



Water and Sanitation Program

An international partnership to help the poor gain sustained access to improved water supply and sanitation services

El Alto Condominial Pilot Project Impact Assessment. A Summary

A quantitative approach to project-induced changes in household infrastructure and hygiene habits

This paper discusses the household survey results of the El Alto Condominial Pilot Project (EAPP) in terms of the changes in sanitary infrastructure within households and improved family hygiene practices since the condominial-pilot was launched.

The El Alto Condominial Pilot Project (EAPP)

The EAPP is a demonstration project initiated in 1998, and led by the Bolivian Government to improve sanitation services in marginal urban areas in the cities of La Paz and El Alto. It attempts to replicate the condominial model pioneered in Brazil in the early 1980s, which involves engineering design breakthroughs together with a major community involvement component.

In Bolivia the pilot project is implemented through a strategic alliance between the Vice-Ministry for Basic Services the Water and Sanitation Program (WSP), which is providing technical assistance and facilitating the transfer of the condominial model to Bolivia; the Swedish International Development Cooperation Agency (SIDA), which funds WSP, and the La Paz and El Alto water concessionaire *Aguas del Illimani* (AISA), which is financing the infrastructure investment in conjunction with the customers.

The project has involved three stages. In the initial or learning stage, interventions took place

with 615 new customers in two El Alto zones - Huayna Potosí and Villa Ingenio - that were selected directly by the utility. In a second stage, project participation was directly decided by 1593 homeowners in the Caja Ferroviaria, Oro Negro, San Juan de Río Seco and Mariscal Sucre areas. During the third stage, 1639 families in the Germán Busch participated in the pilot program. This third stage is being executed by AISA with only limited technical assistance from WSP.

Impact evaluation

The impact evaluation specifically seeks to: a) gather information about the Pilot Project's achievements concerning the number of household connections and type of in-home sanitation facilities installed by the customers; b) gain a better understanding of the changes in the customers' hygiene habits and water consumption patterns; and c) understand to what extent the education and community involvement components have contributed to the pilot project's impact in: (1) increasing the number of household connections and the number and type of sanitation fixtures installed, and (2) improving hygiene habits and increasing water use among households that connect to the public supply.

Achieving each of the proposed impact evaluation goals required putting into practice the following methods and procedures. A first effort provided a comprehensive assessment of the Pilot Project's objectives and goals based on a review

of the data collected for all the households participating in EAPP interventions (census data analysis). A second effort aimed to compare the condition of a sample of beneficiary households before and after the condominial system was introduced (sample analysis). A third approach involved a comparative study between a sample of condominial households surveyed before the introduction of the condominial system, and a sample of households where conventional water supply and sewerage systems were installed (sample analysis).

RESULTS

Household Connections

For the first two stages, the residents' decision to connect their homes to the condominial system was almost unanimous, 96.6%, or almost all occupied houses.

- 97.7% of occupied properties connected to the system (in areas where sewerage was offered by the pilot project).
- 91.7% of occupied properties connected to the system (areas where water services were offered by the EAPP).

A comparison of connection rates showed that 32% more condominial households connected to the systems as compared with conventional system households. These results may be accounted for by negligible or inexistent social interventions in projects using the conventional system.

Household Sanitary Installations

Evidence from surveys points to the finding that the longer the time invested in social interventions for each connection, the greater the number of household sanitation fixtures installed. Intensive social interventions resulted in greater success in getting household sanitation fixtures installed.

The fact that 77% of occupied houses in the first two stages of the Pilot Project had toilets either installed or in the process of being installed only three months after the systems had been built, represents a significant Pilot Project impact.

Likewise, six months after concluding the works, 66% of occupied houses that had a sewerage connection had added an additional type of sanitation fixture.

Water taps

In areas provided with drinking water before the introduction of the condominial sewerage system, most households (61.5%) obtained their drinking water from a single outdoor tap. After the condominial sewerage network was installed, a mere 27.8% of households had a single tap; the rest had installed additional taps or water use points. On the other hand, in similar areas served by a conventional sewer system, 70% of all households had a single, outdoor water tap.

Bathroom construction

A comparison of condominial and conventional sewerage areas shows 44% more households with toilets in the former than in the latter.

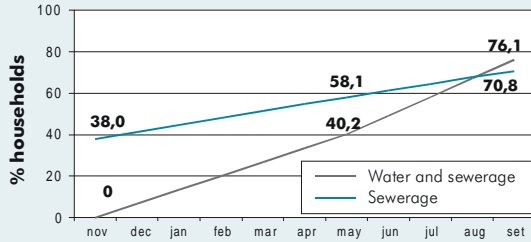
In areas with access to the water service, households with bathrooms built before the project were less likely to be connected to the sewerage network compared to those houses that built their bathrooms as a result of EAPP intervention.

In the latter group almost all toilets were connected to the condominial system within six months of the system becoming operational. In the conventional system area, only 16% of the surveyed houses had connected their sanitary installations to the sewer system, in the same six month period.

Installing bathroom related facilities

Building bathroom related facilities (bathroom modules) hinged on the residents' interest in and economic means available for getting the job done. These conditions led to a range of options in building individual household bathroom facilities. In-home sanitation infrastructure construction did not take place during a single period of time, but proceeded according to each household's priorities and financial possibilities. The following graph shows the increase in the percentage of households with more than one type of sanitary installation at the time of the impact survey.

Percent progression of households with more than one water related instalation. Second stage



It is worth noting that the Pilot Project’s impact in these two areas is part of an ongoing process extending beyond the six month period after which the systems became operational.

Microcredit

Agreements with local lending institutions sought to make possible the building of household sanitary installations using small-scale credits. However, this possibility was no longer offered by the end of the first stage due to low acceptance among beneficiaries. Only 12% of all houses with sewerage connections in the first stage actually applied for a loan while sanitation modules built with these loans accounted for 22.5%¹ of all bathrooms built as part of the Pilot Project.

Community Participation

Results show that the residents greater commitment to the Project as measured by their involvement in training activities is linked to a larger number of water and bathroom related fixtures installed in their homes.

This relationship may be interpreted from two different viewpoints. On the one hand it could be an indication of the fact that residents who participate more actively will also install a greater number of household fixtures. However, it could also be construed as signifying that those residents who have decided to install those fixtures, will request more advice and will continue to be involved to the extent they wish to install more fixtures in their houses.

Consumer data on water use

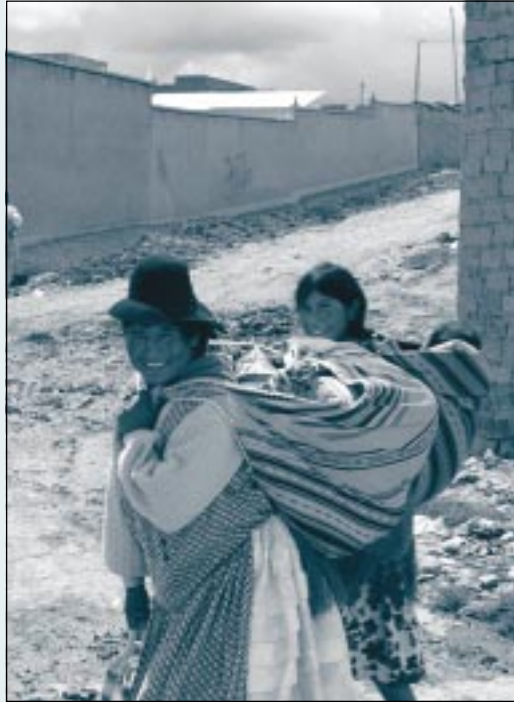
A review of consumer data in the areas where drinking water was available before the Project shows an increase in average household water use after the condominal sewerage system was introduced of between 0.5 and 1 m³ per month. Likewise, data about the installation of bathroom related facilities shows a direct link between increased water use and the number of such fixtures resulting from the EAPP intervention. Lastly, it was not possible to find a major difference in average water consumption between those areas where the condominal sewerage system was installed and those with the conventional sewerage system, in households with a similar level of bathroom fixtures.

These findings led to the conclusion that the reason for the changes in average household water use may not be directly attributed to the social intervention component of the condominal pilot project, but is rather the consequence of a larger number of in-house fixtures installed. Indirectly though, the EAPP social intervention component may have had an impact on water consumption as they result in a larger number of bathroom and water related fixtures installed.

Hygiene habits

Hygiene promotion efforts concentrated on customer behaviors surrounding the adequate use of water, disease prevention, and environmental awareness. An outstanding change in hygiene habits was the abandonment of using contaminated water sources for human consumption. Another remarkable outcome was the 51% reduction in the number of households that disposed of their excreta in the open. Additionally, the number of households that disposed of waste water in the street fell 16% while households reutilizing wastewater diminished by 10%.

Households using the existing refuse collection system rose 21%. Most of these outcomes are structurally linked to the in-house infrastructure improvements resulting from the EAPP such as water connections, bathroom building, and the connection to the sewerage network. Evidence also suggests that improved hygiene behaviors are linked to the EAPP’s sanitation and environmental awareness campaigns.



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Conclusions

The empirical evidence gathered throughout the condominium Pilot Project evaluation shows that the successful implementation of the model in the cities of El Alto and La Paz resulted in higher percentages of connections, more installed sanitation fixtures in the customers' homes, and modified hygiene habits, resulting from technical and social support together with sanitation and environmental training for residents. Such support enabled residents to become aware of their own problems and become responsible agents in solving them.

Changes in hygiene habits were even starker when related to home improvements such as a water connections, bathroom fixtures installed, or connection to and use of the sewerage network. Reactions to other factors, such as those linked to Andean cultural patterns or social representations, were less evident.

To the extent household improvements are still going on the Project's impact is not limited to the results presented here. It will be necessary to wait until the Project's completion and consolidation before such impact can be thoroughly assessed.

¹ The estimate is based on the percentage of bathrooms built (total and previously existing), and was computed using data from pre- and post-project surveys in second stage areas.