Executive Summary

The author’s views expressed in this document do not necessarily reflect the views or policy position of Habitat for Humanity Haiti.

This report is the culmination of community engagement research performed by a group of 31 students and tutors from the Centre for Development and Emergency Practice (CENDEP) at Oxford Brookes University, the Center for Community Design and Preservation (CCDP) at the University of Georgia, the Harvard University Graduate School of Design (GSD), and the Fletcher School of Law and Diplomacy at Tufts University. The research was conducted in collaboration with the non-governmental organization (NGO) Habitat for Humanity (HFH) Haiti as part of their larger initiative to assess and recommend sustainable enabling strategies for livelihood and shelter interventions within the city of Leogane in western Haiti. Leogane was at the epicenter of the January 2010 earthquake and was one of the worst affected regions in Haiti. As such, the group evaluated two specific communities within Leogane in which HFH Haiti has constructed shelters – Santo village and Nolivos village. This was a learning experience, and of the students involved, many were new to Haiti and the Participatory Rapid Appraisal (PRA) method.

The objective was to formulate ten recommendations in accordance with the following five Terms of Reference (ToR):

1. **To what degree did humanitarian shelters serve their original intent? Were the assumptions behind the intent correct?**

2. **What are the longer-term consequences of shelter interventions for building resilience?**

3. **What livelihood opportunities exist to support the upgrading / reconstruction of shelters?**
4. What enabling strategies would assist families to continue towards efforts towards ‘pathways to permanence’/durable solutions?

5. What can we learn for the next urban disaster? What would be done differently?

Prior to carrying out the field research, the team was introduced to a number of PRA tools, some of which were then selected for use in the research. As the research progressed, the team adapted some of the tools in order to increase their effectiveness within the context. The team was able to overcome the language barrier through the help of translators, and after the research was completed the team presented their initial findings to HFH Haiti. The findings were:

- HFH houses provide not just shelter but also a safe and secure environment in which people can live and rebuild their lives post-earthquake. However, houses are just one of the many assets identified as necessary to contributing to livelihoods; social networks and business opportunities are equally if not more important.

- The differentiation between the HFH houses and social networks in Santo and Nolivos villages directly relates to each community’s perception of disaster resilience. In addition, health, income generation, leadership and governance structures, knowledge, and social assets are key factors in building resilience. Furthermore, a holistic approach to integrating the HFH house within the community, and supporting needs beyond just the physical infrastructure, is vital to the sense of safety, security and ownership.

- In order to upgrade or reconstruct shelters, beneficiaries require access to three key assets: construction skills, building materials and cash. Both communities appear to have members with a broad range of construction skills, and building materials can largely be sourced locally. Thus, the main impediments to the expansion and upgrading of shelters in both communities appear to be the lack of disposable income to pay for construction, and the inability to prioritize and budget for spending on home improvements. Additionally, the shelters are relatively new and currently don’t require many upgrades if any, but as time goes on, this will change.

- Small-scale enterprise, petit commerce, and mixed-use spaces are key facets of both communities. The HFH houses and surrounding spaces are often used to create small-scale business opportunities in order to increase household income. In addition, the cultivation of both private and public gardening spaces enhances food security within the communities; however, access to local markets and use of community spaces for commerce could be improved.

- In general, post-disaster responses on greenfield sites, as compared to existing communities, require fundamentally different approaches, namely for building governance structures and holistic communities. Furthermore, transparency of beneficiary selection criteria is important for facilitating community cohesion and acceptance.

Recommendations

1. Whenever possible, rebuild on existing social and spatial structures and prioritize the construction or the rehabilitation of permanent houses.
   - Build back better
   - Utilize pre-existing social assets

2. Raise awareness about practical and affordable home modifications within communities.
   - Maximize the benefits of local expertise
3. Adopt a holistic approach in order to integrate livelihood opportunities and a wider spectrum of services such as health and education.
   - Take a holistic view of the community; housing is just one of many assets
   - Consider planning for health and education

4. Create greater livelihood opportunities by finding and filling market gaps.
   - Support entrepreneurial spirit through grassroots businesses and interventions
   - Seek out niche markets i.e., barbershop and cinema

5. Source locally for construction materials, sewing of school uniforms, and other needs.
   - Support the local economy and labor market
   - Invest in local supply chains
   - Foster a financial ripple effect

6. Explore possibilities of using cash transfers to increase the capacity of households to upgrade their shelters and develop livelihood opportunities, but beware not to create dependency.
   - Empower those impacted by urban disasters
   - Help people accrue assets by encouraging livelihoods

7. Consider how community can be created around public space such as public parks and squares.
   - Vital component of HFH’s strategy
   - Design to incorporate areas where people congregate; build around existing spaces and create new ones
   - Informal gathering spaces are also important; they provide a sense of place
   - Draw people together in areas of shade and comfort

8. Continue to build relationships and partnerships with local community based organizations, building capacity so livelihood opportunities can continue after short-term relief work is complete.
   - Consider pre-existing livelihood opportunities when building new ones
   - Support local initiatives

9. Encourage livelihoods to support the care and education of children.
   - Address concerns surrounding schooling
   - Encourage advocacy to expand access to education
   - Enable women to develop livelihoods outside the home

10. Work with and coordinate between different NGOs, other stakeholders, and community members to avoid division within the wider community.
    - Learn from the success of the GiveLove composting program
    - Further the development of strategic partnerships
    - Draw on the expertise of specialized NGOs and coordinate with partners to foster a spirit of collaboration
Santo village
Nolivos village

Rebuilding communities after the earthquake, Haiti | Livelihood and Shelter Study
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About the Report

This field assessment’s aim was to assess the recovery efforts of communities following the 2010 earthquake, focusing chiefly on the building of post disaster shelters and homes and the livelihood development to support this reconstruction.

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Acronyms

CBO Community Based Organization
CED College of Environment and Design
CENDEP Centre for Development and Emergency Practice
DEP Development and Emergency Practice
HFH Habitat for Humanity Haiti
HFHI Habitat for Humanity International
NGO Non-Governmental Organization
PRA Participatory Rapid Appraisal
SADD Sex and Age Disaggregated Data
TOR Terms of Reference
UNICEF United Nations International Children's Emergency Fund
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Scope, Research Methods and Limitations

The scope of the work described herein was centered on the ToR which concerned assessing the recovery efforts of communities following the 2010 earthquake in Haiti, with a specific focus on the building of post-disaster transitional shelters and their broader implications on livelihood development. A group of 31 students and tutors from CENDEP, CED, GSD and the Fletcher School performed the study. The project included a four day community engagement research process in collaboration with HFH Haiti as part of their larger initiative to assess and recommend sustainable enabling strategies for livelihood and shelter interventions within the city of Leogane in western Haiti. As such, the group evaluated two communities within Leogane in which HFH has constructed shelters – Santo village and Nolivos village. As both of the HFH project sites are embedded within wider shelter landscapes, and the quality of HFH’s interventions can be easily contrasted with surrounding shelter solutions, there is a great potential for tension over unequal access to resources (Engle-Warnick, Bornstein, Lizarralde, 2013). Thus, the contextual richness of the area lends itself to a deeper and more protracted study. However, due to logistics, time constraints, and security concerns, the study was restricted to a focused analysis of the two HFH sites.

To begin the assessment, the group divided into six subgroups structured around the first four ToRs plus two predetermined exploratory themes; gender and spatial organization. The subgroups were introduced to various PRA techniques as an approach to developing an understanding of shelter and livelihood interventions within both the Santo and Nolivos communities of Leogane. The subgroups evaluated the PRA techniques for their appropriateness to and alignment with the ToR and formulated strategic questions for semi-structured interviews as well as focus group discussions. Eliciting information through

A group of students and community members engaged in a PRA exercise
participatory tools and conversational-style interviews recognizes that community members best understand their own particular needs, concerns and circumstances. Furthermore, PRA tools offer invaluable insight into the livelihoods of communities that may otherwise be difficult to represent or capture.

As many of the students had little or no experience using the PRA methodology, the initial day of field work presented an opportunity for the subgroups to practice the tools while getting to know Santo village and building rapport with residents. Each subgroup had a member with some level of French-speaking ability, and was accompanied by a Creole-speaking translator. After the first day, the whole group reflected upon the process and identified ways in which to improve the approach. The students then returned for three additional days of field work in both Santo and Nolivos villages. Over the four days, the subgroups engaged in dialogues and conducted focus group discussions with various members of the communities, representing a cross-section of perspectives. Key PRA tools such as diagramming, mapping, observation, transect walks, timelines, seasonal calendars, daily schedules, Venn diagrams, preference ranking, and semi-structured interviews were utilized to help facilitate the dialogues in order to triangulate and establish a rich database of individual livelihood indicators within the broader community context. In addition, comparison tools were used such as one that utilized cups of water to visually measure and convey how assets differed before the earthquake, immediately after, and today. Our findings, along with a series of ten recommended enabling strategies for livelihood and shelter interventions, were presented to representatives from HFH for feedback.

There are a number of barriers inherent to PRA methodology. Although each group had a dedicated translator, it is inevitable that some meaning and expression were lost. For example, many interviewees reported that they have no job; however, they may have less formal forms of income that went unmentioned due to the nature of the question and the way in which it was translated. Furthermore, conversations and answers to questions may be interpreted differently within and among subgroups, which is both a strength of and limit to triangulation. In addition, PRA tools often need to be adapted on-the-spot to enhance their appropriateness in specific social contexts, which can be challenging. Timing of site visits was also a limitation, as all of the interviews were conducted between the hours of 11 a.m. and 2 p.m. over four weekdays. It was understood that many people were likely at work during this time and would be underrepresented. Moreover, the team was not able to observe activities or the use of community spaces during evenings and weekends.

In addition, groups of four or five people do not readily put interviewees at ease, and the majority of the team was relatively unfamiliar with the cultural context within which they had to operate. It is also important to note that the students’ association with HFH had to be delicately handled so as not to inadvertently give beneficiaries the impression that further assistance would be provided. Although the process revealed invaluable insight into both communities, a small fraction of the information available was captured, thus resulting in an inherently incomplete understanding of the situation. Finally, in contrast to Nolivos village, Santo village is an extremely young community built on a greenfield site after the earthquake, and further studies at later stages may be needed to fully assess the impact of shelter interventions on livelihoods over time.
Background

Leogane, Haiti, was at the epicentre of the January 2010 earthquake, and between 80% to 90% of its buildings sustained devastating physical damage (Doninger, 2013; Julmy, 2011). The loss of life was also overwhelming, with the military estimating between 20,000 and 30,000 fatalities. In the aftermath of the earthquake, thousands congregated in squatter camps in and around the city, where emergency tents and shelters were distributed. The earthquake aggravated already existing problems amongst Leogane’s communities thus exposing them to greater vulnerability.

Emergency assistance was offered immediately after the earthquake and several agencies have since provided more durable solutions (Loughery et al., 2011). Regarding the shelter sector more specifically, 23 organizations registered with the Leogane Hub Shelter Cluster and contributed to the construction in Leogane of over 20,000 transitional shelters (T-shelters) (Doninger, 2013; IASC, 2011). Most T-shelters have a three to five year lifespan (IASC, 2012).

HFH decided to focus on the most devastated area, Leogane, in order to assist affected families with “income-generating training and/or construction of their own homes” (Engle-Warnick et al., 2013). In Santo village, of the around 500 permanent homes, educational and sports facilities that were planned on what used to be agricultural land, only 300 houses and a market place have been built, due to challenges that arose during the construction. In Nolivos village, HFH built over 600 upgradable shelters within the community, on the same site as the original houses, or next to damaged ones. The current review took place within these two communities, focusing on HFH and non-HFH beneficiaries.

Source: Doninger, 2013
To what degree did humanitarian shelters serve their original intent? Were the assumptions behind the intent correct?

It was determined that the intent would be defined as how well the shelters have met basic needs and how well they have contributed to the longer-term livelihoods of the beneficiaries. The students based their review on the intent of T-shelters in general, as well as on findings from the initial field research and on HFH’s presentation to the team. Four assumptions were then established against which to measure the success of the project; they are assessed in detail for each village below.

ASSUMPTION 1: Shelters are transitional
The table below compares the shelters provided by HFH in each community, recognizing that the homes provided in Santo village were built on a greenfield site, while the homes provided in Nolivos village were in-situ replacements. The comparison is based on four principal characteristics of T-shelters (Shelter Centre, 2012):

<table>
<thead>
<tr>
<th></th>
<th>Santo Village</th>
<th>Nolivos Village</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Upgradable</strong></td>
<td>Unit is ideally upgradable; however, without funds it is impossible for people to upgrade their homes in the long or medium term. People are anxious about the implications of paying tax after 5 years. Non-structural improvements have been made such as gardens, fences, and porches; ply-board has been used to ‘upgrade’ and divide shelters into two spaces.</td>
<td>Upgrading seemed more structurally challenging at Nolivos, based on feedback from the community members that were interviewed. While the foundations on the units were able to hold masonry walls many units still had walls constructed from board that had yet to be replaced. Interviewees recognized that the general lack of income made purchase of materials for upgrading difficult.</td>
</tr>
<tr>
<td><strong>Reusable</strong></td>
<td>Plywood is reusable; concrete blocks can be extended upward. Evidence of reuse of the interior or exterior spaces for petit commerce (i.e., cinema, barbershop, etc.)</td>
<td>Those with existing houses used the combined space (old house plus HFH unit) for living and storage. Households felt safer in HFH than existing home so used original home for storage and cooking.</td>
</tr>
</tbody>
</table>
Resalable

Some people may consider selling or renting the unit, especially if they cannot afford the tax after 5 years. People may then move to cheaper homes or tent communities.

Recycling

Plywood divides could be recycled if original unit no longer needs to be split. Could be used for exterior additions.

Note: Shelters should be relocatable if there are land tenure issues. However, as this does not seem to be applicable in these cases, this characteristic has not been included.

ASSUMPTION 2: The design process and the governance structure have an influence on livelihoods.

“The other needs are meaningless to me without the framework of the community.”
(Male HFH beneficiary)

“If I have no money I can’t help my neighbors when they are hungry.”
(Rita, HFH beneficiary)

SANTO VILLAGE

The construction and masonry training that HFH provided during the design and construction process appears to have enhanced the skills and capacities of some of the residents; however, it is unclear how effective this training has been as households have been unable to carry out basic repairs to their homes. The design of each house lot with both shelters and exclusive use areas has enabled residents to install plantings and grow crops which has both increased privacy between the units and advanced food security within the village. However, as the Santo village settlement was built from scratch, there were no pre-existing social or commercial networks to expand upon. According to Mike Meaney, Chief Operating Officer of HFH Haiti, the governance structure remains somewhat new, just a few years old and through an enabling approach and continued investment in the community council, HFH’s aim is to strengthen the governance structure indirectly within community. Though HFH has provided a shelter, additional consideration could be given to making the greater community feel more secure in order to increase the use of and movement through the site, as well as encourage effective use of communal space.

NOLIVOS VILLAGE

Dialogues with community members indicate that the community was not involved in or engaged with the design process for the interspersed HFH shelters within Nolivos village. However, unlike in Santo village, petit commerce networks were well-established within the existing community, thus access to pre-existing livelihoods and social opportunities has been maintained. In general, livelihoods were based around cultivation (largely a male role) and small businesses such as the sale of household and personal goods (largely a female role).

ASSUMPTION 3: The level of importance of the house.

SANTO VILLAGE

“The house and knowledge are more important than money.”
(Member of Sofas, HFH women’s group)

The house is of great importance for people in the community. For the vast majority of the interviewees, the house provides families with
During dialogues, many of the Nolivos village residents interviewed strongly indicated that a house is a very important asset. A majority expressed both their desire to improve their housing conditions, and their prioritization of housing over other assets. This may be due to the fact that the housing was constructed in-situ and allowed residents to build upon existing livelihood opportunities.

It was also noted that due to the existing social networks and reinforcement of the organic spatial pattern through the construction of shelters on the sites of former houses, the sense of community has remained intact.
ASSUMPTION 4: Residents feel safe in the general community and in face of future disasters.

SANTO VILLAGE

“I feel safe being in this house.”
(Female HFH beneficiary)

The disparities in housing quality within the wider community of Santo appear to have generated some tension and discomfort between HFH and non-HFH residents. A few interviewees mentioned that although there were problems regarding security at the beginning, the problems seem to have been resolved. This may be in part due to the peaceful ‘night brigade’ established by the local pastor.

The vast majority of those interviewed within the Santo village feel safe in face of upcoming disasters. However, this is very much not the case for the non-HFH dwellers. It is also important to note that many interviewees feel insecure about their futures; many of them are afraid of not being able to fulfill their tax requirements after five years, as they are currently unable to raise funds or accrue savings.

NOLIVOS VILLAGE

“I don’t feel safe being in this house because the wood is not strong enough if it rains or if there are hurricanes or cyclones.”
(Female HFH beneficiary)

The community in Nolivos appears to have a strong social structure and people feel safe within the village in regards to day-to-day security. However, it was noted that the villagers seem to be less resilient in the face of upcoming disasters. Many interviewees expressed concerns that the houses are not strong or sturdy enough, and that rain can easily penetrate the structures.
What are the longer-term consequences of shelter interventions for building resilience?

Access to safe and adequate shelter is a starting point for building resilience. Shelter interventions open opportunities to improve health, income generation, governance, knowledge, and social assets, leading to a richer and fuller community life. Benito, 66, said his home was “like a baby in the hand of its mother.”

Resilience Defined
In this report, resilience is defined as the capacity of an individual or a community to maintain basic functioning when exposed to a hazard or a shock, while recovering in a timely and efficient manner (IFRC 2010, Blackburn and Johnson 2012). Resilience is about having the capacity to adapt when exposed to a hazard in order to reduce vulnerability (Prasad, Ranghieri et al. 2009). This section of the report investigates the ways in which the poor manage and adapt complex asset portfolios (Moser 2008). Social, political, economic, human and cultural assets are systematically examined as a way of investigating the longer-term consequences of shelter for building resilience.

Community members from Santo village and Nolivos village described resilience in an overwhelmingly social manner. Their capacity to survive, adapt and recover from the earthquake depends on social connectedness to meet basic needs. In the long-term, people are looking to institutional planning and political networks to increase productivity and quality of life.

1. Health
Health is a key factor in building resilience. Research has shown that shelter plays a crucial role in minimizing health risks, in turn helping to improve resilience (IFRC 2010). Access to clean water and sanitation is strongly linked with health. Many households spoke about the need to access clean water as well as the knowledge and means to do so. Rhita, 40, received training in women’s reproductive health, and stressed that such training provided community members with vital prevention knowledge. However, prevention must be accompanied by enabling people to take action. Illnesses such as diarrhea are common occurrences for those without clean water, and were noted by a number of community members who lacked the means to make the water safe. The location of clean water also impacts household health, for example those close to wells said they felt safer when collecting water. When asked what made a house feel like a home, Maria, 36, stressed the importance of good health “it feels like home if I’m not sick”.

2. Income Generation
A second factor for building resilience is income generation, with three important issues emerging after speaking with community members: availability and adaptability of skills,
the use of the home to assist livelihoods and the use of remittances as a means of additional income support.

In some cases people’s income generation skills enabled them to recover effectively after the earthquake. Masons, carpenters and those in the construction industry said they had high earning potential. Fritt, 33, a father of four children, used his skills as a mason to earn money immediately after the earthquake. He has since been able to maintain a stable income. Women shared that they typically participated in jobs that earn lower wages, and were therefore not able to sustain a household on that income alone. Marie, 36, a mother of four who buys and sells charcoal, earns income that meets their daily needs. The design and position of the homes address gender issues by providing a number of opportunities to run small home businesses. In some cases this enables individuals to work from home while caring for their children. Remittances were also found to form an important way of supplementing family incomes. Ricot, 48, said he was lucky to have a connection outside the country to help him when the earthquake happened, and that this helped his family recover more quickly.

3. Community Leadership and Governance Structures
Community leadership and governance structures were identified as an important factor in building both individual and community resilience. HFH and its partners assisted members of the Santo community to develop political governance structures that allow for a “high degree of democratization by giving citizens participation rights, decision making power, and often direct control through institutions such as community councils’ (Somerville 2005, cited Engle-Warnick et al., 2013, p.2).
Interviews with Santo village community members revealed several benefits of a local governance approach, which included:

- **Active participation and community ownership:** Three elected members of the community council in Santo village, two men and one woman, explained how they had been involved in not only building their own shelters but, among other initiatives, contributing to decisions about safety and security, maintaining a clean environment, creating safe spaces for children and resolving community disputes.

- **Connectedness:** HFH implemented two six month community governance programs, one for the first phase of construction serving 150 families, and another for the second, serving all families (Mike Meaney, HFH). Also, HFH Habitat joined with partners and families to develop a 1,200-square-meter farming plot, and a community-based co-op was formed called Bon Jaden ("Good Garden" in Creole) (HFH). Additionally, a 22-week community governance program known as "Bon Vwazen" in Haitian Creole ("Good Neighbor") reached over 50 percent of Santo (Engle-Warnick et al., 2013, p.17). Benito, 66, participated in the program and noted how he "lost a lot of family in the earthquake but I have a lot of friends now." One of the community members in Nolivos village, where this program was not available, perhaps because community committees existed prior to the earthquake, expressed a desire for his community to have more formalized community governance structures, especially to assist with disaster preparedness.

- **Leadership represented by both genders:** Rhita, a 40 year old female community leader represents women on reproductive health, family planning and gender-based violence.

Ricot is the first elected President of the Community Council and lives with his wife and three children in the HFH area of Santo village. He was actively involved in saving lives after the earthquake and served as a camp coordinator. With a background as an electrician and teacher, he has used his technical and leadership skills in facilitating the participation of his fellow Haitians in constructing shelters and building a new community. Ricot demonstrates how strong local leadership can build support for risk reduction. He is able to engage individuals on a personal level and to stimulate the participation of multiple stakeholders to enhance resilience to disaster and to face other community development challenges.
4. Knowledge

The fourth factor identified was the importance of having knowledge and skills. Knowledge is described in a 2011 community resilience study by Arup and the IFRC as “central to the ability of households individually and collectively to be able to prepare, prevent, respond to and recover from shocks and stresses” (Arup 2011, p.iv). Some community members attributed their ability to ‘bounce back’ partially to the skills and knowledge they possessed before the earthquake as well as to the new abilities and information obtained after the earthquake. In some cases, the ability to earn income was said to have increased with trainings that honed existing skills. Rhita, 40, who gardens to support her family, says she took agricultural training (the ‘Bon Jaden’ project mentioned earlier, which was part of a wider HFH program) that improved her production. ‘Bon Jaden’ was a pilot program which, through the sale of produce, has successfully brought in about $1,000/month for the community (Mike Meaney, HFH). Noel, 34, says her husband is a mason who broadened his skills through construction training provided by HFH. Knowledge was increased for others through trainings by a range of agencies on topics from disaster preparedness, financial management, conflict resolution, gender and family planning. While earthquake preparedness training had taken place for many of those interviewed, there was still a sense of fatalism about reducing disaster risk. A community leader and female-headed household were asked if their houses were strong enough to withstand a future earthquake (which, according to Mike Meaney, they are). Both responded that if it was God’s will, then houses would remain, but had no confidence in their own ability to construct earthquake resistant homes.

5. Social Assets

The fifth factor that was found to build resilience and adaptability centers around social networks. Building on existing social structures was a reoccurring theme emerging from community members. Women and men talked about sharing financial and physical assets with their families. Marie, 36, said, “our life is so hard so we share everything”, highlighting the importance of maintaining social assets. Marie has extensive health issues and said that the assistance given by her extended family was vital. Clermont et al. recommend that aid agencies should “Include the building of neighbourhood social and human capital and local civil society as a vital component in all programme approaches and at all stages of relief and recovery” (2011, p.4).

Santo village residents spoke about the importance of using participatory approaches to developing new governance systems and structures. Rhita, 40, a community leader in Santo village, described a positive outcome of the system: “after the earthquake we live in a much closer community”. The equality of the homes in Santo village and bonding through the survival of the earthquake also contributed to the formation of new connections within the community. The equality of the housing in Santo village was valued by Benito, 66, who said, “all my friends have a house like mine”.

In summary, resilience relies on people’s capability to adapt to new realities, and social assets play a considerable role.

“Men anpri chay pa lou”
(“Many hands make light work”)
Haitian proverb
What livelihood opportunities exist to support the upgrading / reconstruction of shelters?

Before unpacking this question, several key terms and assumptions need to be defined.

- Based on our observations, a livelihood is an activity that provides the means of securing the basic necessities of life, including food, water, shelter and health. Several examples from the communities studied include masonry, carpentry, farming and sewing.

- It is assumed that beneficiaries want to upgrade their HFH shelters. As background to this ToR question, it is important to recall that the shelters provided by HFH in Santo village and Nolivos village were not intended as final homes, but as transitional/upgradable spaces that could be modified and improved to accommodate growing and various family needs.

- While some beneficiaries have chosen to sell their HFH homes and move elsewhere, many have already made modifications to their houses to better meet their needs. Those people who have not made changes appear to lack the means to do so or have other priorities.

- In order to upgrade or reconstruct shelters, beneficiaries require access to three key assets: construction skills, building materials and cash. Construction skills existed in the two communities studied and these skills were further developed in Santo village through HFH training, which will be described in the following sections. In addition, building materials, though expensive relative to household incomes and not purchasable within the village, are available in nearby towns. Cash to finance upgrades, however, seems to be less available, and for this reason has been discussed in more detail, involving both the aforementioned materials (such as cement, wood and rebar) and services (if homeowners lack the skills themselves).

Though a rich array of livelihood activities were found to exist within Santo village and Nolivos village, few of these are sufficient in and of themselves to finance upgrades to a home. Prior to the earthquake, Leogane had only three main livelihood options: 1) sugar cane; 2) agriculture; 3) small trading (Mike Meaney, HFH). Many beneficiaries do not have access to long-term sustainable livelihoods and have household expenditures beyond their means.

In response, available financing for home improvements can be increased in two ways by:

1. improving the available livelihood opportunities
2. decreasing overall household expenditures.
The ensuing sections will examine two communities where HFH has provided upgradable shelters and explore how beneficiary households can gain access to the assets necessary for upgrading their homes.

**Skills**

In both communities, interviews and interactions with the beneficiaries suggest that there is a broad range of construction skills. A number of the people spoken to had, or knew people who had, received training from HFH in construction skills. An analysis of the main livelihoods in the community suggested that masonry and carpentry were among the few livelihoods available in the community that were viewed as being capable of supporting a family in the longer term. There was, however, much less work available for skilled tradesmen after the construction phase of the project had finished, so many of those with masonry and carpentry skills were not currently using them to support their families. A lack of appropriate skills in the community did not appear to be a factor limiting the expansion or upgrading of shelters.

**Building Materials**

Discussions with local residents revealed that a majority of the required construction materials—sand, cement, concrete blocks and lumber—are available in the local community. According to the interviewees, the prices for the various materials do not seem excessive relative to the cost of other commodities, and access to building materials does not appear to be a major obstacle to expanding or upgrading shelters.

**Cash**

The main impediment to the expansion and upgrading of shelters in both communities appears to be the lack of disposable income to pay for construction. Cash is needed to purchase building materials and to employ the services of skilled tradesmen. The reasons for this lack of disposable income appear to be twofold. Firstly, the livelihood analysis indicated that a great many households in the community did not have access to a sustainable livelihood. Secondly, the expenditure analysis indicated that after covering other higher priority expenses there was very little cash available for construction materials and repairs. Another issue which may be pertinent to how money is spent concerns the fact that the houses are only newly built; as the buildings age, more repairs will become necessary, thus increasing the importance of spending on construction materials and repairs.

**Santo Village**

Prior to development, Santo village was a greenfield site on the outskirts of Leogane. Now it comprises approximately 300 houses built over a two-year period. Many beneficiaries in Santo village did not know each other before the settlement was constructed, as they had come from other areas of Haiti. This has ramifications for the existence of informal social protection structures and implications for social capital. The plots are relatively large compared...
that the village appeared to have been built on former cropland, which deprived former residents of access to valuable livelihoods. In addition, a large number of residents newly settled in Santos village had been displaced from elsewhere and therefore cut off from their previous livelihoods. The reality is that these livelihood programs are larger overarching issues reaching beyond a Santo level (Mike Meaney, HFH).

**Expenditure Analysis**
A number of beneficiaries interviewed in Santo village said that food and education made up a large part of their budget. Further investigation revealed that while low cost public schools are present in the area, a number of the residents send their children to private schools that cost large sums of money. One of the reasons for this may be that children with low literacy levels do not pass the initial entrance exams for public schools, leaving families with no other option than to enroll their children in private schools.

**Livelihood Analysis**
In the livelihood analysis in Santo village, a number of interviews were conducted with individuals about their livelihood activities and those of their neighbors. The information obtained from residents in Santo village suggests that most people are unemployed. In addition, most of the livelihoods that residents are engaged in seem unsustainable, i.e. provide insufficient income to support a household, such as moto-taxi driving, small commerce and compost maintenance. In Santo village, only three or four livelihoods could be considered sustainable, namely carpentry, masonry, tillage farming and working as a mechanic.

The research in Santo village also revealed to other houses and shelters in the area, and provide greater opportunity for beneficiaries to expand their homes. A high level of house pride is evident in the area, as can be seen by the gardens and home-expansions of the residents.
continue their livelihoods. They have also been able to maintain their pre-existing social capital through strong community links and housing settlements in family groupings. Unemployment, however, is widespread and was a reality prior to the earthquake, despite the existence of some local industries. For example, a nearby factory producing alcohol from sugar cane mainly employs people from the wider Leogane area.

Livelihood Analysis
Semi-structured interviews undertaken with the beneficiaries revealed a diversity of household structures with considerable income vulnerability, particularly among female-headed households. Some of the Nolivos village residents had lost their livelihood tools in the earthquake and were forced to rent equipment such as cooking pots. Jobs in agriculture and driving motorbike taxis represented the largest proportion of livelihoods in the village, with many workers doing both depending on the season. Most of the motorbike taxi drivers appeared to rent their bikes, though there appears to also be a hire-purchase scheme available.

The strong sense of community in Nolivos village seemed to be created by a large degree of interdependence. Residents share resources, in some cases building materials, and undertake renovations within family groupings.

Savings
None of the people interviewed in the community are engaged in saving through a formalized financial system. Instead of saving or keeping cash, people prefer to invest their money in small commerce, the returns of which they reinvest. As one woman said, these kinds of livelihood activities are not necessarily sustainable, especially when the market is unstable.

Nolivos Village
Nolivos village is a pre-established community surrounded by sugarcane fields and banana plantations. As the HFH homes are embedded in the local community and built for beneficiaries on the same site they lived on before the earthquake, it has been possible for residents to even though the cost places strain on their budget.

Many residents in the village were observed growing food crops on or near their plots, including plantains and cassava. This appears to have been used to supplement their diets. Other noteworthy expenses include cooking fuel, such as white gas and charcoal, and mobile phone credit. Construction materials did not make up a significant proportion of the expenditure for anyone with whom the team spoke.

Students engage in PRA livelihood analysis tools with groups of male and female beneficiaries in Nolivos village
said they had bank accounts or saved cash, most of them said they invested surplus money in small commerce and livestock. According to Claude Jeudy, National Director HFH Haiti, people in Leogane (and other non-urban areas) use cooperatives and credit unions because banks are not necessarily accessible nor do they ensure access to credit. Cooperatives and credit unions are more accessible and offer credit through group lending. In Nolivos village, livestock in particular appeared to be relatively lucrative, yielding households a positive return on investment within a year. A goat can be purchased for 400 Haitian dollars (45 USD) and after being fed and fattened can be sold for as high as 800 Haitian dollars (90 USD). Cows yield a similar margin, though with a significantly higher initial investment (a cow typically sells for 3,000-4,000 Haitian dollars (340-460 USD). Both can also be bred to produce offspring, thus significantly expanding households’ assets.

Small-scale money lending acted as a social net for the most vulnerable, though there was evidence of limited small commerce and roadside cooking stalls to supplement income.

Expenditure Analysis
An expenditure analysis of the beneficiaries revealed that in a significant number of households the cost of education represented the largest part of the budget. Many of the beneficiaries found it difficult to pay the many costs involved in sending their children to school, including exam entrance and school fees, school transport and uniforms. This leads to sporadic periods of schooling and to disparity in education among children in the same family. Public schooling is largely inaccessible to children in Nolivos village who are unable to meet the minimal level of literacy required for entry.

Savings
One of the most interesting findings concerns savings. Although none of the beneficiaries said they had bank accounts or saved cash, most of them said they invested surplus money in small commerce and livestock.
What enabling strategies would assist families to continue along their ‘pathways to permanence’/durable solutions?

The purpose of this section is to uncover what and how ‘Roads to Resiliency’ strategies – such as small-scale enterprise, food security, land tenure, remittances, physical security and social networks – assist families along their ‘pathways to permanence’/durable solutions. Pathways to Permanence is part of HFH’s shelter strategy approach, which is defined as “the process of reducing vulnerability as well as supporting disaster-affected families and communities using holistic program interventions that enable incremental progress towards the achievement of permanent, durable shelter and settlements” (Pathways to Permanence, p. 1).

HFHI uses the ‘18 Assistance Methods’ approach for reducing vulnerability. To compare the two Leogane communities, we assessed which of these methods are currently being used four years after the earthquake. Some of the items listed in the model only apply immediately after the disaster (see Fig 1, Appendix B). To help community members continue on their ‘Pathways to Permanance’, we recommend redefining and refocusing this model specifically for long-term post-disaster resilience (Fig. 2, Appendix B).

By focusing on the processes of reducing vulnerability specifically, enabling strategies were identified through two lenses. First, the process through which families had incrementally improved their shelters structurally was studied. Figure three, for example, demonstrates the criteria from HFH’s Housing Quality Standards as applied to shelters observed in Santo and Nolivos villages (refer to Appendix B). Then, the strategies (‘Roads to Resiliency’) families used to improve livelihoods were reviewed. These ‘non-structural components’ - either through HFH’s program interventions or through their own ingenuity subsequently enabled them to make upgrades or improvements to their existing structures.

Mary Lour’s Story

Mary Lour’s daughter Silvian in front of her Nolivos house.
Jean-Baptiste Fevrier’s Story
Jean-Baptiste Fevrier is a 44 year old man who lives in Nolivos village. He received an upgradeable shelter from HFH in 2011 on his family’s land, next to his father’s concrete house, which survived the earthquake. He had previously lived in a different village, but moved back to Nolivos village after the earthquake. He currently lives alone. He has a wife and a five year old child, Jeff, who live in a separate home elsewhere in Nolivos village. Similar to other households in Nolivos village, he has not yet upgraded his house. He still has the initial dirt floor and rebar sticking out of the foundation. While he would like to improve upon his home, such as painting the exterior and interior of his house, and putting in a concrete slab, these projects are lowest on his priority list. His primary concerns are sending his kids to school, which costs about 1,000 Gourdes a month (approx. $25 USD), food, transport, and then other household items.

“I don’t see anything I don’t appreciate; but wood is not good for the long term because of security issues”
(Jean-Baptiste Fevrier)

Mary Lour purchased materials from Leogane to upgrade her Nolivos home. She has improved the quality and permanence of her home by inserting glass windows with plastic surrounds, building a cement wall around the verandah and by adding decorative features like wooden railings and wooden upright pillars. The house has been painted in two different colors on the exterior, and is painted on the interior.

A decorative iron gate has been added to the entrance to the veranda and patterned ceramic tiles are now on the floors inside and outside the house. A shower addition to the house was built using wood and corrugated iron which incorporated two existing tree trunks. She has created a concrete courtyard garden with potted plants and herbs. Mary Lour has also installed electricity through solar power and divided the inside to provide two separate rooms. The ceiling is covered with plastic and foil for insulation.

“I love everything [about my house]”
(Mary Lour)
Jean-Baptiste is also a Taekwondo instructor, and certified black belt. He learned as a young adult from a group of Korean volunteers with UNICEF. He had seen the sport on TV and wanted to learn it, and he also kept a manual that allowed him to continue to hone his skills. He occasionally teaches martial arts to neighborhood children in a local school, and parents sometimes pay him a small amount for the lessons, which provide a minimal amount of income for him. He teaches adults, both men and women, and all have been able to master the sport. He also uses his Taekwondo skills to resolve certain conflicts in the village, such as breaking up fights after football matches.

Jean Baptiste’s unique story testifies to the capacities and resilience of the village residents. His story demonstrates the power of training programs that can produce transformations in peoples’ livelihoods. Jean-Baptiste’s use of his skills is one example of an enabling strategy that has allowed him to continue along his own pathway to permanence.

Roads to Resiliency: Enabling Strategies

HFH’s ‘Pathways to Permanence’ looks at the process of reducing vulnerabilities among populations affected by the Haiti earthquake. Since HFH’s work concluded six months ago, many families and individuals have been able to reduce their own vulnerabilities, either as a result of training or on their own.

Several patterns can be discerned from the data collected through the stone PRA tool where people showed their spending behavior. These findings are summarized in the graph below. A key observation is that the primary categories were food and clothing, with food taking up about a quarter of the budget. Depending on whether the individual had children or not, another quarter of the budget was set aside for school. Those without children spent more money on animals, seeds, and/or items to sell or exchange.

What is particularly interesting is the order in which the stones were laid down. Those with children, in most instances, first set aside stones for education. Food was usually the next category to be budgeted for; the first for those without children. There also appears to be a separation in the way the two genders handle the stones. The women appear to be more particular, counting the stones very precisely; the men tended to focus on overall distribution. There was also a clear generational difference - those with children focused on education and household goods whereas the younger people tended to indicate they spent more money on clothing, cosmetics and music.

Small-Scale Enterprise

Communities in Santo village have transformed a number of permanent shelters along the main road of the new neighborhood into small-scale enterprises. These enterprises symbolize
an emerging local economy, serving families in the permanent HFH shelters as well as the surrounding areas. There are a range of businesses including corner stores that sell various household and basic food items to a barbershop. Some of these homes have been rented out to shop owners, while other tenants/owners utilize their shelters both as a living and a business space.

These enterprises offer a variety of enabling strategies for communities outside of Santo village. A ripple effect has occurred as beneficiaries have rented out their homes and provided local businesses owners in the Santo village area with a more secure entrepreneurial space. As one female shop owner and renter, Maricia, explained, “My store allows me to watch and take care of my children.” She has also started to build relationships with neighbors, offering clients credit so that they can purchase basic household items such as bread, butter or salt. Her store also offers her safe shelter during the rainy season when she is unable to walk home. She pays approximately 1,100 Haitian dollars a year for rent (approx. $137 USD), which she explained is a ‘moderate’ amount for rent. Another example is the handicrafts group, which includes both beneficiaries and non-beneficiaries of permanent shelters. The women have used the training they received from HFH to continue its work creating ornaments and artwork and selling them at local markets or to NGOs in Haiti.

Food Security
Household food insecurity in the Leogane area, which includes Nolivos and Santo villages, is considered “moderate” according to the World Food Program, as compared to other regions in Haiti. This area of Haiti is normally devoted to monoculture (Catholic Relief Services, 2012), namely sugar cane, maize, and bananas, and some families in Nolivos village expressed they had inherited plots of land which they used to grow mono-crops and then sold at nearby markets in Leogane, as well as crops for their household consumption. These included maize, beans, squash, and manioc. While both men and women grow vegetables and mono-crops, women were usually the primary vendors at markets.

In Santo village, many families in the HFH shelters have chosen to construct gardens around their homes. It was noted that both female and male-headed households grow herbs, vegetables, papaya and banana trees, as well as keep livestock (chickens and goats primarily) in and around the home.

Market access seems to be fairly strong for most families in Nolivos and Santo villages, including markets in Darbonne and Leogane. The marketplace in Santo seems to be underutilized at the moment.

Land Tenure
A critical component of the establishment of transitional and permanent shelters in Nolivos and Santo villages is the issue of land tenure and security. For those families in Nolivos village, upgradable shelters were built on secure land title. There was also an emotional connection to the land and families expressed that they would stay in the T-shelters, as they met most of their basic needs. Many expressed that they would like to upgrade or invest in their home, but due to lack of finances, they were unable to at this time.

In Santo village, the government still owns the land, and families did not express any concern of potential displacement given that many are owners of the permanent shelters. The fact that tenure security was relatively high in both locations demonstrates that the threat of displacement is quite low.

Remittances
Remittances contribute anywhere from 20 to 30 percent of Haiti’s annual GDP. While the PRA tools used helped beneficiaries to talk about how they spend money and sources of income, it was not always clear how families
managed during difficult times, or how a family financed significant upgrades to their transitional shelter. Though the average amount in Santo and Nolivos villages could not be quantified, remittances are one example of an enabling strategy to maintain or develop secure livelihoods.

**Security**

Security includes both physical (from the permanent shelters) and emotional components, which have both increased as a result of the permanent and transitional shelters in Santo and Nolivos villages. As Josette DuRocher, a resident of Nolivos village, said, “While my home does not have cement walls or a cement roof, I know that I am safer in this building than I was before, in case another earthquake happens.” Doors, windows and water pumps in Santo village all have locks, creating an added level of security. This was a program intervention supported by CRS’ review of its own shelters, citing the importance of providing locks to t-shelters during distribution (Catholic Relief Services, 2012).

**Social Networks**

Prior to the earthquake, Haiti had a certain level of social cohesion despite the many challenges related to governance and weak institutions. Post-earthquake, the strength of social ties in Nolivos often enabled families to rebound faster than those that were displaced in camps. These networks may have enabled some beneficiaries to become eligible for homes in Santo village. A recurring theme in many of the key informant interviews in Nolivos village was the family and community ties that existed pre- and post-earthquake. Though many homes collapsed and families were temporarily displaced in camps for a few months, by 2011 most families were housed in HFH upgradable shelters. The family compound had regenerated and it was clear that each house acted as part of a larger support unit.

In Santo village, by contrast, many residents had not previously lived together in the same community. Residents of the permanent shelters come from Leogane, Port-au-Prince, Carrefour and other urban areas. Santo village is “not a community that has organically evolved; it is a community of people who have come together out of desperation.” (Engle, Bornstein, and Lizarralde, p. 11) In spite of this, there were signs that community development was occurring and that a sense of place and identity has begun to evolve in Santo village.
What can we learn for the next urban disaster? What would be done differently?

While many of the key recommendations in the report identify important themes that are relevant to the next urban disaster, wherever it may occur, below are some additional, broader lessons drawn from secondary research and from time within the communities of Santo and Nolivos villages.

Given that site visits were made to relatively rural or peri-urban areas, lessons for future urban disasters relate more specifically to how Habitat can develop an organizational strategy that can respond to an urban context, as well as a rural context.

1. Post-disaster responses in greenfield sites, as compared to pre-existing communities, require fundamentally different approaches, namely for building governance structures and holistic communities.

HFH has traditionally used the “neighborhood approach” to rebuild pre-existing communities. Greenfield sites pose an entirely different and more complex set of challenges, as communities developed on a former greenfield site do not have access to the same support networks and social capital that pre-existing communities have forged over many years. This places additional pressure on greenfield communities to form not only new physical structures, but new institutions, governance structures, markets and services (such as for health and education), and to adapt their livelihoods.

HFH’s strategy of building not just houses, but “settlements” lends itself well to this more holistic understanding of community building that is essential for the success of greenfield sites. Its Good Neighbor (‘Bon Vwozen’) Project in Santo village importantly engaged community members in developing a set of rules by which members wished to live, helping to create a self-governing community. Beneficiaries further mentioned the livelihood trainings or “formations” in handicrafts, carpentry and fertilizer creation that HFH Haiti, in partnership with other NGOs such as Give Love, introduced to Santo village. Creating such livelihood trainings has the potential to significantly boost economic activity and provide more opportunities in the area. HFH and other partner NGOs can further this work, assisting beneficiaries to find and fill local market gaps in the provision of goods and services to the new community.

HFH would be well positioned to disseminate key lessons learned and weigh the organizational costs and benefits of greenfield sites. Given that HFH was the only organization to implement an upgradable settlement plan on a greenfield site, other organizations would be able to learn from HFH and its experience in Santo village.
2. Transparency of beneficiary selection criteria is important for facilitating community cohesion and acceptance.

Communication post-disaster on program interventions in communities should be practiced “early and often” and remain as transparent as possible. Confusion about beneficiary selection criteria between agencies and donors reduces effectiveness and can create more harm than good if not carried out appropriately. Messaging should be “creative, visible, and pervasive to compete with the multiple and voluminous messages received daily by those living in urban areas.” (Setchell, 2010).

This is particularly important for greenfield sites where beneficiaries within new communities may not know each other and trust has yet to be formed. As cited in section four, Santo village was a ‘community of strangers’, making transparent collaborative governance and accountability structures necessary to ensure fair beneficiary selection targeting the most vulnerable. Transparent criteria also ensure that people know the process is fair and avoids community divisions and suspicion.

3. Emphasize the importance of gender and age-mainstreaming data collection in pre- and post-disaster response work.

Traditionally, many humanitarian agencies have not collected SADD (sex and age disaggregated data) or used gender and generational analyses in their assessments after a disaster. Generally speaking, the response of humanitarian agencies is not evidence-driven, there is a
lack of understanding and knowledge on how to collect SADD, and there is a lack of interest by donor agencies (Mazurana, Benelli, Gupta and Walker, 2011). In order to overcome this for future urban disasters, HFH could benefit from collaborating or doing its own gender and generational analysis in its needs assessment, and ensuring that it has properly analyzed the data in context, particularly how different genders and age groups are affected by natural disasters. Doing so in future post-disaster response work would ensure more appropriate program interventions that are inclusive of vulnerable communities, which often include women, children and the elderly.

4. **Neighborhood approaches, as opposed to community approaches that focus on small rather than large areas, will lead to better results.**

Communities can often be spread across larger geographic spatial areas, and connected through family, social networks or communities of interest, making it challenging to target effective program interventions (ALNAP 2012, p. 7-8). In Nolivos village, for example, HFH focused its upgradable shelters within a certain section of Nolivos village, rather than the entire community.

5. **In recovery, the humanitarian sector should prioritize the facilitation of long-term homes over the building of short-term transitional shelters (Clermont et al., 2011).**

Land ownership is not necessarily a prerequisite for moving people out of camps. In urban area strategies, it is recommended to take advantage of other accommodation options, such as rental, sub-rental, and lease-holding (Catholic Recovery Services, 2012). Rental subsidies were used with some degree of success to enable families to move out of tents within Port-au-Prince.

While perhaps not viable in Haiti, when funding is available, building apartment blocks can maximize use of space in urban or semi urban areas. They are also more cost effective for service provision.

Although in the short term T-shelters do improve the immediate living conditions for families in tents, there is also the danger that the provision of these shelters reduces the political incentive to provide permanent shelter. Limited funding can reduce the number of permanent shelters NGOs are able to build. Households still in tents could be prioritized for permanent shelter over those with some form of transitional shelter. Long-term solutions require larger budgets and therefore short-term shelters fit donor and NGO project timeframes and budgets. Shelter kits, repairs and support for rebuilding are alternative options.
Women at the Heart of Family and Community Life

Women use their skills in creative ways to provide for their families and assist in community recovery after the earthquake. Although there would appear to be fewer formal livelihood opportunities available to women than men, women have demonstrated an ability to adapt their skills to a variety of different activities in order to generate income. The lack of formal livelihood opportunities and an observed lower literacy rate pose particular challenges for women, especially for female-headed households.

In sharing their stories, it was clear that mothers give priority to the care and education of the children. Even though public education is not easily accessible to most children in Santo and Nolivos villages, women are determined to find the means to send their children to private schools often at great personal cost.

Women are represented on the community council of Santo village where they have the opportunity to raise concerns of particular importance such as safety, reproductive health, and prevention of sexual and gender-based violence. They have also been empowered through working collectively on small-scale entrepreneurial activities such as the handicrafts project. The products they make are sold to local markets and NGOs for a profit, thus providing additional family income. The stories of a few of the women are described below.
Kattelie, Age 36, Santo Village
Kattelie lives alone and has adapted her HFH home to establish a small-scale sewing and clothing business. She has a contract with a school to make uniforms and receives orders from the local community. Her skills have also helped to build the capacity of other women, especially those who participate in the handicraft group. Much of the income she makes through these activities is used to pay for her childrens’ schooling. She has started to build an outdoor kitchen extension.

Maricia, Resident of Darbonne, Small Business Owner in Santo Village
Maricia is renting one of the HFH homes in Santo for 1,100 Gourdes per year to run a business selling household goods to residents in Santo village. Her husband lost his job after the school he worked in was destroyed in the earthquake. The income she generates through her business is therefore vital to the family’s economic security. Working and caring for her children at the same time, the home is a safer business environment than the street. A substantial amount of her income goes towards paying for her children to attend school in a nearby village.

Rhita, Age 40, Santo Village
Rhita is a dynamic, community-minded woman who lives with her husband and three children. Originally from the Santo village area and with skills in teaching and pastry-making, Rhita plays a key role in her community. She was among three women elected to the Santo village Community Council, which she uses as a forum to represent issues of concern to women in the village. Alongside her council responsibilities she is trained in agricultural production from the ‘Bon Jaden’ program, and helps tend the village vegetable garden, the proceeds of which are used to support families in need. Although her family struggles to generate sufficient income to meet their daily needs, she finds deep satisfaction in using her leadership skills and training to benefit others.
Nolivos Village and Santo Village: Spatial Comparison

Although the two sites are only a few miles away from each other, Nolivos village is a pre-established community developed over time, whereas Santo village is still new and the residents are incrementally adapting their homes and shared spaces. The organic growth of Nolivos village around familial ties has allowed for natural spaces for community congregation, often in heavily shaded areas. The Santo village grid layout with private gardens provides ample opportunity for micro-businesses to trade internally within the neighborhood. It appears that the community center and market in Santo Village are less utilized than other places where people naturally congregate (i.e., near street vendors, the church, the bar and shade); this was also observed in Nolivos village. In Santo village, it seems that natural gathering spaces are formed around cultural and commercial activities that have been created by the residents.

<table>
<thead>
<tr>
<th>Nolivos</th>
<th>Santo (Greenfield)</th>
</tr>
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</table>
| **Private Space** | • Informal arrangement of houses clustered into familial areas  
• Land ownership kept as local knowledge  
• Outdoor cooking with charcoal | • Formal arrangements into blocks  
• Land titles are formalized  
• Outdoor cooking in rear yard  
• More shops in front yards due to street layout |
| **Public Space** | • Community meeting room  
• Centralized cemetery with simple and ornate plots above and below ground | • Institutional structures (church, school, market, community center)  
• Mainly concrete buildings or made of shipment containers with metal |
| **Spatial Divisions** | • Few divisions between properties  
• Personal boundaries mainly marked by stones with some use of tarp, plants, sheet metal, and woven palm | • Variety of fences and fence materials – mainly plants, also chain link  
• Some areas are difficult to access due to fencing around centralized field (for security, chain link fencing was left at the request of residents)  
• Older sections are more concealed due to maturing of plants |
| **Pathways/Roads** | • Pathways are curvilinear and lead to the different sub communities and personal houses  
• Unpaved streets in neighborhood and on main roads  
• No street lights | • Formalized grid layout throughout entire community  
• Pedestrian pathways through blocks leading to water points  
• Paved and gravel roads  
• Multiple solar powered street lights |
| **Water/Toilets** | • One house per three toilets  
• Communal taps outside  
• A central river canal with two or three concrete bridges and several temporary makeshift bridges | • Drainage and irrigation ditches composed of mud or masonry  
• Two water pumps per block  
• One toilet and wash room per house |
| **Additions/renovations** | • Examples noted of rooms added to transitional plywood structures composed of various materials on side or back | • Additions are mainly business orientated |
| **Vegetation** | • Mature, lush tree canopy including fruit trees  
• Diverse food plants around home | • Ornamental and food plants attracting hummingbirds and bees  
• Juvenile tree canopy (no shade)  
• Young fruit trees close to houses |
SANTO - Block A

In this type of block the houses face away from the large communal space in the centre. Apart from people going there to collect water from the two wells, the space appears otherwise unused. It is clear that people tend to spend more time in their gardens and on their front porches, facing the street.

SANTO - Block B

Here, a narrow path leads you away from the street and into a different type of shared space - an alleyway where the houses face each other. This layout encourages interaction between the neighbours and results in a more frequent use of the space. Clothes lines are hung between the houses and people can be seen chatting. The spaces are more human in scale than those in Block A, which creates a sense of intimacy.

NOLIVOS - Ka Yo Yo

This community has grown naturally over time. The layout of the houses is integrated with the trees and vegetation, and the lack of demarcation of each house’s garden results in the merging of all outdoor space, creating a strong sense of community. People can often be found congregating under the shade of the tall, mature trees.
Nolivos Village and Santo Village: Dwelling Typologies

The table below shows the elements of historic, pre-earthquake and post-earthquake building typologies found in Nolivos and Santo villages. The most common construction technique in urban and rural Haiti is a concrete slab floor, reinforced concrete frame with CMU (concrete masonry unit) blocks for the walls and a tin or concrete roof. The preference for concrete is viewed as one cause of the degree of casualties during the earthquake because its excessive mass, poor materials and incremental construction resulted in variations in quality and workmanship which led to structural failures. The ‘Jimmy and Rosalynn Carter Work Project’ was an initiative which provided permanent shelters to address this issue by providing concrete knee walls with a lighter wooded frame structure above. They also provide for the Haitian preference for single-story homes with space to cook, clean and trade externally. However, the future design of T-shelters and permanent buildings could be used to strengthen local identity by calling upon indigenous building crafts and materials common to Haiti. This would provide an ideal opportunity to train and certify local residents to build and maintain their communities with a sense of ownership. These alternative systems could include widely available materials of lath and mud plaster such as in Nolivos village, if appropriate quality control systems are devised. However, the timber frame required for this system is expensive in Haiti due to deforestation. Alternatively, the use of fast-maturing bamboo for structural frames would be sustainable and would also provide an opportunity to grow the existing bamboo industry in Leogane, which will contribute to Haiti’s economic development.

<table>
<thead>
<tr>
<th>Photo</th>
<th>Type</th>
<th>Roof style</th>
<th>Materials</th>
<th>Foundation</th>
<th>Extra Features</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image" alt="Traditional Haitian House" /></td>
<td>Traditional Haitian House (Nolivos)</td>
<td>Corrugated metal pitched roof. Front gable (generally)</td>
<td>Local materials: Palm plank lath and framing members with mud/dung plaster/skim coat (waddle and daub)</td>
<td>Local Stone foundation</td>
<td>-Front gallerie/porch – shed roof -Some ornamentation (brackets, decorative surfaces)</td>
</tr>
<tr>
<td><img src="image" alt="Contemporary House" /></td>
<td>Contemporary House (Nolivos)</td>
<td>Variety of roof materials, often flat</td>
<td>Masonry: Cement block with cement skim coat and stone</td>
<td>Poured concrete</td>
<td>-Poured concrete pillars (some rebar) -Iron window guards -Wood and/or iron doors -Galleries (varied)</td>
</tr>
<tr>
<td><img src="image" alt="Temporary shelters" /></td>
<td>Temporary shelters (Nolivos &amp; Santo)</td>
<td>Tarpaulin and/or sheet metal</td>
<td>Tarpaulin and prefabricated tents, often steel framed</td>
<td>Varied</td>
<td>Enclosed with concrete block walls</td>
</tr>
<tr>
<td><img src="image" alt="Red Cross/ HFH ply wood structures" /></td>
<td>Red Cross/ HFH ply wood structures (Nolivos)</td>
<td>Corrugated metal pitched roof</td>
<td>Plywood walls</td>
<td>Cement foundation, knee walls and floors</td>
<td>-Solid doors and windows “various types” -Gallerie</td>
</tr>
</tbody>
</table>
Dwelling Typologies

<table>
<thead>
<tr>
<th>Photo</th>
<th>Type</th>
<th>Roof style</th>
<th>Materials</th>
<th>Foundation</th>
<th>Extra Features</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image" alt="Transitioned shelter" /></td>
<td>Transitioned shelter (Nolivos)</td>
<td>Corrugated Sheet metal pitched roof</td>
<td>Tarpaulin, ply wood, tin sheets, concrete</td>
<td>Varied</td>
<td>Any of the above house types with rooms added to the rear and the sides.</td>
</tr>
<tr>
<td><img src="image" alt="Jimmy and Rosalynn Carter Work Project permanent structures" /></td>
<td>Jimmy and Rosalynn Carter Work Project permanent structures (Santo)</td>
<td>corrugated metal, front gable</td>
<td>Pressure treated ply wood, cement</td>
<td>Cement knee walls</td>
<td>-Well ventilated -Front gallerie and rear stoop shed covering -Gable vents -Roof water collection units on the sides -Raised on pier</td>
</tr>
</tbody>
</table>

Creating Community Around Public Space

Observations show that people gathered in certain areas where there was shade or an economic and cultural activity (see Appendix C). In urban areas the place of gathering is often a public park or square. In rural areas families cluster their homes around a traditional lakou or compound. “These communal lands represent not only cultural history, but also a strategy for resource sharing. The existing lakou should be carefully considered in planning for housing construction, preservation, and community development.” (Loughery, 2011, p. 5)

In Santo village there was an area in the middle of the village which is now unused. This could be transformed into a park to provide a place for gathering and relaxing. This would create a central social area for the community. It is located near the market and as people use the park they would pass the market which may help to attract more trade. As stated by Samuel, a member of the Village Management Committee, “People attract people”. Having a social place at the heart of an area can encourage a sense of community. During the planning process public places should be considered and houses built around a central, public area.
Bibliography


Habitat for Humanity International (2012) “Pathways to Permanence”. Americus, GA


Setchell, C (2010) Sheltering in Haiti: Looking forward while looking back, ShelterCaseStudies.org
Appendix A (Terms and Definitions)

Beneficiary – a person who receives something, in this context a recipient of a shelter

Brownfield Site – a redeveloped or expanded site that has been previously developed for industrial or commercial uses; may be contaminated

Capacity – the ability to take action or do something

Greenfield Site – a newly developed site that was previously in a natural or cultivated state

Governance – process of governing and decision-making; not limited to just formal government, but inclusive of other informal or formal bodies

Lakou – Creole term for a large family/community compound or public space

Livelihood – formal or informal means of generating income to provide for the basic necessities for oneself and one’s family and/or community

Micro-finance – financial services available to entrepreneurs or small businesses to assist the economic development of low-income individuals or areas

Participatory Rapid Appraisal – an intensive, participatory, but semi-structured learning experience carried out in a community by a multi-disciplinary team

Pathways to Permanence - the process of reducing vulnerability as well as supporting disaster-affected families and communities using holistic program interventions that enable incremental progress towards the achievement of permanent, durable shelter and settlements. (Habitat for Humanity, “Pathways to Permanence”)

Peri-urban – urban growth and development in semi-rural areas that creates a hybrid landscape

Petit Commerce – small-scale entrepreneurial activity

Program Interventions – post-disaster work that does not involve building shelters or physical improvements, but rather involves restoring “social, economic, natural and cultural environments and becoming a platform for health, water, sanitation, livelihoods, protection, education and other post-disaster assistance.” (Habitat for Humanity, “Pathways to Permanence”)

Remittance – transfer of funds from a worker in a foreign country to his/her home country

Resilience – capacity of an individual or a community to maintain basic functionality when exposed to a hazard or a shock, while recovering in a timely and efficient manner

Roads to Resiliency – strategies, both programmed and community-generated, that assist families in various ways to reduce vulnerabilities and re-establish security (a term originating in this report)

Transitional Shelters – shelters based on the four principal characteristics of being upgradeable, reusable, resalable, and recyclable; also known as T-shelters

Vulnerability – inability to withstand the effects of a hostile environment; a weakness
### Appendix B

#### Nolivos P2P

<table>
<thead>
<tr>
<th>Direct Production Labor</th>
<th>Community Labor</th>
<th>Contract Labor</th>
<th>Self-Help</th>
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<thead>
<tr>
<th>General Items</th>
<th>Shelter Construction Items</th>
<th>Clean up Items</th>
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<tr>
<th>Cash</th>
<th>Env./Resource Mgmt</th>
<th>Vouchers</th>
<th>Local Info. Centers</th>
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<tr>
<th>Insurance, Loans, Guarantees</th>
<th>Advocacy / Legal / Administration</th>
<th>Market Interventions</th>
<th>Return and Transit Items</th>
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<tr>
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<th>Supervision &amp; technical exp.</th>
<th>Capacity Building</th>
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#### Santos P2P

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Fig. 1 Comparison of Santo village and Nolivos village using Habitat for Humanity International’s 18 Assistance Methods Model

Rebuilding communities after the earthquake, Haiti | Livelihood and Shelter Study
<table>
<thead>
<tr>
<th>Description</th>
<th>So What?</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Technical Trainings</strong></td>
<td>teaching transferrable skills in order to train community members to be more self-reliant in construction, finances, etc and to create livelihood opportunities</td>
</tr>
<tr>
<td><strong>Forming Communities (i.e. women’s groups)</strong></td>
<td>Creating opportunities for various groups to learn skills, start income generating activities (IGAs), and develop stronger personal relationships</td>
</tr>
<tr>
<td><strong>Fostering a long-term partnership between HFH, community members, governance structures and other NGOs</strong></td>
<td>Beginning with ‘sweat equity’ as a buy in for home owners, HFH continues to establish a stronger foundation from a multidisciplinary team of professionals in order to build resilience; the ‘it takes a village’ approach</td>
</tr>
<tr>
<td><strong>Strengthening community spaces</strong></td>
<td>Identifying elements/locations, both formal and informal, to help facilitate stronger settlements</td>
</tr>
<tr>
<td><strong>Land use flexibility and planning</strong></td>
<td>Continuing to allow for natural building upgrades and adaptive use of existing structures to create a more sustainable settlement pattern</td>
</tr>
</tbody>
</table>

Fig. 2 Post-Disaster Assistance Methods for strengthening “Pathways to Permanence” (Redefining the model to reduce vulnerability for Leogane)
<table>
<thead>
<tr>
<th>1. Design</th>
<th>Santo</th>
<th>Nolivos</th>
</tr>
</thead>
<tbody>
<tr>
<td>Covered Area</td>
<td>20 sq m. (smaller than Nolivos), 1-2 rooms, houses occupied from 1 to 8 people</td>
<td>1 room (with potential for sectioning off into 2); larger sq. footage than Santo</td>
</tr>
<tr>
<td>Materials</td>
<td>Cement floors, Bottom 1/2 cement walls, top 1/2 wood walls, tin roof, gutters on sides</td>
<td>dirt floors, rebar exposed for potential cement floors (if beneficiary pays), all plywood construction (treated wood), light green paint, tin roof, no gutters</td>
</tr>
<tr>
<td>Location</td>
<td>Green field site</td>
<td>Existing rural community</td>
</tr>
</tbody>
</table>

| 2. Durability | | |
| Disaster mitigation | Raised floors to prevent flooding; wooden plywood (not cement) in case of another earthquake | plywood instead of cement (better if another earthquake occurred) |
| Safety | Locks on doors/windows, safe location, solar lighting | No locks provided on doors, no solar lighting (or any electricity) |

| 3. Secure Tenure | | |
| Tenure | Government-owned land. Will need to pay taxes in five years (approx. $56/yr). Mixed-use tenure (families own or rent) | Families own or have inherited land and own homes |

| 4. Water | | |
| Quality | Good | Not treated drinking water |
| Access and Quantity | Good, but padlocked / controlled, but free to HFH | Pipes broken, water running continuously |

| 5. Sanitation | | |
| Access to toilets | Variable; half of homes have own latrine; other half have access to composting toilets | Most homes have access to latrine |
| Design, construction and use of toilets | First 150 home owners were not satisfied with original latrines; composting project for everyone | Unclear if beneficiaries were included in design process |
| Drainage | No pipeline / running water. | No running water |

Fig. 3 Habitat for Humanity’s Housing Quality Standards
Appendix C

Fig. 4. Locations where people gather in Santo village
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## Appendix D

<table>
<thead>
<tr>
<th>PARAMETERS</th>
<th>VULNERABILITIES</th>
<th>VULNERABILITIES</th>
<th>CAPACITIES</th>
<th>CAPACITIES</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Men</td>
<td>Women</td>
<td>Men</td>
<td>Women</td>
</tr>
<tr>
<td>PHYSICAL</td>
<td>Health and wellbeing: clinic is not within easy walking distance.</td>
<td>Health and wellbeing: clinic is not within easy walking distance. The villages are dark at night due to inadequate street lighting. There is lack of police presence so people pray for protection and ‘call on Jesus’. Women are particularly at risk when using public transport from their villages to the city.</td>
<td>Trained in a variety of locally useful manual skills, therefore able to take on more work opportunities.</td>
<td>Home ownership and land tenure are available to women.</td>
</tr>
<tr>
<td>SOCIAL</td>
<td>Men appear to have several families in dispersed locations—may have more children to support.</td>
<td>Women with children often left without partner support, which can have economic and psycho-social implications. Lack of access to family planning.</td>
<td>Due to a more fluid understanding of family/marriage, some men benefit from having more resources available to them and can choose ‘the best option’. Generally have more power than women in public discussion spaces i.e. Civil Protection meetings. Strong Christian community.</td>
<td>Often benefit from the support of the neighborhood and family support. Are observed network in small groups for daily activities creating ties. Able to express themselves within the mixed-gender discussions within the community. Strong Christian community.</td>
</tr>
</tbody>
</table>

Fig. 11 Gender Vulnerability & Capacity Analysis Tool
<table>
<thead>
<tr>
<th>PARAMETERS</th>
<th>VULNERABILITIES</th>
<th>VULNERABILITIES</th>
<th>CAPACITIES</th>
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</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Men</td>
<td>Women</td>
<td>Men</td>
<td>Women</td>
</tr>
<tr>
<td><strong>FINANCIAL</strong></td>
<td></td>
<td></td>
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</tr>
<tr>
<td></td>
<td>Might face added responsibilities to support dispersed families. Some men are struggling to find employment post-earthquake. Land tax liability down the line.</td>
<td>Many women are dependent on men to provide financial support. Capacity for new opportunities is limited if they are also child-rearing. With absence of men, women lose financial capacity. Female-headed households with children have less financial capacity. Land tax liability down the line.</td>
<td>Men have more capacity to find jobs and often have the ultimate say over spending. Many men are engaged in petit-commerce and thus often control day-to-day funds derived from such.</td>
<td>Many women are engaged in petit-commerce and thus often control day-to-day funds derived from such. When remittances are sent, they are generally sent to the women as they are more trusted to manage the funds for the benefit of the family at home (Mike Meaney, HFH).</td>
</tr>
<tr>
<td><strong>LIVELIHOODS</strong></td>
<td></td>
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<tr>
<td></td>
<td>Little opportunity and/or access to markets, especially after disruption of social networks.</td>
<td>Little opportunity and/or access to markets, especially after disruption of social networks.</td>
<td>Men have greater opportunities to work/earn outside of the household. Some men have or will receive training in construction, finance and DRR.</td>
<td>Women more involved in making handicrafts and sewing. Also involved in petit commerce, sales, and management. Some in Santo have/will receive training on finance, DRR, and handicraft-making.</td>
</tr>
<tr>
<td><strong>HUMAN</strong></td>
<td></td>
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</tr>
<tr>
<td></td>
<td>Literacy rate low.</td>
<td>Literacy rate low.</td>
<td>Some have skills and education.</td>
<td>Some have skills, education and creative abilities.</td>
</tr>
</tbody>
</table>