


Haiti Earthquake Reconstruction

Knowledge Notes from DRM Global Expert Team for the Government of Haiti

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Government of Haiti

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PREFACE

The devastating Haiti Earthquake of January 2010 created major challenges on a variety of fronts. To support the Government of Haiti's decision-making on the recovery and reconstruction operations, the Global Facility for Disaster Reduction and Recovery (GFDRR) decided to make available expert advice and global best practices to the Government by mobilizing the World Bank Global Expert Team (GET) (and also procuring external expertise where in-house expertise was not available) to prepare Knowledge/Good Practice Notes on ten identified, 'burning' post-disaster recovery and reconstruction issues in a time-bound manner. These knowledge notes covered a number of key sectors including: Building Seismic Safety Assessment; Debris Management; Environmental and Social Assessment; Experience with Post Disaster Income Support Programs; Land Tenure; Management of Recovery Managing Post-Disaster Aid; Rebuild or Relocate; Transitional Shelter, and; Helping Women and Children to Recover and Build Resilient Communities.

The notes provided just-in-time advice and options for Haiti's disaster recovery, availing the state-of-the-art expertise available through the GET-DRM. The French and English versions of the Notes were made available to the Government of Haiti to assist in developing its viewpoint for the deliberations at the Technical Workshop (held at Santo Domingo on March 18, 2010) to endorse the PDNA outcomes and lay the outlines of the recovery and reconstruction strategy.

These knowledge notes endorse the commitment of GFDRR and the Bank to provide the Government of Haiti with all the possible ways and means for meeting the massive recovery challenges that it continues to face. The fact that the Government of Haiti endorsed the Notes with deep appreciation and full ownership stands testimony to the fact that the good practices disseminated through the knowledge notes are informing key policy and strategic decisions and providing practical implementation advice to the Government of Haiti.

The real efficacy of the GET Notes would be gauged in the medium to long term in the extent to which the Government-led recovery and reconstruction process in Haiti mainstreams disaster risk reduction as a key element of its sustainable development agenda. This will be possible only by fully availing the opportunities opened up by the disaster for building back infrastructure better and building disaster resilient communities – an enterprise for which the GET guidance notes will continue to be a useful source of knowledge and guidance.

Most impressive, though, was how this unfortunate calamity has opened doors for collaboration amongst DRM partners. With a severe dearth of valuable data which disaster managers needed in order to provide life-saving assistance, the information technology community banded together and started organizing crisis camps – gatherings where tech savvy people came together and found solutions to crises that emerged from the earthquake. A similar, though less tech-savvy collaboration, also helped produce these knowledge notes in the aftermath of a disaster that has no comparison in recent history, and which required the assistance of scores of individuals to produce. I express my gratitude to the Knowledge Strategy Group and Global Expert Team for providing the sort of financial support, just-in-time advice and technical know-how that has helped the Bank become the "Knowledge Bank".

The World Bank stands by the Haitian people as they embark on this arduous journey to rebuild their country – and their lives. For all the many lives lost, there are many more to be saved. GFDRR, along with many other partners, is committed to assisting those in need and ensuring Haiti recovers and exhibits the same resilience we have seen so many times in the past.

Sincerely,

Saroj K. Jha
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Managing Post-Disaster Aid

The Haiti Earthquake will be remembered as one of the most tragic natural disasters in recent times and also as one of the largest relief and recovery efforts ever. The international community has an opportunity to help Haiti and demonstrate that it has learned the lessons of previous large-scale natural disasters, especially from post-Tsunami. Given the outpouring of global solidarity it is most likely that there will be enough resources to rebuild Haiti. However, the success or failure of Haiti's reconstruction will depend on the management and implementation of these resources.

Key Decision Points

1. ***Establish early the best mechanism to manage the recovery.*** *Clear modalities of operation will be critical.*
2. ***Speed should override detailed planning*** *in the early phase. "Cluster approach" can help establish clarity on leadership.*
3. ***Hold (monthly) decision meetings with international partners*** *and protect the time of senior government officials.*
4. ***Tracking the money and results needs to be started early.*** *A strong and detailed Damage and Loss Assessment is critical to effectively allocate resources later.*
5. ***Establishment of a Multi-Donor Trust Fund*** *can help reduce fragmentation of aid.*
6. ***Allow for flexible PFM arrangements.*** *Projects do not need to be channeled through country systems if the regular budget cycle makes efficient implementation difficult.*

international community's ability to coordinate aid effectively since post-Tsunami reconstruction. Haiti has been receiving a huge inflow of resources and this increasing volume of aid will come with increasing fragmentation. Aid coordination will thus be one of the most important challenges, both in the short term for the relief effort as well as in the medium-term when the reconstruction effort begins.

The strength of Haiti's and international management system will determine the success of the recovery effort. Haiti's senior government officials will most likely be overwhelmed by requests from well- intentioned donor partners. It will be important that development partners and NGOs don't overestimate their individual role. Too frequent individual interaction with senior Government officials create a high risk of draining unnecessarily the scarce human resources of Haiti's government. A recent survey of humanitarian assistance considered the lack of effective and efficient coordination as the biggest constraint to a successful response to humanitarian operations (see figure 1).

Figure 1- The main challenge: Effective coordination

Source: ALNAP 2010

In the initial phase – the first 6 to 9 months – there is a high premium on speedy implementation of relief and recovery programs. Speedy delivery should override detailed planning. In this early phase, Haiti and its major partners should develop a rough reconstruction plan that needs to be kept simple and provides guidelines for sequencing programs. For example, large-scale infrastructure normally takes several months to complete procurement and mobilize teams to support works, while more decentralized, smaller programs such as household repair or community-based redevelopment can begin earlier. It is important to start preparing these smaller programs early so that they can be implemented once the emergency effort reduces its intensity. Otherwise there is a high risk of a *gap* which has slowed down the recovery effort in many previous natural disasters, including Aceh's post-Tsunami reconstruction (see figure 1).

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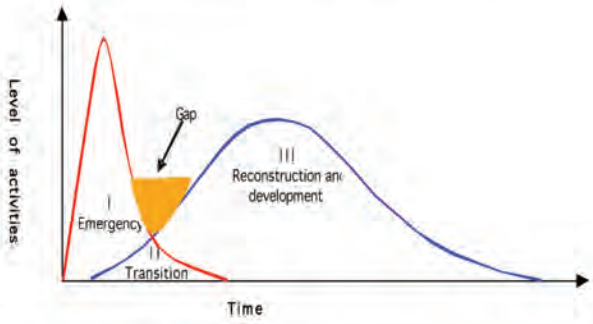
Figure 1 – The gap between relief and recovery



Six Lessons from Past Experiences

1. **Define early on the best institutional approach to lead the recovery effort.** There are several options to determine the best institutional set-up for managing the recovery and reconstruction process (see *Managing the Recovery* Note). The scale of Haiti's Earthquake argues for the lead agency(ies) to be fully focused on the task. This agency will most likely need to establish special mechanism for resource allocation, procurement and staffing. In case staff or the unit are contracted, it will be critical to establish a sunset clause to avoid taking a life of its own or surviving beyond its mission.

2. **During the relief effort, establish clarity on leadership and division of labor through the "cluster approach" which has been successfully practiced in humanitarian relief in recent years.** In this approach, a lead agency – which can also be an NGO – would have responsibility for the emergency response in the whole sector, not just for its own actions. If a gap emerges, the lead agency is expected to have the capabilities to fill that gap itself—a provider-of-last-resort. The cluster approach can also help to minimize the gap between humanitarian relief and the recovery effort. The cluster approach is already working well in Haiti and should continue to be encouraged.

3. **Establish (monthly) decision meetings with international partners.** One of the best early investments is the establishment of a joint decision making body, which meets predictably and follows up on all the decisions continuously. This policy forum could also include representatives of non-traditional donors. In the case of Aceh's post-tsunami reconstruction, the Multi-Donor Fund provided the venue for policy discussions and overall stocktaking of the reconstruction program between government and development partners, including key NGOs.

4. **Encourage development partners to establish, and contribute to, a Multi-Donor Trust Fund.** The pooling of funds can substantially reduce fragmentation of aid and transaction costs for Haiti's government. The Aceh Multi-Donor Fund established a high level policy forum and also helped to provide much needed "fungible funds". These fungible funds helped to close several of the sectoral and spatial gaps in a second phase of the recovery (see box 1).

5. **The government should set-up a monitoring system which tracks the money and outputs.** Given the likelihood of high fragmentation of aid, it will be very important to establish an information system which provides overall trends and gaps in real time. However, many mistakes have been made in establishing overdesigned monitoring systems which focus too much on sophisticated Information Technology and too little on the quality of the data. While informational technology can help, ultimately people need to track the money and the outputs. The secret of a successful monitoring system is a dedicated team of analysts which holds responsible for collecting, updating, analyzing, aggregating, correcting and communicating the data. If the reconstruction agency decides to approve every recovery project – as it did in Aceh – it can establish a comprehensive project database which would then became the baseline for the monitoring system. At a later stage, authorities can apply the 20/80 rule and focus on the big players when updating the database: Typically, the top 20 players are managing 80 percent of the reconstruction portfolio. Building on this project database and the damage and loss assessment the reconstruction agency can estimate sectoral and geographic gaps (box 1).

6. **While core fiduciary principles apply, post-disaster financing is fundamentally different to the implementation of regular development projects.** In post-disaster situations, the management, planning, budgeting and project implementation will need to be much more rapid and flexible. Funding does not necessarily need to be channeled through country systems if the regular budget cycle does not allow for a speedy and flexible implementation of recovery projects. However, to the extent possible, all reconstruction funds should be recorded on the regular budget even if they are not channeled through it. Proper fiduciary oversight and speedy implementation can go together. The government should consider to establishment of an Independent Service Authority chaired by the government but which includes civil society and international members to oversee procurement and financial probity.

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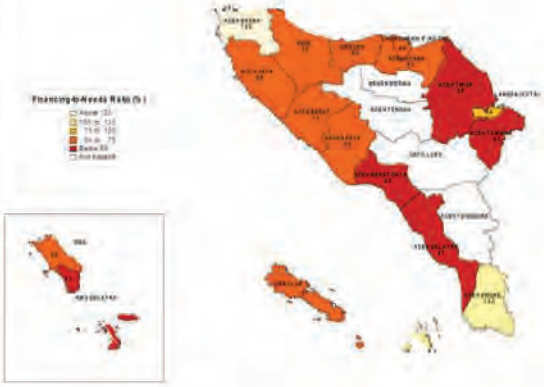
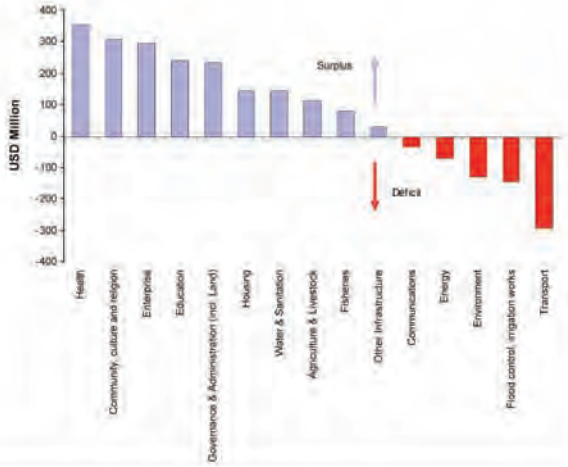
Box 1 – Aceh: Tracking aid to establish geographic and sectoral gaps

Like Haiti, Aceh experienced generous inflows of aid from all over the world after the 2004 Tsunami. The financial assistance was sufficient not only to rebuild what has been lost in the tsunami, but also to "build back better". How was this information generated? Which sectors where betting most which least? Which regions need additional funding? A joint team of the Reconstruction agency and the World Bank were "tracking the money" since the beginning of the recovery effort to establish geographical and sectoral gaps (see below charts). The regions close to the provincial capital Banda Aceh received sufficient funding while the badly affected areas on the West Coast and the island of Nias remained severely underfunded (dark red regions in the below map). Similar disparities were also seen in sectoral reconstruction, with some sectors being over-funded (including health, education), while others failed to receive adequate funds to even return them to pre-tsunami levels (transport, housing, flood control, environment and energy). Based on these "gap assessments", the government of Indonesia and the Multi-Donor Fund (MDF) started to allocate additional funds to close these gaps.





Conclusion

It is possible to build back better after a devastating disaster. The experiences in Indonesia and other parts of the world have demonstrated that a better future is possible even in areas which were poor and difficult before the disaster hit. Government leadership will be the key factor determining a successful recovery of Haiti. International partners should make every effort to strengthen the government's role to lead Haiti's recovery – no matter how fragile the government's capacity remains. In previous successful recovery efforts, international partners came together to align behind government and "lower their flags" instead of increasing the fragmentation of aid.

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Managing the Recovery

The Government of Haiti has several options that are available to manage the recovery process in an effective and coordinated manner. The two most common proposals are: (a) to create ***a new institution*** *for recovery management or to (b) to strengthen and coordinate* ***the existing line ministries*** *so that they can lead the reconstruction on a sector-by-sector basis. A* ***third hybrid option*** *is also presented below that combines features of both approaches.*

OPTION 1: CREATE A NEW INSTITUTION TO MANAGE RECONSTRUCTION

The creation of a new institution to manage reconstruction is desirable in a situation where it is unlikely that the existing government institutions will be able to implement a high volume of additional projects at increased speed, while at the same time sustaining routine public services. This option consolidates reconstruction in one agency that provides oversight, a single point of coordination for international stakeholders and additional capacity to implement and expedite reconstruction projects. This model was used in Sri Lanka and Indonesia after the 2004 Indian Ocean Tsunami.

The key features of a new coordinating institution include:

- Headed by a respected senior government official with a clear mandate;
- Rapidly staffed by seconded civil servants and staff from development partners, consultants, private sector experts and pro bono expertise;
- Performance of one or more of the following roles:
  - Coordination between Government, donors and NGOs;
  - Monitoring and benchmarking the recovery;
  - Setting and enforcing quality control standards; public information and relations;
  - Managing key reconstruction activities such as land acquisition; and/or implementation;
- Systems for ensuring a "clean" recovery through transparency, accountability, integrity, independent oversight, and anti-corruption measures – this is a key function in ensuring that international pledges become firm commitments;
- A finite lifetime and support for capacity building so that there is a transition to the normal functioning of government agencies.

Principles for Rebuilding National Capacity in Haiti

1. ***Good governance*** *– an emphasis should be placed on transparency, accountability, stakeholder participation, and controlling corruption.*
2. ***Capacity building*** *– start by building on existing capacity and social capital. In Haiti, this would include local and international NGOs, community-driven development programs, religious organizations, and the Diaspora.*
3. ***Invest in a modern state*** *– ensure that the recovery process contributes to rebuilding a government that is capable of providing services and enforcing the rule of law.*
4. ***Decentralization*** *– use the recovery to increasingly decentralize economic and political activity where it promotes prosperity and good governance.*
5. ***Quality standards*** *– apply, monitor and enforce quality standards, such as integrating disaster preparedness, managing the environment, protecting vulnerable groups, enhancing gender equality, and enabling the private sector.*

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The richest international experience with developing a new recovery agency is the Executing Agency for Rehabilitation and Reconstruction of Aceh-Nias (BRR) that operated from 2005-09 in Indonesia. Some of the relevant lessons from the BRR experience are:

- **Incremental responsibilities** – move from coordination and information-sharing to a more complex role of project implementer as capacity increases over time;
- **Financial management** – adhere to the principles of speed (accelerating on-budget financing and using off-budget mechanisms), efficiency (ensuring off-budget funds are properly coordinated) flexibility (use uncommitted resources such as the Multi-Donor Trust Fund to fill sectoral and geographical gaps in reconstruction) and accountability (have systems for integrity and anti-corruption);
- **Facilitation and information** – facilitate the recovery through: development of a geospatial information system; a one-stop shop for donors to process tax exemption, visas and import licenses; quality standards for housing; and standard operating procedures for approving and monitoring projects;
- **Leadership** – select a nationally and internationally respected leader who has cabinet-level status as well as access and political support at the highest level;
- **Communications** – develop different instruments to communicate early and often with beneficiaries and donors about the pace and direction of the recovery. This is key in ensuring expectations are set realistically throughout the program;
- **Learn from mistakes** – conduct an early beneficiary census to meet needs and avoid fraud; insist on community-driven housing reconstruction as opposed to the top-down contractor model; integrate disaster risk reduction from the beginning.

OPTION 2: USE STRENGTHENED LINE MINISTRIES

The alternative approach for government management of the recovery is to rely on strengthened line ministries to supervise and implement projects. This usually begins with joint preparation of a master plan, blueprint or action plan for the recovery where the respective roles and activities of the line ministries are identified in support of the reconstruction. The government budget is the main conduit for channeling recovery finance to line ministries, though parallel off-budget activities, such as through UN agencies and NGOs, are usually critical. The line ministries then implement projects and programs while supervising related off-budget efforts.

One example of this is the experience of the Federal Emergency Management Agency (FEMA) in the USA.

Key features of FEMA include:

- Federal level support for public and individual assistance provided by a national agency;
- Additional reconstruction activities implemented through the existing government departments corresponding to the sectors and services where damage has been sustained. For example, funds would be channeled through the Department of Health to reestablish public health services;
- Existing government agencies at different level, i.e. national and sub-national, work together to deliver the reconstruction program;

Lessons learned from strengthening line ministries following disasters in developing countries revolve around the establishment of project management/implementation units. These units can:

- Help line ministries make emergency decisions that are supportive of both relief and a longer-term recovery framework;
- Provide a mechanism for day-to-day management of recovery activities within a given ministry;
- Monitor reconstruction finance;
- Ensure that mitigation measures are adopted to avoid negative impacts; and,
- Adjust implementation based on lessons learned from early results.

OPTION 3: HYBRID MODEL

A third, hybrid path involves existing government structures that are strengthened by a temporary agency that is tasked with providing support to increase the speed of reconstruction. This model combines the approach of both the above options.

The post-conflict reconstruction effort in Liberia is an example of how a temporary agency can support the reconstruction efforts of the existing government structure. The context is comparable to Haiti in that there was large scale physical destruction and weakened government institutions. In the case of Liberia's reconstruction, a Special Implementation Unit (SIU) was established in the Ministry of Public Works to assist with procurement and provide technical support to other line ministries involved in infrastructure activities (such as roads, ports, airports, water, agricultures, energy).

These functions are being transferred back to the line ministries as capacity is rebuilt. A Public Finance Management Unit was also created at the Ministry of Finance to provide financial checks and balances throughout the duration of the reconstruction program.

Both these agencies relied on contractual staff. As the reconstruction program developed, it became clear that an expansion of support from the SIU was necessary and the agency moved from providing only minimal capacity support to providing more strategic anchoring for the reconstruction program.

The key characteristics of this hybrid model, when applied to the context of Haiti, would consist of:

- A small recovery agency or committee with a very focused mandate that would undertake a limited number of critical reconstruction functions such as:
  - Expediting reconstruction processes including procurement;
  - Managing a land acquisition program;
  - Technical assistance to the implementing agencies to address bottlenecks and speed up delivery;
  - Monitoring and benchmarking the recovery;
  - Development and enforcement of quality standards;
  - Public information and relations;
  - Housing of a one-stop office to facilitate recovery procedures;
  - Ensuring the transparency and accountability of the reconstruction process in order to maintain credibility amongst beneficiaries and donors alike.
- Implementation of key projects and programs through line ministries where capacity exists.
- Where capacity does not exist or where delivery is delayed, implementation through parallel structures such as Non-Governmental Agencies and United Nations agencies.
- Gradual strengthening of line ministry capacity to implement critical projects and programs as well as supervise and facilitate off-budget activities.

The advantages (+) and disadvantages (-) of each approach in the Haitian context are as follows:

Recovery Agency	Line Ministries	Hybrid Approach
+ Can accelerate coordination and implementation of recovery; + Models of good practice exist with features that can be replicated; + Can draw on resources beyond the civil service resource pool + Can focus on tasks which are specific to reconstruction, e.g. land acquisition, development of reconstruction policy.	+ Respects and strengthens existing government structure and capacities; + Does not create additional competition for resources and power; + Facilitates transition from reconstruction to longer-term development.	+ Respects and strengthens existing government structure and capacities; + Has a light structure therefore can be easily dissolved after the reconstruction is over; + Provides additional capacity to line ministries whose capacities and resources will be under immense pressure; + Provide a single point of responsibility for managing reconstruction; + Can focus on tasks that are specific to reconstruction, e.g. land acquisition, development of reconstruction policy, aid tracking.
- Potential for rivalry with existing agencies; - Takes more time and resources to establish than expected; - Requires existence of strong central government for support and authority; - Can create issues of sustainability of reconstruction 'investment'; - Does not strengthen existing government bodies.	- Capacity was low before earthquake and has been further decimated since; - Line ministries will be drawn away from their routine work - Will still require 3rd-party implementation; - Will not address specific reconstruction activities, such as coordination of off-budget funds and continuous communication with stakeholders on reconstruction progress & upholding transparency and accountability.	- Light structure may not be sufficient to deal with the enormity of the task; - May lack the political weight necessary to coordinate other line ministries or other reconstruction actors.

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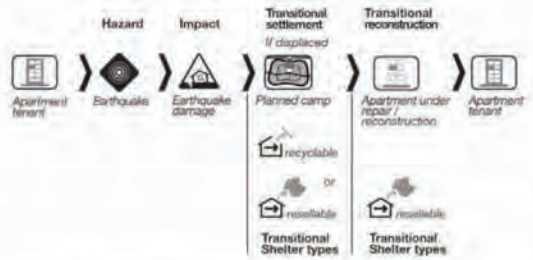
Transitional Shelter

With an estimated 1.2 million left homeless and the hurricane season approaching, shelter for persons displaced by the earthquake in Haiti is an urgent issue. While emergency shelter is a high government priority, this note is written to build on the work already undertaken by the government and international community and provide medium and longer term transitional shelter recommendations.

The government is facing urgent decisions about how to develop transitional shelter options which are responsive to both the immediate hurricane risks and to the longer term reconstruction and recovery needs in Haiti. Decisions made about type and location of transitional settlements made in this early phase will have a spill-over effect on later policy decisions months and even years later. It can take years to find a durable solution for people displaced by disasters due to varying constraints such as land acquisition, development of infrastructure, ownership issues related to construction of new housing and delays or changes in the design and location of the new houses.

WHAT IS TRANSITIONAL SHELTER?

"Transitional shelter provides a habitable covered living space and a secure, healthy living environment, with privacy and dignity, to those within it during the period between a natural disaster and the achievement of a durable shelter solution." (Corsellis & Vitale 2005). More than just a type of house, transitional shelter is part of a process which covers the spectrum from immediate temporary/ emergency shelter following displacement through the time an individual's house is reconstructed or they find a durable solution.



*from The Shelter Center's Transitional Shelter Guide

THE PREFERRED OPTION: A TRANSITIONAL SHLETER PROGRAM WHICH IS:

1. **Tailored to community/individual needs and circumstances.** There will be no easy one-size-fits-all for Haiti's transitional shelter needs. Policy decisions about shelter type and location should be made in consultation with the affected population, keeping in mind that the preference for transitional shelter may be community-specific and that transitional shelter needs may change as time passes.

2. **Done by, rather than for the affected population;** provide families with the materials to construct their own transitional shelter.

3. **Near to or on the site of the damaged/destroyed homes,** allowing IDPs to participate in reconstruction, maintain community ties, secure their land tenure and maintain proximity to their former employment or source of livelihood. If it is not possible to locate displaced families near their homes or work, transportation should be provided (free or at minimal cost) for displaced families to get to former or future home sites as well as to their means of livelihood.

4. **Designed so that, when possible, there is a seamless transition between transitional settlements and reconstruction or a durable solution.** Transitional shelter in of itself does not constitute a permanent solution for the affected population.

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ADVANTAGES AND DISADVANTAGES OF A TRANSITIONAL SHELTER PROGRAM

Some of the advantages of a well devised transitional shelter program are that it spans the entire transitional period from disaster until a durable solution is achieved, involves Haitians in the decision making process about the type and design of their transitional shelters, can support local procurement of construction materials and circulate money in the economy, can use local skills and materials which are culturally familiar to provide shelter, and the best designs allow families to upgrade, move or incorporate shelter materials into their permanent dwelling.

Some of the disadvantages of a transitional shelter program are that it may take more time then acquiring tents, it may be at odds with international perceptions that earthquake victims "need" tents, it requires more human resources to determine the appropriate materials for Haiti's transitional shelter constructions, it is dependent on the global supply of these materials, it initially may be more expensive than procuring tents, transitional shelter, particularly far from the city, can render the displaced population "invisible" and take some of the pressure off housing reconstruction effort.

TRANSITIONAL SETTLEMENT OPTIONS FOR THE DISPLACED AND NON-DISPLACED

A transitional shelter program can be used for both the displaced and non-displaced population. Haiti's **displaced population** might find themselves in one of many situations, including staying in "planned camps" (for example, the eight new sites selected by the government), "collective centers" (building such as schools, community centers which are temporarily inhabited for shelter), "self settled camps" (spontaneous camps formed after the earthquake), "rural self settlements" "urban self settlements" or with staying "host families."

In urban areas, the proportion of tenants to owners/occupiers often exceeds 50%. Whether owner, tenant or informal settler, household that were not displaced may also find themselves in need of - and should be eligible for – support for transitional shelter.

TYPES OF TRANSITIONAL SHELTER

Ideally, transitional shelter materials used in Haiti will be sturdy enough to last the entire transition period until reconstruction. When possible, they should be

Upgradeable. While being inhabited, transitional shelter is improved over time and becomes permanent housing. This is achieved through maintenance, extension or by replacing the original materials for more durable alternatives.

Reusable. Transitional shelter is inhabited while parallel reconstruction activities are taking place. Once reconstruction is complete, the transitional shelter can be used for an alternative function, for example a shop or storage.

Resellable Transitional shelter which is inhabited while parallel reconstruction activities are taking place. Once reconstruction is complete, the transitional shelter is dismantled and its materials are used as a resource to sell. Therefore, during the transitional shelter design process, materials need to be selected that will be suitable for resale after the shelter is dismantled.

POST DISASTER TRANSITIONAL SHELTER IN HISTORY

1963 Skopje Earthquake, Macedonia. *20,000 units of temporary housing in sites approximately 10km from the city center are provided.*

1972 Managua Earthquake, Nicaragua. *5,000 housing units in secondary cities are provided.*

1976 Guatemala City Earthquake, Guatemala. *10,000 serviced lots in Guatemala city are provided.*

2001 Gujarat Earthquake. *Materials for bamboo framed thatch-roofed units provided.*

2003 Bam Earthquake, Iran *Established camps outside the city and provided 18 sq meter prefabricated houses in urban areas.*

2005 North Pakistan Earthquake, Pakistan. *Reusable dome shaped transitional shelters and recycled material salvaged from debris are provided.*

2008 Jogyakarta Earthquake, Indonesia. *Some 25 million sticks of bamboo are provided for transitional settlements.*

2009 Abruzzo Earthquake, Italy. *4,500 temporary apartments within newly reconstructed apartment blocks are provided.*

Recyclable. Transitional shelter which is inhabited while parallel reconstruction activities are taking

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place. The transitional shelter is gradually dismantled during the reconstruction process and the material from the transitional shelter used in the construction of the families permanent shelter solution. (adapted from the 'Transitional Shelter Guidelines', Shelter Centre)

ISSUES OF IMMEDIATE CONCERN

If a transitional shelter strategy is not yet in place, steps need to be taken immediately to develop one, in consultation with the affected population. This plan will lay out a policy framework on the number and types of proposed shelters, a timeframe for their development, provision of related facilities and services and a plan for communicating with the public.

The affected population should be consulted on shelter options. The preference for a certain type of shelter option may be community-specific and their choices should be respected. Women, in general, spend more time in their shelter and their participation in the design of transitional shelter is essential for a successful program.

Allowing the renewal of livelihoods as soon as possible at new sites or providing transportation from sites to the former source of livelihood increases the likelihood of a successful program.

Develop a plan for basic services; potable water, proper sanitation and health facilities, education for children in tandem with the transitional shelter plan.

Ensure transitional shelter is resistant to future disasters, planned with weather variables in mind and caters to Haiti's climate. For example, in the summer, families slashed windows in tents provided after the Pakistan earthquake, rendering them useless in the following winter.

MEDIUM TERM CONFERNS IN TRANSITIONAL SHELTER PROGRAMS

People displaced by the same disaster are often affected differently and will respond differently. Some will be able to begin reconstruction of their partially damaged housing in the first days after the disaster, while others will be displaced for some time, even finding their situation changing from week to week for many months or even years.

If displaced families or individuals elect to self shelter with family, host families should receive support to reduce the additional burden of caring for the hosted families.

Determine whether the use of materials salvaged during debris removal could be used for building or augmenting transitional shelters.

Prepare a plan for mobilization of the displaced families (whether self sheltering in neighborhoods or in collective settlements) to address sanitation, schooling, recreation for children, protection of more vulnerable persons, conflicts and disaster preparedness.

Ensure continuous two-way communications in order to keep communities informed of developments and also to allow communities to give feedback and input.

Key points related to transitional shelter after disasters:

- Reconstruction can take years, or decades, and transitional shelter needs to be designed to potentially last as long.
- But it must keep durable solutions in mind. Research from the 2005 transitional shelter program in Indonesia showed that the positive economic impact of transitional shelter declined if it was occupied for too long.
- The degree of acceptability and ownership by displaced communities determines a successful outcome of a transitional shelter program.
- This acceptability and ownership often depends on how well the settlements have been designed with affected population's participation and take local needs and customs into consideration.
- The best designs allow the household to upgrade or incorporate the shelter materials into the permanent reconstruction, permit the family to return to their home because they are mobile and flexible, or both.
- Programs that minimize the distance from former and future homes and shorten the duration of displacement allow people to better maintain their livelihoods and protect their land, property, and possessions.
- Creating a sense of community among displaced families at the temporary settlement(s) helps to avoid conflicts and discontent.

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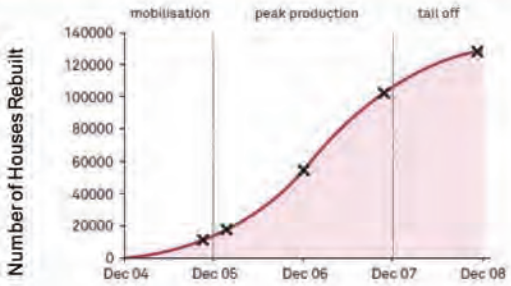
Environmental and Social Assessment

It is often said that a major disaster compacts 20 years of rebuilding into a few years of reconstruction, with inherent environmental and social impacts – and risks. Lessons from past disasters show that it is critical for the Government to clarify from the outset the environmental and social procedures to be followed by all development partners, and for institutional capacity to be strengthened for their effective follow-up –and particularly, at the community level. Not doing so may result in major delays (especially with regard to land tenure issues), further environmental degradation, and rebuilding structures that may fail to resist future disasters due to poor site selection or construction standards.

The Haiti earthquake – and the planned reconstruction – will greatly add to the environmental pressures that the nation already faces.

Following the initial impact of the disaster and the environmental impacts of the management and disposal of massive debris, the main pressures are likely to come from solid waste, water consumption and pollution, energy and food needs, and demands on local materials for reconstruction. As is common in post-disaster contexts, Haiti has correctly focused its immediate assistance on humanitarian needs, while recognizing that environmental issues will become increasingly important during the recovery phase over the medium to longer-term.

As Haiti moves into recovery and reconstruction, there is an urgent need to harmonize donor responses. Prior to the earthquake, more than 10,000 non-governmental organizations operated in Haiti. As of end-January 2010, about 385 relief organizations had registered with the Office for the Coordination of Humanitarian Affairs and interest from prospective recovery and reconstruction contractors was steadily growing. Experience from other major disasters shows that, without solid coordination and oversight, aid agencies and line Ministries will face pressure to meet physical targets and deadlines for reconstruction. Construction codes, environmental and social standards, and other key quality aspects, risk becoming sacrificed in the process.



Lessons Learned from Aceh – the Need for Effective Application of Guidelines for Reconstruction.

During the early reconstruction period in Aceh, there was a weak shared understanding of a standard quality for reconstruction - particularly for housing. Consequently, many aid agencies proceeded to develop their own standards. This led to social tensions about inequity of assistance, a high demand for fuelwood for brick production, the need for retrofitting sub-standard structures, and a proliferation of unqualified contractors. Many households also proceeded to build additions which ignored the building codes. The coordinating agency (BRR) progressively contained these issues with harmonized guidelines – including the "Strategic Framework for a More Environmentally Sound Reconstruction of Aceh" – community participation, "green procurement", and blacklisting of unqualified contractors. In total, reconstruction took four years - two longer than originally planned.

Sources: da Silva (2010) Lessons Learned from Aceh

The main challenges facing the Government of Haiti may be summarized as follows:

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1. ***Assessing the disaster's environmental and social impacts.*** *Many rapid assessments have been made, but need to be compiled and made accessible to decision makers in their own language.*

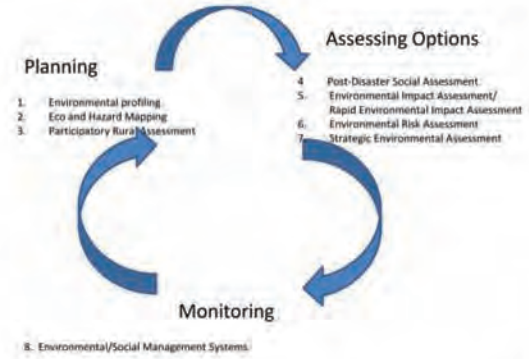
2. ***Harmonizing Environmental and Social Guidelines:*** How best to develop a harmonized environmental and social framework for the various operations and agencies involved in the recovery and reconstruction, so as to facilitate cooperation and avoid unnecessary complications and transaction costs.

3. ***Reinforcing Institutional Capacity*** for effective environmental and social monitoring.

Assessing the Environmental and Social Impacts of the Disaster

The first challenge is to rapidly assess the potential environmental and social impacts of the disaster. This initial stage typically uses rapid assessment tools aimed at filling information gaps until more comprehensive Environmental and Social Impact Assessments can be undertaken. The Table below lists some of the early standard environmental and social assessments carried out in Haiti to date.

Assessment	*Agency*	*Timing*
Hazard Identification Tool	UNEP/OCHA	Same day of disaster
Rapid Environmental Impact Assessment	UNEP	5 days after disaster; updated every 2 days
Initial social/needs assessment (incorporated in UNDAC)	UN/EU/WFP	3-8 days after disaster
Public Health Risk Assessment	WHO	9 days after disaster
Post Disaster Needs Assessment	Multi Agency	1.5 months after disaster (planned)



Common Tools for Environmental and Social Assessment in Disaster Recovery and Reconstruction (adapted from GDRD undated). See Key References for Specific Tools

Specific environmental and social disaster impacts may require further specialized assessments. These may include, for example, assessments of asbestos waste management or groundwater contamination.

It will be critical for development partners to closely coordinate these initial impact assessments via a central focal point. Such centralized coordinated is critical not only for future records of the disaster, but also to avoid duplication of efforts and to assist a harmonized Post Disaster Needs Assessment. It is recommended that the future National Crisis Committee request that all development partners post their impact reports on a centralized Web page.

Harmonizing Environmental and Social Guidelines for the Recovery and Reconstruction

The second challenge is how to use Environmental and Social Assessments specifically *for the recovery and reconstruction.* This is a distinct challenge from assessing the disaster's impacts. In essence, it involves the: (i) ***planning***; (ii) ***assessment***; and (iii) ***monitoring*** of recovery and reconstruction activities.

For each of these steps, a range of specialized tools can be used (see figure above).

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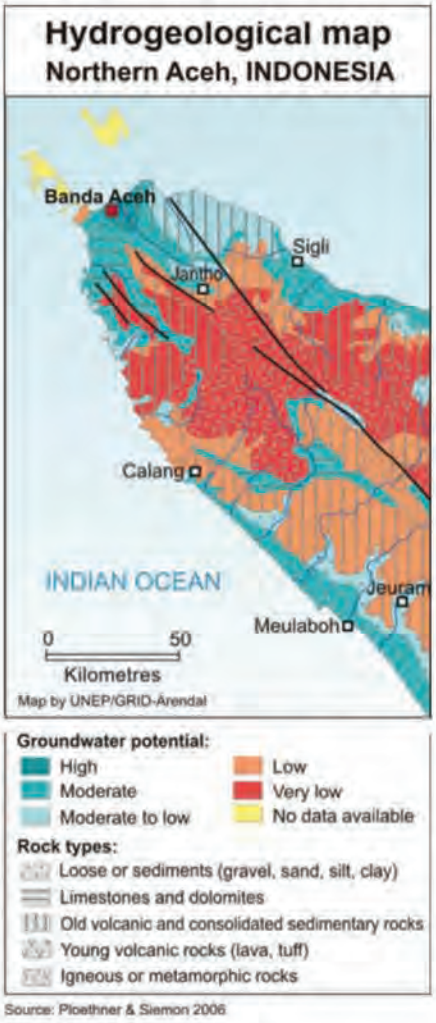
An important consideration for the Government will be how to anticipate and apply Environmental Impact Assessment (EIA) and Social Safeguard procedures during the recovery and reconstruction period. Current recovery efforts have focused on cash-for-work schemes, primarily centered on debris clearance and recycling, drain clearance and installation of logistical facilities for temporary resettlement camps. As efforts progressively shift towards the actual rehabilitation and reconstruction of public works and housing, environmental and social issues are likely to intensify. Based on past disaster experience, these tend to include:

- *Problems of water quantity and quality*. In Aceh, many households proceeded to drill deep wells to extract uncontaminated water, thereby affecting groundwater aquifers. Many households also proceeded to build their own sanitation systems, rather than plan communally for the disposal of waste.

- *Excessive removal of raw materials for construction,* especially sand, gravel, and fuelwood for brickmaking and housing construction. In Aceh, the rebuilding of 120,000 houses was estimated to affect 10,000 ha. of forest. Even though housing in Haiti involves a higher use of cement, even a modest use of wood could have significant impacts on the already deforested landscape, with associated risks of erosion and flooding.

- *Land tenure claims* – these may arise between individuals, as well as vis-à-vis public works. Potential resettlement issues should also be anticipated (See Note on Land Tenure).

- *Poor location or design of housing* – many households in Aceh after the tsunami proceeded to build additions or rebuild in locations that were unsafe. There was also a proliferation of poorly qualified contractors. To manage this, authorities gradually gave preference to a system of qualified contractors working with and on behalf of communities and managing the reconstruction of 20-50 (and later, 100-150) houses. Unqualified contractors were blacklisted and not allowed to undertake construction projects.



Source: Ploethner & Siemon 2006

Environmental and social issues should be anticipated early during reconstruction, to avoid potentially irreversible impacts or costly retrofitting. Assessments should be made of the supply of and demand for potential key resources (e.g., water, sand/gravel and fuelwood), so that environmentally and socially sound policies can be encouraged.

Source: UNEP: Environment and Reconstruction in Aceh: Two Years after the Tsunami.

- *Overexploitation of natural resources* –with population displacement, increased pressures are expected on already fragile and over exploited fisheries and forestry resources.

To facilitate the Recovery and Reconstruction, the Government may want to consider adopting a harmonized Environmental and Social Framework. Experience from other disasters suggests that, in the absence of such a framework, development partners tend to follow their own safeguard standards, creating a fragmented and confusing reconstruction process. In some cases, no guidelines may be followed at all. The simultaneous use of different procedures in the same geographical area can lead to social tensions and perceptions of unequal benefits and entitlements. Examples from internationally assisted emergency programs provide illustrations of how such frameworks have been used in the past and options for their development.

- In ***China***, the US$710 million Wenchuan Earthquake Recovery Project followed an *Environmental and Social Safeguards Screening and Assessment Framework*. This facilitated the screening of small projects under a simple screening checklist that scrutinized the projects' complexity and determined whether they needed an Environmental Impact Assessment (EIA), or a more simplified procedure. It also screened projects to determine whether more complex social issues, such as resettlement, were involved. The Framework remained, however, project – and not program – specific.

- In ***Aceh***, UNEP assisted the Government in adopting a *Strategic Environmental Framework for a More Environmentally Sound Reconstruction*. However, this was only adopted more than two years after the disaster, following earlier pilots developed by other development partners.

- In ***Timor-Leste***, each Ministerial sectoral program adopted a specific safeguards framework, tailor-made to that sector's needs and evolved as the country was built. The extent of donor harmonization varied considerably by sector.

- In ***Madagascar***, the Government was faced with a System of Protected Areas that was tripling in size (to 6 million ha.) in only 7 years, implemented by over 16 partners. It harmonized environmental and social safeguard requirements into a new Code for Protected Areas, which became legally mandatory for all its partners.

National Frameworks can be used to encourage sound environmental and social practices during reconstruction. By adopting simple screening and monitoring procedures, the Government could promote "green" procurement and sound socio-cultural policies during reconstruction. Examples include (see [b] for further examples):

- Does the project promote recycled/re-used materials?
- Can temporary shelters be re-used or incorporated into permanent housing?
- What materials are available locally? Are they sustainably sourced?
- What potential is there for introducing new materials at comparative cost that would have less environmental impact?
- Is the project likely to affect an area larger than the site directly concerned?
- Does the project involve demolition of existing structures? Who do they belong to? Is the land privately or publicly owned?
- Does the project involve involuntary land acquisition or prior acquisition of land?

- **The Government of Haiti already requires a standard Environmental Assessment for major construction, rehabilitation, and roads projects.** These national guidelines have existed since 2000. In the follow-up to the earthquake, the Government may want to consider the following options:

  - Clarify the cut-off (project size) to which its national guidelines apply.
  - Make the directives publicly available on the Internet, in English and French.
  - Review and update any relevant clauses to address the special needs of post earthquake reconstruction.
  - Refer to these guidelines, as well as to any other relevant national legislation, in any Environmental and Social Management Framework prepared to support reconstruction.

Haiti is currently in the process of developing an Environmental and Social Management Framework with assistance from key development partners. It should be further encouraged in this process.

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Reinforcing Institutional Capacity for Effective Environmental and Social Monitoring

The third – and perhaps most difficult – challenge is to reinforce institutional capacity for effective environmental and social monitoring. The capacity of the Ministry of Environment was weakened by the disaster. Several options could be considered to reinforce it:

- *Contract qualified partners* – such as non-governmental organizations, trained individuals, qualified Haitian expatriates - to monitor standard environmental or social safeguards issues on behalf of the Government, while the latter retains final clearance oversight. In Madagascar, the Office National de l'Environnement (until recently, a contractual parastatal) is responsible for overseeing environmental assessments, while the Government issues the final permits. Projects are charged 3-5% to support assessment costs.

- As an interim measure, *rely on the capacity of major existing projects*, funded by development partners with strong track records, such as the *Projet de Developpement Communautaire Participatif* (PRODEP) and the *Projet de Developpement Communautaire Participatif Urbain* (PRODEPUR). These projects tend to already follow the standard safeguards procedures of international agencies, such as the Inter-American Development Bank (IADB), USAID, or the World Bank, and would be required to ensure that sufficient capacity is in place for their effective monitoring. The major disadvantage, as stated above, is that safeguard monitoring would remain project or program specific, and thus might not be sustainable over the long term.

- As part of the process of reaching a harmonized environmental and social framework, a capacity building program could be promoted in safeguards-related skills-preferably as a joint effort by key donors. Such a program would target the phased transfer of responsibility for safeguards oversight to local agencies during the period of projects' implementation, as well as the building of a roster of skilled and trained in-country environmental and social consultants to assist Government teams in future safeguards work. Existing efforts in this direction (e.g. under multi-donor sectoral programs) should be examined and, if necessary, strengthened. In the current context of an urban-rural population shift and weakened capacity overall, capacity building should also be understood to cover the regional and local – as well as national – levels.

In sum, as the relief phase progresses to recovery, potential social and environmental issues linked to rehabilitation and reconstruction will need to be anticipated and managed. The best way to achieve this would be through harmonized procedures and a strong early investment in national capacity.

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Rebuild or Relocate?

Given its hazards, should Port-au-Prince be rebuilt where it is, or relocated? While economics, livelihoods, land tenure and existing transportation are powerful constraints against relocation, relocation even if only of some functions such as government, may be appropriate. Quantitative data should be assembled and quickly analyzed in order to decide what and where, to relocate. ***The decision of whether and what to relocate should be made quickly, before ad hoc reconstruction overtakes the situation.*** *Continuing uncertainty would be destructive of morale and recovery.*

Port-au-Prince is subject to several natural hazards which, following the 12 January earthquake, raises the question as to whether rebuilding and investment should occur at the existing location in the Plaine du Cul-de-Sac and surrounding hills, or whether the majority of Port-au-Prince's governmental and economic functions, and population, should be permanently relocated to a new location. Other countries have faced this question (see box), with some starting all over again at a new location (Guatemala), some rebuilding precisely as before (San Francisco, Tokyo), some not doing enough (New Orleans, Caracas) and some literally nothing (Managua). While there are many intermediary options, the choices confronting the Government range between the following two extremes:

- **Rebuild in situ:** In this approach, the basic economics of Port-au-Prince and Haiti would remain the same, and the existing infrastructure (port, energy, roads, water and wastewater systems) investment would not be lost. However, visions of broad boulevards and *La Belle Cité* would collide with the realities of existing patterns of land ownership as well as the impetus to rebuild as quickly as possible.

- **Relocate**: This approach would start anew, creating a new urban region of hundreds of thousands - candidate locations include Croix-des-Bouquets (13 km to the east of Port-au-Prince but also in the Plaine du Cul-de-Sac) and Hinche, a seismically stable city of 50,000 128 km to the North of Port-au-Prince (see Figure 2 for locations).

The fundamental factors affecting the rebuilding / relocation of a city, whether the capital or not, are:

Rebuild or Relocate in History

- ***1755*** *– Lisbon destroyed, rebuilt in same location with special seismic design.*
- ***1773*** *- Antigua (Guatemala) destroyed for second time, moved to Guatemala City (heavily damaged in 1976 with 23,000 killed)*
- ***1841*** *– Cartago (Costa Rica) capital destroyed by earthquake, moved to San Jose.*
- ***1854*** *– San Salvador (El Salvador) heavily damaged, also in 1917, 1986 and 2001, but remains the capital in same location.*
- ***1906*** *– San Francisco (USA) totally destroyed by earthquake and fire. Despite pre-earthquake new City Beautiful urban plan by Daniel Burnham, city rebuilt exactly the same, due to difficulties in changing existing property rights.*
- ***1907*** *– Kingston (Jamaica) heavily damaged, rebuilt in same location with height limits imposed on buildings.*
- ***1923*** *– Tokyo largely destroyed by earthquake and fire, rebuilt as before.*
- ***1967*** *– Caracas, heavily damaged and rebuilt in the same location*
- ***1972*** *– Managua largely destroyed by earthquake, city center remains largely abandoned today.*
- ***2004*** *– Aceh 60% destroyed by tsunami, largely rebuilt in place.*
- ***2005*** *– Hurricane Katrina devastates New Orleans – as of 2009, population only 60% of pre-Katrina.*

Economics drives the recovery - basically, was the economy of Port-au-Prince thriving and robust before and the disaster? Will creating a new 'growth pole' as

- capital city affordable and worth the risks? The political economy of the costs, almost always underestimated, is front-loaded while benefits begin trickling much later. This also pertains to donor commitment and perseverance. It should be noted that in cases where capitals have been moved, it has taken the best part of a decade, San Francisco in 1906 was the "Queen of the West" with good reason, and had plenty of financial vigor to quickly rebuild. New Orleans was a declining city before Hurricane Katrina, and has rebounded very slowly. **For Haiti, is there a vital economic reason for Port-au-Prince being where it is? Does Haiti have the economic vigor to discard its existing investment in infrastructure in Port-au-Prince? Or, does the port stay, and can governmental and most economic functions occur as well elsewhere?**

- **Livelihoods** – if a major urban region is created elsewhere, where will the jobs come from? Port-au-Prince at least has the port. **What economic drivers exist or can be created to sustain the population in a new location?**

- **Hazards** – the primary reason for considering moving Port-au-Prince is that it is located in a very high hazardous location, not only adjacent to the major Enrequillo Plantain Garden Fault zone but founded in part on soft soils and also at low elevation and thus subject to flooding and storm surge. Moreover, a significant portion of the building stock lies on unstable hillsides. In the North of Haiti along the Péninsule du Nord is the Septentrional Fault, with many of the same problems, but midway between however is the Haut Arbonite Valley and the city of Hinche, located on seismically stable soils, with good water resources (as opposed to Port-au-Prince). This area has many attractions as a site for a new city - significantly lower hazards, sufficient buildable area, good water resources and climate. Higher hazard sites, such as Port-au-Prince, can still be made adequately safe with good seismic design and construction (i.e, greater capital investment), as compared with sites having lower hazard but higher transport costs. **What are the trade-offs between hazard and transportation costs at a different site?**

- **Transport** – Haiti's transport system is an obstacle to its development – it no longer has a railroad and has only 4,000 km of road (and, only 1,000 km of paved road!). However, Hinche has recently had major road improvements and is now only about two hours from Port-au-Prince over a good road. Relocating the capital now may be significantly more feasible than previously. Haiti cannot afford to be building new transportation infrastructure at the same time it is relocating Port-au-Prince, so **existing transportation may be the chief constraint on any decision to relocate**.

- **Land Tenure** is a key issue following most disasters in developing countries, particularly when relocation is considered. In the case of moving Port-au-Prince, this problem is doubly compounded – for example, **will current Port-au-Prince land owners be compensated with new land plots if Port-au-Prince is moved to a new location?**

- **Political and Social** – Relocation may create new political divisions and stresses in Haiti's society – inevitably, change is disruptive. Social and cultural problems in voluntary relocations are almost always underestimated and/or unforeseen. **Relocation may also generate political tensions and pose significant governance challenges.** Finally, relocation is nearly always accompanied by a new way of organizing urban society and economy. This presents opportunities but also challenges: who will plan and execute this reform and how?

- **Heritage** – Port-au-Prince is the repository of much of Haiti's cultural and historic heritage. **How would Haiti's heritage be endangered, and what mitigation actions might be taken, if Port-au-Prince is relocated?**

Rebuilding in-situ, or wholly relocating Port-au-Prince, are two extremes between which are other Options sharing both approaches to varying degrees. Since recovery and reconstruction are going to occur soon – indeed, are already underway due to basic economic and survival needs – **a clear decision should be made as quickly as possible**. Such a decision should be

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based on the above factors as well as many other preferences of the population – distrust of repaired buildings, and fear of large buildings for example are factors that may need to be dealt with. Another factor for planned rebuilding or relocation is the time typically required for development and implementation of a proper new urban plan – following the 2001 Gujurat (India) earthquake successful urban re-planning of Bhuj occurred, but required two years.

If relocation is seen as the way to go, economic, political and social conditions must be created so as to attract the population to the new sites. Rather than moving the population in a manner seen as involuntary evacuation, the Government may want to consider (encouraging some of the economic activities in Port-au-Prince to move to secondary cities and providing incentives to investors in the new areas in a free and open manner, and supporting rural economy through targeted policy and infrastructureLastly, achieving less sooner may be the optimal choice. In any case, if a clear choice is not initiated quickly, economic, political and other factors will result in a de facto decision, and the opportunity to rebuild better will have been lost. Regardless of the ultimate choice, feasibility studies should be carried out urgently to orient the Government in their final plan.

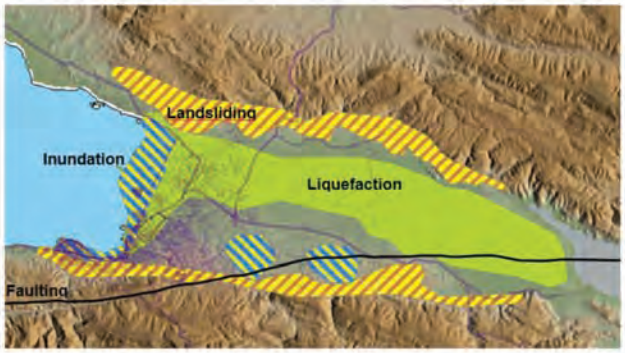

Figure 1 – High hazard zones schematic of Port-au-Prince – constraints on rebuilding.

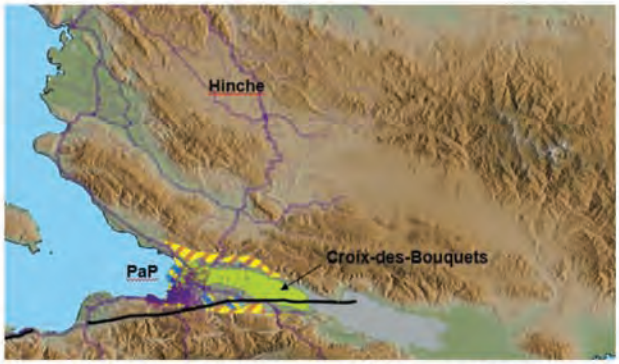

Figure 2 – Central Haiti, showing Port-au-Prince (PAP), Croix-des-Bouquets and Hinche

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Debris Management

The Haiti earthquake produced an estimated 40 million m^3 of debris. As a comparison, the 2004 tsunami in Aceh and Nias resulted in 5.8 million m^3 of tsunami waste – and two years later, despite dedicated efforts, only about 1 million m^3 had been cleared. The U.S. spent over US$3.7 billion clearing 76 million m^3 of debris over the course of a year. These examples illustrate the challenges facing Haiti as it seeks to balance the damage of the earthquake with the urgency of recovery.

Debris clean-up requires prudent management.
Debris can contain human remains, which need to be retrieved with dignity. Debris also contains personal property, often the only assets survivors have left. Debris can provide the raw materials for reconstruction - the wood, metal, bricks and concrete aggregate to build future structures and fill roads. The debris left by an earthquake may also be dangerous to the population and the environment because amongst recyclable materials, there could be pollutants and hazardous materials such as fuel, ammonia, pesticides, lead, heavy metals, medical waste and asbestos.

Haiti is currently facing two major challenges in debris management:

- How to best coordinate the removal of debris during the recovery phase.
- How to manage such a large quantity of debris given the urgency of reconstruction and livelihood needs

To save costs and coordinate efforts, a Post Disaster Debris Management Plan is generally recommended.
These plans clarify responsibilities, procedures, location of storage and disposal sites, and staff and equipment needs.[1] By contrast, weak initial planning can result in significant costs. Two examples - from the Marmara earthquake (Turkey) and the Aceh Tsunami – illustrate how:

- The Marmara earthquake (1999) generated 35 million m^3 of rubble. More than 90% of the original debris would have been potentially recyclable, but weak initial coordination and planning led to extensive dumping. As a result, the debris became commingled with soil, clothes, wood, and in some cases hazardous materials, requiring expensive secondary sorting to produce recyclable materials.
- In Aceh, about 400,000 m^3 of tsunami waste was initially dumped into rice fields, fish ponds and other sites in order to clear residential areas. The Tsunami Waste Recovery Program had to spend about US$9 million, rent 60 trucks and employ 1,500-2,000 workers to recover this waste.

The most urgent procedures should be agreed first.
Agreement on a complete Debris Management Plan can take time – ranging from 1-1.5 months in the US after Hurricane Katrina to close to 2 years in Aceh after the Tsunami. The Government of Haiti may want to consider assembling the Plan in stages, with the most urgent procedures agreed first. These include (see *References* below):

- Procedures for Disposal of Medical Waste
- Procedures for Disposal of Hazardous Waste
- Designation of debris collection sites, and subsequent wide dissemination of site locations to the public (by radio or other rapid means)

Other procedures – such as agreements between Government, communities and development partners – could then be implemented progressively. However, as illustrated above, any delays in planning could have major cost consequences.

The second major challenge facing the Government is how to manage such a large quantity of debris given the need to balance the urgency of reconstruction with employment opportunities

The Choices: how to use debris

Debris management can be used to promote the overall reconstruction plan. In this context, the Government may want to use debris management as an opportunity to implement its overall reconstruction strategy:

- In areas where reconstruction is planned, encourage local population to re-use and recycle the debris
- In planned new development sites, use the debris for structural fill – however, this must only be done after removal of organic materials such as wood. Organic material will decompose creating voids which may collapse years in the future. People have died as a result of such collapses made with unseparated structural fill.
- In other areas, consider strategies, such as reforestation (through mulching) or potentially leaving the debris on site (after removal of hazardous materials).

The Choices: on-site separation vs. transport to intermediate sites

A major choice in the overall debris management strategy is whether debris should be separated at origin or transported to intermediate holding areas prior to separation:

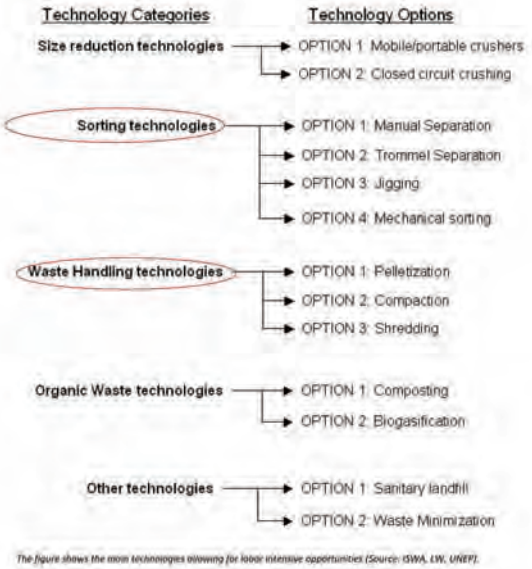
- The first option (on site separation) has generally been preferred in developing country disasters, such as those affected by the Tsunami, due to lower cost and the potential of maximizing livelihood opportunities. This option also facilitates separation of hazardous materials if users can provide information on their location prior to the earthquake and avoids commingling waste from various sites – thus, the potential for recycling is higher. However, it occupies valuable space that may be needed for reconstruction, and if coupled with manual separation, can be time consuming.

- The second option (transportation of debris to intermediate holding areas) has been used in earthquakes in California, Kobe (Japan), and Wenchuan (China), in general together with mechanical sorting. While it has the advantage of clearing space rapidly for reconstruction and be subject to higher control, it is costly and requires large areas: for the volume of debris currently found in Port-au-Prince, it would need at least 50 ha per 1.0 million m^3 of debris for holding space, with 60% set aside for roads, buffer areas, and treatment operations[ii]. As the debris is processed and moved off-site for reuse or disposal, additional volumes could be managed at a site. Several intermediate holding and processing sites could be located in Port-au-Prince rather than a single facility. The precise number of sites and their size will depend on the processing speed and volume of debris handled. The assessment should also fuel costs, drivers and trucks required to transport the debris (which would vary according to truck capacity and distance to the sites).

- **Temporary storage and/or stockpiling may lead to contamination of water and food supplies and therefore any stocked materials should be placed on a lined pad** such as concrete, asphalt paving, or natural material, made of low porosity clay, if available. The ground should be sloped to allow runoff to flow to a low point, and runoff basins sized to contain potential hurricane rainfall flow. Any exposed (dumped) debris should be similarly considered a potential public health and environmental hazard.

The Choices: labor-intensive vs. capital-intensive technology

Debris management can provide solid livelihood opportunities - but choices may need to be made with respect to the schedule of reconstruction. Opportunities to maximize employment are found primarily through choices of sorting and handling technologies (see Figure below). Technologies for crushing construction and building debris remain largely mechanical.



The figure shows the main technologies allowing for labor intensive opportunities (Source: ISWA, UN, UNEP).

- If the objective is to promote livelihoods (cash-for-works), then manual separation and salvaging,

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followed by recycling, should be promoted. In Aceh, removal of 1 million[3] of tsunami waste used approximately 795,000 person-days of labor (1,450 temporary workers/day for 1.5 years). An option to speed up debris removal might be to install short tracks of rails to facilitate the pushing of wheelbarrows. These could be removed after the recovery period.

- Mechanical sorting (most commonly through vibration screening) can be used as an alternative or complementary technology for heavier or more toxic debris. The capacity is about 2-3.5 m^3 per hour.
- With the amount of debris in Haiti, there should be numerous opportunities to combine manual sorting with mechanical processing. In the short term, manual sorting is most likely the best suited. As more mechanized and contractual arrangements become available, they could be progressively integrated.

Debris management is an opportunity to promote cash-for-works recycling programs. Recycling activities are already being supported by the Community Development (PRODEC) Urban Program and by extensive UNDP cash-for-works programs. Port-au-Prince also used to have private waste collectors prior to the earthquake, and it would be important to rely on them and on experienced 'waste pickers' as supervisors to increase the number of people benefitting from cash-for-works programs.

Special care will be needed to protect workers from unsafe buildings, as well as hazardous and medical waste. Close supervision and training will be needed to ensure the safety of workers, particularly around sites known to contain hazardous substances or asbestos. According to the preliminary UNEP/OCHA Hazard Identification Tool, these are likely to include toxic gases, chlorine, ammonia, cyanide, kerosene, solvents, fuel, and sulfur dioxide, used in the sugar industry[iii]

Given the quantity of debris generated by the earthquake, the Government may want to identify buildings most likely containing hazardous materials for carefully supervised manual sorting. Surrounding households identified as less hazardous could be identified as the focus of more rapid debris removal, thus organizing the clean-up of neighborhoods on a rolling basis using a combination of manual sorting and mobile debris processing equipment– as an area was cleaned up, reconstruction should begin consistent with approved plans. Processed

UNDP Cash-for-Works Program in Martissant. Photo by Adam Rogers/ UNDP

construction and demolition debris could be hauled to temporary storage areas for later use in reconstruction under supervised quality control.

In sum, the options ultimately selected for Debris Management should seek to optimize livelihoods, save costs, ensure public safety, promote environmental sustainability and accelerate recovery. A checklist for these criteria can be found in ISWA, LW and UNEP (undated).

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Type of Debris	Main Use	Disposal
Construction and Demolition: • Wood • Metals • Bricks • Concrete	• Re-use if lead-free • Re-use clean reinforcement bars (re-bar) • Re-use clean bricks; crush broken bricks • Crush for aggregates and use in road construction and structural fills or stockpile	Landfill (if contaminated) Landfill (if excessive volume or contaminated, after crushing)
Municipal Waste		Landfill
Rotten/Spoiled Food/Meats/Animals		Landfill
Vegetative Waste (trees, brush)	Compost or mulch (for agriculture/parks)	Incineration (to reduce volume) Landfill
Bulky Waste: • Appliances • Electronics • Other materials (carpets)	Recycle (after removal of refrigerant) Recover components	Landfill
Hazardous / Toxic Wastes: • Paints • Solvents, pesticides • Asbestos	Separate from other debris: • Paints – Can be re-used if mixed with similar paints such as latex	Stored for special treatment Landfill (wetted and placed in double bags)
Medical Waste	• Separate from other debris. Landfill or treatment (incineration, autoclave).	Landfill or treatment (autoclave, incineration): • Landfill needs special handling/disposal (e.g. puncture proof containers and special purpose pits) • Incineration should only be used with care as can produce toxic smoke

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Helping Women and Children to Recover and Build Resilient Communities

Disasters are not neutral. They compound social exclusion and existing vulnerabilities, disproportionately taxing the poor, women, children and the elderly. Relief and recovery interventions are also not neutral. They can increase, reinforce, or reduce existing inequalities. In the immediate term, this means taking measures to protect the safety and human rights of women, children and other vulnerable groups, collecting data by sex and age to understand different needs, and involving women and children in the design, implementation, and monitoring of interventions. For longer term recovery, support can be designed to upgrade living standards of the poor, to enable the most marginalized to participate, and to establish mechanisms between affected citizens and government to foster accountability.

OF IMMEDIATE CONCERN: SECURITY AND HUMAN RIGHTS

Guaranteeing the physical security of women and children is critical in post-disaster settings. International experience shows that violence and sexual harassment of women and children typically increase after a crisis when civil and administrative structures are weakened. Such risks may be overlooked by officials as social/cultural reluctance obstructs addressing these issues. In temporary shelter settlements security provisions should include appropriate lighting in areas frequently used by women and girls, safe and confidential reporting mechanisms and additional policing.

Adequate privacy should be offered to all. Women and girls should be consulted on the set up and location of sanitation to ensure that the route is safe; that latrines are well lit, lockable from the inside, and offer privacy. Separate facilities should be put in place for males and females, not directly next to each other. Pregnant women in temporary settlements are at high risk due to the psychological and physical strains put on their maternal health. Medical facilities should be established specifically for pregnant women, lactating mother and infants.

Orphans and children separated from their families are at high risk of abuse, abduction and kidnapping. Physical security and legal protection for them is a priority, as is family reunification. In some cases, like in Pakistan, government put a ban on any adoption of children from earthquake- affected areas. For orphans, interim and alternative care options that are culturally sensitive should be provided, and unnecessary institutionalization should be avoided. Awareness raising and training on child rights and child protection should be carried out targeting all concerned actors.

About 225,000 or 16% of children in Haiti are restaveks,[i] children sent by their parents to live in the home of a distant relative or stranger, with the hope that they will have better access to food and education. Two thirds of restavek children are girls. Many restaveks are forced to work as domestic servants and are prone to abuse. Some have run away, while others have been evicted by their host families because, according to Haitian law, when a child reaches 15 they must be paid for their services. There are non-governmental organizations that have set up centers to work with these street children. If these centers were destroyed in the earthquake, the children will return to the streets to survive as best they can. These children will need special support. They can also be mobilized to participate in all aspects of recovery.

IN THE MEDIUM TERM: UNDERSTANDING DIFFERENT VULNERABILITIES AND CAPACITIES

After a disaster and during recovery, lack of data can impede equitable distribution of assistance. A number of factors contribute to the particular vulnerability of women before, during, and after a disaster: lack of information about shelter options, limited literacy (a factor in Haiti), culturally restricted mobility, and responsibilities to care for the young and the elderly. Entitlement programs have traditionally favored men over women, tenants of record, bank-account holders, and perceived heads of households. The damage assessment can help ensure equity by disaggregating mortality and morbidity by gender and age, and taking into account losses suffered in the informal sector. Past experience stresses the importance of assessing women's vulnerabilities

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separately due to the potential for vulnerability differences and the relationship between these differences and a number of cultural and social factors. It is helpful to set up special desks at aid distribution centers for women/girls and other vulnerable groups. Special attention should also be paid to children's inheritance rights to land and property, and administration by legal guardians.

Reconstruction programs need to try to preserve social networks and find ways to lower the workload of women. Women shoulder much of the burden of care for children, the elderly and disabled, as well as such household tasks as provision of water and fuel wood. Disasters increase the intensity of this work, and informal networks among neighbors and extended family, an important coping mechanism for women in times of crisis, have often dissolved. Paid childcare, delivered by older women, for example, was planned in a 2003 reconstruction project in Zambia project to recreate a form of support network and to provide paid employment for women.

For women in the informal sector, the loss of housing often means the loss of workplace, tools, supplies and markets. Haiti's economy is approximately 85 percent in the informal sector, and within that more than 75 percent of those participating are women. Agricultural production is often produced in the garden by women and traded in the marketplace for other essentials not produced by the household or manufactured, and provides the income with which women feed and care for their children. It would be important in Haiti to formally recognize women's agricultural activities and provide compensation for their loss of tools and agricultural inputs.

Restoring records of property rights to housing, commercial property, and land should be launched as soon as possible, with special assistance to the poor, squatters, widows and orphans. Establishing a multi-disciplinary Land Task Force has worked in other cases to protect land and inheritance rights, as well as land dispute resolution.

ESTABLISHING LONG-TERM OPPORTUNITIES FOR WOMEN AND COMMUNITIES

The promotion of gender equity can often be addressed easily and speedily in the recovery process. For example, including women in housing design as well as construction, promoting land rights for women, building nontraditional skills through income-generation projects, distributing relief through women, and funding women's groups to monitor disaster recovery projects are practical steps that can be taken to empower women, and at the very least avoid the reinforcement of any existing gender inequities. Indeed, it has become standard practice to issue housing grants and housing and land titles in both the wife's and husband's names, and to stipulate that widows receive houses in their own names after so many cases resulted in positive social impacts. Cases include post-tsunami reconstruction in Sri Lanka; post-earthquake recovery in Maharashtra, India; and post-flooding reconstruction in Argentina, El Salvador and Mozambique.

Post-disaster situations can be opportunities to empower women at the grassroots level, build more resilient communities, and initiate long-term social change and development. Women have often been active leaders in rebuilding their communities after disasters. They take the initiative in calling grassroots community meetings and organizing disaster response and recovery coalitions. In Maharashtra, India, after the earthquake, a local non-governmental organization negotiated with the government to secure the appointment of women as communication intermediaries, placing them at the center of the reconstruction process. The women's groups underwent training to build technical capacity and monitor reconstruction. Over time, they became community development intermediaries. In Turkey after the 1999 earthquake, a local nongovernmental organization (KEDV) began by creating public spaces for women and children to rebuild disrupted community networks and promote women's participation in the public sphere. These

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Women and Children's Centers started out in tents and then moved to temporary housing settlements. They provided women's groups with a place to meet, organize, learn new skills, gather and share information on the reconstruction process, and start individual and collective businesses.

Key points related to supporting the recovery of women and children after disasters:

- Ensure that relief and recovery interventions protect the safety and human rights of all.
- Assess and understand the different needs of women, girls, boys and men for recovery, including the indirect economic impacts women typically suffer from being in the informal economy.
- Establish specific monitoring mechanisms (e.g., Continuous Social Impact Assessments) to ensure that women and children can access recovery resources, participate publicly in planning and decision making, and organize to sustain their involvement throughout the recovery process.
- Foster grassroots women as leaders in community recovery: Create formal spaces where women's groups can organize to participate in recovery efforts and formally allocate resources and role to groups of affected women. This will not only contribute to more effective and efficient recovery, it will establish opportunities for women and communities to shape a more sustainable development.

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Building Seismic Safety Assessment

An immediate task in Haiti is to decide which buildings are seismically safe or can be made safe, and which must be demolished. This task is normally done in two steps: the first is to rapidly inspect and tag building safety. With special training and equipment, all buildings in Port-au-Prince could be assessed within a month. A second, more detailed assessment is then needed for buildings marked for development or structural repairs. The use of standard methodologies, the ATC-20 and and FEMA 306iv, are recommended in this two step assessment.

Reconstruction cannot begin until building safety has been assessed. There are tens of thousands of buildings still standing in Port-au-Prince and surrounding areas, in varying degrees of damage ranging from near-collapse to virtually undamaged. Rapidly assessing *safety* – that is, which buildings need to be demolished to be repaired, or can be used as-is, is among the first tasks on the critical path to reconstruction. Very little can be accomplished until this task is completed. Compounding the problem are aftershocks, some of which may cause further building collapses, and that the assessment or inspection process is a labor-intensive task requiring many experienced engineers. However, this problem is not new, and standard methods developed and applied in a number of earthquakes over the last two decades can be usefully adapted for use in Haiti[i].

Building seismic damage assessment is a two step process. The first step consists of rapidly deciding which buildings can be occupied, which are likely to need repairs and should not be occupied until then, and which are heavily damaged and are likely to be demolished. These decisions are made using a standard methodology[ii] that visually inspects and evaluates building components (see top figure, next page). When inspected, buildings are tagged as follows:

Green (safe to occupy),
Yellow (do not occupy) or
Red (do not enter).

The ATC-20 methodology, is the international standard for this purpose. It has been adapted and employed in numerous earthquakes in the US, Japan, Turkey, Indonesia and other countries. Hundreds of engineers have received trained in the ATC-20 methodology, which only takes a day or two, and extensive training materials exist for this purpose. Lastly, a "SmartPhone" application of the ATC-20 methodology termed ROVER (*Rapid Observation and Visual Estimation of Risk*) has recently been implemented, which significantly speeds up inspection time and productivity. The application can be installed on any Windows Mobil telephone and eliminates paper forms – all data is georeferenced and one-time entered, including building photographs (see bottom figure, next page) and then uploaded to a central server database. Uploading can be via the telephone network, or at the end of the day via a computer link[iii].

During the second stage, an assessment is made of the structural repairs needed. Once buildings have been rapidly or initially assessed, a significant fraction (all Yellow and many Red tagged) will then need a more detailed assessment for development of structural repairs. Such assessment and design of repairs is a difficult task for which many engineers lack experience. However, a standard methodology for detailed assessment of concrete and masonry buildings (the predominant building type in Haiti) has been developed, termed FEMA 306iv (see middle right figure, next page, which shows the methodology's Process Flowchart) which could be readily be adapted to Haitian conditions. Training requires several days.

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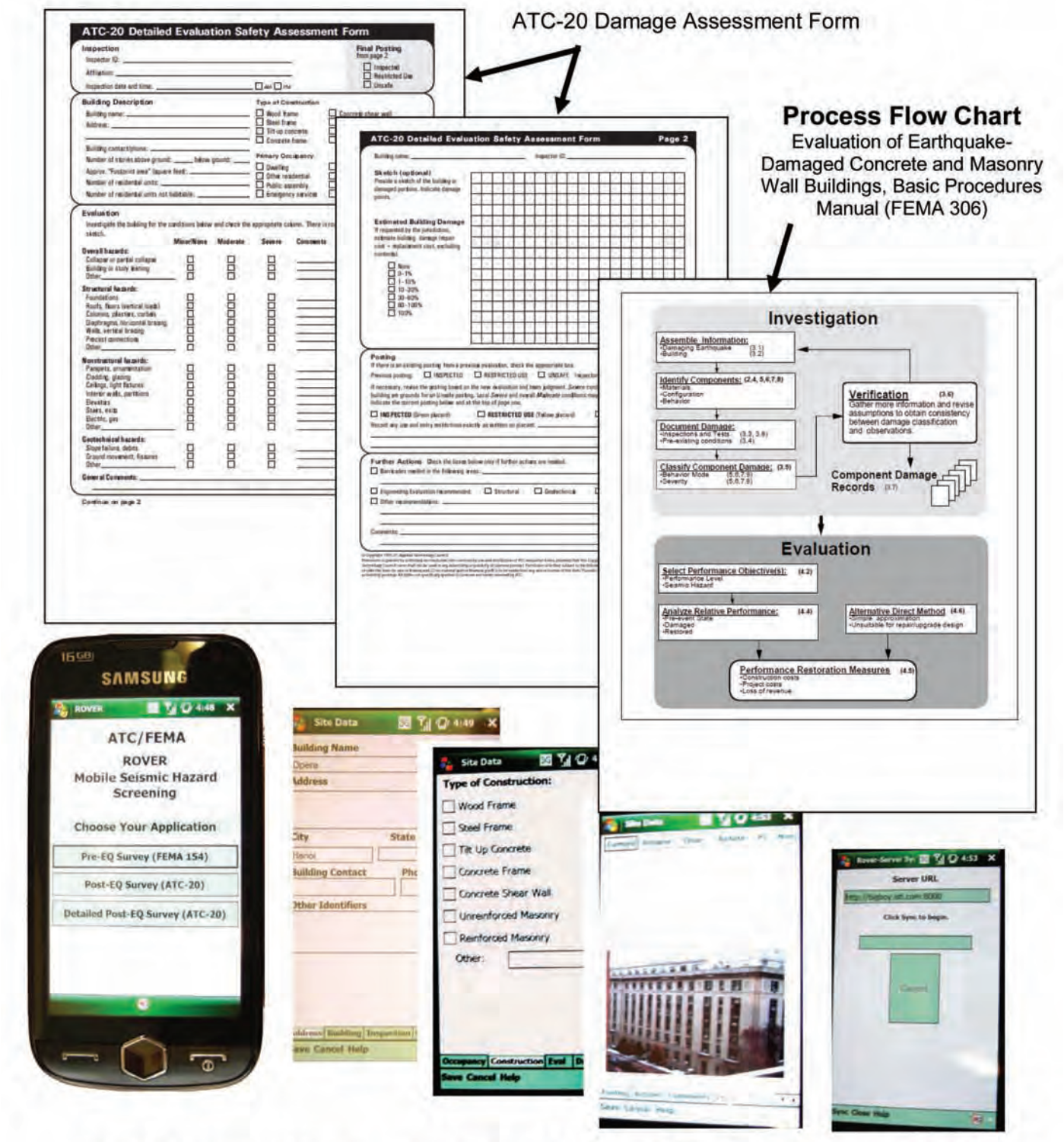

ROVER SmartPhone Implementation of Post-Earthquake Survey Methodology (FEMA)

(left-right): Windows Mobil SmartPhone with Initial Screen, Building Location Screen, Type of Construction Screen, Photos Screen, Server Upload Screen. (only selected screens shown)

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***In summary,* the thousands of damaged buildings in Haiti can be rapidly and efficiently assessed in a two step process using two standardized and widely accepted methodologies** that can be readily adapted for Haitian buildings and employed by Haitian engineers and technicians, to the extent they are available. Since use of these methodologies requires training – for the ATC-20 methodology, only a day or two, and for the FEMA 306 methodologies, several days, establishment of a Technical Support Center in Port-au-Prince is recommended. A last point is that the safety assessment may also be the basis for beneficiary assistance, which then requires transparency and credibility (both fulfilled by the above methods if properly implemented) as well as an appeal mechanism for owners objecting to the findings.

Implementation of a building seismic safety assessment program will likely require the following next steps:

1) Authorities agreement in employing these methods;
2) Initiate a Technical Support Center, ATC-20 training and inspections;
3) Follow up quickly with FEMA 306 training and detailed assessments.

Initial ATC-20 assessments can begin within several days following a decision to proceed, with all of the affected area tagged within several days to weeks depending on staffing. Detailed assessments can probably be completed within months to a year or more, depending again on staffing.

NOTES:

[i] Indeed, already are being employed – that is, building safety assessments are being initiated as of this writing, using the methods presented here.

[ii] ATC-20 (2005) Procedures for postearthquake safety evaluation of buildings, Second Edition. pp. 152pp. Applied Technology Council,, Redwood City. http://www.oes.ca.gov/WebPage/oeswebsite.nsf/ClientOESFileLibrary/Recovery%20-%20TAP%20-%20Safety%20Assessment%20Program/

[iii] That is, the ROVER software/hardware package uses a mobile phone, not as a telephone but as a handheld PC, and actually doesn't rely on having a functioning telephone network in order to be employed for building safety assessments. For more information see http://www.sparisk.com/pubs/ATC67-2008-ROVER-flyer.pdf

[iv] FEMA 306 (1998) Evaluation of Earthquake Damaged Concrete and Masonry Wall Buildings: Basic Procedures Manual. pp. 270pp. Federal Emergency Management Agency, Washington. http://www.fema.gov/library/viewRecord.do?id=1652&fromSearch=fromsearch

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Land Tenure

Lack of clarity in land title systems can significantly delay the reconstruction of housing and infrastructure and lead to conflict. The land tenure system in pre-earthquake Haiti faced several challenges, and in the post-earthquake context, poses serious risks for the reconstruction. It is important that land title, access, use, and pricing issues be addressed up front, as was done in Aceh. The development of short-term solutions to facilitate the process (again, on the model of Aceh) may be considered, followed by a broader, longer-term review and – if necessary – reform and upgrading of existing systems..

Key Decision Points

- ***A legal framework to address land acquisition and occupation should be developed for immediate reconstruction needs.***
- ***The diverse categories of affected people will need to be addressed.***
- ***Gender considerations should be included.***
- ***Forms of proof of ownership other than existing formal land title might be considered.***
- ***A second phase might consider broader system strengthening and reform.***
- ***Involving communities strengthens buy-in and promotes success.***

A legal framework to address land acquisition and occupation should be developed for immediate reconstruction needs. Land may be in short supply in the reconstruction process (as the Aceh experience shows, post-disaster conditions are usually cramped). Land tenure issues are likely to arise in the near-term, as people tire of waiting for tents and begin to return to their former homes to rebuild. An immediate priority of existing property owners will be to re-establish ownership of their lands. Specific mechanisms to fast-track the allocation of public land for recovery and reconstruction activities might be considered.[1]

The diverse categories of affected people will need to be addressed. Pre-earthquake informal settlers, as well as people living informally on lands taken under the reconstruction should be provided with viable alternatives. Squatters' claims to public lands should be assessed as part of the process. As tent cities and new rural residences consolidate over time, the gray area between "temporary" and "permanent" shelter, and its land tenure implications, should be considered.

Gender considerations should be included. The international best practice standard of ensuring joint title for husbands and wives should be respected. When specific attention is paid to ensuring women's land rights, households are better able to cope with disaster. Women's land rights – whether they have joint, independent, or shared claims to common land and/or resources – should be ensured.

Forms of proof of ownership other than existing formal land title might be considered. An equitable process for (re)establishing land title might consider all types of land certificates, and other forms of proof of ownership. The Government could work together with communities to document and verify their claims (e.g., through on-site GPS coordinates, informal mapping, photographing of destroyed property, and the documenting of oral testimonies). Such informal evidence could be made legally valid as a basis for claims. The titling process might also be linked to registration with public utilities (i.e., water, electricity, sanitation services); both as another form of proof of residence, and as a way of restoring/enhancing access to basic utilities.

A second phase might consider broader system strengthening and reform. A mid-to-long-term solution for addressing land tenure and land rights issues should also be considered (as in the Peruvian context). Such a broader process may involve both legal reform and the creation of a robust national database for documenting land ownership. Existing building codes, their practical enforcement, and any possible role of corruption in construction should also be examined. A long-term solution could also

1 See "How to Rebuild: Environmental and Social Safeguards Note" (pp.66-68).

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guarantee all citizens equal access to affordable, timely, and independent redress mechanisms when their claims are contested (in the post-disaster context, the poor and vulnerable are less able to defend themselves in land disputes than usual, and specific efforts may be considered to provide effective legal support to them so as to ensure equal access to legal redress).

Involving communities strengthens buy-in and promotes success. Finally, popular consultation and involvement at all phases is recommended as essential to ensuring general buy-in and ownership of the process. Assisting communities in rebuilding their own homes, businesses, and farms, on the original sites is an approach that tends to lead to greater consensus and more sustainable results than top-down solutions.

The tent cities that now house much of PAP's population, and the sudden urban-rural exodus, are examples of the challenges that reestablishing land ownership in Haiti following the earthquake will take.

Lessons Learned from Past Experiences

India

The 2001 earthquake In Gujarat, India left an estimated 200,000 dead, more than 300,000 injured, and 1,000,000 homeless. Survivors faced disability, trauma, homelessness, loss of productivity and earnings.

- Providing short-term shelter during the rebuilding was an immediate, highest-level priority.
- Apart from shelter, the most urgent need was to reestablish livelihoods for the poor; in particular small venders, informal service providers, and farmers.
- The poor and vulnerable had fewer resources to rebuild. The long-term consequences of death and disability will particularly impact widows, orphans, and the elderly.

Madagascar and Peru

Experiences show that lack of clarity in land title systems can significantly hamper development (in Madagascar) and delay the reconstruction of housing and infrastructure and lead to conflict (in Peru) – and that effectively addressing these issues up-front facilitates reconstruction.

- In Peru, ambiguities and gaps in the titling system (e.g., the failure of homeowners to seek separate title for their buildings) resulted in frequent legal disputes.
- Following the Ica earthquake, a system was developed of government vouchers for housing reconstruction, but soon became mired, due to a widespread lack of formal title.
- Policies intended to provide communities with tenure security were poorly disseminated and overly bureaucratic, and therefore, underutilized by poor communities.
- The World Bank-supported national Land Rights Project was launched, now in its second phase.
- In Madagascar, the recent *Programme National Foncier* was faced with an outdated and largely untitled land system. Communal land tenure offices were created (many mobile and under Government contracts), to verify and validate simple tenure certificates. This system allowed land certificates to be issued after only 200 days and at US$24 per unit.[i]

Indonesia

Lessons from Aceh illustrate some of the options the Government might want to consider.

- ***Land tenure in post-tsunami Indonesia was characterized by a similar state of affairs as in Haiti.*** Few parcels were titled and most records were destroyed in the disaster itself.
- ***The government agreed to restore land tenure through a multi-tiered community-led process.*** The first project financed under the reconstruction was focused on land administration. Local communities, with

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support from NGOs and the national Land Administration Agency (BPN), conducted land inventories, in accordance with BPN guidelines. BPN verified the results by measuring the parcels and validating community agreements on ownership and boundary demarcation. The results of this adjudication were publicized for 4 weeks, whereupon the properties were registered and titles issued. These services were provided free of charge. This process facilitated the reconstruction of housing and infrastructure, with community mapping of over 200,000 parcels of land and formal titling of over 100,000. The project also established a state-of-the-art land administration database to prevent future loss of documentation. Key land administration buildings destroyed by the tsunami were rebuilt.

- ***Progress with titling and housing reconstruction could not be achieved simultaneously.*** Rather, the issuance of title generally followed construction. The CDA approach allowed construction to proceed with a high degree of confidence that houses were indeed on the correct plots and on accordance with land rights.
- ***Many families chose to informally subdivide their plots to enable the building of new houses for family members on the resulting "sub-parcels."*** Many of these were subsequently titled under RALAS or another government program.
- ***The tsunami exacerbated impediments to women's access to land.*** To address womens' limited ownership rights to land registered to their husband or father's names, mobile teams from Shari'a courts accompanied the BPN land adjudication teams to tsunami-affected communities to socialize religious principles of guardianship and inheritance and encourage women's land ownership and rights under Shari'a.
- ***Vulnerable groups need special support.*** Less effectively addressed issues include resettlement assistance for those rendered landless by the tsunami – and in particular, vulnerable groups. It was later recognized that these groups should have been a key focus early on.
- ***Existing capacity is relevant.*** Unlike Haiti, Aceh was able to count on support from a strong central land administration apparatus (albeit with some prodding). The Haiti reconstruction will have to address the absence of similar institutional capacity and resources.
- ***People generally do not want to relocate, and that relocating towns and communities is rarely successful.*** Providing assistance to communities in rebuilding their homes, businesses, and farms, on the original sites is an approach that tends to lead to more sustainable results.

Land Tenure in Pre-Earthquake Haiti

Land title arrangements were complex and ambiguous. Land administration, land use planning, zoning and building codes, were all in need of strengthening before the earthquake, due to several factors. Reference systems and records were often unclear, incomplete, or not properly updated. Often there was no reliable way of obtaining enforceable documented guarantees of land title. Overlapping, invalid, or improperly documented titles were a frequent source of conflict, making land disputes common, and there no fast and reliable formal process existed for settling such disputes.

Titling Procedures. The existing land titling system, managed by the *Direction Generale des Impots*, is not computerized and in need of modernization. Title to a property is established by the land purchase agreement and survey of the referred property. Most property transactions are made by private act. Title is often unclear. The formal sector purchases land and property through Notaries Public, who are commissioned by the President of the Republic. To purchase a property, it is necessary to have a recent survey establishing its peaceful possession by the seller. The buyer then requests that the seller deposit with the Notary the survey and bill of sale. The buyer deposits the purchase price with the Notary, and both parties sign the bill of sale. The seller receives the selling price after deduction of the added value tax.

Structures. In order to legally build, one must first obtain authorization from the local authorities, in exchange for a fee. There are no town planning boards or other land-use planning entities.

Land Tenure and Poverty. Titling procedures tend to be burdensome and costly, making formal title largely inaccessible to the poor. Banks cannot use contested properties as guarantees, which exacerbates poverty. In terms of housing, interest rates on home loans are high and there is public housing is unavailable. There

is little effective support for poor people defending their rights in court. Specific rural and urban poverty issues are addressed in those sections.

Institutions. There are good institutions, but spaces for potential strengthening as well. The cadaster institution ONACA has been doing admirable work, but depends mainly on external funding. They have a good reputation for helping rural areas – and, in particular, irrigation districts – to determine the location of plots to promote natural resource management and land security. The agrarian reform institute, INARA, is inefficient and has a mixed reputation. It would need an overhaul in order to adapt it to the needs of current situation.

Informality. In light of the legal insecurity of land tenure, possession is vitally important. People with a claim to land quickly build walls, and at least part of a dwelling, as a bulwark against competing claims. Large landowners may quickly build rental housing in residential areas, or grant peasants tenure rights for agricultural lands. The rental housing and tenure rights then give the peasants possession and thus, an incentive to defend the landlord's tenure. Possession is especially important for the poor– and in some cases, the only tool they have to defend their rights.

There are notable differences between land tenure practices in urban and rural areas.

Urban Areas. Port-au-Prince and other urban areas have relatively reliable land survey and cadaster systems (*Plans d'Arpentage*) to identify individual landowners. While land and property titles are not always held, changes in title are generally registered in the *Plans d'Arpentage*. However, extensive informal settlement in recent decades complicates the situation. Where formal land title systems are inaccessible or inapplicable, informal systems have arises, sometimes governed by violence. The area of Cite Soleil, for example, originally belonged to a single family, and is now a major slum, with an essentially parallel informal land tenure system. Overcrowding in urban areas – and particularly PAP – will also have to be addressed.

Rural Areas. In the countryside, the process of *Arpentage* has increasingly focused on titling and the settling of disputes. While property is still often registered (see chart below), conflicting claims may nevertheless be found (see table below). In national parks and elsewhere, significant amounts of government-owned land is being used by farmers with no permit or rent agreement, leading to a lack of incentives to invest in the land. The high legal costs of transferring title and subdividing land have led to the practice of subdividing inherited plots without titling them, resulting in disputes among family members. These conflicts must then be resolved by a local "*Juge de Paix*."

Gender. Haitian land law does not discriminate against women. In practice however, land held informally is rarely allocated or equally administered for women and men. Customary and other forms of "informal" tenure may allow women access to land, although their rights are not equal to those of men. As most property is purchased, women tend to have less access to land than men. If women are not recognized heads of households or not included in existing ownership deeds, it may be difficult for them to reclaim their homes.

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Experience with Post-Disaster Income Support Programs

Livelihood support is a critical part of recovery and reconstruction efforts in Haiti. Direct cash grants and public works programs are common interventions to provide needed support to vulnerable households in the earthquake recovery process. Program goals include protecting the most vulnerable in the short term while reviving economic activity for the longer term. Important design and implementation considerations are outlined below, drawing from lessons learnt from international experience.

Restoring livelihoods in the earthquake-affected areas of Haiti will be a critical component of relief and reconstruction efforts. The strategy that enables resumption of normalcy in the affected areas must involve rebuilding assets to generate income and employment, as well as protecting the most vulnerable members of the community. This will be a significant challenge given the extent of damage in Haiti.

This note will focus on two broad types of income support programs implemented in other countries that faced similar disasters: (I) direct cash transfers to eligible beneficiaries and (II) public works programs (cash-for-works). Building on relevant country examples and best practice, the note will propose ideas for Haiti that utilize existing implementation structures for quick and efficient assistance.
It would also be important to state at the outset that the direct cash transfer and public works programs that have been used in post disaster situations are also part of a larger social protection agenda.

Options for Income Support Programs

I. Direct Cash Grants

Cash grants to affected households provide crucial short-term help. They help protect the vulnerable and boost local economies by creating purchasing power in affected areas. The success of a direct grant program, however, is predicated on the capacity of the government to effectively design and implement it. There also must be adequate supplies available for purchase and, of course, the markets themselves must be functioning. Cash grant programs in Pakistan (post earthquake) and Sri Lanka (post tsunami) provide valuable lessons. The key elements of a program are highlighted below:

Targeting issues: Who should receive cash grants? Geographic targeting may be appropriate and easy to implement rapidly when damage is extensive and most households are affected in an area. However, previous experience suggests that the most affected and vulnerable population may be dispersed geographically. Areas deemed "less affected" often have households that have experienced extensive damage. If targeting is at the household, not geographic, level then clear, simple and verifiable criteria should guide the eligibility process. Typically this includes all those who are displaced and living in temporary shelters or relief camps, as well as households who are especially vulnerable because they are headed by the elderly or have experienced the death of the main income earner. Additional criteria for identifying the most vulnerable should be developed in close collaboration with the authorities and informed by a careful damage and needs assessment. Household-level targeting systems have been effective in both Pakistan and Sri Lanka, yet it is important to recognize the challenges of implementing such a targeting system in emergency situations as the one Haiti faces today. Careful assessments may be necessary prior to implementation and initially a combination of geographic, demographic, and self-targeting methods may be preferable until a good household targeting system can be built and can

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effectively reach vulnerable populations for the longer term. .

Targeting issues: Efficient implementation: Eligibility criteria should not be administratively burdensome to implement. A quick and careful review of the presence or lack of cash grant programs in Haiti may reveal whether communities or local authorities are well placed to identify beneficiary households for efficient grant implementation. However, since communities may have been fractured and scattered in the aftermath of a disaster, efficient targeting may be challenging. Faced with a similar situation and context of Haiti, Pakistan's authorities selected beneficiaries in affected areas through a simple targeting form. As information was collected, it was reviewed against eligibility conditions, and households were selected for the program. A grievance process was implemented to ensure that anyone who felt wrongly excluded could appeal and the case would be investigated by local government officials. This process did take time in Pakistan; implementation was phased in gradually after the earthquake. In contrast, in Sri Lanka, where there was a well established national safety net program prior to the tsunami, community officers who facilitated the national program were entrusted to identify eligible households in affected areas. To ensure that there was minimal exclusion of affected areas and households, a monitoring survey was conducted early in the program to reassess the program and make midcourse corrections to improve targeting.

Ultimately, the success of a cash transfer program depends on clear implementation arrangements. In Pakistan, the first step was developing a comprehensive manual to specify eligibility criteria, rules for validation and appeals, as well as the accountabilities of different tiers of government.

Determine the amount and duration of payments: The amount of cash assistance provided to each household is always a difficult parameter to set – balancing between needs, resource availability and labor disncentives. In Pakistan, $50 cash per month per household was granted to eligible households. The amount was established by calculating the needs of an average household of seven. The government decided that the payment would be uniform for all beneficiary households and would continue for 6 months. In Sri Lanka $50 per month per household was granted for 4 months. In post disaster settings, at least initially, needs can be quite high as households have both lost significant assets and had their income flows disrupted or halted. Sometimes, the cost of the food basket, or perhaps the poverty line is used as a reference point. However paying the whole cost of living for all affected families is very costly when the scale of the disaster is as large as in Haiti. (The pressure on resources in Haiti will be much more marked than in Pakistan or Turkey where the earthquake affected a smaller segment of the population.) Moreover, such high payments assume that families are unable to earn any income at all, an extreme situation which was true for some initially, but which will be less true as families re-establish some income streams, even if not as high as prior to the earthquake. Thus payments may be reduced over time as the recovery proceeds.

Delivery of payments: The delivery of payments should alleviate the cash constraints of the needy, be affordable, safe, reliable, and accessible to all beneficiaries. Beneficiaries should be able to access payments without high transaction costs, due to intermediaries and/or travel. If identification cards (IDs) are required, arrangements should be made to provide IDs to those who have lost them or never had them. Banks, post offices, and other institutions that are readily available may be used for distribution—especially if they are currently serving similar programs in the country. Additionally, the flow of funds should be transparent and auditable. A post-evaluation from the program in Pakistan, which opted to make benefit payments through banks and made arrangements for beneficiaries to open free accounts, points to the importance of accessibility and the need for timely and robust audit processes to ensure good governance and prompt payments. In some countries where remittances are a common source of income for much of the population a better payment delivery option could be through funding transfer agencies. Prior to the earthquake, a large number of households depended on remittances through funding transfer agencies, which are seen as

honest and efficient with affordable fees, and reach most parts of the country. Additional options that have been used to complement delivery mechanisms in certain settings and contexts include credit unions[1] and microcredit agencies.

Calculate program costs: Program costs are determined by the final cost of a grant program, which is calculated by the addition of total benefits (i.e., the amount of the cash payment multiplied by the estimated number of payments) to the total implementation costs (i.e., the cost of data collection, monitoring, and general administration). Although the rule of thumb to calculate implementation costs for a scaled and established program is 10% of total costs, it should be noted that in emergency programs, which tend to be smaller and have less systems in place, this cost may differ drastically. Pakistan, for example, could serve as example for new program costs, since existing programs were not available to help with implementation. There, a damage assessment of lost livelihoods combined with data from household surveys estimated that about 250,000 households would receive $50 cash grants for 6 months with a possible extension for an additional three months to the most vulnerable households. The total cost of the program was $85 million.

Ensure a clear exit strategy: A clear and transparent exit strategy, defined *prior* to any payments, helps avoid dependency on subsidies. Beneficiaries should not be deterred from looking for regular employment. A government may want to vary its approach to different population groups, based on longer-term vulnerability. For able-bodied workers, a program could move from unconditional to conditional cash transfers. Conditions could include participation in a public works program or other preparations for employment. For the most vulnerable (e.g. households headed by people unable to work or orphans), cash transfer could be delivered through regular social welfare programs, if necessary, for an extended period of time.

[1] CIDA used these to transfer money to cover schooling costs.

Monitoring and evaluation (M&E): Monitoring and evaluating a social support program is facilitated by a sound database prior to the disaster. However, the lack of data should not discourage the implementation of such a program. In fact, any new assistance program is an opportunity to create a database that can be augmented and kept alive beyond the lifetime of disaster recovery, and can help mitigate disaster risk over the long term. In Pakistan, a database of applicants to its cash grant program was created to be cross-checked with its national ID system. With this database, it was easier to propose extending Pakistan's program for the most vulnerable households and to transfer them to ongoing safety-net programs.

II. Public Works Programs (Cash-for-Works)

Public works programs have helped counter the impact of disasters in developed and developing countries alike. A public works program provides cash or paymentin kind to individuals who are able and willing to work to help their households meet their immediate needs. At the same time, such programs can restore (or create) much needed infrastructure. Examples of projects include debris removal, repair of community water supply and sanitation schemes, repair or new construction of public buildings such as community centers, and road repairs. The programs can be easily targeted to specific geographic areas. Overall, public works programs are flexible, can be easily scaled up, and can mobilize resources quickly.

Public works programs have been widely used in the aftermath of natural disasters and major conflicts. Countries such as Indonesia, India, Madagascar, Ethiopia, Kenya, and Honduras all implemented similar programs to counter the impact of various shocks. In Indonesia, around 18,000 participants in 60 villages were involved in public works programs after the tsunami. It made quick and safe disbursement of assistance possible. The programs are often funded with budgetary resources, but can also be implemented by non-governmental organizations (NGOs), Social Investment Funds (SIFs), or Community Driven Development (CDD) funds.

In Haiti, such cash-for-work programs are being used extensively to restore livelihoods in the aftermath of the earthquake. They include UNDP's program targeting 100,000 beneficiaries (50 percent women); Oxfam's Program in makeshift camps targeting 80,000 people; numerous sub-projects under the *Project National de Developpement Communautaire (PRODEP)* and its urban equivalent, PRODEPUR (see photo); and cash-for-work schemes funded by aid organizations like CHF and Mercy Corps.

A public works program is essentially a form of cash transfer program conditional on working. Key design elements are highlighted below:

Setting the most effective wage rate: The wage rate is a key element determining the distributional outcomes of the program. In an effort to build a targeting system that can be effective in the immediate term as well as the longer term, while reaching the most vulnerable and affected households and economically disadvantaged, the wage should be set just *below* the prevailing market rate for unskilled manual labor, since only those who have no other means of income will accept the lower wages of cash-for-work programs. Setting low wages can also help prevent temporary work programs from crowding out more permanent job creation. In some cases, the prevailing market wages are lower than an unenforced yet legal minimum wage. Setting the program wage at such a such a minimum wage level would however weaken the self-selection of the poorest into the program. In such cases it is important to explore the option to get the payments classified in such a way that the minimum wage law does not apply (for example in Argentina with Trabajar).

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It is also important to determine the appropriateness and feasibility of public works in specific country contexts. For example, in Pakistan, prior to the earthquake, there was a high rate of migration of adult men from the affected areas, so it was difficult to ascertain *a priori* whether people (in particular, women) would be willing to engage in manual labor. For this reason, a direct cash transfer program was deemed more appropriate for implementation.

***Determining the work content*:** Public works should target disaster-affected regions and address the needs of specific communities. Projects should produce infrastructure that is owned and managed by communities or governments to ensure that the assets created are shared and sustainable. In addition, a public project should produce assets that are "built back better" to survive earthquakes and adhere to disaster risk management practices. Furthermore, a careful determination of the maximum number of person-days of employment is essential; this is mostly dictated by budget availability but also depends on the estimated population of households affected or vulnerable as a result of the disaster. Finally, projects should adhere to the environment and social safeguard procedures (please refer to the Environmental and Social Assessment note for details.)

Making the program cost-effective and labor intensive: A cost-effective program should pay out a high percentage of its total outlays in wages. In other words, labor-intensive projects should be selected. International examples suggest that the cost of labor for road construction projects ranges from 40 to 50 percent of the total costs. In road or drainage *maintenance* projects, the rate ranges from 70 to 80 percent. In Argentina, for example, the proportion of labor costs in program budgets ranged from 30 to 70 percent, depending on the type of project. In South Korea, the share of labor costs was close to 70 percent overall. The goal is to

ensure that the selection of projects is guided by community needs combined with cost-effectiveness in order to maximize a primary objective of the program: to create employment.

Dealing with implementation issues: One should bear in mind implementation issues in a specific country context to determine the best way for funds to flow to local authorities and communities. As discussed above, the flow of funds is critical for a project to move credibly from design to implementation.

Monitoring and evaluation Program monitoring helps ensure that public works are demand driven and adhere to their guidelines. Monitoring and Evaluation also prevents corruption or leakage. Finally, it should ensure wages are paid to the workers on a timely basis.

GUIDING PRINCIPLES FOR HAITI

This note has outlined two social assistance programs that provide income support to vulnerable households in the face of a disaster. The key design principles and features for each of these programs are relevant for authorities in Haiti to consider as they design programs to protect their vulnerable populations in the aftermath of its earthquake. Below is a summary of the guiding principles:

Try to determine the extent of coverage needed to support the vulnerable population during the Post Disaster Needs Assessment (PDNA): Preliminary estimates of all types of losses in Haiti are crucial for understanding the extent of support needed. Even ballpark estimates are very useful and necessary as a starting point. Useful data may include census and household surveys. The lack of available data has often been a constraint in similar situations. For example, during the PDNA in Pakistan, the estimates of damages and livelihood losses were based on a combination of insights from field visits after the disaster, interviews with government officials and affected communities, and early data collected pre-earthquake—such as its 1998 census combined with household surveys in affected areas.

To fill the data gap in Pakistan, an innovative information-sharing web portal called "RISEPAK" was developed and maintained by a consortium of experts from American and Pakistani universities, the World Bank, Pakistan's National Database and Registration Authority, and World Online (Pakistan's largest Internet service provider). RISEPAK was created within two weeks of Pakistan's 2005 earthquake. It provided users with maps of about 4,000 villages affected by the quake—including detailed demographic information, disaster information, assistance received, and access routes to the villages in the area. It was designed to allow the Pakistani government, army relief operations, donors, and non-government organizations to add or update information through text messages, faxes, emails, and phone *as assistance was implemented*. The database helped coordinate the massive relief efforts by numerous organizations working in the affected area.

Conduct a quick assessment of existing safety nets and programs that can be augmented to implement livelihood support: The existing Community Driven Development and UN or NGO-run programs in Haiti can facilitate the implementation of new social assistance programs. The following should be assessed: (a) the overlap of social assistance programs with the earthquake affected areas; (b) the extent to which local program capacities are depleted post-disaster, (c) the types of interventions (i.e., cash grants, public works) that existing programs could be quickly adapted to serve; and (d) the auditing mechanisms that could monitor fund flows and ultimate effectiveness of livelihood support programs.

If the choice of support is the cash grant program, conduct a quick assessment of implementation challenges: Targeting decisions are important, but may lead to implementation challenges. The urgent need to reach a large population as soon as possible implies that cash transfers should be granted to everyone in an affected region, but more sophisticated targeting at the household level may provide better protection to the most vulnerable across a wider geographic area. If household targeting is chosen, there are important challenges to address: (a) how vulnerable households will be identified, (b) how cash will be delivered, and (c) how inclusion/exclusion will be

monitored. In addition, a very clear and enforceable exit strategy should be present from the first payment to avoid undue subsidy dependence.

If a public works program is chosen, work to ensure design and implementation capacity: A carefully designed and efficiently implemented public works program can rebuild infrastructure while providing income in the immediate aftermath of a disaster. However it is important to assess the political feasibility of setting a wage rate that self selects the most vulnerable (poor) and doesn't crowd longer term employment opportunities. In addition, the local capacity of a community to participate in and deliver on a public works program is a very important consideration so is the capacity to properly supervise the program.

Cash transfer and public works are not "either-or" considerations: In the context of a short- to medium-term social protection strategy, a cash transfer program could also effectively transition to a public works program. For example, after 4 to 6 months, able-bodied cash-grant recipients could then be required to work for continued payments. A graduated effort to provide support in Haiti could even inform a more permanent social protection strategy for the country. How such a process would evolve would need to be assessed with authorities examining longer term local requirements. Furthermore, it is important to recognize that both cash grants and cash-for-work can coexist given that they have a sensible targeting mechanism, eligibility criteria, and benefit levels that complement each other nicely.

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