

Study of Social Entrepreneurship and Innovation Ecosystems in the Latin American Pacific Alliance Countries

Case Study: Echale a tu casa, Mexico

Fundación Ecología y Desarrollo

Office of the Multilateral
Investment Fund

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**Study of Social Entrepreneurship and
Innovation Ecosystems in the Latin American
Pacific Alliance Countries**

CASE STUDY

ECHALE A TU CASA, MEXICO

**Multilateral Investment Fund (IADB) ·
Fundación Ecología y Desarrollo**

July 2016



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Abel Manuel Estrada, community promoter of Echale a tu casa
Elizabet Rodriguez Cruz, house owner of Echale a tu casa

1. Introduction

Name: Echale a tu casa	
Description	Echale offers an affordable and sustainable housing solution for vulnerable communities, which includes community development, financial education, low cost financing, environmental education and local employment.
Founded	In 1997 Adobe Home Aid created as a Foundation, in 2006 Ecoblock international registered as a limited company, in 2013 Echale improvements registered as a Community Finance Company. All three registered in Mexico City.
Legal format	Three separate organizations; Non-profit foundation, Limited Company and Community Finance Company.
Num. employees/volunteers	48
Geographical reach	Mexico with trials in South Africa and Colombia.
Certifications/ awards	National House Building Prize (2007), Winners of Mexico Initiative (2013), B Corp Best of the World (2015), National Award for Quality (2014).
Social innovation variables	
1. Innovation type	The low cost finance solution that blends household savings, government subsidies and low interest credit and the adobe brick making technology are the two key innovations.
2. Social impact	One million lives have been improved, with 30,000 new houses and 150,000 house improvements carried out to date.
3. Financial sustainability	The private company has had a 4% annual profit margin over the last five years and the community finance company and foundation are both non-profit organizations.
4. Key Partners and Support ecosystem players	Public sector housing authorities are key as they facilitate subsidies, the government also purchases Echale services and financial institutions that provide credit for the community finance are also key players.
5. Scalability and Replicability	Currently investment is needed for the community finance to be able to scale and offer lower interest loans. A social franchise model is being developed to scale internationally.
References	www.echale.com.mx

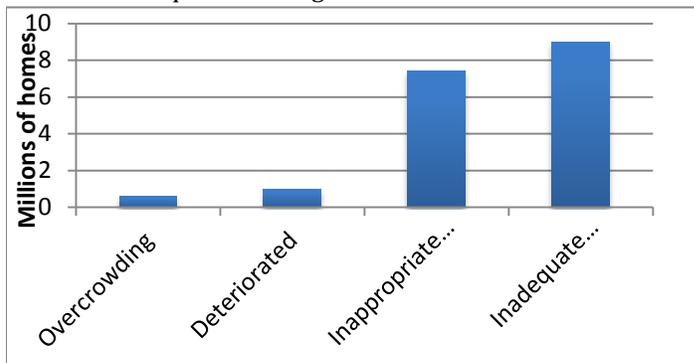
2. Local Social Issue and the Challenge

One billion people on the planet do not have a decent house and this breach of a fundamental human right deprives these individuals of other basic rights, such as access to health, peace and the right to development.¹

Housing deficit of 9 million

Echale a tu casa (Echale) sets out to combat this challenge in Mexico, where there is a housing deficit of 9 million homes. 3 million of those families who lack access to a decent house fall into the national housing programs, which provide houses either through public subsidies or private construction company initiatives. This leaves 6 million families unattended. Mexico does not have a significant homeless problem, but rather a lack of basic, adequate housing facilities with overcrowding being one of the critical issues. Families of up to 12 members may typically share one bedroom, with three generations living under the same roof. The roof is likely to be made of aluminum, providing no insulation from the extreme heat in the summer and the cold in the winter. 40% of the 6 million families without a decent home live in rural areas, which means they also don't have access to appropriate building materials.

Table 1. Inadequate housing characteristics in Mexico



Source: SHF with data from ENIGH 2010, INEGI.

In 2013 several large Mexican construction companies stopped building government-subsidized homes on the outskirts of the major cities. This was due to research carried out by the Mexican Social Security Fund for Housing which showed that 34% of these subsidized homes had since been abandoned, as often they were built in areas that lacked public services and

transport links or were built with inadequate materials that deteriorated quickly.

In response to this crisis, in Mexico two thirds of all houses are self-built, which only partially resolves the problem as most of these houses are built very precariously and are overcrowded, which exacerbates the underlying problems of domestic violence, child abuse and poor sanitation. However, 90% of the families who lack decent housing are economically active so the challenge is not purely an economic one. As 40% live in rural areas, the major barriers to decent housing are access to good materials and technical knowledge. An additional challenge for these families is the debt accrued from high interest loans to fund the construction of their homes. The annual interest on a loan to build a house in Mexico can be typically around 80%.

1. This equates to 17% of the global population (Sarigiannidis & Pervou 2013: 28).

3. Solution and Social Impact

Echale offers an integrated model that combines community empowerment, local house-building training, an innovative affordable financing system and ecologically sound building materials and techniques to improve housing conditions for the underserved populations in Mexico. Echale implements this model through three separate legal structures, a non for profit foundation, which delivers philanthropic self-build projects after natural disasters, a private limited company which manages the construction of new houses and improvements to existing houses, and a community finance organization which delivers the low interest micro-finance solutions to families who want to build or improve existing houses.

The combined efforts of the Echale family of organizations provide Mexicans with the materials and technical knowledge to build their own well-designed, environmentally friendly and long-lasting homes, making the self-build sector far more efficient through a combination of innovative environmentally friendly materials and tailor-made, low cost financing solutions. Echale has over 20 years of experience delivering solutions across Mexico.

Four key components to Echale

- **Social inclusion:** the Echale process includes a community development program whereby families are trained to produce their own building materials and build their house to professional standards.
- **Financial education:** all members of the family are trained in how to start saving to finance their building project.
- **Technical training:** men and women learn how to create sustainable “Ecoblock” bricks using local materials to create highly resistant and well-insulated houses.
- **Social franchise:** individuals in the community are trained to extend the program to others and recruit new families to join the self-build operations.

There are several elements to Echale’s model that make it unique. First, the focus on community empowerment and integration; while each house is built and financed by individual families, there is a community housing committee, which oversees the overall design and importantly makes sure that each person working on the houses receives a decent wage. Second, the technology that creates the Ecoblocks (95% adobe and 5% cement) as a resistant, highly insulating local material for the construction. Finally, the three part financing solution that accrues family’s savings, a government subsidy and a low interest credit to pay for the full cost of the house, and generate a profit margin for Echale.

Social impact

In the last 20 years Echale has helped communities build 30,000 new homes across Mexico and facilitated 150,000 home improvements. To date the estimated overall impact is an improvement to the lives of 1 million Mexicans, with a total of 200,000 temporary jobs created. Echale does not believe in donating houses and works hand in hand with communities to ensure people learn new skills, develop self-esteem and take ownership of their own development.

4. The Social Entrepreneur



Dr. Francesco Piazzesi is the son of a civil engineer and for most of his life has worked for the family construction business, Ital Mexicana, founded in 1961. An early experience that marked him for life was his visit to a brick-making kiln aged 12. His father took him to the kiln to experience what life was like for the most vulnerable. He and his brothers took part in collecting rubbish, plastic, old tires and all sorts of industrial waste to throw into the hot kiln to fire the bricks. Conditions were atrocious, children often working barefoot with no form of protection and for long hours. The experience marked Francesco for life and stirred his passion to create more sustainable building solutions.

Ital Mexicana – family construction business

Aged 17, Francesco formally started working with Ital Mexicana, specialized in cement block machinery and cement mixers. He later completed a degree in Business Administration and an MBA in Finance. At the end of the 1980s Ital Mexicana decided to create a new ecologically friendly, adobe brick and developed the Terrapress machine, a hydraulic press to make bricks out of clay (95%) and cement (5%). In 1985 Francesco took the Terrapress to a community for the first time to show people how to make “Ecoblocks” to build their own homes. He remembers many years of trial and error with these early experiences. For example, on one occasion after the community had successfully made 4,000 ecoblocks the president of the community came along to take the materials for his own private use. This learning process continued for some years.

Adobe Home Aid – EcoBlock International – Echale Improvements

In 1997 Francesco registered a foundation to develop the community work as a sideline to his job at Ital Mexicana and in the same year the foundation received support from the Mexican government to rebuild a community after hurricane Paulina. In this first experience the local families designed their own homes, paid for some of the cost of construction and the government subsidized the rest. Similar projects followed, however by 2002 Francesco decided to return to study for a PhD and develop a more robust financial solution as the impact he was having with Adobe Home Aid was not sufficient.

2006 marked a turning point for Francesco. He completed his PhD with a thesis dedicated to micro-credits for sustainable housing and decided to dedicate himself full time to community self-build. In the same year he registered EcoBlock International as a private limited company and set to work on the integrated community development, self-build and low cost finance model. By 2013 he had created a third enterprise, Echale Improvements, a community credit association to run the financing arm of the business. In 2010 he was nominated as an Ashoka Fellow and in 2011 he was awarded the social entrepreneur of the year by the Global Economic Forum. Francesco is currently director of Echale.

5. Business Model

Echale has over 20 years of experience delivering integral housing solutions to vulnerable communities across Mexico. The houses are co-designed and built by the community with affordable, local, eco-friendly materials under the supervision of experienced architects and community development professionals.

5.1 Characteristics

Echale offers two key forms of housing assistance and a set of tailor made low-cost financing solutions as described below.

Assistance in self-build of a new house

A typical new Echale house is 40m², has two bedrooms and is equipped with a rainwater collection tank, solar water heating system, efficient stove and in some cases a biodigester. The houses are built with the “Ecoblocks”, which are made by the Terrapress from a mix of adobe and a small amount of cement (5%). The Ecoblock has high thermal qualities ensuring houses keep warm in the winter and cool in the summer. The blocks also have far lower environmental impact than cement blocks, first due to the avoided CO₂ emissions generated by cement production, and second from the avoided transport-related emissions as the Ecoblocks can be made on site, with local earth. Echale also ensures that wherever possible the other materials necessary for the construction are sourced locally, and in the case of the earth for the bricks, this is sourced from the nearest certified clay pit or mine, to ensure that the local environment is not damaged by uncontrolled excavations that could cause erosion and landslides.

The building process includes the rent of the Terrapress machine, training of 5 people per house in the building technique, technical drawings for the house and manuals for its construction. The total cost of each house is 10,000 USD, which includes materials and labor costs, with people from the community paid to work on the construction. A typical house takes three weeks to build and the whole process from Echale’s first contact with the community with an initial demonstration to completion of the houses, usually takes 6 months.

Improvements to existing houses

Around 50% of Echale’s installations are improvements or extensions to existing structures. The process is the same as that described above, with the cost of the project including the rent of the Terrapress (managed by the local Echale representatives), raw materials (earth or clay), cement and other construction materials, architecture plans, technical supervision and local labor.

On completion of the construction, the Terrapress stays in the community and is managed by a local resident or group of residents who become the future promoters of Echale. These individuals are people who have been trained to use the Terrapress and who go on to recruit new families for the project, in return for a small commission from Echale as well as the opportunity to work on future projects.

In some cases the families choose to use cement blocks, rather than Ecoblocks. According to Francesco this is because there is still a cultural perception that the adobe blocks are inferior to cement, which can be considered by families as a better, more modern material.

Community development process

The two services above are facilitated within the context of a community development process. This begins with a demonstration of the Terrapress, whereby the machine is put on show and someone is asked to make the first brick. According to Francesco this is invariably a woman, which is a key part of getting women involved in the whole process. After the demonstration, there is a workshop on social organization to connect the community. Often the communities are already self-organized for certain activities such as the local festival, religion or politics however they are not usually organized for building and planning matters. The community development process may include elements of infrastructure development for the community such as recycling, rain water harvesting or reforestation projects. In some cases where there are problems related to alcohol abuse or violence, these topics are also covered by experts from the Echale team. Finally there is a co-design process whereby people draw their dream house. It is key that all members of the family are involved in this process.

The next step is a workshop on financial education, which consists of raising awareness around savings as well as practical steps to start saving for an Echale house. Once a family has saved 10% of the cost of the house (1,000 USD) they can join the project. It is important that this money comes from savings and that the monthly amount saved (around 50-60 USD) is the same as the amount that will have to be paid monthly for the credit for the house. Once the savings have been deposited in Echale's account the building process can begin.

5.2 Fee structure or pricing model

The average price of the house or a housing improvement project is 10,000 USD and this includes a 10-12% margin for Echale, which is how the company covers its costs and in recent years has been able to make a profit. In some cases, families pay up front for the total cost of the house, however in most cases they pay for the house with a combination of savings, government subsidy and micro-credit.

$$\text{SAVINGS} + \text{SUBSIDY} + \text{CREDIT} = \text{HOUSING SOLUTION}$$

Housing subsidy

After years of negotiations Echale successfully convinced the Mexican Social Security National Housing Fund (Spanish acronym CONAVI) to provide a subsidy for up to 30% of the cost of the Echale houses. Around 30% of the families that Echale works with receive this subsidy, and this number is increasing. Echale manages the subsidy for the families, who present the company with their petition and once approved the government transfers the funds to Echale who then manage the remaining 70% of the payment either through the community finance company or in partnership with a micro-finance enterprise. In the case of the projects to help rebuild communities after natural disasters the government has funded up to 100% of the costs.

In 2015 the process changed and rather than providing 10% of the total cost in savings to join the program, families need to have 30% of the house built before being able to join and apply for the subsidy. This means that they need to have financed the materials and labor involved for this initial part of the construction and is a way of guaranteeing that they will continue to completion of the house.

Micro-finance

In Mexico the average annual interest rates for Echale's target population to build a house is 80%, which means that houses can take between 5 and 15 years to build. Echale offers two different credit options at a reduced rate, through independent financial intermediaries or through its own community finance organization Echale Improvements as described below.

- **Independent financial intermediary.** Echale negotiates an interest rate of 30% from other micro-credit agencies willing to work in the often remote, rural areas that the projects take place. Echale to date has worked in 20 states across Mexico. In these cases the agency will pay Echale for the costs of the construction and the families sign the credit agreement directly with the agency. Echale then manages the construction project.
- **Echale Improvements (SOFINCO).** Echale has its own community finance company, which manages micro-credits directly with families who in turn become shareholders in the company and can access financial products at attractive interest rates. This company was one of the first community finance companies (acronym in Spanish SOFINCO) to be registered in Mexico and is regulated by the National Banking and Stock Exchange Commission (acronym in Spanish CNBV).

Echale Improvements has a credit line with *Banco B Por Más*, which provides loans to Echale at 12% annual interest. Echale Improvements then charges 30% annually to clients and signs a contract directly with each family, with no requirement for guarantee. The credit includes life insurance and household insurance. An additional service is that clients can open savings accounts with Echale Improvements at varying interest rates depending on the type of account.

5.3 Target beneficiaries

Echale's work is targeted to help families at the base of the pyramid across Mexico who currently live in inadequate housing situations. This target population, already currently spent 30% of their income on housing improvements, 60% are women and the majority are between 30 and 55 years old, and are self-employed in the non formal sector. This target group represents 10.9 million families in total. A break down of the type of housing this target usually acquires is described in table 2.

In addition to helping this group achieve the basic human right of having a decent home, Echale's process also intends to empower families to take their development into their own hands in several ways. A key element is to build financial literacy and promote a culture of

financial saving. Echale subsequently offers specific savings products to this usually unattended target population. Echale also provides new technical skills and the opportunity of temporary employment to help build self-esteem. The community development processes serve to build better social cohesion in the community, creating self-supporting and peer-to-peer networks to better face day-to-day challenges. Finally, environmental and health education programs aims to empower individuals to take better care of their own health and that of their surroundings.

Table 2. Types of housing for different target groups

Type of population	%	Type of housing acquired
Population with capacity to pay for housing	10%	Self build/community housing with some assistance
Population who receive insurance for housing (state social security)	30%	Purchase (commercial production)
Population with capacity to pay for housing but no insurance from social security	10%-20%	Purchase from self build/community housing with or without assistance
Population under the poverty line	40%-50%	Self build/community housing with or without assistance

Source: CONAVI 2011.

6. Social and Financial Performance

6.1 Social Impact Performance

Since 1980 Echale has helped vulnerable communities build 30,000 new homes and 150,000 home improvement projects, and is estimated to have improved 1 million lives in Mexico. In addition the project has created 200,000 temporary jobs. Echale Improvements has 1,000 savings clients and has delivered a total of 400 credits (480,000 USD).

6.1.1 Social impact achieved

Since 2011 Echale has seen a steady growth in terms of improvements to homes, and also an overall increase in numbers of new houses with an average of 20,000 temporary jobs created per year. Tables 3 and 4 show details of this growth in the last five years.

Table 3. Number of new houses and home improvements installed (2011-2015)

Families served	2011	2012	2013	2014	2015
Self-build assistance for new homes	1,000	455	1,482	1,080	1,078
Home improvements	853	6,500	1,112	153	541
Total	1,853	6,955	2,594	1,233	1,619

Table 4. Number of jobs created (2011-2015)

	2011	2012	2013	2014	2015
Full time jobs	38	38	42	40	48
Temporary jobs created	20,000	20,800	21,000	20,500	20,800

6.1.2 Social impact measurement

Echale's most obvious social impact indicator is the number of new houses, number of home improvements, and jobs created. However there are also several environmental measurements that are taken for each project. This includes reduced water consumption; the rainwater harvesting tanks are estimated to save 20% on the amount of water that is purchased; the efficient stoves installed are calculated to save 70% of firewood; the solar water heaters reduce the consumption of gas and the energy efficient light bulbs are estimated to save 10% on energy. The houses with biodigestors reduce the septic tank leaks to water sources and also produce biogas.

The benefits in terms of community development are more complex to measure, however the areas of impact could be related to specific improved infrastructure in the community, such as recycling systems and community centers built or areas of land reforested. Other benefits are less tangible and are not measured; however these could include stronger community resilience through improved relationships and collaboration between families. Also the

improved housing conditions bring about improvements to the general wellbeing of individuals, and have a positive influence on domestic violence, alcoholism and drug problems and other common challenges that overcrowded housing causes. These aspects are not currently monitored.

Once a family signs up to the scheme an initial base line questionnaire is completed by the Echale team, which identifies in detail the living conditions of the family including a personal profile of all family members, details of the materials the house has been built with, previous credit experience and experience in construction. See Annex 1 for the detailed questionnaire.

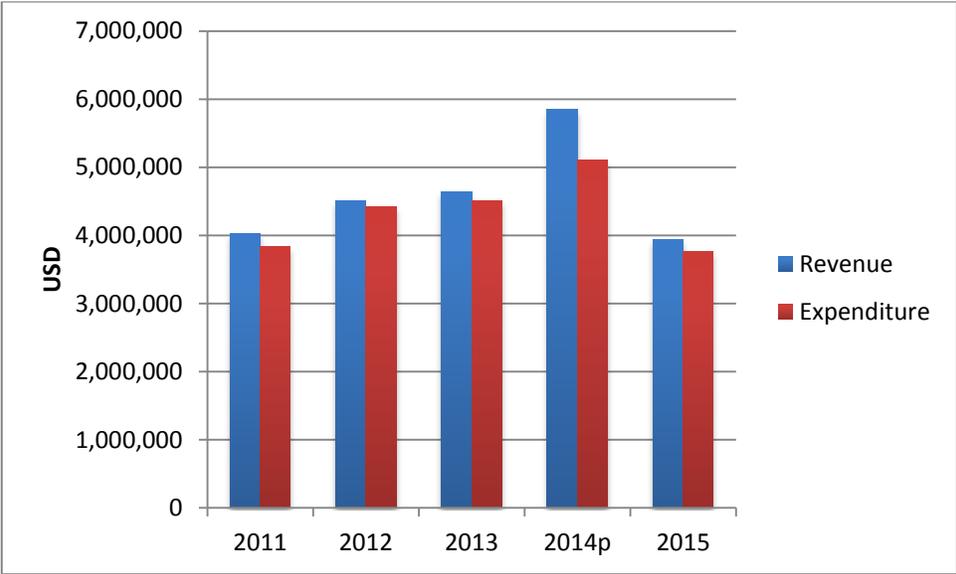
6.2 Financial Performance

Financial performance can be measured both for Ecoblock International, the organization responsible for the construction and community development processes and for Echale Improvements, the community finance organization. Ecoblock International is a private limited company equally owned by Francesco and his two brothers who founded the organization in 2006 when Echale a tu Casa became independent from Ital Mexicana. EcoBlock International builds on the work of the non-profit organization Adobe Home Aid, which was also founded by Francesco in 1997.

6.2.1 Revenue and Expenses

Ecoblock International has been profitable since 2011 with an average annual return of 4% over the last five years. The company has an external advisory board and is currently seeking external investors for growth and a restructuring of the shareholders.

Figure 1. Ecoblock International’s Revenue and Expenses (2011-2015)



Echale Improvements was registered as a Mexican SOFINCO in 2013 and table 5 shows a comparison of the results of the organization with other financial intermediaries that have worked with Echale in its first two years of operations.

Table 5. Echale Improvements and other intermediaries comparison (2014)

Number of housing solutions provided	113,200	
Number of subsidies from CONAVI	45,280	
Previous savings 5%	5,660	
	Financial intermediaries	Echale Improvements
Cost of construction	3,500 USD	3,500 USD
Cost of supervision	140 USD	0.00
Administration costs	70 USD	0.00
Opening fee	138 USD (4%)	35 USD (2%)
Tax on payments	22 USD	6 USD
Total credit	3,870 USD	3,541 USD
Difference		-329 USD
Monthly quota	1,38 USD	0
Tax on quota	0.22	0
Duration of loan (months)	60	60
Interest rate	30%	30%
Interest rate for late payments	45%	45%
Life insurance and house insurance	0.00	0.01%
Monthly payments	137 USD	113 USD
Difference		-24
Total payments	8,216	6,782
Difference		-1,434
Liquid Asset Value	137 USD	346 USD
Difference	-209	

6.2.2 Proportion of Income from Sales

The original capital for Echale was 70,000 USD, which was invested by Francesco and his brothers at the start of the initiative in 1997 when the non-profit organization Adobe Home Aid was founded. Ecoblock International has received a considerable amount of in-support from Ital Mexicana since the start, most significantly the investment in the design and manufacture of the Terrapress. In 2008 Ecoblock received 100,000 USD in prize money as a

grant from the Mexico Initiative. With the exception of this grant, all donations and loans have been for the financial arm of the company, Echale Improvements.

Echale Improvements received 25,000 USD in 2011 from Deutsche Bank and subsequently, in 2015, a line of credit from *Banco B por Más* of 350,000 USD, loans from Alfa Mundi of 200,000 USD in 2013 and 250,000 USD in 2015 and 1 million USD from IDB between 2015 and 2016. Echale is now seeking investment to grow the community finance arm of the business, as well as convert some of its debt to equity.

7. Business Development and Ecosystem Evolution

Echale today is the result of over 30 years of commitment and leadership from Francesco Piazzesi. There have been three key stages to the development of this social enterprise; the Startup phase from where Francesco pioneered the early technological development as an intrapreneur within the family construction business Ital Mexicana and the non-profit organization Adobe Home Aid; the Early Phase of development from the registration of the private company, Ecoblock International to the creation of the community finance company Echale Improvements; and finally the Growth Stage whereby the two companies work alongside each other to a common cause of providing sustainable housing solutions for vulnerable communities across Mexico.

Table 5. Summary of Echale's business development milestones from 1980 to present

Stage	Year	Description
Start-up	1980	First design of Terrapress to make environmentally friendly bricks.
	1985	First experience of Terrapress in communities in Mexico.
	1997	Registered Foundation Adobe Home Aid as a non-profit to coordinate the community housing projects.
	1998	Adobe Home Aid rebuilt a community destroyed by hurricane Paulina.
	1998-2002	Tests and trials of the building and community development model carried out across Mexico.
	2002	Francesco decided to return to study, to develop a robust model, started a PhD.
Early	2006	Francesco presented his thesis on micro-finance and committed full time to Echale. He registered the company Ecoblock International S.A. de C.V.
	2007	Echale received Mexican National House Building Prize.
	2008	Dialogue with housing authorities started to develop subsidy program. Echale won Mexican Initiative program 100,000 USD grant.
	2009	First housing subsidy given in Campeche.
	2010	Francesco nominated as Ashoka Fellow.
	2011	Francesco nominated as Social Entrepreneur of the Year at WEF. Deutsche Bank provided grant of 25,000 USD to start a credit organization
Growth	2013	Echale Improvements created and credit line from <i>Banco B Por Más</i> secured.
	2013	Echale joined accelerator Momentum Mexico Project (BBVA). Received first part of loan from Alfa Mundi 200,000 USD. Rebuilt Vienta Vieja community after hydroelectric dam disaster.
	2014	First regional office opened in Morelos of Echale Improvements. National prize for Quality from national entrepreneur organization (INADEM). Echale certified as B Corps.
	2015	IDB loaned 1 million USD (first part 500,000 USD), Alfa Mundi loaned part two 250,000 USD. Third version of Terrapress created.
	2016	Banamex Foundation paid for construction of two communities, Angostura and Navolato. Second part of IDB loan (500,000 USD) administered.

7.1 Startup Stage (1980 – 2006)

7.1.1 Milestones

Echale's roots lie within Francesco's family construction business Ital Mexicana, specialized in the design and manufacture of machinery for the building sector. In the 1980s the business began to respond to the global environmental concern associated with cement, as a highly carbon intensive industry. In 1980 the company created the first Terrapress, a machine inspired by the original design of the well known adobe press created in 1956 by Raul Ramirez known in Spanish as the "Sinbarram." This machine was a manual press to create bricks from adobe. Ital Mexicana's first design was a hydraulic press, with 95% adobe, 5% cement or lime and run on a gasoline generator, which produced a far higher quality brick at greater speed. In 1985 Francesco took this machine for the first time to a community to try it out as a tool for communities to build their own houses. Here the process of trial and error began, which is the foundation of Echale's success today.

Adobe Home Aid Foundation

In 1997 Francesco registered a non-profit foundation as a structure to organize the work he was carrying out in the communities. Francesco and his three brothers put forward 70,000 USD as initial capital for the organization which enabled the foundation to employ a team of 5 people, with Francesco as President, on a voluntary, part-time basis. Within the first year of activity the foundation was recruited by the Mexican government to rebuild an entire community, which had been destroyed by hurricane Paulina. This became the first pilot for Echale, with the communities involved both in the design of the houses and also recruited as paid labor for the construction. This was the first significant project for Adobe Home Aid and similar projects continued between 1998 and 2002 across Mexico. These were largely government supported initiatives to rebuild communities after natural disasters. This road show around rural Mexican communities with the Terrapress helped the organization to better understand the untapped self-build market in Mexico. At this time no construction company had formalized an understanding of this sector.

During this time the Foundation had difficulty retaining staff as it was not able to pay competitive salaries and Francesco became frustrated with the lack of scale of the initiative. In 2001 he took part in a social training course at the social union of Mexican businessmen (acronym in Spanish USEM) and recalls a conversation with his professor Don Lorenzo Servitje who asked him whether he had built a "million" homes yet. This provocation inspired Francesco to return to study to create a more robust model with potential for scale. He enrolled in the new Development Policies PhD program at Anahuac University and dedicated his research to developing a micro-credit model for sustainable housing with a case study on a rural community in Mexico, called *La Petrolera*.

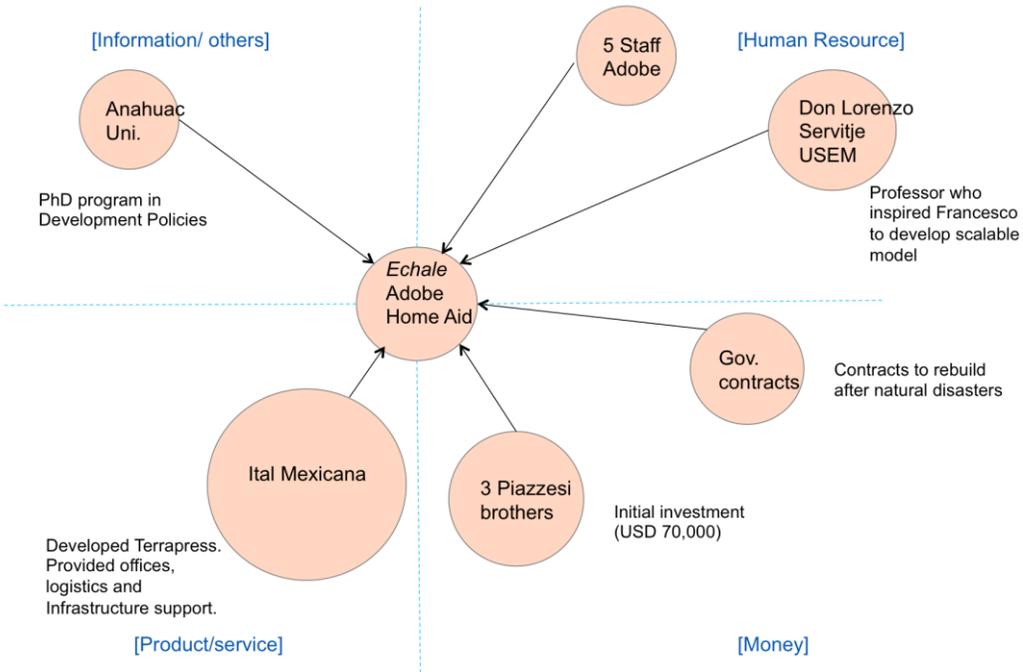
Ecoblock International

In 2006 Francesco completed his thesis and decided to leave the family business and dedicate himself full time to Echale. In the same year he registered Ecoblock International, as a private

limited company, with himself and his two brothers as shareholders. This marked a clear turning point in Echale’s history.

7.1.2 Key supporters

Figure 2. Echale’s Startup Stage Key Supporters



7.2 Early stage (2006-2012)

7.2.1 Milestones

Now that Echale had its own registered company and a full time commitment from Francesco, the project started to make more rapid progress. Francesco began to share his ideas with several organizations and sought support; he started early discussions with Ashoka in Mexico who criticized the project for not having enough capacity for scale. He and his team also got to know other community housing initiatives such as the Chilean born foundation TECHO. They observed success in TECHO in terms of student engagement and the provision of temporary housing, particularly in very critical situations after natural disasters, however they also observed that the results were not sustained over time as building that is done by volunteers was not valued in the same way as building that is done by paid labor from the community. Many houses were poor in quality and often ended up being used for livestock or storage rather than for living. In this sense Echale’s model was reaffirmed, whereby it was considered important that the construction labor was fairly paid.

Savings + subsidy + credit model

During this early stage the first foundations were laid for the financial model of the business, combining family savings, government subsidies and credit. Francesco and colleagues started conversations with the national housing commission in Mexico (CONAVI) to explore ways of supporting the segments of the population previously not attended to by the Social Security Housing Fund. At this time Echale would go into the communities, demonstrate the Terrapress and offer the service of house building or home improvements and to fund their homes, families would be obliged to seek credit from an independent intermediary, often charging high interest.

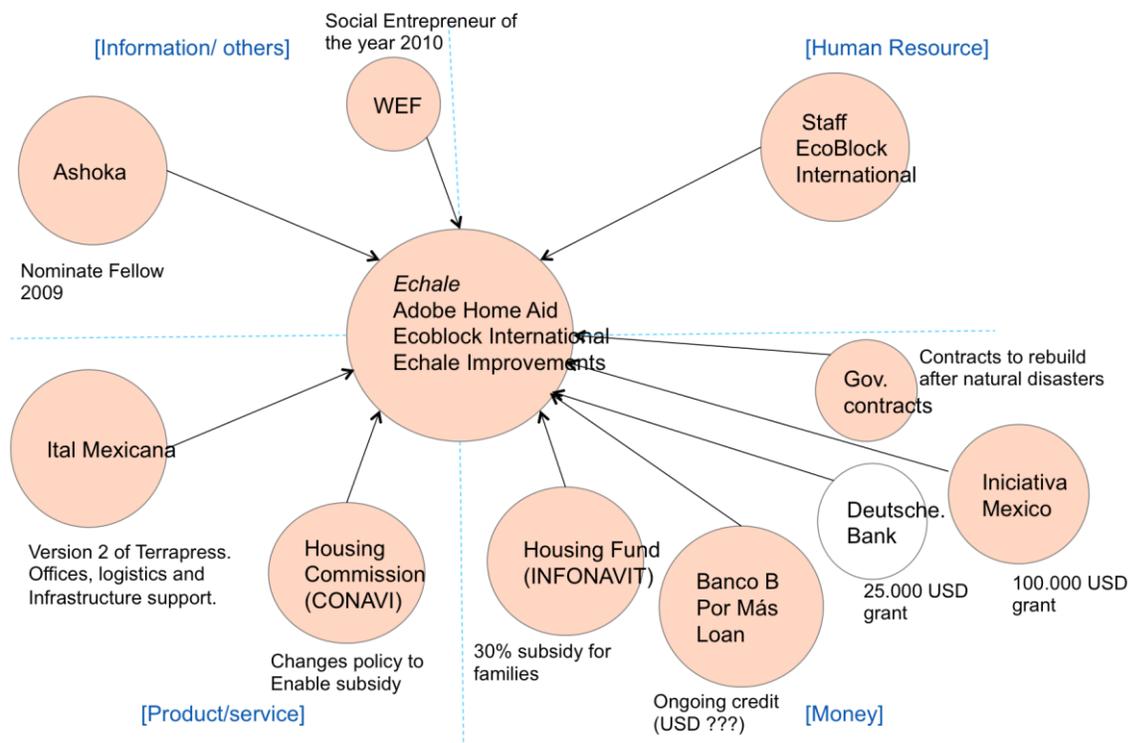
At this time, Echale's target population, who are not in formal employment were not included in the state housing support scheme, which was only available for people with formal employment contracts. In 2008 an agreement was established with the Social Security Housing Fund (INFONAVIT) to subsidize this target group. The first housing subsidy was secured with Echale in 2009. Families had to complement this subsidy which covered 30% of the total cost of the house, with a loan from an independent intermediary. Echale found the intermediary and negotiated the rate of interest at 30%. At this stage Echale started to become well known in Mexico and in 2008 the company won the Mexican Initiative prize, which gave the organization national TV coverage and 100,000 USD in grant money.

Social Entrepreneur of the Year

In 2010 Francesco was nominated as an Ashoka Fellow and this positioned him on the international social entrepreneurship stage. In the following year in 2011 he was selected as social entrepreneur of the year at the World Economic Forum held in Brazil. At this stage he put in place the strategies to complete the low cost financing model. With an initial grant from Deutsche Bank set up a community finance company, Echale Improvements, known as a *Sociedad Financiera Comunitaria* (acronym SOFINCO) in Mexico. This new company was one of the first community finance companies to be registered in Mexico. Echale Improvements was able to start offering credits at an annual rate of 30% with a line of credit from the private bank, *Banco B por Más*, which charged 12% interest to Echale.

7.2.2 Key supporters

Figure 4. Echale's Early Stage Key Supporters



7.3 Growth stage (2013-2016)

7.3.1 Milestones

The rebuilding of the community that was destroyed by the breaking up of a large dam was one of the key milestones in Echale's history, as it demonstrated the company's capacity to respond quickly and effectively in providing housing, infrastructure and community development. The dam broke on the 13th September in 2013, and the government approved Echale's involvement in June of the following year. By December 2014, the entire community had been rebuilt, with 116 new houses, a community center, reforested areas and new paved streets. 750 temporary jobs were created and 350,000 Ecoblocks were manufactured. The government paid for this project in its entirety.

Echale Improvements consolidates

The next key element in this initial growth phase was the securing of financial capital to enable the community finance company to administer micro-credits to Echale clients. With the initial grant support from Deutsche Bank, followed by a line of credit from *Banco P por Más*, Echale then took out a larger loan from Alfa Mundi, of 200,000 USD in 2013 and later 250,000 in 2015. A 1 million USD loan was also secured from the IDB. At this point, with the financial muscle in place Echale was able expand the micro-credit operations as well as offer a savings facility for clients.

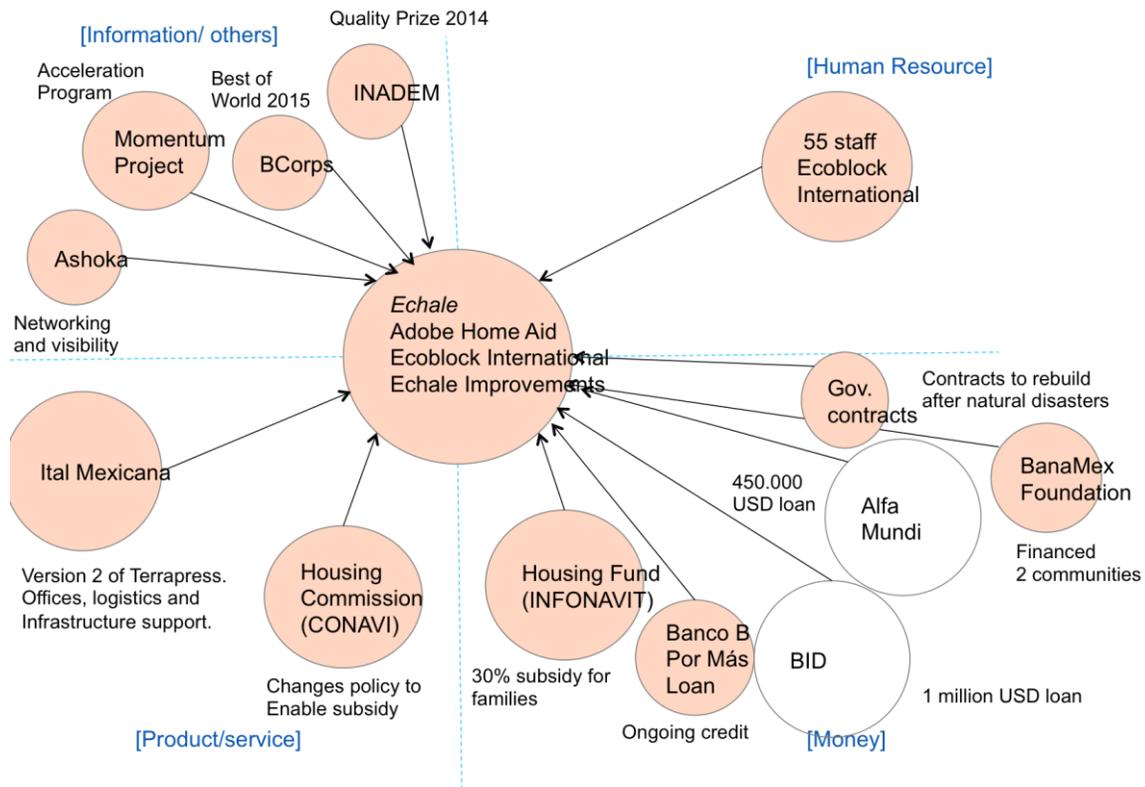
Echale's national and international credibility continued to grow during this stage and in 2012 was nominated as a finalist in the Katerva Prize and in 2013 as finalist for the Buckminster Fuller Prize. In 2013 Echale was selected as one of the 10 Mexican social enterprises to participate in the first edition of Momentum Project Mexico, an acceleration program developed by ESADE Business School in Spain and run in Mexico by New Ventures, in collaboration with the ITESM Business School and BBVA as financial supporters. In 2014 the organization received the First Prize for Quality from the public entrepreneurial agency, INADEM, and later in 2015 received the B Corps award for Best of the World with 168 points on the maximum 200.

Private investment for growth

While 2015 was a difficult year for the Mexican economy, Echale maintained stability in terms of volume of its operations and in 2016 won a significant contract from the Banamex Foundation for the construction of two very marginalized communities, Angostura and Navolato. 2016 also marked a significant step in Echale's growth as the companies moved into new offices, independent from their previous location with Ital Mexicana. In 2016 Echale started to seek private investment, with a particular focus on the community finance company's growth. This is intended to mark a new phase in the governance of Echale, as the original shareholders, Francesco's brothers, are envisaged to step down to make room for a new and more involved investor. Currently the finance company is offering an 8% return on investments, which is considered very reasonable for the construction market in Mexico. The largest, and most established construction company in Mexico (*Fibra Uno*) currently offers 9%.

7.3.2 Key supporters

Figure 4. Echale's Growth Stage Key Supporters



8. Scalability and Replicability

With over 30 years' experience working in low income communities, the appropriate structures for an integrated program of community development, sustainable construction and low-cost financing, Echale is in a position to scale its impact towards the target of 6 million people who do not have decent housing in Mexico, and beyond. There are currently two strategies in place for scaling the program, consolidating the community finance program in Mexico and creating a social franchise program for international replication.

Investment for the community finance program

Echale aims to seek investment to consolidate the community finance arm of the organization, and above all not to have to rely on external creditors with high interest rates that eventually have to be passed on to Echale's clients. Francesco and his team are currently in discussions with several potential investors to support the organization and broaden access to low cost credit for vulnerable underserved communities in Mexico.

Social franchise program

As well as expanding and consolidating in Mexico, where there is still a considerable market to tap into, Echale also has intentions to expand internationally. The organization is currently developing a social franchise model in two different countries, Colombia and South Africa. In Colombia Echale had first contact through the Ashoka Globalizer program, which took Francesco first to Paris and then to Colombia. Lots of interest in the program was generated, and a potential pilot is being developed in a community that was destroyed by the guerrilla during the conflict. The leading global cement company Lafarge and the Colombian government are interested in supporting this project.

In South Africa progress is being made for an initial project with the community Limpopo. The local partner organizations, both from the public and private sectors have visited Echale's projects in Mexico and likewise the members of Echale's team have visited Limpopo. To develop the partnership Echale has contracted the services of Feher and Feher, a private Mexican law firm to design a social franchise model, whereby there will be an agreement between the two organizations to develop the Echale model in Limpopo, with an initial fee as well as % of ongoing revenue returned to Echale. The brand name will remain the same. Rather than global organic growth Echale is interested in working with a growing network of partners who share the same values and vision.

There have also been previous unsuccessful attempts at scaling, as was the case with Nicaragua (for political reasons), Guatemala (where the architects leading the project wanted to use the Terrapress for higher paying private clients) and China (where the situation was highly complex).

9. Final Reflections

Key milestones

Over the last 30 years there have been several significant moments in the history of Echale, however the following three can be highlighted;

- The registration of Ecoblock International in 2006 as a key moment in becoming an independent operation from Ital Mexicana which brought with it the full time dedication of Francesco.
- In 2009 the first social security government-housing subsidy was issued for families in the non-formal, previously unattended segment of society, after long negotiations with Echale to include this sector in subsidy programs.
- In 2013 the creation of one of Mexico's first community finance companies, Echale Improvements, as a recognized legal entity to enable individuals from vulnerable communities to become shareholders in a micro-finance organization. Shareholders can benefit from both low cost loans for building new homes, or improving existing homes as well as making their own investments in savings accounts.

Challenges for growth

A key challenge is to consolidate the community finance arm of the business, as currently only 10% of the loans are managed directly by Echale Improvements and the rest are subject to independent intermediaries interest rates as well as precarious services. While Echale tries to negotiate low interest rates and a fair deal for their clients as the service is not entirely within their control, there is always the risk for a less than favorable situation.

The second key challenge is to have the resources and necessary skills to be able to scale the business on an international scale, while there continues to be high demand in Mexico. While Colombia and Limpopo are on the horizon, resources are limited to accelerate this growth.

Contribution to social innovation

The key systemic change brought about by Echale in Mexico is the change achieved in terms of housing subsidy policy, whereby the National Commission for Housing has reformed its regulations regarding the segments of society who can access housing support. This process has been developed to be relatively quick and simple and Echale manage the process directly with the communities. A second systemic change is the influence that Echale has had on the self-build sector in general. There are now several offers on the market for this target group, from pre-fabricated houses to other types of self-build programs based on credit. Given the size of the target, this is seen in a positive light, even if not all the solutions are optimal.

Annex 1 Baseline questionnaire

QUESTIONNAIRE
Which Echale program are you part of?
Name of community
Name of person answering questionnaire
Age
Sex
ID number
How many children aged less than 17?
Do you have children aged less than 17 who don't go to school
What level of studies does the head of household have?
How many members of the household work with fixed, temporary or no contract?
What is the majority of the house made from?
Where is the water used in the toilet from?
Where does the drinking water come from, how is it treated before drinking?
Does the house have a mop?
What fuel is used for cooking?
Does the house have a liquidizer? Iron? How many televisions?
How many bedrooms are there?
Would you be interested in further training?
Before working with Echale have you had any other credit? From where?
Do you participate in a community organization, what type of organization?
Have you worked in construction before?
At this moment what is your priority in life?
Which are the public services you have access to?
Would you like to take part in the construction of a community center?