

Final Result Report

Organization: Catholic Relief Services
Name of Project: Barrios Más Seguros Quetzaltenango (B+SQ)
Agreement No.: AID-OFDA-A-12-00014
Country: Guatemala
Site(s) / Location(s): Quetzaltenango
Reporting Period: October 1, 2012 – December 20, 2014

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Sectors	October 1, 2012 – December 20, 2014	
	Total Targeted	Total Reached
Sector 1: Shelter and Settlements	6,000	6,116
Sector 2: Water, Sanitation, and Hygiene	6,000	6,192
Sector 3: Natural and Technological Risks	10,000	10,021

SECTOR 1: Shelter and Settlements

Indicators	Total Result	Total Project Target	% of Target Achieved
1. % of target households (HHs) implementing at least 2 hazard mitigation measures (960 households)	81%	80%	101%
2. # shelters incorporating hazard mitigation measures	1,393	900	155%
3. % of households knowing 3 of 5 shelter mitigation facts	79%	70%	113%
4. # settlements adopting hazard mitigation measures	6	4	150%
5. # and % of people retaining shelter hazard mitigation knowledge 2 months after training	3,522 (79%)	4,200 (70%)	84% (113%)
6. # of households receiving structural shelter hazard mitigation packages	608	600	101%
7. # of households attending shelter hazard mitigation workshops	1,287 (75% women)	1,200 (33% female)	107%
8. # local vendors participate in voucher program	4	4	100%

Sector Narrative

Barrios Más Seguros used two strategies to make individual homes more resilient in the face of disaster: a) the implementation of hazard mitigation measures at the household level through a voucher program; and, b) training families on anti-seismic construction and hazard mitigation measures.

Project staff, in collaboration with community leaders and representatives, carried out a Household Structure Vulnerability and Risk Study in six target neighborhoods. The study identified 660 households with structural damages and high vulnerability. Based on these results as well as the economic conditions of the families, the project selected 608 priority families (80 in El Cenizal, 85 in La Ciénaga, 37 in La Independencia, 107 in Los Altos, 68 in Pacajá Alto and 231 in Pacajá Bajo neighborhood) to participate in the voucher program. Each of these prioritized households received a voucher to purchase construction materials that they used to make repairs and improvements in their homes.

In order to facilitate the voucher program, the project signed an agreement with four suppliers of construction materials (*CONSTRUFACIL, Perfiles y Materiales de Construcción Candelaria, La Sevillana y Ferretería, and Fábrica de Artículos de Concreto S.A.*) which supplied high quality materials at established locations on the dates of each voucher fair. The vouchers were distributed in a public event in each neighborhood where each family signed a letter of commitment to use the materials appropriately. At the end of the project, 98% of the recipients had used the materials to repair and make their homes more resistant to disasters. Only 12 families (2%) did not complete the works either because they did not have funds to pay for skilled labor or they changed address.

In addition to the vouchers, families received training in shelter hazard mitigation and seismic resilience. These trainings also reached residents that did not receive the structural packages but were interested in learning how to make similar improvements in their homes. Training topics included soil analysis; installation of drains; safe construction norms for walls and columns; beam and column reinforcement techniques, preparation of concrete and how to implement mitigation measures in households.

Through collaboration with the San Carlos University, social work graduate students conducted visits to households where they verified that 1,550 homes implemented at least one mitigation measure and 974 households implemented more than two. Measures included installation of eaves and construction of concrete gutters to channel water off the roof and away from homes; replacement of damaged tile or metal roofing with new roofing; elevating the floor by filling it with dirt and a concrete layer, installation of metal/iron door barriers (average of 20”); building a concrete floor; applying waterproof coating to walls; retrofitted supports to increase seismic resistance of existing walls; replacement of adobe, wood and metal walls with reinforced brick/block walls; and/or reinforced damaged walls with steel and concrete.

The project partnered with *Cementos Progreso, Sika Guatemala* and *Aditivos y Acabados (Adyaca)* which provided experts in construction, waterproof coating, and fissures/cracks repair. The strategic allies supported the facilitation of trainings for 4,447 participants, including members of COLREDS¹ and neighborhood residents. In total, 3,302 women and 1,145 men were trained, representing 1,287 households. Of the individuals trained, 3,522 (79%) retained the knowledge based on a post-test administered two months after training. The test also revealed that at the end of the project, 950 participating families knew 3-5 shelter mitigation measures. The training was complemented by IEC materials (15,000 manuals, 15,000 posters, and 15,000 brochures) produced to promote seismic safety standards at household and public levels.

SECTOR 2: Water, Sanitation, and Hygiene

Indicators	Total Result	Total Project Target	% of Target Achieved
1. % increase from baseline in # of people protected from flooding.	30.3%	30%	30.3%
2. % fewer illegal public trash dumps versus baseline.	86%	60%	143%
3. # neighborhoods organizing and conducting community cleanup/debris removal activities.	6	4	150%
4. # large and small scale hazard mitigation projects completed.	14	12	117%

Sector Narrative

The project focused on three strategies to accomplish planned objectives under this sector: a) conduct clean-up campaigns; b) establish hazard mitigation projects in target neighborhoods; and c) establish alliances to complement project efforts.

The first indicator was measured by comparing the percentage of families who indicated and were found to be vulnerable to flooding at the time of the baseline with the percentage of families that are protected from flooding at the end of the project as a result of the installation of gutters, containment walls along riverbanks

¹ Local Coordinating Committees for Disaster Reduction

and other flood prevention measures. For example, the baseline study revealed that 67% of the population in the lower part in the La Cienaga neighborhood faced regular problems from flooding. The project implemented hazard mitigation works that increased the protection of 100% of the residents in that neighborhood from flooding.

To prevent clogged gutters during the rainy season, the project organized 2,237 residents (1,117 women and 1,120 men) from six neighborhoods who conducted clean-up campaigns along roads, in ravines and gullies, and throughout the six target neighborhoods, collecting 445 cubic meters of sediment and 122 cubic meters of garbage. For this, the project distributed 16 kits among six COLREDs and six ECOREDs². Each kit was composed of 5 hoes, 2 machetes, 5 shovels, 5 pairs of gloves, 10 brooms, 5 rakes, 5 dustpans, 2 wheelbarrows and sacks along with educational signs and posters to prevent littering and illegal dumping.

These campaigns served to clean 49 illegal dump sites out of the 57 that local leaders identified at the beginning of the project. These dump sites were identified and monitored through community transect walks and GPS technology. The Municipality of Quetzaltenango and the Clean *Xela* Program supported the project with workers and trucks to remove the waste. These activities helped strengthen the relationship between the neighborhoods and the Municipality of Quetzaltenango. The cleaning campaigns were a highly popular activity that was successful sustained by neighborhoods following project closure. In 2013 the project led the clean-up campaigns with the support of the six neighborhoods; in 2014 the six neighborhoods led clean-up campaigns with minimal organizational support from the project; in 2015 (post-project) the neighborhoods organized the campaigns with the support of the municipality and plan to complete campaigns in all six neighborhoods in the months of April and June. Over the life of the project, the six neighborhoods carried out 25 clean-up campaigns, many of which were done in coordination.

Throughout the project, Barrios Más Seguros organized different environmental protection awareness activities with schools and youth ECOREDs including a workshop on innovative recycling techniques, two recycling contests where students made items out of recycled materials and a drawing contest with the theme “United to Prevent Disasters.” The top three drawings were recreated by students from the art school *Humberto Garabito* and the Independent Theater Group *Xela* on the remodeled public washing basin in Pacajá Alto neighborhood.

To build the resilience of communities, the project completed 14 hazard mitigation projects selected in a participatory manner in consultation with COLREDs, COCODEs³ and community leaders. Municipal authorities analyzed, authorized and supervised each hazard mitigation project. These works directly reduced vulnerability to flooding for 1,455 individuals (364 households) and indirectly reduced vulnerability for an additional 3,853 residents in target neighborhoods.

The Municipality of Quetzaltenango, the private sector and residents contributed directly to the project through human, financial and in-kind support. While this contribution totaled over \$30,000, the project accounting system documented US\$ 23,923 (Q 181,814) of support. This does not include technical assistance for hazard mitigation projects provided by the Municipality of Quetzaltenango.

Neighborhood	Public Mitigation Works
El Cenizal (3)	Phase I: Construction of ditches, grit removal systems, a sedimentation tank, energy dissipators, and a retaining wall made of 625 recycled tires to protect the dissipators. Phase II: Reforestation around the energy dissipators.
	Installation of 6 sediment traps, 55 terraces to absorb water and reduce runoff and sets of stairs to improve the evacuation of the high part of the community.
	Reforestation in areas prone to disasters (by youth)

² Community Youth Teams for Disaster Reduction

³ Local Coordinating Committees for Community Development

Los Altos (3)	A 25 lineal meter containment wall and a 55 lineal-meter perimeter wall in the municipal waste water discharge area to mitigate frequent overflow during the rainy season.
	A 6 lineal meter containment wall in the riverbed (dome overflow)
	A 12 lineal-meter containment wall along the riverbanks of <i>Río Seco</i> to prevent flooding.
La Ciénaga (2)	Phase I: A 50 lineal-meter containment wall along the riverbanks of <i>Río Seco</i> to prevent flooding. Phase II: A 15 lineal-meter containment wall along the riverbanks of <i>Río Seco</i> .
	Dumping site transformed into an ecological park (with asphalt floor and tire swings).
La Independencia (1)	Phase I: Reforestation to mitigate erosion and reduce flooding and construction of 2 wheelchair ramps to improve evacuation routes for individuals with disabilities. Phase II: Placement of handrails and construction of a 550 lineal-meter containment wall.
Pacajá Alto (2)	Construction of a stone retaining wall, a perimeter wall, elevated stairs, a ditch system, extension of a drainage system and replacement of a roof in the public washing basin.
	Construction of bridge and slope protection in <i>zanjón Calderón</i> to reduce runoff.
Pacajá Bajo (3)	Installation of 319 lineal meters of gutters, 3 manholes, 2 storm drains and 29 house connections to the main collector to mitigate flooding.
	Installation of 106 lineal meters of gutters and 2 manholes to mitigate flooding of homes.
	Installation of 100 lineal meters of gutters and 2 manholes to mitigate flooding.

Barrios Más Seguros led the development of maintenance plans for the hazard mitigation public works that were implemented by the project which included activities, responsible persons and timeframes. These were developed with active participation from neighborhood leaders and the Municipality of Quetzaltenango. This, along with a Follow-up Committee that was formed by members of COLREDs, ECOREDs and municipal authorities, will help maintain and strengthen communication between the neighborhoods and municipal authorities to jointly plan DRR and emergency response activities. This committee will implement the maintenance plans mentioned above and continue organizing activities such as clean up campaigns.

SECTOR 3. Natural and Technological Risks

Indicators	Total Result	Total Project Target	% of Target Achieved
1. % of COLREDs in four target neighborhoods having hazard mitigation plans and implementing mitigation activities.	100%	90%	111%
2. # of COMRED members participating in Disaster Risk Reduction (DRR) meetings with municipal authorities (4 members)	23	15	153%
3. % increase in municipal funds allocated to neighborhood hazard mitigation.	14%	5%	287%
4. # hazard risk reduction plans, policies, or curriculum	5	5	100%
5. # people trained in disaster preparedness, mitigation, & management	2,348	1,200	196%
6. # and % of beneficiaries retaining disaster preparedness, mitigation & management knowledge 2 months after training	1,782 (95%)	900 (75%)	198%
7. # of youth volunteers trained and certified by Government	265 (55% female)	240 (40% female)	110%
8. # of youth Master Trainers conducting workshops	61 (54% female)	60 (40% female)	102%

Sector Narrative:

The project focused on the following strategies to accomplish planned objectives under this sector: organizing local committees/teams for disaster reduction, involving youth into DRR, training and certifying youth teams for emergency response, developing disaster mitigation and response plans and supporting neighborhoods to advocate for the allocation of municipal funds for DRR in neighborhoods.

These strategies centered efforts on neighborhood level structures and organizations. Initially, the project supported the creation of four COLREDs in neighborhoods with no existing COLREDs (Pacajá Alto, Pacajá

Bajo, El Cenizal and La Ciénaga) and the re-organization of existing but weak COLREDS in two neighborhoods (Los Altos and La Independencia). Additionally the project supported the creation, development and formalization of youth committees (ECOREDS) in each of the six target neighborhoods.

Following a series of trainings provided by the project, SE-CONRED, and other related actors, SE-CONRED certified 83 members of six COLREDS and 61 young members (33 women and 28 men) of ECOREDS. Certified members received training and equipment on emergency preparedness, mitigation and response skills based on SE-CONRED requirements. Both the COLREDS and ECOREDS are now officially inserted into the national CONRED system as local response teams and are trained and ready to assist others in their neighborhood following an event, in collaboration with the local authorities. The main role of the ECOREDS will be to support first-aid and search and rescue efforts following an event.

The project supported COLREDS to develop five local emergency response plans in six neighborhoods.⁴ These were developed in a participatory manner where community leaders identified risk zones, evacuation routes and the resources of each neighborhood. These plans were approved by the SE-CONRED and shared with neighborhood residents and the Municipal of Quetzaltenango.

Under this sector, the project trained 2,348 individuals (1,267 women and 1,081 men) in leadership, risk management, local response plans, evacuation routes, search and rescue, first-aid, the local incident command system, psychosocial support, the CONRED system, and environmental management and protection. 1,782 men and women trained under this sector retained the knowledge based on a post-test administered two months after training. In addition, youth master trainers replicated trainings on risk management that reached 1,511 individuals (641 women and 870 men) and 265 youth (145 women and 121 men from ages 14-30) who are now participating in sub-committees in each of the target neighborhoods. These youth were also certified by the SE-CONRED as youth volunteers.

The project organized a tour to SE-CONRED facilities in Guatemala City where ECOREDS learned about the CONRED emergency response protocols and their role in the community. This along with training and recreational activities related to DRR motivated youth to make improvements in their neighborhood. As a result of the training and certification process, youth are better aware of what they can offer to their neighborhoods and residents better recognize their contribution to the community. For example, the work done by the youth in Los Altos provoked the COCODE to give three young women and one young man the opportunity to formally participate in the youth development committee created within the COCODE.

As part of the sustainability of the work of these local organizations, the COLREDS and ECOREDS of the six target neighborhoods have been incorporated into the Municipal Committee for Disaster Reduction (COMRED) with clear roles and responsibilities. This will also facilitate coordination with the local and national government, SE-CONRED, and other actors responding to an emergency.

To respond to indicator 3, the project documented annual budgets allocated to neighborhood hazard mitigation by the Municipality of Quetzaltenango. Between 2012 and 2013, there was an increase of 14% (\$259,562 to \$411,103) in funds allocated to neighborhood hazard mitigation. In addition to the annual municipal budget, during the life of the project the municipality, local private businesses and the six target neighborhoods contributed US\$ 23,923 (Q 181,814) in human, financial and in-kind support as described above.

Analysis of Overall Performance of the Project per Objective:

Objective 1: Shelter and Settlements (S&S) - Homes have decreased risk for hydro-meteorological and geologic hazards.

⁴ Pacajá Alto and Pacajá Bajo developed a joint plan

The project exceeded targets for indicators 1, 2, 3, 4, 6, and 7 and reached target for indicator 8. Under indicator 5 the project achieved 84% of the target due to lower than anticipated participation in trainings. This is related primarily to the initial population estimates from the target neighborhoods based on available municipal data for the related zones. Although more accurate population data was identified in the baseline, the project staff failed to revise the targets. Despite this, the project worked to ensure that all neighborhood families were included in the training process. The project also invited the municipality, relevant local actors, and other leaders to participate in the trainings to expand the reach of the trainings.

In addition to the lower than estimated population, the challenge was due to the difficulty of locating training participants two months after trainings to administer the post-test. This was particularly related to the high rate of migration in the urban setting and the nature of urban livelihoods that provide less flexible work hours. Although the project proposed the indicator: **# and % of people retaining shelter hazard mitigation knowledge two months after training**, a lesson learned for future projects is to find more dynamic alternatives to traditional memory training methods and design a popularized version of training materials to get key messages across.

Objective 2: Water, Sanitation, and Hygiene (WASH) - Neighborhoods have increased mitigation of hydro-meteorological hazards.

Results exceeded targets for all indicators under this sector. This was, in large part, due to the high level of participation of residents in the clean-up campaigns (that also reduced the number of illegal dump sites from 57 to 49) and the implementation of 14 hazard mitigation projects out of 12 planned. Involving local leaders and residents from the selection to the construction of the public works was a key factor in the successful completion of these projects.

Another factor that contributed to achieving targets was the territorial distribution found in the target area. The project originally planned to work in four neighborhoods based on areas identified in pre-project investigations, but when the project initiated, six neighborhoods were identified in the target area. The increased number of neighborhood organizations and leadership allowed for a scaling up of project activities and an increase project reach and influence.

To measure the first indicator related to the change in the percentage of people protected from flooding, CRS compared the percentage of families who were vulnerable to flooding at the time of the baseline with the percentage of families that are more protected from flooding at the end of the project as a result of specific works to reduce their vulnerability to flooding. Although hazard mitigation measures and projects did not completely eliminate the risk to flooding, they increased household protection against it. To achieve this important objective the project prioritized the type, design and location of public mitigation works to protect households and areas that were found to be particularly vulnerable to flooding.

Objective 3: Natural and Technological Risks - Organizations successfully advocate for neighborhood hazard mitigation needs.

In general, the project achieved higher than anticipated results under this objective. This was in large part thanks to the positive response from community leaders which facilitated the creation/ re-organization of six COLREDS and the creation of six ECOREDs.

The national support from SE-CONRED, coupled with strong collaboration with the municipality and other local actors, led to a highly successful, visible, and publically sponsored certification process for both COLRED and youth leaders.

Furthermore, during the second year of the project, youth and community leaders organized and trained by the Barrios Más Seguros project responded to multiple real emergencies, including floods, an earthquake in a

nearby department, and other emergency situations that arose. Lastly, the strong relationships developed within and between neighborhoods during the project training process facilitated stronger than anticipated collective action which contributed to advocacy efforts and the increase in municipal funding for hazard mitigation projects.

Collaboration/Coordination:

As described above, collaboration and coordination efforts played a significant role in the success of the Barrios Más Seguros project. Throughout the project, staff met with officials from the Municipality of Quetzaltenango regularly to coordinate clean-up campaigns and to obtain municipal support and authorization to implement hazard mitigation projects. Collaboration was also very close with SE-CONRED who approved the local emergency response plans, trained youth on disaster preparedness and emergency response, and certified six COLREDS, six ECOREDs, and youth sub-committees.

Through coordination with the Mariano Gálvez and San Carlos Universities, the project received substantial assistance from social work, land administration, and environmental management graduate students with project activities including hydrological studies and the verification of hazard mitigation works in households. Additionally, the Guatemalan Red Cross, volunteer firefighters, *Servicios Jurídicos y Sociales* and the Independent Theater Group of *Xela* also contributed by training facilitators for members of COLREDS, ECOREDs, and residents of the six target neighborhoods.

The project worked closely with the private sector to ensure their backing as well as tangible support for the project. Private companies Cementos Progreso, Sika and Adyaca sent experts to train COLREDS and residents on seismic safety standards for construction. Additionally, the companies that supplied the project with construction materials (FACCSA, Construfácil, Candelaria and La Sevillana) established separate initiatives with target neighborhoods, including discounts on materials needed by families. Lastly, the active participation and commitment of residents in clean-up campaigns and hazard mitigation projects throughout the project was a key factor in the achievement of project results.

Constraints Encountered and Adjustments Made:

While the project faced multiple social challenges in the first year of implementation, including the motivation and organization of youth, conflict between neighborhoods, and general hesitation on the part of residents, these challenges were resolved through adjustments in management, project design strategies, and project organizational structure.

- As described in early project reports, the Barrios Más Seguros project faced multiple initial challenges with community organization, identification of neighborhoods, and pre-existing conflicts between neighbors and community leaders. Despite these challenges, the process of carefully identifying neighborhoods, understanding context and needs of each area and jointly prioritizing and planning responses resulted in the unanticipated result of restored and strengthened inter and intra-neighborhood relationships. As described above, this contributed significantly to collective advocacy actions that have sustainably empowered neighborhoods to influence public sector decision-making.
- The implementation of hazard mitigation works required more time than anticipated for planning, designing, building and supervising the projects. In particular, the municipality, which provided substantial support in the revision and approval of public works, was slow to provide this support. However, neighborhood leaders compensated by playing a leadership role in decision-making and successfully incorporated neighborhood needs in compliance with the specifications required by the local government. In the end, the project completed 14 hazard mitigation projects out of 12 planned.

- Organizing youth into ECOREDs was one of the most significant challenges faced by the project, particularly in the first year of the project. Despite this challenge, the positive final result of this component far exceeded the expectations of the project. The process of identifying and mobilizing youth in year one was the first difficulty encountered due to the unavailability of many youth during the traditional daytime hours. The project made significant adjustments in the second year to accommodate the dynamic schedule of youth and their preference for trainings held in nighttime hours and weekends events held outside the neighborhood setting. In addition, the project initially planned to organize youth and youth leaders under a framework of committees; however, following discussions with SE-CONRED departmental officials, the project focused on the creation of ECOREDs whose members replicated trainings and led the development of youth volunteer groups. Today, 61 youth leaders, members of ECOREDs are participating actively in search and rescue activities as part of the COLREDs and 265 young volunteers participate in a sub-committee in each of the target neighborhoods.
- As described above, several characteristics of the urban setting led to unanticipated challenges and learnings during project implementation. In particular, the dynamic and mobile nature of urban resident and community organization led to errors in population estimates and delays in organizing groups. Furthermore, the project learned to adjust activities in response to the high rate of migration in the urban setting. Another characteristic of urban participants was a higher rate of home renters versus owners. Lastly, the distinct nature of livelihoods in the urban setting provide beneficiaries with less flexible working hours and required the project to respond with more flexible training and event timing.

Overall Cost Effectiveness

CRS and implementing partners efficiently budgeted and managed resources, spending 100% of OFDA funds (US\$1,051,690). CRS planned cost-share was US\$25,000 but exceeded this with a total cost-share of \$27,229.45. Among multiple areas of efficient and strategic financial management, one example is the hazard mitigation projects. While the project planned to implement 12 projects, it was able to implement 14 as a result of strong collaboration from residents who provided significant unskilled labor, while others who could not contribute with labor provided funds that were used to purchase local construction materials. Another example is the clean-up campaigns where the project successfully coordinated with the Municipality of Quetzaltenango who provided workers and trucks for the campaigns. Lastly, engagement with the private and academic sectors leveraged project funds to achieve greater reach; private construction materials suppliers and CONRED sent experts who facilitated trainings while universities contributed to technical and social investigations and regular technical support.

Description of assessments and surveillance data used to measure results

To measure progress, the project collected both quantitative and qualitative data.

The collection and use of quantitative measurement included four elements: 1) A baseline-study which provided an information base against which to monitor and assess progress identified aspects such as areas vulnerable to flooding, existing community organization and residents' knowledge on DRR; 2) Project technical staff collected and reviewed information throughout the project to enter it into a database; 3) Local implementing partner coordinators together with CRS staff reviewed the data and analyzed progress on a quarterly basis; 4) The project coordinator evaluated impact in achieving indicators and implementing activities in accordance with yearly plan of activities and made adjustments as needed.

Through monthly and quarterly meetings with COLREDs and ECOREDs the project utilized qualitative measurement to: 1) validate quantitative data and compare with qualitative reports and observations; 2) analyze results and impact; and c) establish strategies to improve results, follow up progress and manage budget execution.

An external consultant carried out a final evaluation in November - December, 2014 to evaluate the achievement of proposed results, benefits/impact on target population, project management, monitoring of performance and sustainability strategies and the need to modify the strategies that can be useful for other similar projects.

The impact on the program objectives and how the impact has been addressed

One of the most significant impacts of the project relates to risk management. Through multiple trainings, events, and media mechanism project activities helped create a culture of risk management in target neighborhoods. Beyond improving the household culture of risk management, the hazard mitigation works at household and neighborhood levels directly benefited 1,455 residents and indirectly 3,853 residents who are now are less vulnerable to floods.

Another important impact of the project was on relationships. Prior to Barrios Más Seguros, the relationship between the municipality of Quetzaltenango and the neighborhoods was minimal. Trainings, meetings, collaborative work in hazard mitigation projects, clean-up and recreational activities helped improve the relationship among residents, neighborhoods and with municipal authorities. Following the project closure, there are more cordial relationships among residents of all ages and there is a sense of solidarity and commitment and a collaborative atmosphere. Participants expressed that the most significant benefits of the project was increasing citizen participation, organizing, equipping/training residents, and developing social awareness. As described above, following the close of the project, the six neighborhoods continue to work together to conduct clean-up campaigns as well as to advocate with the municipality for risk mitigation activities.

Related to this, the project helped build neighborhood leaders' advocacy capacity and participation at the municipal level. New leadership arose especially among youth. Residents are now involved in monitoring the progress of municipal projects and municipal funds expenditure and now have an idea of actual costs of similar works based on the hazard mitigation works conducted by the project. The project empowered residents in such a way that many local leaders recently began to attend meetings held by the Municipal Council and express their opinion about municipal projects. COLREDSs, ECOREDs and COMREDs are already conducting monthly meetings as part of the Follow up Committee formed by the project to conduct DRR activities and implement the plan to maintain project hazard mitigation works.

Incorporation of Youth and Women

Before the project, young and adult residents had very little collaboration. Many had never met and youth rarely got involved in finding solutions or decision-making for the existing problems in the neighborhoods. To promote their motivation and integration into DRR activities, the project conducted hands-on training activities that included search and rescue drills, and first-aid, combined with fun activities such as plays, and sports. They also interacted with other residents in clean-up campaigns, meetings, and hazard mitigation projects.

Today, youth feel more included in their communities and are either part of the ECOREDs or are volunteers and have a specific role and responsibility in responding to events that may arise. To date, they have participated actively on reforestations, clean-up campaigns and providing first aid assistance on multiple occasions when there has been a need. It is important to continue creating programs to motivate and develop social awareness among youth to engage them into community service activities. Ideally, these programs should be promoted and generated by the youth, adults and leaders of each neighborhood.

At the beginning of the project, women's participation was scarce or non-existent, either due to lack of opportunities or lack of interest. With Barrios Mas Seguros, women were given the opportunity to join the COLREDS and ECOREDs where they have begun playing decision-making roles.

Conclusion

Prior to the start of project activities, each neighborhood worked individually. There was rivalry between local leaders and neighborhoods, miscommunication and lack of mutual respect. Today, local leaders and resident have constructed better relationships among themselves and with other actors such as municipal authorities, SECONRED and the private sector. The use of the neighborhoods approach served to create a sense of belonging and prompted neighborhoods to work together and seek ways to improve their communities. It also strengthened local organization and capacity to reduce vulnerability to floods and respond to emergencies through the local emergency response plans developed by the COLREDS as well as individual family emergency plans.

After the completion of the hazard mitigation projects, leaders from COLREDS, ECOREDS and the Municipality of Quetzaltenango met to discuss and develop maintenance plans for these works effective January 2015. They also created a Follow-up Committee to plan joint DRR and emergency response activities, which will add sustainability for these activities. Through these improved relationships, organizations, plans and capacities, the impact of the project will not only provide a sustainable improvement in risk management and mitigation within the six target neighborhoods, but also provide an example to be replicated by other neighborhoods.