Sustentabilizar Hogares

Region	**Latin America and the Caribbean**
Award Scheme	**Dubai International Award**
Start Year	**2017**
Sustainable Development Goals	**Goal 11 - Make cities and human settlements inclusive, safe, resilient and sustainable**

Summary

Annually, the Argentine government builds around 36,000 housing units through social housing plans (http://www.vivienda.gov.ar) Construction is based on living space needs and a reduced budget, not on energy efficiency criteria. Therefore, the region adds thousands of homes each year that are both unsustainable in the short and long-term and waste energy.

Background and Objective

The housing deficit in Argentina reached 595,000 homes in 2007, and as a result the national government through its Federal Housing Plan began to construct thousands of homes each year. While providing shelter for a significant portion of the population, the housing plan lacks access to vital services and the homes are constructed without considering energy efficiency or environmental impact.

Actions and Implementation

The main obstacle hindering energy efficiency in housing is not economic, but cultural. The barriers that have led to a lack of laws and regulations, minimal investment, and an overall reasoning that sustainability is expensive and requires complicated technologies, relate to a lack of information in society and experiences working with energy efficiency. Within Argentine society, there is a general lack of knowledge surrounding the following: a) How low income households actually satisfy their energy, water and waste disposal needs. FOVISEE specifically carries out research in order to create projects that attend to low-income sector energy needs. b) The potential that sustainable practices and technologies have for improving the quality of life and health of families, and the potential of energy and financial savings c) The implementation of sustainability criteria in housing, specifically low-income government sponsored housing, does not require complex technologies nor large financial investments. FOVISEE's projects demonstrate that simple modifications such as the use of window screens and light curtains, coupled with energy saving practices such as the correct use of the window and low energy consumption household appliances can have significant impact on a family's energy consumption and economic standing. FOVISEE also demonstrates through its projects that solar thermal energy is a viable and relatively inexpensive way to include energy efficiency in low-income public housing in Argentina. Since FOVISEE is one of the few organizations in Argentina that work with energy efficiency and housing, the forum has been working persistently to promote a "cultural change" in Argentine society, where sustainability, energy and housing are considered interdependently. FOVISEE strives to demystify energy efficiency and demonstrate to society as well as the government that sustainability criteria can be applied to all homes and buildings in Argentina at low costs. This is especially important in Argentina's current energy context, where the nation is importing energy and costs are rising. FOVISEE's projects attend to this need by providing models for public policy (project 100). On the other hand, FOVISEE concretely works to promote said "cultural change" through the implementation of the Instructions Manual for the Sustainable Use of the Home (see section Objectives and Strategies), the photo contest FOVISEE is launching this year, "Housing and Energy: Under the light of Sustainability", and the international conference FOVISEE hosts each year where energy, technologies, government policies regarding sustainability and housing are discussed and debated by members of civil society, regional governments, and NGOS. In order to carry out the aforementioned projects FOVISEE has partnered up with an electric distribution company, companies that produce materials related to energy efficiency in construction, and companies that manufacture thermal solar energy systems.

Outcomes and Impacts

Financial aspect: FOVISEE's projects have demonstrated that it is possible to build energy efficient public housing with minimal additional costs. There already exists a large budget destined towards social housing and including sustainability criteria is financially feasible within the existing funds destined towards public housing. Social and economic aspect: The implementation of sustainability criteria to social housing can generate up to 50% energy savings per household. As a result the family saves money on energy bills and access to energy is guaranteed. In addition, the families also experience

significant improvements in quality of life and health, demonstrated through fewer hospital visits. Cultural aspect: by raising awareness surrounding the efficient use of energy, consumption patterns are changed and families stop wasting energy. Families become aware that they are the main actors in household energy savings and become conscious of how to take care of the environment. Environmental aspect: through the efficient use of energy and installing solar panels for the heating of water, household energy consumption goes down by up to 50%. If the thousands of housing units built each year in Argentina were to introduce sustainability criteria, C02 emissions would reduce significantly within a few years Institutional aspect: the end goal of the project is to serve as a model for public policy in Argentina. The potential to “scale-up” the project to a national level is enormous due to the number of housing units built by the government each year. The implementation of sustainability criteria to public housing is highly feasible due to the minimal additional costs implied and the enormous benefits that it offers.

Gender and Social Inclusivity

Transfers are one of FOVISEE’s main objectives. All of FOVISEE’s projects are based on actual social housing plans so they may duplicated on a massive scale. Once FOVISEE’s projects have been completed and evaluated, team members disseminate the project results, raise awareness, and share our experiences and expertise with government officials as well as private sector and civil society institutions working on social housing. FOVISEE projects only make sense if they are eventually implemented on a large scale. FOVISEE based its energy efficient affordable housing models on the average size and cost of units built under the “Federal Housing Plan” (approximately 50 sq. meters or 538 sq. ft. and a total cost of US$ 30,000). In order to ensure minimal additional costs and guarantee the extension of sustainability housing criteria to millions of people, FOVISEE chose to work with simple and low-cost energy efficiency technologies. Sophisticated and costly technologies would surely be rejected by state housing plans. The cost of the insulating materials, technologies, and construction systems applied in FOVISEE’s pilot projects were very low and did not exceed 10% of the total housing unit value. FOVISEE has been gradually “scaling-up” its projects and hopes to introduce energy sustainability in 100 social housing units in order to create Argentina’s first energy efficiency neighborhood. FOVISEE’s projects have also learned and taken into account energy efficiency plans from the region. For example, FOVISEE looks to Brazil’s housing plan “My House, My Life”, which in 2010 constructed 40,000 social housing units with solar panels (for water heating), and by 2014 aims to construct 300,000 more with the same sustainability criteria, for guidance.

Innovative Initiative

The main lesson learned is that in Argentina energy efficiency in affordable housing is a field with no gathered experience, even amongst experts. Due to this reality, FOVISEE began to carefully carry out projects “in the field”, all of which were based on extensive research and included community input. Among FOVISEE’s first projects, several project aspects did not produce positive results, all of which allowed team members to rule out ideas that were impractical, too costly, complicated or fragile. An element that proved very successful in FOVISEE’s field projects was the installation of solar panels used to heat water for domestic use (solar thermal energy, STE). Since there is very little experience with solar energy in Argentina, and a practically non-existent renewable energy industry, FOVISEE experimented with different prototypes for solar heaters in newly built social housing units, and subsequently tested their efficiency. The first solar panel models used did not produce the desired results, but eventually, after various rounds of “trial and error”, the team members were able to successfully install a solar panel model that produced positive technical and social results in the affected households.) (see www.fovisee.com-“Proyectos”, and videos at www.fovisee.com-“Home”). An element that proved to be unsuccessful was the use of energy efficient stoves.Through FOVISEE’s projects, team members were able to learn that energy efficient stoves, that waste very little energy, but consume firewood, were socially beneficial but overall were impractical to install in thousands of housing units. The team members confirmed that the market lacks the type of fuel necessary for the stoves, and would fall short of supplying heat for thousands of households in greater Buenos Aires. A very important lesson learned was how important it is to have an interdisciplinary team working on the project. The project relied not only on technicians, architects, and engineers, but on sociologists who permanently support the beneficiary families socially, monitor their perceptions and opinions regarding energy efficiency and the environment, carry out workshops on the efficient use of the home (efficient use of energy, water and the proper waste management), as well as conduct surveys, research, and evaluations in order to produce reports regarding the project. The research that the sociological team carried out allowed for a precise diagnosis of the beneficiary family’s energy consumption patterns, as well social and economic standing, all of which allowed the project to be designed specifically in line with the most pressing problems facing the families.

Resources devoted to delivery

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Global Thermal Energy Counsil

Conclusion

“Sustentabilizar Hogares” is innovative as it intends to become a larger public policy and not only to end up in the local community. While some NGOs focus on practical intervention, we believe that the improvement needs a massive aplication that only public policies can provide. The biggest challenge in the coming years is to consolidate the established links between FOVISEE and the local governments. We believe that these local experiences could be the starting point of a substantial improvement. We aim for a regional and international projection.