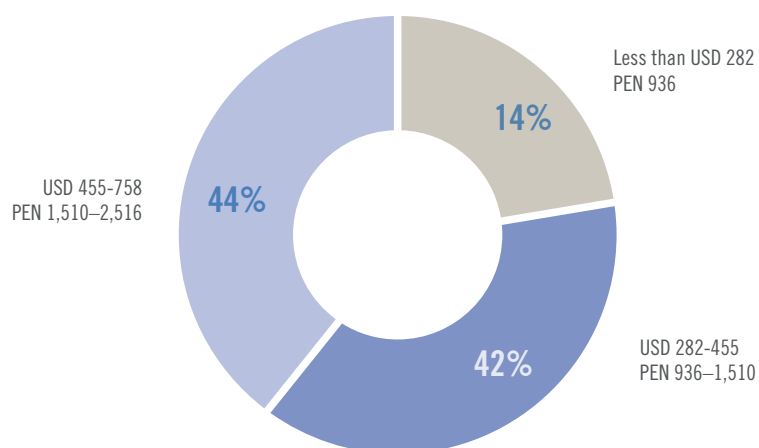
Diagram 02: Average monthly income for construction work (2009-2016)



Source: (INEI, 2018)

Despite the positive outlook, this data is only relevant for construction workers working under a formal contract, since wage increases do not apply to informal workers (who represent 80% of the sector). Roughly 60% of informal workers serving BoP households earn less than minimum wage. Moreover, 44% of workers earn between PEN 1,510 and PEN 2,516, indicating that the number of workers earning below minimum wage could be even higher (Hábitat para la Humanidad, 2018).

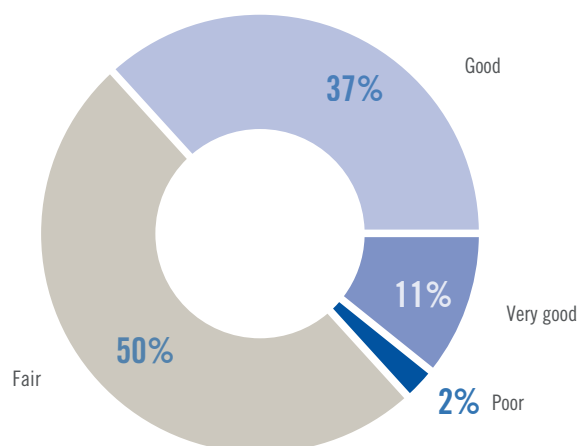
Diagram 04: Monthly salary range



Source: Participant survey at SODIMAC Fair (October 12, 2018)

Fieldwork and survey data show that roughly 50% of workers are satisfied with their income level, while only 2% reported being dissatisfied. This leads us to conclude that income, although significant, is not the main issue faced by workers.

Diagram 05: Perception of income



Source: Participant survey at SODIMAC Fair (October 12, 2018)

Households typically pay masons in cash. Participants in HFH's 2018 consumer study (Habitat para la Humanidad, 2018) expressed that setting fair rates to compensate their labor and the quality of their work is the main way to ensure they are respected by clients. Masons said that, while they remain flexible and reduce fees to serve the BoP population in Lima (as a "social rate"), fees were still perceived by many households as high (i.e., beyond their purchasing capacity). Consequently, the best masons in the region find housing construction work in other areas of Lima rather than meeting the needs of BoP households.

3.1.1.2 Employment stability

A total of 72.5% of salaried employees do not have a contract, so they are at risk of not receiving payment or other compensation for their labor.

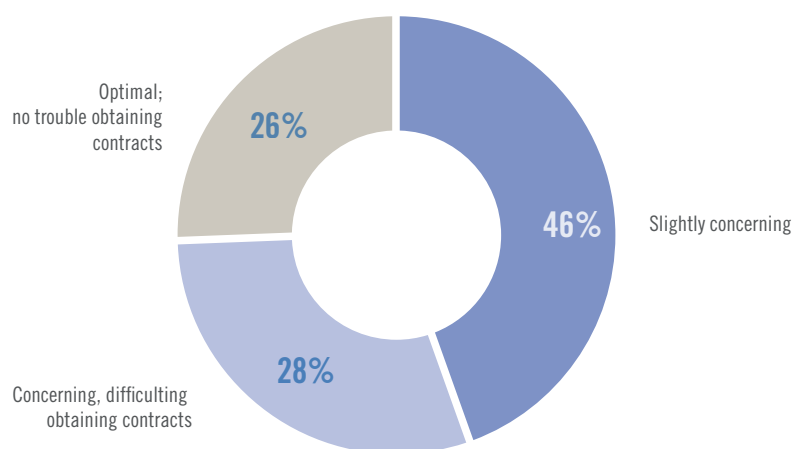
Table 02: Salaried employees with formal contracts by activity, 2017 (percentage)

Activity	Total	Contract	
		Yes	No
Agriculture, fishing and mining	100.0	26.6	73.4
Manufacturing	100.0	56.6	43.4
Construction	100.0	27.5	72.5
Commerce	100.0	47.3	52.7
Transportation and communications	100.0	24.4	75.6
Public administration, defense, social security	100.0	58.0	42.0
Hotels and restaurants	100.0	82.3	17.7
Real estate and rentals	100.0	100.0	0.0
Teaching	99.9	93.9	6.1
Other services	99.9	70.3	29.7

Source: (INEI, 2017)

For the BoP segment, 50% of participants in the study reported that contracts may be verbal. These are directly negotiated with the master builder, who calls together his team of collaborating masons for the job.

Diagram 06: Workers' perception of employment stability

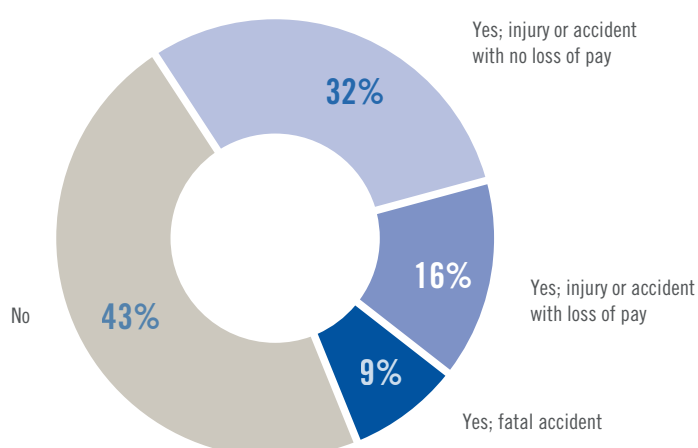


According to the GTCP, construction workers are employed an average of seven months of the year, the remaining months occupied with other activities.

3.1.1.3 Workplace safety and health

This aspect represents a significant risk for construction workers and hardware store employees. According to HFH, more than half the workers (57%) surveyed reported having suffered or known someone who suffered an injury or accident at work. In 23% of these cases the accident disabled the worker, either due to a serious injury or a fatal accident.

Diagram 07: Workers who have suffered or know someone who has suffered an injury or accident at work



3.1.2 Housing construction services demand of the BoP

3.1.2.1 Formal mechanisms for accessing BoP housing

In Peru there are various alternatives for people to meet their housing needs. Generally, Peruvians use mechanisms that combine formal and informal strategies. This section aims to identify the main mechanisms available to citizens. First, it describes social housing programs that the government manages through its agencies. Second, it presents a brief diagnosis of the current situation of BoP households regarding access to housing.

Programs that provide access to housing

Techo Propio

The Techo Propio program consists of a government subsidy called “Family Housing Bonus” (BFH), which facilitates access to housing solutions. The Ministry of Housing, Construction and Sanitation (MVCS) assigns an annual budget to the Mi Vivienda Fund, which is then used for housing subsidies. These subsidies are distributed through the following three modalities:

- *Acquisition of New Housing (AVN)*: Consists of a subsidy to purchase a new single-family house.
- *Construction on Family's Site (CSP)*: Consists of a subsidy to cover construction costs of a housing unit.
- *Home Improvement (MV)*: Consists of a subsidy to cover home improvement costs (structural reinforcement, roofing improvements, sanitary or electrical installations, flooring, beams, stairs, additions).

MVCS establishes maximum and minimum values for the house, the housing subsidy, and the minimum savings that households must have established in order to qualify for the Techo Propio program in any of its three modalities (see Chart 4). In addition, MVCS sets the requirements that households must meet to access subsidies, which are summarized in Chart 3.

Chart 03: Requirements to access a Family Housing Bonus⁴

AVN	CSP	MV
Comprise a family group		
Monthly household income of PEN 3,626 or less	Monthly household income of PEN 2,658 or less	Monthly household income of PEN 2,658 or less
Not own a house or land	Own a property or lot where the work will be executed	Own a property or lot where the work will be executed
Proof of minimum savings (see Chart 04)		
Proof of loan (if necessary)		
No previous government housing support received.		

Source: Prepared by the author based on FMV regulations.

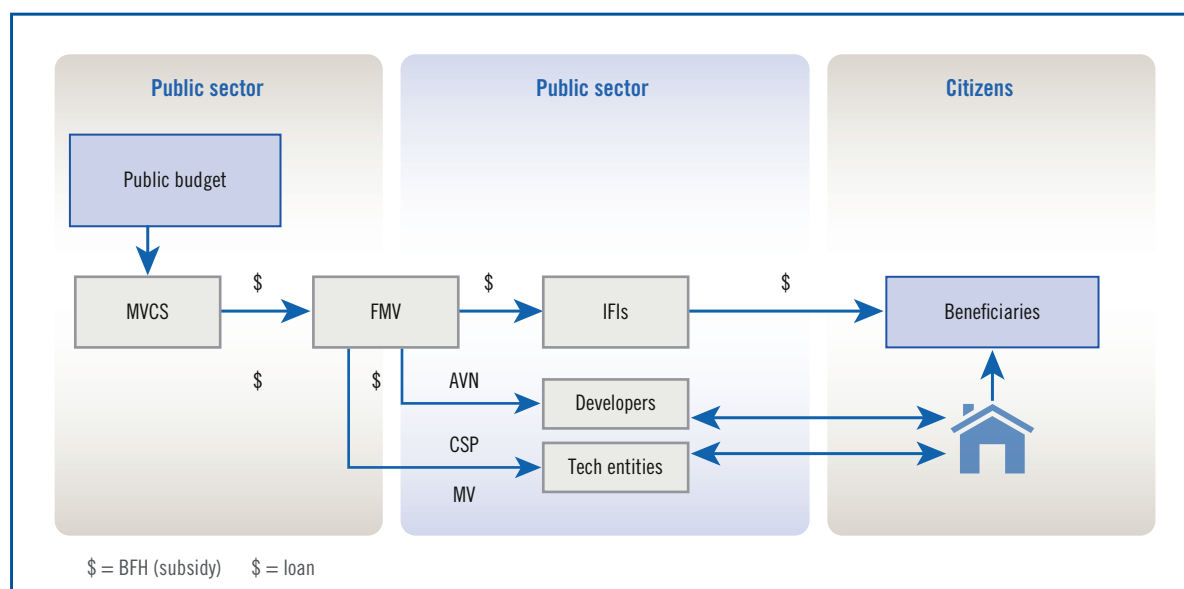
4 According to R.M. 327 – 2017; R.M. 236 – 2018; R.M. 102 -2012.

Chart 04: Techo Propio values per modality

Modality	Type	VIS value (price)				BFH value		Min. savings	
		UIT min.	UIT max.	Min. S/.	Max. S/.	In UIT	In S/.	In UIT	In S/.
AVN	Single-family	-	-	not established	S/.81,000	8	S/.33,200	-	3% of VIS value
	Multi-family	-	-	not established	S/.101,250	8	S/.33,200	-	3% of VIS value
CSP		5.9	20	S/.24,485	S/.83,000	5.45	S/.22,618	0.45	S/.1,868
MV		2.5			S/.10,375	2.3	S/.9,545	0.45	S/.1,868

Source: Prepared by the author based on FMV regulations.

Figure 07: Techo Propio operational structure



Techo Propio functioning description

- 1) MVCS defines the operating regulations of each modality and establishes the value of the subsidy, the family's required savings amount, the maximum value of the housing units to be purchased, and the maximum value for construction work and home improvements (Chart 4);
- 2) Beneficiaries (known as "family groups") apply for one Techo Propio program modality at a time. Family groups must be defined as eligible to receive the BFH.
- 3) Family Groups must choose a housing unit from one of the Developers (for the AVN modality) or hire a Technical Entity (for the CSP and MV modalities).
- 4) Developers must obtain a letter of guarantee from the financial institution that will support their operations (AVN, CSP, or MV).
- 5) Once this condition is fulfilled, the FMV grants the BFH subsidy (on behalf of the beneficiary) to the developers or technical entities, who allocate it per the operation.
- 6) Beneficiaries can supplement the difference between the cost of the housing unit and the cost of the subsidy with their own funds or through a private loan.

(Fondo Mi Vivienda, 2018, p. 1). Adapted from: Borasino, G. (2018)

Chart 05: Characteristics of the Nuevo Crédito Mi Vivienda (NCMV) program

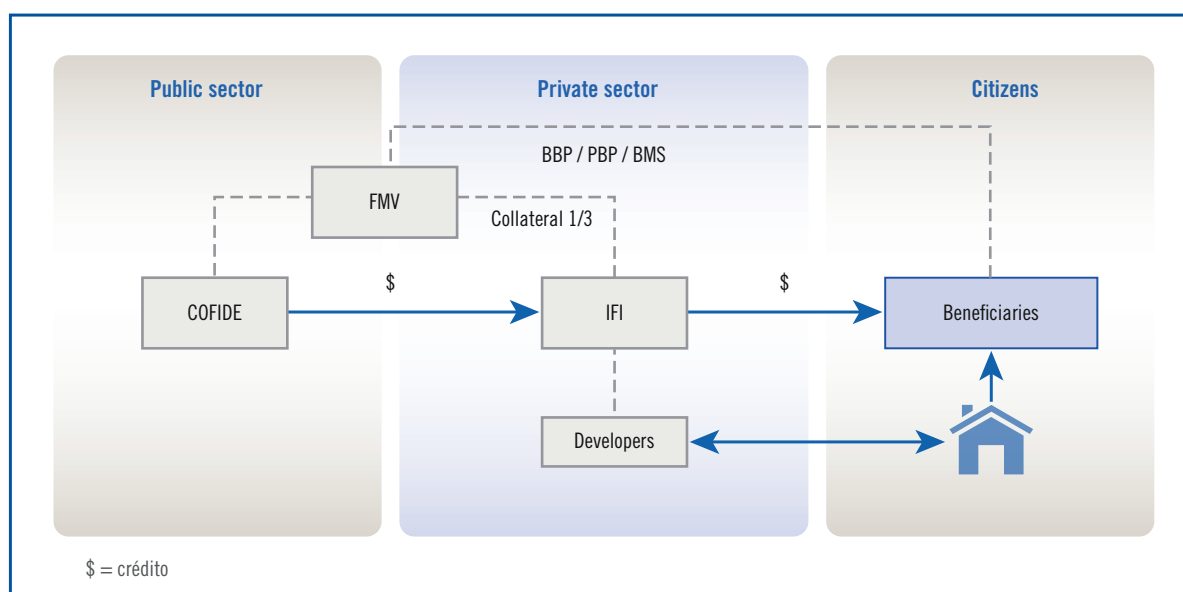
- The beneficiary must contribute between 10% and 30% of the housing unit value.
- The NCMV is granted for housing units with prices between PEN 57,500 and 410,600.
- The term of the loan can range from 5 to 20 years.
- The loan rate is fixed and granted in PEN (Peruvian soles).
- For housing costs of less than PEN 205,300, the total mortgage loan fee may not be higher than 40% of the beneficiary's income.
- For housing costs of more than PEN 205,300, the total share of the mortgage loan cannot be greater than 50%.
- Loans can be granted for the acquisition of a new or used housing unit, construction, or improvement to land owned by the beneficiary.
- The maximum financed amount may not exceed 90% of the cost of the housing unit.
- For the acquisition of future assets, there is a grace period of 6 months.
- IFIs evaluate applicants. For households applying through programmed savings (informal income and no credit history), the savings period must be at least 6 months.

Nuevo Crédito Mi Vivienda (NCMV)

The NCMV program is a “mortgage loan financed by FMV and channeled through Intermediary Financial Institutions (IFIs) to a beneficiary who complies with the requirements established by FMV” (Fondo Mi Vivienda, 2018, p. 1). To obtain the NCMV subsidy, applicants must be of legal age, have been qualified by an IFI as a credit subject, and not own or co-own a housing unit. The main characteristics of the NCMV program are listed in Chart 5. Through NCMV, FMV provides the following complementary benefits:

- **Good Payer Award (PBP):** Granted by NCMV as a complement to the initial fee for houses valued between PEN 205,300 and 304,100 (Fondo Mi Vivienda, 2018).
- **Good Payer Bonus (BBP):** Direct, non-reimbursable financial assistance that is granted through an IFI to people who have complied with the requirements and procedures for receiving a BBP, according to the FMV (Ministerio de Vivienda, Construcción y Saneamiento, 2018, p. 33).
- **Mi Vivienda Sostenible bonus (MVS):** Granted by Mi Vivienda and consists of direct, non-reimbursable financial assistance for people accessing sustainable housing with MCMV loans through IFIs (Fondo Mi Vivienda, 2017, p. 1).

Figure 08: NCMV operational structure



NCMV functioning description

- (1) FMV manages COFIDE's resources to grant mortgage loans in the financial market through IFIs.
- (2) FMV lends the money to the IFIs who, in turn, grant mortgage loans to beneficiaries.
- (3) Clients/beneficiaries use the loan to finance the acquisition, construction, or improvement of a housing unit.
- (4) As a complement to this loan, FMV grants the Good Payer Awards, Good Payer Bonuses, and Mi Vivienda Sostenible Bonuses (Charts 6, 7, 8, and 9). In all cases, these benefits are granted by FMV through IFIs.

Chart 06: Good Payer Award

Good Payer Award	0.74 UITs	PEN 3,071
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Source: (Fondo Mi Vivienda, 2018)

Chart 07: Good Payer Bonus (in PEN: Peruvian soles)

House value	BBP value
57,500 - 82,200	S/ 17,500
82,200 - 123,200	S/ 14,400
123,200 - 205,300	S/ 12,900
205,300 - 304,100	S/ 6,200

Source: (Fondo Mi Vivienda, 2017)

Chart 08: Mi Vivienda Sostenible Bonus

Degree of sustainability	Financed amount	
	Up to PEN 140,000	More than PEN 140,000
Degree 1	4%	3%
Degree 2		4%

Source: (Fondo Mi Vivienda, 2018, p. 2)

Chart 09: Granting of BBP + PBP + BMS⁵ benefits

House value	PEN 304, 100
Maximum contribution (30%)	PEN 88,130
BBP + PBP	PEN 6,200
Funding amount without MVS	PEN 209,770
MVS	PEN 8,068
Final Financing Amount	PEN 201,702

Source: (Fondo Mi Vivienda, 2018, p. 2)

3.1.2.2 General diagnosis of the housing system

To gain a general understanding of both the housing situation and the working conditions in the construction sector, it is important to understand the impact that housing policies and access mechanisms for lower income sectors have had to date. Formal mechanisms to access housing, or mechanisms implemented through government policies, have been unable to meet the housing demand; thus, people continue to choose the self-build / owner-driven modality.⁶

Table 03: Housing deficit according to the NSE

NSE	2007
Low	1,113,635
Medium-low	449,161
Medium	234,217
Medium high-high	63,679
Total	1,860,692

Source: (Ministerio de Vivienda, Construcción y Saneamiento, 2018). INEI data (2007)

This statement is supported by information available on mortgage loan placements and governmental housing program performance. In 2007, the housing deficit was estimated at 1,860,692, including a 79% qualitative⁷ deficit and a 21% quantitative⁸ deficit. Since its creation in September 2018, the Techo Propio program has granted 285,795 housing subsidies (Fondo Mi Vivienda, 2018). Based on estimates from MVCS (2018), in 2007, the housing deficit was primarily concentrated in the low- and medium-low socioeconomic levels – the Techo Propio program's target population (NSE) (Table 3) – and it is very likely that the housing deficit at these levels has not gone down. New house construction⁹ between 2007 and 2017 was 87,438 units, showing that the

5 As an example, Chart 7 shows the benefits included in a mortgage loan granted to a beneficiary who purchases a housing unit for PEN 304,100 – the maximum house value for a household receiving a BBP.

6 In this report, the term “self-build” must be understood as the housing construction processes that occur in stages, without the assistance or supervision of an engineer or architect, but with the support of a master builder and financed entirely by the household (Bráñez, García Calderón, Miyashiro, Riofrío, & Tokeshi, 2007, p. 364).

7 The qualitative deficit “considers the deficiencies in the quality of the dwelling either materiality (walls and floors), habitable space (overcrowding) and basic services (potable water, drainage and electricity). This calculation seeks to determine (identify) those dwellings that need to be improved in terms of their infrastructure in the mentioned aspects” (INEI, 2009, page 14).

8 The quantitative deficit corresponds to the amount of housing that is needed for each household to occupy a dwelling and to those that need to be replenished as long as they are not suitable to be inhabited. See (INEI, 2009).

9 This information is based on data from the 2017 National Census (INEI, 2018, p. 9), which highlights that the population growth between 2007 and 2017 was 301,662 people per year, and that the average number of members per household is 3.45, averaging an annual increase of 87,438 households in Peru.

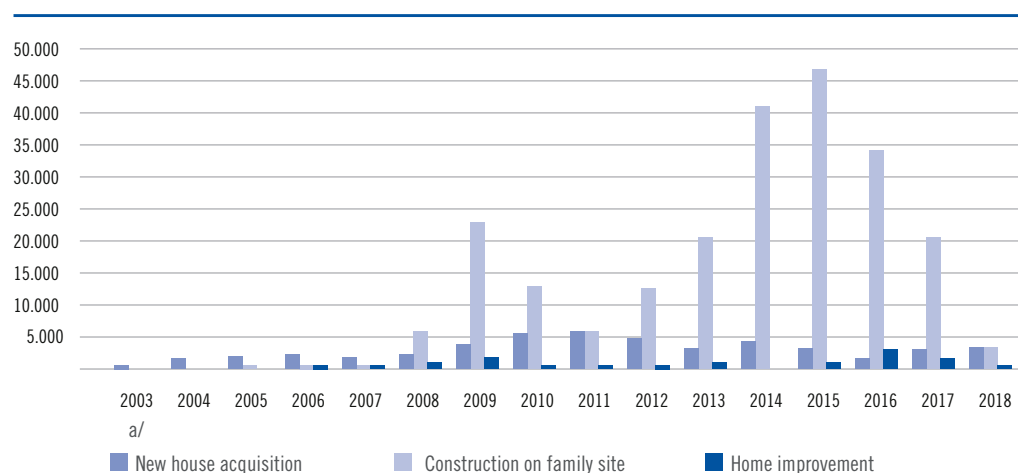
formal supply of housing solutions represents a small fraction of the demand. As seen in Table 7, an average of 34,430¹⁰ mortgage loans are granted annually through formal channels, of which only an average of 939 annual loans belong to the Techo Propio segment.¹¹

Table 04: Number of Techo Propio BFHs according to modality in Peru

Year	New house acquisition	Construction on family site	Housing improvement	Total Annual
2003 to/	688	-	-	688
2004	1,912	-	-	1,912
2005	1,839	13	-	1,852
2 006	1,991	26	8	2,025
2 007	1,887	398	109	2,394
2 008	2,396	6,120	772	9,288
2 009	3,867	22,841	1,732	28,440
2 010	5 353	12,835	547	18,735
2 011	5,991	6,071	432	12,494
2 012	4,498	12,597	405	17,500
2 013	3,414	20,492	8	23,914
2 014	4,260	40,904	-	45,164
2 015	2,836	46,467	1,101	50,404
2 016	1,576	34,344	2,925	38,845
2 017	3,182	20,421	1,776	25,379
2 018	3,416	3,307	38	6,761
Total	49,106	226,836	9,853	285,795

Source: (Fondo Mi Vivienda, 2018)

Diagram 08: Number of Techo Propio BFHs per modality in Peru



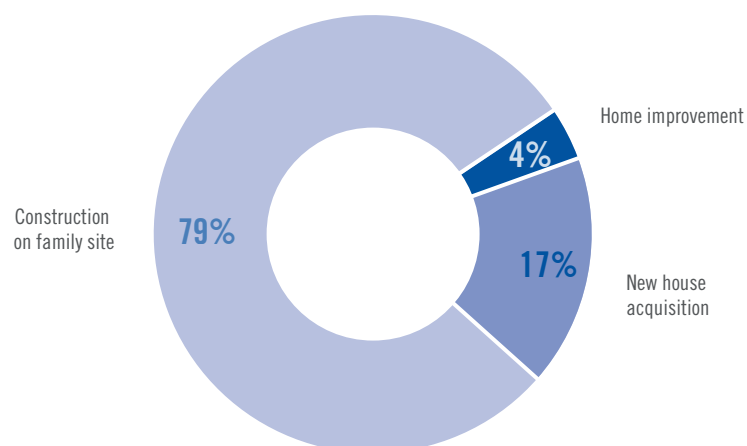
Source: Prepared by the author based on (Fondo Mi Vivienda, 2018).

¹⁰ This number includes Techo Propio's complementary bonuses.

¹¹ This information is consistent with data in Diagram 10, which shows that only 4% of Techo Propio beneficiaries complemented their BFH with a loan.

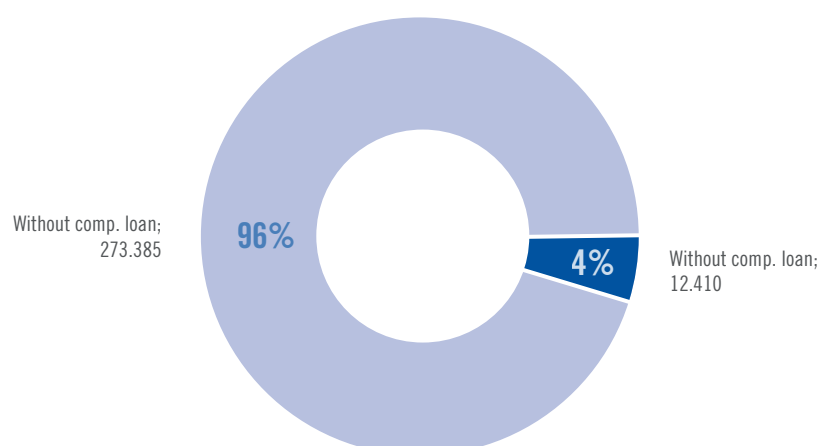
On average, the Techo Propio program provides housing solutions (without a loan) to 17,087 households per year (Table 5). In contrast, 51,517 households are served with construction technical assistance through formal channels, while mortgage loans and Techo Propio subsidies involve the participation of developers and technical entities. Thus, it can be deduced that 42% of households¹² meet their housing needs through other channels, such as private loans, informal loans and sweat-equity mechanisms, and self-build modalities.

Diagram 09: BFH grants per modality (percentages)



Source: Prepared by the author based on (Fondo Mi Vivienda, 2018).

Diagram 10: Total BFH complimentary loans (Sept. 2002 - 2018)



Source: Prepared by the author based on (Fondo Mi Vivienda, 2018).

Table 05: Techo Propio track record

BFH total	285,795
With complimentary loan	12,410
Without complimentary loan	273,385
Average Techo Propio annual services (without loan)	17,087

Source: (Ministerio de Vivienda, Construcción y Saneamiento, 2018)

¹² This percentage is an estimation of the proportion of households that access housing solutions through some formal channel (51,517) and the average of households served annually.

The research carried out by the Mi Vivienda Fund at the national level and conducted by CAPECO for Lima and Callao both serve to corroborate this fact, showing that there is a high unmet demand. The Mi Vivienda Fund highlights a potential demand of 918,000 housing units, but only 136,000 are considered part of the effective demand—that is, households able to pay the price of housing units supplied by the market (Fondo Mi Vivienda, 2018). Similarly, CAPECO's data shows that 20.44% of the unsatisfied demand refers to housing units with prices below PEN 80,000 and households that are not served through formal channels. Table 6 shows that 95,147 of the households in Lima and Callao could pay up to PEN 80,000 for a house; however, the market supply includes only 130 units (Cámara Peruana de la Construcción, 2017). This is consistent with the “Acquisition of new house” modality shown in Table 4. Meanwhile, the Techo Propio program requires a private supply that meets the price conditions established by MVCS regulations.

Table 06: Unmet housing demand according to price range (Lima and Callao)

Price of house in PEN	Effective demand	Immediate supply	Unmet demand	Share/ranking
	Households	Housing units	Households	%
Up to 80,000	95,147	130	95,017	20.44
80,001-90,000	26,184	186	25,998	5.59
90,001-100,000	9,819	10	9,809	2.11
100,001-120,000	41,458	290	41,168	8.86
120,001-150,000	69,787	1,730	68,057	14.64
150,001-180,000	58,264	1,473	56,791	12.22
180,001-210,000	62,064	1,200	60,864	13.10
210,001-240,000	16,466	1,798	14,668	3.16
240,001-,270,000	29,132	2,116	27,016	5.81
270,001-,300,000	20,266	1,924	18,342	3.95
300,001-,350,000	36,732	3,299	33,433	7.19
350,001-,400,000	5,857	2,564	3,293	0.71
400,001-,450,000	8,865	2,112	6,753	1.45
450,001-,500,000	3,324	1,389	1,935	0.42
More than 500,000	6,727	5,111	1,616	0.35
Total	490,092	25,332	464,760	100.0

Source: (Cámara Peruana de la Construcción, 2017)

In this context, construction services are essential if households at the BoP are to meet their housing demands. Data from the 2017 census shows that the total number of households nationwide has increased since 2007 by roughly 2.5 million (Table 8). As previously mentioned, since the production of formal housing units is 51,517 units per year, for a total of 566,687 formal housing units produced during the inter-census period, the remaining households have been served by other mechanisms. The production of housing units in urban areas specifically increased by 1,996,209 houses between 2007 and 2017. Thus, only 28.3% of housing units have been produced through formal channels.

The characteristics of housing units must be considered. Through technical entities, the Techo Propio program has facilitated the construction of minimum-size units between 35 and 45 m². It is important to note that the 2017 census data shows a significant increase in the predominant materials used for walls in occupied housing units. In 2007, 47% of occupied housing units were built with brick or cement blocks; this percentage rose to 56% by 2017 (INEI, 2018, p. 23). In other words, households are more commonly turning to cement and brick construction materials. This does not necessarily imply, however, that the qualitative deficit has been reduced, that buildings are higher quality, or that they better comply with regulations.

In interviews, representatives of the Peruvian Association of Technical Entities (APET) stated that the bureaucracy imposed by the Mi Vivienda Fund makes it difficult for households to access Techo Propio subsidies or for technical entities to get disbursements for housing construction. As illustrated in Diagram 8, the Techo Propio BFH with the highest distribution is the “Construction on family site” modality; meaning that households that own a plot of land have better access to government programs. Its potential scope is limited, however, by the program’s allocated institutional budget, which in 2018 PEN 1,389,367,503. Assuming this budget was completely executed and all CSP subsidies were granted, this totaled 60,407 households nationwide.¹³ While this number represents a significant increase in the annual service provided to households, data shows that disbursements in this modality have not exceeded 47,000 loans in any given year and, by December 2018, MVCS had executed just 72.6% of the program’s allocated budget (Ministerio de Economía y Finanzas, 2018).

13 Although this subsidy would only allow the construction of a housing unit between 35 and 45 m², most households do not choose to complement the subsidy with a loan.

Table 07: Total and average of mortgage loans per source¹⁴

Year	# New loans	# FMV loans	# TP loans	Private loans
2009	16,038	2,285	921	12,832
2010	33,230	6,436	2,007	24,787
2011	39,544	8,888	2,183	28,473
2012	42,876	10,133	1,176	31,567
2013	40,536	12,064	1,100	27,372
2014	39,075	10,226	551	28,298
2015	36,793	8,743	347	27,703
2016	34,194	7,990	92	26,112
2017	37,038	6,754	346	29,938
2018	24,977	4,043	668	20,266
Annual average	34,430	7,756	939	25,735

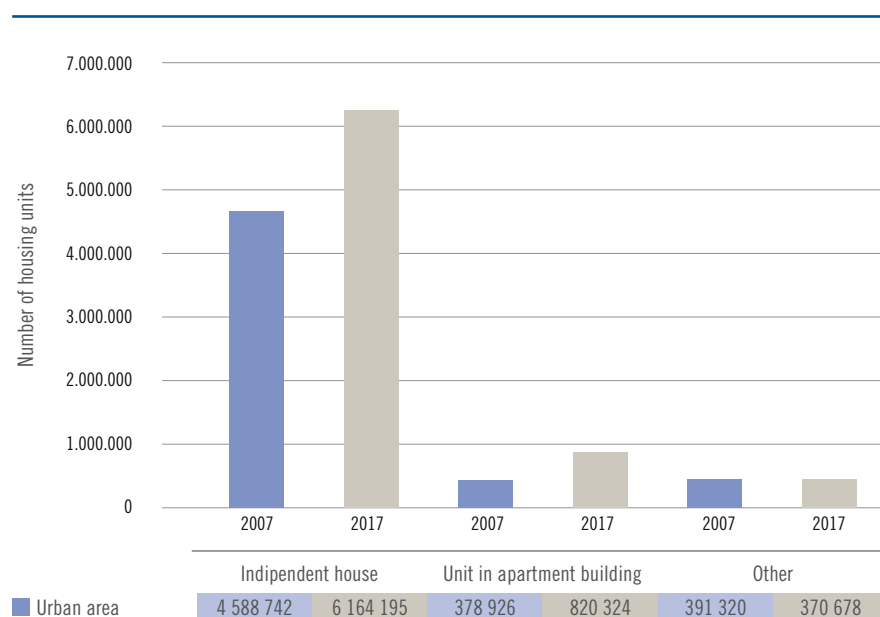
Source (Ministerio de Vivienda, Construcción y Saneamiento, 2018)

Table 08: Housing units 2007 vs. 2017

Type of area being surveyed	Type of housing unit									TOTAL		
	Independent housing unit			Apartment in building			Other					
	2007	2017	var 2007-2017	2007	2017	var 2007-2017	2007	2017	var 2007-2017	2007	2017	var 2007-2017
Urban	4,588,742	6,164,195	1,575,453	378,926	820,324	441,398	391,320	370,678	20,642	5,358,988	7,355,197	1,996,209
Rural	1,888,659	2,599,165	710,506		281	281	343,850	179,207	-164,643	2,224,152	2,778,653	554,501
Total	6,477,401	8,763,360	2,285,959	378,926	820,605	441,679	735,170	549,885	-185,285	7,583,140	10,133,850	2,550,710

Source: Prepared by the author based on (INEI, 2018), including occupied and unoccupied housing units.

Diagram 11: Housing units in urban areas 2007 vs. 2017



Source: Prepared by the author based on (INEI, 2018).

¹⁴ Information from June 2009 to July 2018.

3.1.3 Support functions

3.1.3.1 Business associations

The **Peruvian Construction Chamber (CAPECO)** prevails among formal business partnerships with both SMEs and large companies. The partnership unites 850 businesses (CAPECO, 2018), primarily providers of medium and large construction projects. CAPECO has a decentralized presence through Regional Associations with representatives in Arequipa, Chiclayo, Cusco, La Libertad, Piura and Tumbes. It is currently a member of CONFIEP, AFEP, and Peru Green Building Council, and serves on the boards of SENCICO, CONAFOVICER, and the Ministry of Housing's Construction and Sanitation's Housing Advisory Commission.

Although CAPECO does not directly serve the BoP, it has shown interest in supporting the development and formalization of micro-enterprises composed of self-employed workers in the informal sector. This would be implemented through the CAPECO Institute. CAPECO also promotes a public-private initiative called "Building Formality" (Construyendo Formalidad), aimed at promoting formal construction in Peru. Within this cooperative framework, CAPECO has signed a partnership with the **Peruvian Association of Technical Entities (APET)**, which unites more than 200 small construction companies that work with Techo Propio's CFS modality. Members sign commercial agreements with responsible suppliers, allowing them to access products that comply with Peruvian and/or international technical standards. APET is also working with several microfinance institutions on a proposal for a mortgage product that will potentially benefit BoP households.

Its work with the Techo Propio program makes APET a key stakeholder. It has great interest in developing small construction companies while addressing the sustainable housing deficit. APET submits proposals to the Peruvian government regarding the promotion of: 1) minimum complementary loans to enable households to participate in the Techo Propio CSP modality; 2) the "Aprovechamiento de Aires" program, which consists of providing households located in the city's "Conos" (neighborhoods that comprise the Lima Metropolitan Area) the possibility of building an entire housing unit at no cost – in exchange, households must give up the right to build additional stories above the new unit, transferring this right to allow other households to build additional units of up to five stories above theirs; 3) the Assisted Construction program, in collaboration with financial institutions that provide loans; 4) the Formalization and Patrimonial Strengthening Program; and 5) the establishment of standards and criteria for various government housing loans in order to facilitate the application process and ensure that both the technical entity and household have access to these loans.

APET has offered to involve 600 technical entities (ETs) for the construction of 120,000 housing units in one year. Although in their best year (2015) ETs built approximately 52,000 housing units (APET, 2018), they have always surpassed their annual goal. According to APET, the Techo Propio program stalled in 2016, which significantly affected ETs' work since they had already invested time into readying initial payments and records. The fact that self-employment dominates self-build modalities means that productive units are not organized into business associations. The CTGP is currently working to support housing cooperatives to provide technical assistance to households building new housing units. Lima proves to be a greater challenge compared to Peru's other provinces, however, where the model seems more feasible.

It should be noted that housing cooperatives differ from worker cooperatives, in which self-employed workers build for external clients and are able to access government loans. There are currently seven housing cooperatives registered as ETs in the Mi Vivienda Fund, a small number when compared

to participating construction companies. Based on this data, the cooperative model has not yet been exploited in Lima's housing market.

3.1.3.2 Workers' organization and representation

Both formal workers and those who work a combination of formally and informally usually belong to a union. There are two key unions in the construction sector: The Peruvian Federation of Civil Construction Workers (FTCCP), which represents some 160,000 workers, and the National Administration Committee of the Housing and Recreation Centers' Construction Fund for Civil Construction Workers (CONAFOVICER), a nonprofit organization launched at the request of formal construction workers.

In response to informal construction worker unions who establish fees or special conditions for its members to work on particular jobs, which increases costs and puts at risk the security of its workers and businesses owners, the Ministry of Labor and Employment Promotion (MTPE), CAPECO, and the FTCCP introduced the first National Registry of Construction Workers (RETCC). Stakeholders see this initiative as a positive step forward to eliminating informality. However, the registry is limited to construction workers on large jobs; those who work on the small projects executed by ETs don't typically benefit.

One of the registration requirements for the RETCC initiative is to have received formal construction training from an MTPE-accredited training institution, which include non-governmental organizations (e.g., Swisscontact) and private companies. The training requirement represents a potential limitation, since the supply of training providers is not enough to reach workers on small projects. On one hand, the registry facilitates greater access to contracts in formal and larger budget projects. Once trained and registered with the RETCC, workers can access better-paid contracts in the formal market. On the other hand, this jeopardizes the availability of skilled labor in the BoP market, where revenues are not attractive.

National Registry of Construction Workers (RETCC)

Mandatory permit for construction workers who wish to work in the formal sector. To date, about 700,000 workers have been registered. Registration is required for works exceeding 50 UIT (tax units) and must be renewed every two years.

Nevertheless, CONAFOVICER is taking steps toward consolidating itself as an institution that serves construction workers. Although the committee originated at the request of formal workers, it now provides affiliation opportunities to both formal workers, under a special labor system (regular membership), and informal workers, as well as those who have ceased their activities (facultative membership). Thus, though the number of facultative members is still very low, the committee is a key stakeholder in providing development and social security services to workers in the BoP sector who oscillate between formal and informal employment throughout the year. It has tried to encourage this type of membership, but acknowledges that there is still a lack of information about the benefits of joining and support in the membership process. Thus, overall, informal workers in the self-build market are not formally represented by any institution.

3.1.3.3 Market information providers

Housing construction workers and service providers lack the formal means and platforms to access clients. The link between supply and demand is still informal and sporadic, and is based on word-of-mouth recommendations from relatives and acquaintances. BoP households seek out trustworthy masons via personal networks.

Hardware businesses also provide information. Local hardware stores often recommend trusted masons to their customers, providing contact information and no contract commitment. The hardware stores do not receive any type of commission for this work.

Access to new technologies offer some benefits, which are present in the areas visited by HFH. Internet and other communication services have high penetration through cell phones, representing an opportunity to disseminate essential information about construction service providers to BoP households and more easily connect workers and suppliers to potential clients (Centro Terwilliger de Innovación en Vivienda / Hábitat para la Humanidad, 2018).

3.1.3.4 Provision of materials

The provision of materials for BoP housing construction services is channeled through local hardware stores.¹⁵ These stores assist households in obtaining construction materials by granting in-kind credit (in the form of materials) and establishing a payment contract based on fixed rates and a repayment period of six months to three years. Hardware dealers also offer special deals for local masons who will be using the materials in their own construction projects (Terwilliger Center for Innovation in Shelter, 2018, p. 55). As previously mentioned, transactions are made in cash. Hardware dealers have no influence over construction quality or decision-making processes, but offer suggestions and information regarding price, use, and quality of materials (Terwilliger Center for Innovation in Shelter, 2018, p. 56).

3.1.3.5 Transportation of materials

Materials are transported by the customer (BoP) or by a building materials carrier provided by the hardware store. Previous studies have found that transportation prices depend on the quantity of materials and road conditions (distance and accessibility) to get to the construction site (Terwilliger Center for Innovation in Shelter, 2018). According to an interview with a local hardware dealer, in some cases, hardware store owners who obtain bank loans to develop their businesses (SMEs) also obtain insurance to cover any job-related accidents, including the transportation of materials.

3.1.3.6 Financial services

Demand for construction services: In addition to loans for materials, BoP households can access mortgage and Mi Vivienda Fund loans. However, as mentioned in section 3.1.2.2., these are not often requested by BoP households; formal market consumer loans are used instead. According to HFH (2018, p. 27), heads of households assess the various market options before applying for a loan, and largely base their decision on which institution can provide the lowest monthly payment. As mentioned above, the loan investment is not accompanied by professional technical assistance.

Supply of construction services: The range of services available to developing SMEs in Peru is very diverse. However, construction workers who provide services to BoP households do not tend to form enterprises or associations. While local masons and master builder associations do exist, it is uncommon for them to formalize or to access SME loans; when they do, the BoP ceases to be their target client as they instead choose to serve municipal or otherwise formal contracts, and/or sectors with more resources.¹⁶ Of the information gathered in the interviews, the partnership between Cementos Pacasmayo and TECSUP, is worth highlighting. These entities jointly implement the PROCER program (PROCER, 2018), which consists of a construction

¹⁵ This information has been verified in previous studies, including the study carried out by the Terwilliger Center in San Juan de Lurigancho (2018).

¹⁶ This information has been verified by CONAFOVICER representatives and construction workers.

worker training, for which they receive a nationally-recognized certification (TV Cosmos, 2018)¹⁷. While the program does not include the creation of SMEs, Cementos Pacasmayo representatives mentioned that students in the program have created construction service companies and highlighted the exceptional support that the company's management team has lent to this initiative.

3.1.3.7 Training and certifications

This study shows that there is currently no construction training that meets the high demand for technical skills. Since the training supply is insufficient to meet the demand, current services tend to focus on smaller segments or the needs of private companies, which usually pay to train their own workers.

Municipal governments recognize the realities of housing construction conditions but have little capacity to access training opportunities; therefore, the education infrastructure has not yet been exploited. There are several training options in Lima, SENCICO and the CAPECO Institute among them. Chart 10 offers a brief assessment of these institutions. While SENCICO's main objective is to provide training for the informal market, its financial and operational limitations force the institution to focus on the formal sector, where there are more opportunities to obtain the income needed to finance the courses. For this reason, both the CAPECO Institute and SENCICO focus on the same target group, excluding informal workers who serve BoP households.

A key problem is that there is no mechanism to update the training curriculum that technical entities provide to construction workers and professionals. Thus, promotion of effective interaction and feedback between the private and academic sectors to update relevant curricula is needed. These efforts could be leveraged via current collaborations between CAPECO and the FTCCP – both SENCICO board members.

Chart 10: Training supply

Institution	Training	Performance
SENCICO	<ul style="list-style-type: none"> Masonry diploma (447 hours) Certification: electrical installation specialist (432 hours) Certification: formwork and rebar specialist (390 horas) Certification: sanitary installation specialist (458 hours) Certification: gas installation specialist (442 hours) 	<p>SENCICO's main objective is to provide free training for workers in the informal market. However, its capacity is limited by institutional policies. Despite having sufficient financial resources, it must offer services to private companies in the formal sector in order to obtain more income.</p> <p>Courses are provided during business hours (9 a.m. to 5 p.m.), limiting access for those who must work during these hours. SENCICO trains an average of 1,100 workers per year, a very low figure considering the number of workers in the sector (Vega, 2018).</p> <p>SENCICO has renewed its intent to continue collaborating with Swisscontact and to co-finance trainings.</p>
CONAFOVICER	<ul style="list-style-type: none"> Workplace security and health Blueprint reading Building measuring Estimation of costs and budgets Hygiene and occupational safety Electrical and sanitary installations 	<p>On-site courses may be provided at CONAFOVICER or SENCICO's facilities with prior coordination. CONAFOVICER's network includes both formal and informal workers.</p> <p>There is still no agreement between Swisscontact and CONAFOVICER.</p>

¹⁷ For its first promotion, PROCER received 2,000 applications, but was only able to accept 80, who received their certification (TV Cosmos, 2018).

Institution	Training	Performance
CAPECO Institute Continuous, intensive, virtual and specialized training courses.	<ul style="list-style-type: none"> ▪ Electrical installations ▪ Blueprint reading ▪ Measuring and budgeting ▪ Work supervision ▪ Workplace safety and health ▪ Sanitation ▪ Painting technician 	<p>The CAPECO Institute provides training to its members and has great interest in training informal workers. For this reason, it has collaborated with the Construya Perú project.</p> <p>There are two institutes, one in Arequipa and another in Lima.</p>
Ministry of Education (CETPROS)	<ul style="list-style-type: none"> ▪ 32 courses in Lima ▪ Metal construction ▪ Basic house and building maintenance 	CETPROS's services are decentralized and flexible to accommodate new careers.
Swisscontact (in collaboration with SENCICO, private companies, the CAPECO Institute, the Moquegua School of Engineering, municipalities, and the Ministries of Housing and Civil Defense)	<ul style="list-style-type: none"> ▪ Training in technical skills for construction workers with empirical knowledge who perform various tasks ▪ Training in construction good practices and habitability for homeowners. 	<p>As of June 2018, the project has been successful in terms of training workers in technical skills (3,354, 65% of its goal), instructors (165, >100% of its goal), heads of households (2,640, 88% of its goal) and hardware dealers (43, 86% of its goal).</p> <p>Training is provided in short evening courses. The project has prioritized practical methodologies such as “learning by doing” and “training of trainers.” So far, the project has financed the implementation of courses through payments to training institutes, so the business model is still questionable in terms of its financial sustainability.</p> <p>It should be noted that the training for heads of households was provided by the Ministries of Housing and Civil Defense, along with municipalities. Given the high turnover in the ministry, the MOH partnership has not been fruitful or renewed. The project seeks to strengthen collaboration with the Ministry of Labor, which is responsible for formalizing the sector and certifying skills.</p> <p>Performance in terms of courses offered to the private sector has been limited since the quality of these courses, which focus largely on product promotion, has not met expectations.</p>
Cementos Pacasmayo	<ul style="list-style-type: none"> ▪ PROCER program: Exclusive and free certification program for informal master builders; created to train and develop knowledge for master builders in the North. ▪ Self-building courses through DINO stores. 	<p>PROCER is a very selective program that trains 30 to 60 participants per year. The program is implemented by TECSUP, a higher education institution mainly focused on the formal and specialized sectors.¹⁸</p> <p>Cementos Pacasmayo serves the informal sector through a training project that will soon be implemented at its DINO stores, but is currently still in the design stage. Swisscontact has signed an MoU with Cementos Pacasmayo, which will establish a committee and provide the courses.</p>

18. For further information: <https://www.tecsup.edu.pe/>

Institution	Training	Performance
SODIMAC Peru Training Fairs Habitat for Humanity <ul style="list-style-type: none"> Safe construction processes Healthy and secure housing units UBERMANN Tools for professionals Sika Adhesives for different materials Aceros Arequipa Importance of corrugated steel stirrups in construction INDECO Solutions for safe electrical installations Peru UP Work safety in high places Tupemesa Resistance of beams in drywall METALCON building systems Volcán Building safe housing units with Drywall VolcanPro systems Rotoplas Tanks Cementos Quisqueya Concrete technology and quality Pavco Sanitary installations in buildings Vainsa How to choose a high-quality faucet for your house Italgrif How to install a toilet, step by step Bosch Productivity, durability and practicality in Bosch cordless tools		<p>As of November 2018, SODIMAC Peru has organized two training fairs. A third was scheduled for March 2019. The training is carried out in collaboration with various companies and institutions, and is addressed to construction specialists, including master builders and masons. In the last edition held in October 2018, participants said that most of their clients were BoP households (93%), suggesting that the training helps improve housing conditions for the BoP.</p>
SIDER Peru <ul style="list-style-type: none"> Free course on “Recommendations for building a safe house” Free course on “Recommendations for ironwork” Free course on “Characteristics of iron” 		<p>Swisscontact has had conversations with SIDER Peru to sign an implementation agreement.</p>

The certification of practical or informal skills is still unknown or inaccessible for a significant number of workers. The Peruvian government appointed the MTPE as the only entity responsible for standardizing and certifying work competencies. To this end, the “Labor Competencies Committee for the Construction Sector” was formed in 2016 as a body for consultation and

dialogue that allows identifying and prioritizing skills needed in construction activities, as well as performance standards and required training for construction companies. To date, however, little is known about the results of this working group. In conversations with CAPECO, this study identified that one of the main obstacles to training – facilitating the development of updated and relevant courses for the sector – is the lack of a feedback mechanism between the private sector and training institutions.

In 2017, MTEP launched the “Impulsa Perú”¹⁹ program to promote employment through various initiatives, among them the certification of construction skills. This includes occupational profiles for masons, electrical installation specialists, master builders, formwork and rebar specialists and others related to the construction sector. As part of this process, the MTEP authorized 19 certification centers in 17 regions in the country. SENCICO certifies six occupational profiles.²⁰

Table 09: Work skills certification centers in Lima

Work profile	Certification center (Lima) ²¹	
	CAPECO Institute	SENCICO
Master builder		
Mason		
Electrical installation specialist		
Sanitary installation specialist		
Rebar specialist		
Wood formwork specialist		

3.1.3.8 Business development and training

The development of entrepreneurial skills in the construction sector through training is still minimal, considering the efforts made to improve labor skills. Swisscontact, in collaboration with SENCICO, private companies, the CAPECO Institute and the Moquegua School of Engineering provide a training module in business skills for construction workers. As of June 2018, the project had trained 848 workers, exceeding the established goal. According to Swisscontact, 85% of participants in this module reported better employment. This training is given through short, evening courses. Swisscontact finances both the technical and business trainings.

Despite limited information regarding the impact of business training in the construction sector, it must be recognized that there is an opportunity to work more intensively in this area. In an interview, representatives of Swisscontact Peru said that by the end of the training participants had begun to form collaborations with other participants. They were motivated to some extent to launch their own business activities in construction, even if this meant operating as an informal business.

In this component, there is an opportunity to link the business training offer with ILO’s “Start and Improve your Business Programme” (SIYB), specifically, MESUNCO’s “Improve your Business” program, which is focused on the construction sector. SIYB is one of the largest business management training programs in the world. It helps small businesses to start and strengthen their initiatives while creating more and better jobs for both women and men.

¹⁹ For further information: www.impulsaperu.gob.pe.

²⁰ For further information and details on profiles: <http://www.sencico.gob.pe/publicaciones.php?id=285>.

²¹ Last updated October 1, 2018: https://gobpe-production.s3.amazonaws.com/uploads/document/file/178836/CENTROS_DE_CERTIFICACION_C3%93N_DE_CL-AREAS_ACTUALIZADO_WEB_7_.pdf

In Peru, ILO currently works with the Center for Technological Innovation of the Wood (CITEMADERA). In addition, there are five trainers of trainers available to work with business training institutes.

In addition to Swisscontact's resources, the community has access to the "Emprender"²² platform of the National Superintendence of Customs and Tax Administration (SUNAT), which provides information on how to start and manage a business, as well as how to formalize a company and its workers. However, company and self-employed workers serving the BoP sector make little or no use of this information. Moreover, there was no evidence of any type of current training or technical assistance for the conformation of cooperatives.

3.1.3.9 Health insurance

Access to health insurance varies enormously between formal and informal workers. Formal workers enjoy social benefits (life and/or health insurance), while informal workers have none. Independent masons and their households are unprotected in the case of work-related accidents, and do not seek these benefits by themselves. This is explained by potential users' perception regarding independent work, life, and health insurance plans, which are seen as expensive and not a priority.

Formal workers, whether permanent or temporary, can access social health insurance (EsSalud) and associated plans. For independent workers, there is an optional insurance plan (+Salud) that can be supplemented by a complementary risk work insurance (+Protección) for additional coverage in case of occupational diseases or accidents. The social health insurance system also has a specific plan in case of accidents (+Vida). This study revealed that some self-employed workers who serve the BoP are affiliated with the social health insurance system; however, numbers are still low in terms of insurance coverage.

As part of the affiliation benefits in its regular or optional modalities, CONAFOVICER offers its members a "social assistance program", which provides protection in case of total and permanent disability or death. CONAFOVICER also provides legal advice on social security and retirement plans. Recently, CONAFOVICER began to offer a new health insurance service to potential members, in a facultative association modality. This would serve as an incentive for unemployed or informal workers to join or remain affiliated.

CAPECO has also implemented, in a strategic partnership with the Cayetano Heredia Clinic, the "CAPECO Salud" service. This provides medical services to formal construction workers in order to contribute to the fulfillment of safety and health legal obligations in the workplace (CAPECO, 2018).

3.1.3.10 Inclusive work promotion programs

The "Trabaja Perú" program, an initiative of the Ministry of Labor and Employment Promotion, seeks to promote inclusive social employment and develop productive and employment capacities. The program focuses on populations living in poverty and extreme poverty. It finances basic infrastructure projects such as road paving, construction of sports and recreation areas, parks, retaining walls, irrigation channels, and riverbank ramparts. It is worth noting that 70% of beneficiaries are women. By October 2018, the program had hired approximately 11,000 temporary workers per year (Hauchecorne, 2018).

22. For further information: <http://emprender.sunat.gob.pe>

No social housing projects have been financed to date, but program director Flor Blanco Hauchecorne stated that the option of financing joint housing projects has been considered. The program offers an opportunity to enhance the financing of sustainable housing projects in order to meet the demand in marginalized areas. One topic of consideration that could be aligned with the project's interests is sustainable housing and adaptation to emergency situations.

3.1.4 Rules and regulations

3.1.4.1 Formal laws and regulations

Obligation to register in the National Registry of Construction Workers (RETCC)

The RETCC is a compulsory permit for construction workers who wish to work in the formal sector; however, a large number of workers who carry this permit oscillate between informal and formal jobs. Approximately 700,000 workers have been registered. One of the requirements is to complete 40 hours of any kind of formal training; therefore, the trainings mentioned in section 3.2.1.7 “Training and work skills certification” qualify workers to register in the RETCC.

Bidding documents for Mi Vivienda Fund do not require that companies subscribe to collective agreements

This situation affects a large number of workers who work through ETs in construction projects, since some ETs do not pay a minimum wage or avoid registering workers entirely. The Ministries of Labor and Housing must demand collective agreements to comply with labor laws.

The National Building Regulation (RNE) regulates the “criteria and minimum requirements for the design and construction of urban building habitations (...)” and “it is the national technical standard that establishes the rights and responsibilities of stakeholders intervening in the building process, in order to ensure the quality of the building” (El Peruano, 2006). This regulation, composed of 66 standards, establishes that all construction work must include the participation of licensed professionals. The RNE establishes all of the standards to be met by housing units in terms of design and general features, such as the minimum size of roofed areas²³ and electrical and sanitary installations.

Modifications to the RNE are completed by the RNE's Permanent Updating Commission, chaired by the Ministry of Housing, Construction and Sanitation (MVCS) and composed of representatives from both vice-ministries of the MVCS and the following institutions: Peruvian Construction Chamber (CAPECO); professional associations of architects, engineers and lawyers; National University of Engineering (UNI); Municipality of Metropolitan Lima; and Association of Peruvian Municipalities.

The Law on Regulations of Urban and Building Habilitation (Law No. 29090) and its modification by Law No. 30494 (El Peruano, 2016), establish procedures for obtaining licenses for construction, inspection, reception, compliance with work requirements, and signed statement of housing construction. This law defines four modalities of licenses or building permits. The “A” modality is required for the construction of single-family, detached housing units, which are the object of this study. This modality is automatically approved at municipalities when blueprints are signed by a professional. However, housing

23. According to Article 8, Chapter II of the RNE, the “minimum roofed area for a housing unit without the capacity for expansion (apartments in multi-family buildings or residential complexes subject to horizontal property regulations) will be 40 m²”. In the case of single-family homes, “in its original structure, with the capacity for home extensions, minimum roofed area will be 25 m².”

construction for BoP households does not typically comply with this requirement. For example, in 2015, municipalities issued just 45,124 construction licenses nationwide (INEI, 2015).

Chart 11: “A” modality license – automatic approval with signature of professionals

<p>In order to obtain an “A” modality license, applicants must submit all documents required by this Law and the RNE to the respective municipality. The registration fee includes the license, and work can begin once it has been paid.</p> <p>The following may apply to this modality:</p>	<p>the total roofed area of the original building and the extension does not exceed 200 m².</p>	<p>f. Minor extensions and remodeling as established in the RNE.</p>
<p>a. Construction of a detached housing unit of up to 120 m², provided that it is the only building on the plot.</p>	<p>c. Remodeling of a single-family housing unit provided it does not imply structural modifications, changes of use, and/or increased roofed area.</p>	<p>g. National Armed Forces and Police military buildings as well as criminal detention establishments, which must be built according to the Territorial Conditioning and Urban Development Plans.</p>
<p>b. Extension of a single-family housing unit whose original building has a construction license, manufacturer registry or proof of no charges pending, and in which</p>	<p>d. Construction of fences of more than 20 m long, provided the property is not under regulations that apply to coexisting sections of exclusive or common property.</p> <p>e. Complete demolition of buildings less than three (3) stories high, without semi-basements or basements, provided explosives are not used.</p>	<p>h. Required urban habilitations and buildings for the development of public investment projects, through public-private partnerships and private concessions, for the provision of essential public services or the construction of public infrastructure.</p>

3.1.4.2 Informal rules

Regarding housing quality, this study revealed that BoP households typically determine the workers’ activities in the construction process; i.e., the household’s decision-making defines housing quality. This was verified via interviews with masons and master builders, and by findings from recent studies on social behavior. In a study commissioned by HFH for Lima, one mason said²⁴:

“As masons, we make suggestions to the client, but if the client has an idea of what he or she wants we must do our best to make it happen. People always want lower prices; this is what they demand the most, although a few do request high-quality materials and products.” – Local mason

Housing quality, in addition to the knowledge and skills of master builders and masons, greatly depends on exchanges between the BoP household (demand) and the construction worker (supplier). As mentioned in the previous testimony and further verified in the field, households often negotiate prices directly with construction workers, who tend to lower their prices in order to complete the job. Master builders may reduce expenses in the budget by opting for lower quality brands and materials, and short-changing construction processes. One mason mentioned that “it is possible to use less iron, build less pillars, and omit other details to cheapen the construction process” (Market Share Associates, unpublished).

This study also documents that master builders and masons prioritize exterior finishings and downplay the importance of structural elements. This study shows that “the structure does not matter; what matters is what can be

24. Taken from the study carried out by Market Share Associates for HFH (Market Share Associates, unpublished).

seen,” highlighting the fact that households are more interested on how their houses look²⁵ than its structural condition. This also suggests that households associate durability and safety with “what can be seen,” and judge the final product based on external finishings (both interior and exterior).

3.1.4.3 Controls

As mentioned in section 3.1.4.1., licenses for the construction of housing units are managed at the district or municipal level. Municipal governments are responsible for controlling the quality of the construction. An “A” license means that the professional’s signature is sufficient for the license to be granted. Based on interviews with architects and other professionals, this study revealed that in many cases the blueprints used to obtain construction licenses do not comply with the minimum quality standards; however, they still pass municipalities’ control mechanisms and succeed in obtaining the respective license or permit.

Despite this issue, construction licenses do not stop households from building their housing units. Construction largely exceeds the number of licenses granted. Although the control capacity of municipalities is insufficient, in many cases patronage-based relationships develop between settlement residents and municipal authorities. These relationships reduce controls, thus allowing illegal land occupation and the informal construction of shelters.

3.2 Findings from the market systems analysis of the BoP housing construction services market

Official and formal programs to access subsidies and loans that guarantee an acceptable housing quality only serve a small fraction of the demand. Most of the demand is served through alternative channels and self-build modalities.

Although this is a recognized issue in the sector, these statements are not usually accompanied by data regarding the size of the demand for BoP housing construction services. Based on 2017 INEI’s data, information on loan disbursements and figures regarding the allocation of official programs, this study estimates that in the 2007 to 2017 period just 28.3% of new urban housing units were built with some kind of technical assistance. It is highly probable that the remaining percentage of urban housing units built during the inter-census period did not have technical assistance from a construction professional (architect or engineer), as established in the RNE.

The Techo Propio program—the main program used by BoP households to access formal housing—has a limited impact potential due to its annual budget, the implementation capacity of the responsible entities, and the construction area permitted by the subsidies received by the households. Thus, as they are currently designed and implemented, programs for BoP households to access formal housing do not represent a scalable alternative. In response, households continue to build on their own, and construction workers who provide services for the BoP are major players in this process.

25. Women are usually more concerned about interior house finishings, while men consider exterior finishings such as facades and other visible parts of the housing unit to be more important (Market Share Associates, unpublished).

Limited training of construction workers affecting housing quality

Workers who provide construction services to BoP households do not always have the necessary skills to build safe housing units. According to our interviews, in a best-case scenario, education and training institutions serving the construction sector might meet a demand of 10,000 students annually. This represents a small fraction of construction workers, which are estimated at some 957,000. In addition, once trained, construction workers who provide services to BoP households tend to direct their services to a higher-income demand. In other words, formal training may result in construction workers providing services less frequently to BoP households, since they can obtain better wages working for higher socioeconomic levels, doing more complex jobs, etc.

Data from interviews with education and training entities shows that, although there is interest in certifying construction workers' practical skills, there are still no clear initiatives in this regard. Swisscontact and SENCICO's experience in the Construya Perú program was referenced in several interviews. Swisscontact has established relationships with the Ministry of Labor and Employment Promotion, the Ministry of Education, and the Ministry of Housing, Construction and Sanitation²⁶. In many cases, government officials expect to work with Swisscontact. However, to date, the international NGO has been working mainly with SENCICO and some municipalities.

The Construya Perú program offers training to workers and BoP households in housing construction processes. To date, after four years of operations, the results show a total of 3,000 households and 4,000 workers trained. On their part, SENCICO and Swisscontact have trained 1,600 workers. Of these, 60% are master builders and 40% are masons. Swisscontact reports that two out of three construction workers have improved their income by 15%, and that 46% of the housing units built have reduced their vulnerability to seismic events. The Construya Perú program estimates that 26,000 people have improved their housing units. By the end of the first stage of the program, Swisscontact plans to provide a more active role to SENCICO and limit its intervention to a facilitator's role.

The Construya Perú program's training approach has shown a change in its orientation on two fronts: construction services supply (workers) and construction services demand (households). It is still unknown if trained workers continue to provide services to BoP households or if they have migrated to other business niches. Moreover, the Construya Perú program does not involve the participation of construction professionals. Therefore, according to sectorial regulations, housing units built through this program could not get a license and would still be considered "informal."

Most trainings address labor needs in the private, formal sector

Another aspect to consider regarding trainings available at a national level is that they are mainly aimed at meeting the demands of the private, formal construction sector. According to interviewees, this is the case with SENCICO and the CAPECO Institute, the main training entities. CONAFOVICER representatives also mentioned that two CAPECO representatives participate in SENCICO's board of directors, influencing the educational offer to respond to the private sector's skilled labor demand.

26. MTPE, MINEDU, MVCS.

Households' decision-making processes affect construction quality

Households have little or no information to help them make decisions based on safe construction processes. Interviews with construction workers and previous HFH study findings both reveal that households choose master builders based on recommendations that consider the master builder's reputation in the local area rather than construction skills or certifications. Social recognition is often more valued than formal education and training.

Master builders confirm that this is the socially accepted standard, reporting that households do not value formal training. Typically, a builder's reputation is improved by less expensive budgets and external finishings, regardless of the quality of internal structures. Work experience, how many housing units master builders have built in the area, "honesty," and "punctuality," are the aspects most chosen by BoP households (Market Share Associates, unpublished). However, as highlighted by this study, in practice, construction workers who provide services to BoP households typically say they have experience in all types of services, regardless of whether this is actually true. Construction workers assume they can do any kind of work requested by the client. Workers say it is always advisable to accept the job since, between contact with other workers and the information available via videos and other media, it is possible to do the work.

This is, without a doubt, an issue that affects housing quality. Households lack relevant information to make decisions regarding construction processes, they do not choose workers based on verifiable skills, and workers are not adequately trained. This results in the construction of unsafe housing units and inefficient construction processes, which require more resources and more work in insecure conditions for both households and the workers themselves.

Opportunity for business promotion through SMEs and cooperatives

Some productive units, composed of master builders and masons, operate as businesses in the construction sector. These productive units, although informal, work through contracts and provide health insurance and savings funds for their workers. On the other hand, it is worth noting that there is a significant lack of business training opportunities for this sector.

Thus, there is an opportunity for two improvements: to advance self-employed worker cooperatives, and to promote entrepreneurial skills through training, in conjunction with the CAPECO Institute and SENCICO.

Health insurance plans are relatively inaccessible for workers serving the BoP

Health and safety conditions are worrisome in the construction sector. More than half of the workers surveyed report having suffered or known someone who suffered an injury or accident at work. In addition to economic losses caused by absentee disabled workers, the issue also puts at risk the workers' physical integrity, their income and future opportunities.

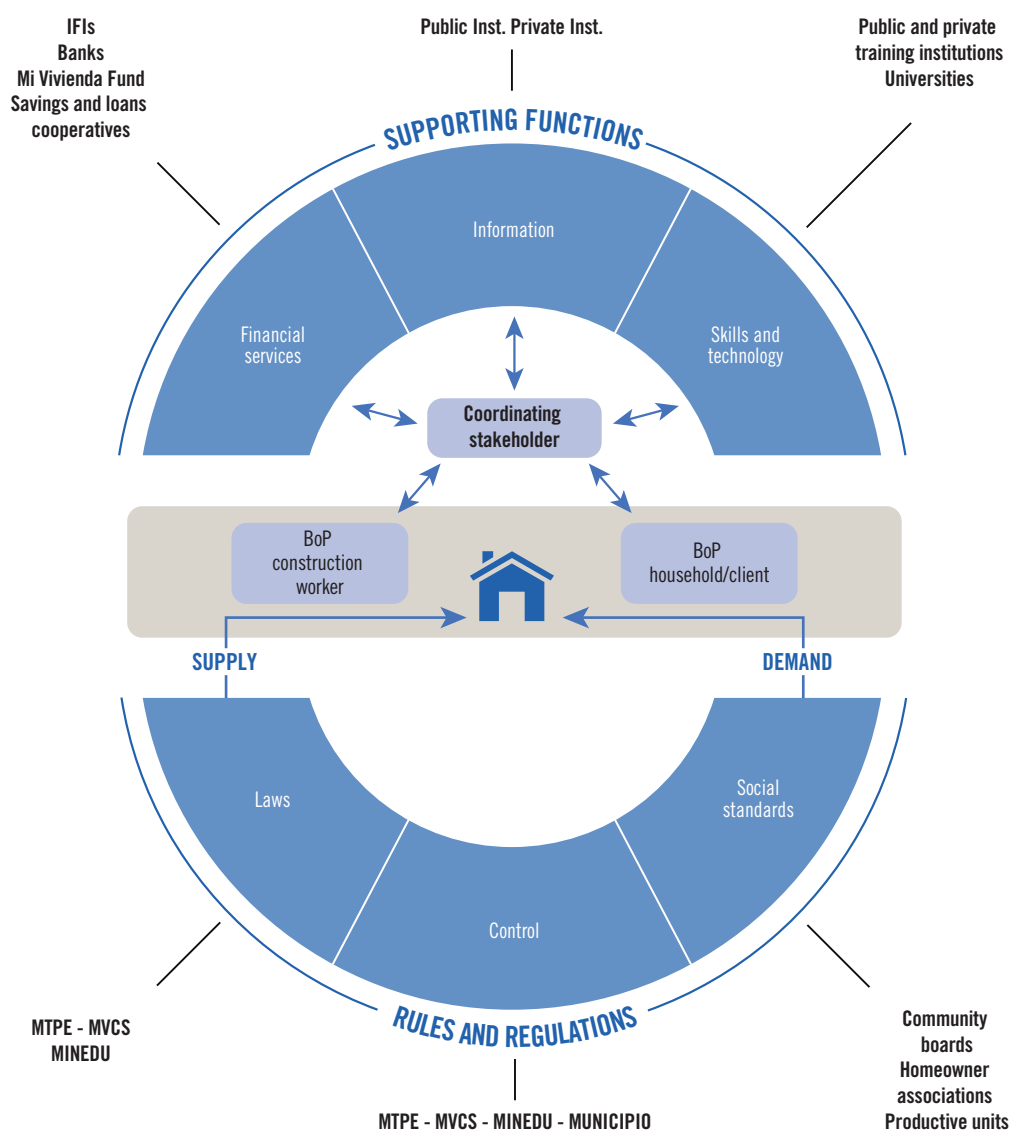
This study showed that affiliation with the Social Health Insurance system is still low, since workers consider it an additional expense. The few workers who were affiliated expressed that they do not use the insurance due to their distance from participating medical centers.



4

Intervention opportunities

Figure 09: Market intervention system



4.1 Suggested interventions

In conclusion, interventions that aim to significantly impact the BoP housing construction services market must address three cross-functional dimensions: 1) institutional, 2) supply, and 3) demand. To impact the market system, interventions must focus on the following three aspects:

- Education, training, and certification of construction workers
- Networks of construction workers
- Access to information, training, and awareness for BoP households

Current initiatives to educate and train construction workers and address the populations' housing demands show a disconnect. On the one hand, formal housing programs do not address the lack of training for construction workers. Because most of their workers are employed by formal companies, these formal housing programs remain disconnected from issues surrounding a lack of available training. Additionally, the impact of formal housing programs is small in terms of number of households served and housing units built. On the other hand, however, the current training supply does not meet the BoP housing construction demand. Its impact is equally small and, as described above, responds largely to private sector demand.

To achieve greater impact, interventions must simultaneously address households' decision-making processes, education and training for construction workers, and professional technical assistance in construction processes. Thus, the following aspects should be included:

4.1.1 Institutional: supporting functions and rules

4.1.1.1 Education, training and certification

A capacity-building institutional framework should be divided among several government institutions. The Ministry of Labor and Employment Promotion (MTPE) defines the construction sector's occupational profiles, through which occupational certification processes are designed. The Ministry of Education (MINEDU) dictates educational policies for higher education technological institutes (IEST) and technical-productive centers (CETPROs). SENCICO is the main public training institution for the construction sector, affiliated to the Ministry of Housing (MVCS) as a "special treatment entity", with a board composed of representatives from CAPECO, MTPE, MINEDU, CGTP, FTTCCP, and universities.

At the institutional level, interventions could influence IEST and CETPROs' educational policies to improve their training approach by offering programs to construction workers that provide services to the BoP. Swisscontact training modules could be replicated to train construction workers. It would be important to evaluate the possibility of an intervention that includes on-site housing construction training for BoP households. In this regard, it is advisable to continue to explore which elements could be simplified in training processes to create educational modules that are more accessible to construction workers. Likewise, we recommend exploring how occupational profiles could be modified and adapted to meet the demand for the skills required to build safe housing units for BoP households.

Innovation proposal 1: *Provide business development and management training.*

This proposal suggests developing and implementing business development training opportunities for construction workers who demonstrate entrepreneurial skills or are interested in starting a business. In this component there is an opportunity to use ILO's "Start and Improve your Business Programme" (SIYB)—specifically, MESUNCO's "Improve your Business" program, which is focused on the construction sector. SIYB helps small businesses to start and strengthen their initiatives while creating more and better jobs for both women and men. The program includes five trainers of trainers who are available to work with the proposed business training institutes.

This training could be provided in two different ways:

- Collaborate with Swisscontact to improve its business training module according to ILO's SIYB methodology. This would be implemented through the CAPECO Institute and SENCICO's training offer. The advantage of this approach would be to leverage advancements made in collaboration with these institutions, since the Swisscontact training program has been positively accepted. The CAPECO Institute recognized the value of the business training module and the need to continue improving this component.
- Develop a business training course in collaboration with the CAPECO Institute and/or SENCICO, not linked to the Swisscontact training. This approach would require initiating a new collaboration with the training institutions.

Innovation proposal 2: *Develop a feedback tool for the private sector and training institutions to continually identify skills needed in the sector.*

In order to develop training courses that take into account the demand, a tool is needed to continually identify the needs of current and future employers. This tool must recognize workers' unique profiles and design courses that are both relevant to the private sector and feasible and impactful. This could be achieved through an annual survey, administered and supervised by the Labor Competencies Committee, which includes relevant entities such as SENCICO, the CAPECO Institute and the Ministry of Housing, and others. The construction sector's Occupational Demand Survey, annually conducted by the MPTE could be used to this end, and the results shared with the committee.

4.1.2 Supply

4.1.2.1 Networks and technical training

This study revealed that the BoP housing construction services supply is mainly composed of productive units of local master builders and masons who work together to meet the demand. Typically, this takes place through sporadic agreements with no legal contract, and depends on the availability of masons and master builders. Hiring is not based on worker training or certification, but on reputation, which does not necessarily correspond to the quality of their work or the housing quality that results from it.

Regarding the supply of construction services, we recommend continuing to explore the impact that interventions promoting construction worker networks may have in achieving greater productivity in housing construction for BoP households. This cannot be disconnected from training processes, however, since networks will have positive effects on BoP households once construction processes are more productive (if more is built with less it is safe for households and workers and provides a higher income to workers). Stakeholders such as CONAFOVICER have shown interest in this type of initiative, and have the potential to support workers in accessing social and health insurances.

Innovation proposal 3: *Create self-employed worker cooperatives.*

This proposal is based on the presence of groups of self-employed construction workers composed of master builders and masons, as well as local engineers and/or architects who assist them. This component would seek to provide technical assistance for the conformation of cooperatives to better identify productive units and to provide training and follow-up to construction workers.

The conformation of cooperatives is an alternative to the creation of micro-enterprises, which may emerge among participants who complete the business training course. The Ministry of Production currently has a network of facilitators to support cooperatives within the My.COOP program, which could be used to launch this activity in the construction sector. There is also the possibility of working with CONAFOVICER to implement a training program for cooperatives whose members (due to external reasons) are not included as regular members but as facultative members when temporarily unemployed.

Finally, there is an opportunity to link the productive groups of construction workers with universities that require students to complete internships in architecture and civil engineering, especially in the absence of professionals in the area of intervention.

Innovation proposal 4: *Design an accessible health insurance scheme as an incentive to formalize informal work.*

This intervention proposes two actions: a) approve self-employed workers' facultative affiliation to CONAFOVICER (and avoid the current requirement of proving a contractual relationship with former employers); and b) collaborate with CONAFOVICER to develop a health insurance product for its members. Health insurance not only protects workers in the event of illness or accident, but also provides an incentive to join (in the case of new members) or continue affiliation with CONAFOVICER's social assistance program. CONAFOVICER's platform could also be used to promote and facilitate the affiliation of self-employed workers with the health insurance product.

Innovation proposal 5: *Facilitate access to services and social security schemes as an incentive for registration in the National Registry of Construction Workers (RETCC).*

The Ministry of Labor and local stakeholders are working to implement the RETCC in an effort to fight informality and illegality in the construction sector. It facilitates access to formal contracts and jobs in construction sites, and represents an incentive for construction workers to attend trainings (a requirement for RETCC registration).

Given its current design, most workers registered in RETCC are formal or have worked under formal contracts; informal workers are typically left aside. The training requirement may exclude certain workers, since there is still a limited availability of trainings and those offered tend to focus on formal companies. Therefore, it is necessary to provide tangible incentives for informal workers to register. For example, RETCC could be linked to service providers offering incentives such as:

- Access to social security and health insurance (in collaboration with EsSalud or CONAFOVICER)
- Access to loans and other financial products (in collaboration with financial institutions to be defined)

4.1.3 Demand

4.1.3.1 Access to information, training and awareness raising

Regarding housing construction services, the study concludes that households do not make decisions based on timely and adequate information. Previous studies have also highlighted the fact that households make decisions that negatively affect their home economy and housing quality. In addition to simultaneous interventions through product design, capacity-building processes, and networks of construction workers, we advise exploring awareness and training interventions for BoP households. This level of intervention should complement professional training, since the demand for trained professionals will increase once households are better informed to make decisions in construction processes. Based on our findings, another intervention worth exploring is the provision of construction-related information and the strengthening of the role of women in construction decision-making processes.

Innovation proposal 6: *Promote the involvement of college and graduate level students in financial and technical assistance for BoP households.*

This intervention proposes to involve students of engineering, architecture, administration, and other related careers to help households make informed financial decisions to participate in the construction of their housing units. CAPECO, SENCICO, the MVCS and a number of professional architect and engineer associations have already explored this proposal, but it has not yet been implemented. According to interviewees, it is necessary to position this topic on the agenda. Similar proposals have been made, but in unstable political contexts that prevented the design of an intervention strategy.

It is important to consider that this involvement requires monitoring and supervision by experienced professionals, who should ensure the quality of the assistance provided by the students. This could represent a limitation, as it would require the allocation of funds and responsibilities to professionals. An option to cover the cost of professional supervision may be to work with volunteer programs or within the education centers' own curricula.

4.2 Intervention design

Based on our findings, an intervention aimed at impacting housing quality for BoP households and facilitating access to decent work for construction workers must consider the aspects mentioned in the previous section. In order to integrate these interventions, **a stakeholder is needed to coordinate initial stages in a specific territory** (for example, an urban settlement) **and transfer capacities**. This coordinating stakeholder must promote the improvement of processes in the BoP housing construction value chain while fostering integration of stakeholders influencing the process. In conclusion, the role of the coordinating stakeholder should be to consolidate information in order to guide decision-making in construction services supply and demand processes, thus optimizing the value chain.

4.2.1 Intervention stakeholders

Municipalities

Current regulations indicate that municipal governments can control construction processes. They are able to fulfill cross-sectorial coordination roles (through ministries) because they are the level of government that is closest to the general population. Municipalities are fundamental stakeholders for the development of interventions. For this reason, the initial coordinating stakeholder mentioned above must work closely with municipalities so that, if considered appropriate, capacities and interventions can be transferred at a more advanced stage.

Training institutions

Training institutions have the human resources and knowledge needed to provide training to construction workers. The coordinating stakeholder could connect training institutions and construction workers through the creation of on-site certification modules. This would transform a passive role in technical training processes into an active role that could certify practical capacities.

Universities and professional associations

The coordinating stakeholder could encourage construction professionals to approach BoP sectors. Based on data gathered through interviews, stakeholders can see the potential of involving universities and professional associations in the provision of technical assistance for BoP housing construction processes.²⁷ The provision of technical assistance could be a requirement to obtain a professional degree and meet the demand of technical assistance for the BoP. The coordinating stakeholder could serve as liaison between these sectors.

International volunteer organizations

These organizations provide international students with access to work experiences in various challenging contexts. There is a potential market in Peru for organizations that provide this service. The coordinating stakeholder could, in turn, connect these organizations to the supply and demand in construction services. Still to be assessed is the opportunity to provide assistance to workers in the conformation of productive units and to households regarding their decision-making processes when investing and accessing funds.

²⁷ CONAFOVICER, CAPECO and MVCS representatives have shown interest in this initiative.

Financial institutions

The financial market for BoP housing construction mainly operates through the provision of loans that are disconnected from other self-build stages. Thus, households do not invest their loans appropriately. The coordinating stakeholder could accompany this process and connect other previously-mentioned stakeholders. In this way, households will be able to make better decisions when investing in their housing units.

4.2.2 Potential coordinating stakeholder

This study has outlined, in general terms, the role of the coordinating stakeholder. However, it is advisable to further assess the potential of the stakeholder's role in the market. That is, to assess the potential of the stakeholder's actions in representing a service that could be operationally sustainable in economic, social, and political terms. At the economic level, the coordinating stakeholder can provide information and develop a client portfolio that includes financial institutions, hardware dealers, productive construction units, education and training institutions, etc.

We also recommend evaluating the social implications that the coordinating stakeholder could have for both the BoP population and construction workers. Construction professional's approach to construction processes, though so far done without technical assistance, can be seen as a contribution. Nevertheless, this contribution may cause conflict between professionals, households, and workers when complying with regulations could involve additional work and higher construction costs. In addition, it may be prudent to evaluate the articulating stakeholder's potential to transfer capacities to municipalities. In this sense, institutionalizing the articulating role through public policies must be considered, since policies may affect the scalability of the construction services market chain.



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