ISDR

International Strategy for Disaster Reduction

Private Sector Activities in Disaster Risk Reduction

Good Practices and Lessons Learned

2008

United Nations

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Good Practices and Lessons Learned

Bonn, December 2008

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United Nations

Please send your feedback and suggestions, including further case studies for consideration, to:

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Foreword

Right now, human suffering and economic losses from disasters are unacceptably high. In 2007 alone, natural hazards caused USD 78 billion in economic losses, but only USD 30 billion of these losses were covered by insurance (MunichRe 2007). Climate change is predicted to make natural hazards like hurricanes, droughts and floods, more frequent and more intense. If concerted efforts are not made to reduce the impact of natural hazards, future costs of the disasters they cause could skyrocket. The private sector has a vitally important role to play in averting disasters, safeguarding economies, nations, communities, and themselves.

All of society - the public and the private sector – ends up facing the consequences of disasters. It follows that all of society, the private sector included, has a role to play in reducing disaster risk. Natural hazards need not result automatically in disasters. Simple measures can be taken beforehand to strengthen the resilience of communities, to save lives, to secure livelihoods and to prevent the loss of investments and development gains. When a natural hazard threatens a nation, public facilities and private businesses alike have to protect their assets, their workforce, and their supply and distribution chains in order for society and the economy to keep functioning.

In most societies, the private sector has been the driving force behind socio-economic development. Businesses are often proud of both their profitable operations, and the social dividend that those operations yield to society. But to make these gains sustainable for both business and society, the private sector must work with governments to address the disaster risk incentives of their business practices. In turn, governments are responsible for providing an enabling environment for public-private partnerships.

The private sector can play an important role in disaster prevention, mitigation and preparedness by investing more in disaster risk reduction, both for their own business continuum, and in the local communities where their workforce resides. For multinational companies with global reach, corporate social responsibility initiatives should seize upon disaster risk reduction as an increasingly important development and humanitarian issue.

For these reasons, the UNISDR has collected original contributions that provide new perspectives and insights into public-private partnerships based on disaster risk reduction work. This good practice publication focuses on projects and initiatives that have shown innovative qualities and results, as well as a potential for being replicated and adapted on a broader scale.

Mr. Sálvano Briceño
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Introduction

This publication highlights the link between disaster risk reduction and public-private partnerships. As the flagship UN document for disaster reduction, the Hyogo Framework for Action (2005) in its priority action 4 “Reduce the underlying risk factors” is requesting the promotion and establishment of public–private partnerships in order to better engage the private sector in disaster risk reduction activities. It encourages the private sector to foster a culture of disaster prevention, putting greater emphasis on, and allocating resources to disaster preparedness activities such as risk assessments and early warning systems.

The wider context for the UNISDR’s engagement with the private sector is set by the UN Global Compact, launched in 2000 and brings businesses together with UN agencies, labour, civil society and governments. The Global Compact requests businesses to integrate disaster prevention into their decision-making throughout the value chain. Actions based on the principles set forth in the Compact often result in one of three types of public-private partnerships each being dependent on the reach of the company and how its leadership perceives the risk from disasters. Some drivers of change toward disaster risk reduction are generated as a need to manage risk while others are a result of global citizenship.

1. In advocacy and awareness raising partnerships, the private sector partners with other stakeholders to take a leadership role in championing, advocating for, and contributing to resolving different issues. Companies often partner with governments and regulatory bodies, and participate in legitimate dialogues and collective action with stakeholders from diverse sectors of the economy.

2. For social investment and philanthropy partnerships, the business provides financial support, contributes volunteers or expertise, or makes in-kind contributions, including product donations.

3. In core business partnerships, partners collaborate to create employment and foster entrepreneurship, contribute to economic growth, generate tax revenues, implement social, environmental or ethical standards and provide appropriate and affordable goods and services.

The private sector has been very generous after a catastrophe has occurred. Corporate reaction to humanitarian emergencies generally has been solely response-oriented, thereby limiting its overall potential for effectiveness and efficiency. Increasingly the private sector has begun to demonstrate its commitment to areas such as risk transfer, corporate social responsibility in reducing the vulnerability of communities, better risk assessment and the overall reduction of the potential impact of disaster on their own businesses.

This publication highlights seventeen examples of how the private sector engages in partnerships to reduce the risk of disaster. An attempt has been made to divide the examples into the three partnership types. Many examples have been submitted from the Asia Region, especially from Japan where a strong commitment exists on the engagement of the private sector in disaster risk reduction. A fundamental lesson coming from these experiences is that disaster reduction partnerships work best when there is a clear vision, coordination and available funding.

For ease of reference, each good practice is presented in the same format beginning with a short abstract and ending with the potential for replication. Our 'bottom-line' goal is to foster public-private partnerships for disaster risk reduction and contribute to sustainable socio-economic development by reducing risk and vulnerability to natural hazards.

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Photo by Tokyo Gas Company

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Advocacy and Awareness Raising Partnerships

In advocacy and awareness raising partnerships, the private sector partners with other stakeholders to take a leadership role in championing, advocating for, and contributing to resolving different issues. Companies can partner with governments and regulatory bodies, and participate in legitimate dialogues and collective action with stakeholders from diverse sectors of the economy.

Central America and the Caribbean

Building a disaster resistant community: Project impact in Central America and the Caribbean

James Lee Witt Associates

Photo by James Lee Witt Associates

Abstract

In 2000, former US President Bill Clinton asked the United States Federal Emergency Management Agency (FEMA) to implement Project Impact, a community-based mitigation initiative, in six Central American and Caribbean countries that were devastated by hurricanes Georges and Mitch. Project Impact had been used for a number of years in the United States to help communities prepare for natural disasters by linking the private and public sectors on hazard mitigation projects that benefited communities by reducing disaster vulnerability to the community and to participating businesses. The program forged private and public sector partnerships in fourteen communities in Haiti, Dominican Republic, Guatemala, El Salvador, Honduras, and Nicaragua. Projects were selected that would minimize future disaster damages as well as protect the assets of the private sector. Seed funds were combined with private sector donations of cash and in-kind services. Dozens of projects resulted that have proven helpful in minimizing disaster damages. This project has also been a catalyst in launching similar community-based mitigation initiatives that involve the private and public sectors in Latin America.

Goals and Objectives

The major goal of the project was to reduce future disaster damages in 25 communities in six Caribbean and Central American countries. A major objective was to involve the private sector and encourage it to match the seed money provided. Seed money for projects was about USD250,000 per country. Another objective was to promote awareness of hazards and actions that local government, citizens, and business could take to reduce the impact from future disaster losses.

One participating community in Honduras was impacted by a significant flood a few months following the completion of the project. Individual projects in that area prevented flooding in an entire section of the community. In another community, where a small levee was built, residents commented that the year following the completion of the levee was the first time that homes had not flooded in the neighbourhood. The biggest impact was that the project functioned as a magnet for attracting other organizations to implement similar initiatives. The USAID/OFDA funded a similar project in 2004 in various communities in Latin America for approximately USD500,000. The project successfully demonstrated that small communities in Latin America can embrace the concept of community-based mitigation initiatives. Local, regional, and national companies were eager to participate.

The Initiative

Project Impact is a community disaster mitigation initiative. The core idea is to involve the private sector in specific mitigation efforts in specific areas. The individual projects are implemented by following certain steps. First an NGO is selected and trained for support of a specific project. Secondly, meetings are arranged with pivotal private and public sector leaders, including local government, civic leaders and the heads of businesses. Following that, a convening session is held, which is open to the public.

This session is used to educate and raise awareness on hazards and obtain prospective solutions to problems. The participants vote on solutions that they feel would be best in helping to minimize future disaster losses. After that, committees are formed and meetings are continued with both public and private sector leaders. Projects are selected and support is obtained to help accomplish projects by leveraging seed money. Project Impact was launched in Latin America in 2001. It was completed in 2003.

The project was implemented in the following countries and cities:

- Honduras - La Lima, Pespire and Santa Rita
- Nicaragua - Estelí, Chichigalpa and Bluefields
- El Salvador - Berlin, Usulután and Alegría
- Guatemala - Eleven small communities in Taxisco municipality
- Haiti - Jacmel
- Dominican Republic - Haina, Jaquimeyes, Tamayo, Vicente Noble

Funding of the project was provided by the US government, through FEMA and was tasked by former President Clinton to use specially appropriated funds to provide relief, following the ravages of hurricanes Georges and Mitch in 1998. Each community supported the initiative as did various NGOs and the private sector.

The parties involved included:

Public Sector - The Federal Emergency Management Agency; the USAID Office of Foreign Disaster Assistance (OFDA); the national governments of Haiti, Dominican Republic, Guatemala, El Salvador, Nicaragua and Honduras; and the city governments of each participating community.

NGOs - Pan American Development Foundation, the Cooperative Housing Foundation, the Association for Disaster Prevention in the Dominican Republic and Catholic Relief Services.

Private Sector - Businesses and organizations that participated include: La Haina, Dominican Republic Industrial Association, Chiquita Banana, coffee growers associations, and numerous small businesses in each participating community.

Outcomes and Activities

Most communities selected to participate were communities of around 25,000 people or less. Education and outreach activities were meant to target all citizens. Other projects were meant to focus on a specific area of a city. Two project examples are the building of a sluice gate and soil conservation practices. A sluice gate was built along the Chamelco River in La Lima, Honduras, as this stretch of river flooded every few years, destroying banana plantation property and several hundred residences. Chiquita Banana paid for the sluice gate and a control valve; city employees installed the gates and valves; and project seed money paid for city worker salaries. A flood occurred soon after completion, where no damages occurred in the protection area. For the second project, a Canadian organization paid for soil conservation practices on one hillside in Berlin, El Salvador, prior to Hurricane Mitch. The project included obtaining permission from local coffee plantation owners to work on their land and install live barriers, rock walls, ditches and other common soil preservation practices on steep slopes. These practices were helpful and the areas where work was performed did not suffer massive landslides following Hurricane Mitch. The efforts paved the way for Project Impact. However, rather than only ask permission of coffee plantation owners to work on their land, this initiative made the coffee plantation owners, partners in the project. They worked alongside city volunteers in implementing soil preservation practices on nearly 80 hectares. In total, 17,000 meters of live barriers were built and many rock walls were constructed. Partners dug 14,500 infiltration ditches and 180 catchment wells. In total, 4,990 trees were planted and 12,470 bamboo stakes were buried on the slopes to slow down water flows. A series of gabions were built in strategic locations and a cement-lined ditch was built at the base of the slopes. A significant series of earthquakes occurred in El Salvador in the period after completion of the soil conservation projects. Many local experts believe that significant landslides may have occurred had soil conservation procedures not been implemented.

The innovative part of these two projects and all projects under the initiative is that the private sector and citizens were expected to participate. Many similar initiatives have been performed to mitigate future disasters, but this was an initiative that could not be launched without participation from all sectors of a community: private, public, and NGOs. The initiative only launched projects whose benefits would provide a positive impact to the private sector, the public sector, and to the citizens. Once prospective participants understood that the project was not simply asking for a donation, but that the results would actually minimize public sector and private sector losses, many organizations were interested in participating.

The impact and result of this initiative is that several dozen communities now understand that they can reduce future disaster losses and that they can expect local businesses to participate.

The Good Practice

This good practice demonstrates that the private sector will and can help communities mitigate disasters. The key characteristics driving this initiative are that each of the communities have:

1. Multiple hazards
2. A history of disasters
3. Committed local leadership
4. Committed NGOs, who follow direction
5. Well-established businesses

This initiative was not nearly as successful in cases where one or more of these elements were missing. One of the barriers to overcome was the expectation by local communities that someone else should be responsible for their problems. In some cases education helped overcome this barrier. Community leaders need to grasp the importance of 'total community involvement' in disaster mitigation projects.

Lesson(s) Learned

Two important lessons were learned. Firstly, that the private sector will get involved if it is clear that results will benefit them. And secondly, local leaders, who are supportive, can motivate others to participate. Future projects of this type should carefully consider the five key characteristics: multiple hazards, history of disasters, committed local leadership, committed NGOs, who follow direction, and involving well-established businesses.

Potential of Replication

This project has been replicated under the leadership of the Pan American Development Foundation. Replication in general is based on the willingness of a funding organization to provide seed money and then identifying communities with certain key elements: they should be at risk, threatened by multiple hazards, have a history of disasters, have committed local leadership, committed NGOs and well-established businesses that are willing to support the project.

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France

A dedicated association launched by the French insurance market to address natural risk knowledge and prevention

Mission Risques Naturels (MRN)

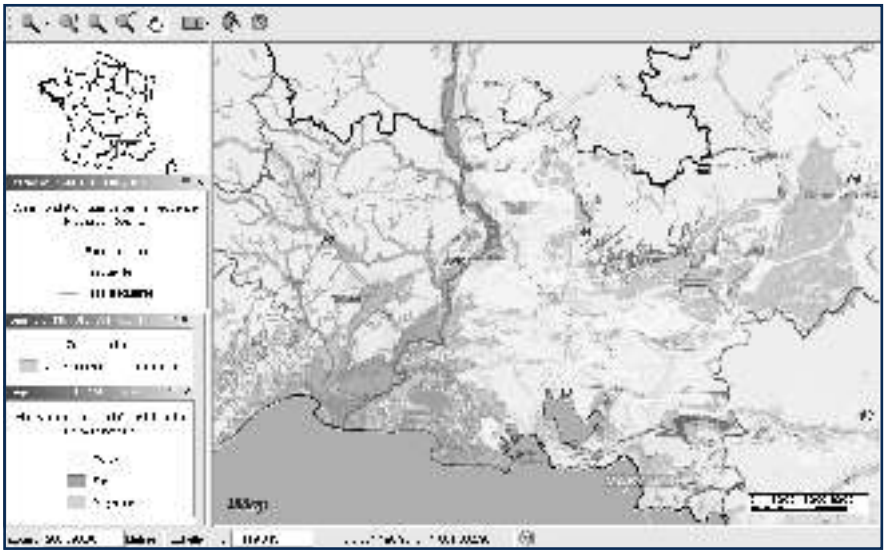

Figure by Mission Risques Naturels (MRN): Intranet Geoportal

Abstract

Mission Risques Naturels (MRN) is an example of an initiative taken by members of the insurance market to study and prepare how to organise itself against the effects of natural catastrophes and climate change. The association was created in 2000 by French insurance companies, just after experiencing the huge losses caused by storms Lothar and Martin, as well as large floods and subsidence during the decade. It is dedicated to developing general interest services for the market as a whole and for its insurance companies on knowledge and prevention management. This includes PPP initiatives with state and territorial authorities, on information sharing, public awareness raising and modelling improved analysis of socio-economic and financial costs of risk scenarios.

The above image shows a screen shot of the MRN intranet geoportal, based on a collaboration with French Ministry of Ecology and local authorities, to share natural hazard zoning data: such a tool helps the insurers to assess the exposure at each asset location and to raise risk prevention awareness of their customers.

Goals and Objectives

The main goals of the project were to participate in the formulation of disaster prevention policies and to provide a technical interface between insurance association and public authorities at the national, European and territorial level.

The Initiative

The MRN association was launched in March 2000 between the Fédération Française des Sociétés d'Assurance (FFSA) and Groupement des Entreprises Mutuelles d'Assurance (GEMA), the two trade associations of the French insurance market, following the 1999 floods and storms, and further motivated by a decade of cumulated loss experience in subsidence. The association employs 6 permanent staff members, which are engineers and research staff.

Due to the lack of centralized information on the side of public authorities and the myriad number of actions by their representatives, the insurance sector felt it useful to develop a technical interface facilitating more transparent and structured access to public data and projects. MRN is acting as an "executive producer" and in most cases as a "conductor" on behalf of the community of all insurance members of FFSA and GEMA.

Principal activities include:

1. Risk knowledge management supported by contact groups set up between the French administration and the MRN and providing input to common activities with public authorities (national and territorial):
   - Professional web services for access to public geo-data for hazard zoning and regulatory zonings;
   - Asset exposure observatory, for the main categories of insured assets (dwellings, professionals); and
   - Collective vulnerability scoring tools at the municipality level which evaluate the appropriateness and efficiency of risk prevention plans.

2. Prevention:
   - Providing practical guidelines to address each category of hazard. The generic contents provide recommendations to individuals on what to do before, during and after a catastrophic event; and
   - Practical guidelines for vulnerability assessment to floods.

3. Information and communication
   A network of 120 regional correspondents (insurance companies' regional executive staff members) has been established. Their role is to interface at the regional and local level with public authorities and facilitate the link between insurance and prevention by connecting local authorities and teaching activities through:
   - MRN information letter; and
   - Website www.mrn-gpsa.org

4. Participation in technical debates at various levels:
   - National
   - Public authorities
   - Associations
   - International level: mainly European

The greatest impact has been that a PPP with national and territorial public authorities has been established. For example, several floodplain management authorities have developed joint studies on the exposure of private and professional assets. Furthermore, field campaigns targeting the exposed commercial lines have been assessed for risk awareness raising through a vulnerability diagnostic component. A relationship with a number of international and European institutions has been created.

In a next phase, the scope will be extended to cover a geographic information system (GIS) web services platform for natural risk zones for industrial/technological risks as well as the environmental liability. As project leader, the association will be operating at the French national level (metropolitan + overseas territories), with dedicated national project staff and regional correspondents acting as volunteers.

A number of public partners for the MRN initiative include the following:

- National, territorial and municipal public authorities, in charge of natural hazard risk management and civil security;
- Specialised local authorities, such as the French association of floodplain managers (AFEPTB);
- Dedicated associations of local authorities such as CALYXIS (an association dedicated to risk, located in Niort and servicing local authorities and insurance mutuals);
- The Centre Européen Pour la Prévention des Risques d'Inondation (CEPRI), Institut pour la Prévention et la Gestion des Risques Urbains (IPGR) and the Institut des Risques Majeurs (IRMA).

Private partners include the following:

- FFSA and GEMA, French insurance associations, the members of MRN;
- Insurance companies (presently about 120) operating on the French market, as members of FFSA and/or GEMA, co -financing the budget of the association;
- Other partners of MRN include the civil society associations such as : Association Française pour la Prévention des Risques Naturels (AFPCN), Agence Qualité Construction (AQC), Haut Comité Français pour la Défense Civile (HCFDC), Association Française de Génie Parasismique (AFPS), Société Hydrotechnique Française (SHF) etc.

Outcomes and Activities

The different stakeholders involved in insurance and the prevention of natural catastrophes implemented and funded the initiative from the perspectives of the insurer-insured (private side) and insurance-society (public side). Embedded in the French insurance market, the initiative was warmly welcomed by national public authorities, which integrated MRN into:

- Steering groups for selected projects;
- The French governmental delegation, to attend meetings such as:
  - EU networks/projects - ERA NET CRUE and EXCIMAP
  - UNISDR international conferences (Kobe 2005, Bonn 2006 and Geneva 2007)

The association's budget is decided on common agreement between FFSA and GEMA, financed 100 % by insurance companies. It is shared on a pro-rata basis of their property business income.

All stakeholders operating in the risk management chain of natural hazards, mainly public authorities and associations are directly benefiting from the initiative. Indirectly, all insured populations (approximately 25 million private customers, 3 million commercial customers) via the membership of the insurance companies, gain from this initiative.

Some of the achievements include:

- National assessment of exposed assets to natural hazards, capacity for relevant studies analyzing exposure by asset category (e.g. exposure of private assets to climate change);
- Access to added value services integrating assets located in hazard zones and contribution to a detailed report of all information available at the level of a risk location, as an aid for decision making;
- Modelling of the exposure evolution according to urban expansion projections; and
- Communication and development of an information kit on the link between insurance and prevention.

The impacts of the project include the development of technical capacities, skills, methodologies and tools:

- To integrate asset exposure analysis at the level of the French insurance market and to interact with public authorities (especially in the present debate on climate change adaptation); and
- To evaluate public risk prevention policies at municipality level.

The Good Practice

The project is considered a good practice because it reinforces the insurance sector strategic interest in the prevention of natural catastrophes.
Key success factors have been:

- Important loss record of the period which has increased the role of awareness raising for a common initiative;
- Leveraging effect produced by the actors who are convinced of the usefulness of the initiative;
- International cooperation with similar initiatives in other neighbour markets; and
- Awareness of disasters as a cross-cutting technical issue at the national level.

This practice entailed interaction between actors and practitioners, the integration into stakeholder circles, the animation of inter-professional debate and the inclusion of transparency elements (letter, seminars, publications and website).

Lesson(s) Learned

Key lessons learned include the need for:

- Active participation of user clubs, where the different categories of skills with the companies staff members are expressed;
- Integration into the different spheres of stakeholders through active networking; and
- The importance of monitoring and sharing of good practice.

Major challenges have been:

- Motivating and stimulating the insurance companies on selected actions;
- Difficulties in obtaining public information;
- Acquisition cost of referential, geographic and socio-economic databases; and
- Lack of collaboration of the State reinsurer on sharing of insured loss record data at aggregated level.

Potential of Replication

The knowledge management part of the project has been replicated or is being considered in an adapted form in other European insurance markets, such as :

- Austria, HORA in PPP between the Austrian insurance Association (VVO) and Lebensministerium;
- Germany, ZURS project by the German Insurance Association (GDV);
- Italy: SIGRA project, by the Italian Insurance Association (ANIA);
- Czech Republic : FRAT project, by the Czech Insurance Association; and
- United Kingdom, PPP between Association of British Insurers (ABI) and the Environment Agency (EA)

The French MRN model has inspired an initiative in Africa: CARC - “Centre Africain des Risques Catastrophiques”, launched by Société Centrale de Réassurance du Maroc (SCR) and supported by the World Bank, Conférence panafricaine d’assurances and other partners.

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France

Conferences series for geographers and insurers focusing on disaster risk reduction in France

Mutuelle assurance des instituteurs de France (MAIF)

Photo by Mutuelle assurance des instituteurs de France (MAIF)

Abstract

Since 2006, a series of interactive conferences have been organized for geographers and insurers to focus on natural hazard risk reduction and prevention. Discussions have been fostered between the academic world and insurance practitioners on themes related to disaster risk reduction.

Goals and Objectives

The main goal of the project is to raise the attention of disaster risk reduction stakeholders on the links between research, academic topics and the practical approaches from an insurance perspective.

The Initiative

Since 2006, an annual one day conference has been organized jointly with a university in France - University of Versailles Saint Quentin en Yvelines (2006), University of Montpellier III (2007), and University of Paris Diderot (2008) - and the “Mutuelle Assurance des Instituteurs de France” (MAIF). These conferences have brought together geographers and academic staff of different disciplines, practitioners and the larger public. Neighbouring countries have been invited to participate in the conference as well. All results of the meeting have been published in a series of proceedings with an edition of 5000 copies. The conferences are organized by a university department together with other research teams in collaboration with the MAIF. The outcomes of the meetings have a national or regional impact according to the region where the conference has been organized.

The conferences focus on identifying the linkage between insurance and prevention measures. Analyses are undertaken on the common interests between the academic geographic and professional insurance approaches. The meetings are organized around one subject. For example in 2007, the theme had been “urban development and flood risk in the French Mediterranean area”. During the meetings the academics presented their research findings to the insurers on the ways to face these types of situations. In 2008, a round table between state representatives and insurers opened a debate on the opportunity of a public-private partnership on public policies of risk prevention. MAIF, one of the first French mutual insurance companies, which places voluntary policy in favour of risk education and prevention as a central preoccupation, was selected to play this role.

This unprecedented experience generated an immediate success for the targeted public, which was confirmed each year with an increasing audience. Proceedings of these conferences are regularly edited in 5000 copies. The next conference will be prepared with the University of Lille and MAIF for 2009.

As public partners to the MAIF initiative, the university served as a co-organiser along with representatives of public authorities including associations of local authorities such as CALYXIS (association based in the city of Niort, France, which works on individual risk reduction and natural risk reduction) and CEPRI (Centre Européen pour la Prévention des Risques d’Inondation).

Private partners are the MAIF. Part of the audience consisted of representatives of insurance undertakings and the civil society in general (associations for prevention, students, etc).

Outcomes and Activities

Around 200 participants attended each conference. One half has been representatives of the private sector (mainly insurance) and the other half has been participants coming from the public sector (research, teaching, administrations). MAIF “Département actions mutalistes” has been the leading organization but received technical support to the organizing committee from MRN of which MAIF is also a member serving as part of the Groupement des Entreprises Mutuelles d’Assurance (GEMA). MAIF financed 100% of the organization of the project, its logistics, communication, and the editing and distribution of the proceedings. The targeted audience has been public and private stakeholders in the field of disaster risk reduction in France, which have been represented mainly through their representative bodies such as public authorities and associations on an individual basis. Participation is based on invitation only.

These discussions received high attention which was leveraged by press coverage. About 5000 copies of the proceedings have been distributed after each conference. Proceedings are available on inquiry and can be sent to the participants and the speakers. If a research project is issued from a colloquium, it can, if necessary, be the object of financing by the MAIF Foundation (a foundation for the research on risk prevention).

The Good Practice

This is a good practice because it reinforces the role and function of the insurance sector in the prevention of disasters caused by natural hazards. Furthermore, it enables an environment for open discussions between the academic world and practitioners of the private insurance sector. Invitation is open to other partnerships. For example in 2008, the conference has been jointly organized with Association Française pour la Prévention des Catastrophes Naturelles (AFPCN).

Key success factors have been:

- Volunteer commitment by MAIF delegates, as staff members of the co-organizing universities;
- Participation of a team of academics in the organizing committee; and
- Strengthened relationship between MAIF-MRN

Photo by Mutuelle assurance des instituteurs de France (MAIF)

Projects have been created for the teaching and research community out of the symbiosis between the mutual insurance company and its members. A straightforward procedure has been developed for the preparation of the conference. Additionally, there had been the support of a communication professional. MRN provided the technical support in designing the programme.

Lesson(s) Learned

A key lesson learned has been that there is a better understanding of the linkages between the mutual insurance actions and risk culture. The main challenge has been to connect the interests of college academic staff in geography and those of the insurance mutual companies.

Potential of Replication

Similar approach can be applied in different insurance fields. For example, conferences can be held on the topic of civil engineering risk management or risk and expertise as an initiative of Société Mutuelle Assurance du Bâtiment et Travaux Publics (SMABTP), a builders' and constructor's insurance mutual.

Specific to the MAIF environment, this approach is expected to be replicated in other universities, also with more international participation. There is a very strong link between the benefits of this initiative and the nature of the membership to MAIF.

This practice could be replicated in other national markets, especially if the majority of the education and research community belongs to the membership of a specific market player.

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India

Human resource development programme in disaster risk management in India – HRDP DRM

Capacity Building International, Germany (InWEnt)

Photo by Dr. Rakesh Dubey

Abstract

Considering the natural, economic and social diversity of India, as well as its large population and differentiated structure, creating a national capacity building programme for Disaster Risk Management in India is a huge challenge. The project is slated to last for three years (2007-2010) and covers industrial as well as natural disasters. Most of India is a highly disaster prone region with natural disasters ranging from earthquakes, landslides, flooding and cyclones to droughts. A total of around 1,700 Major Accident Hazard (MAH) units define the dimensions of the capacity building tasks. Capacity building is the basis for a proactive strategy that requires a collaborative effort when it comes to both on-site and off-site emergency plans for civil society, regulators, planners and local civil administrators. The first phase of the ongoing project laid the groundwork for the establishment of a capacity building system. The necessary tools and platforms have been decided for an operation plan focussed primarily on professional skills training for management involving training providers, awareness-raising campaigns, and field testing through mock drills. Plans are made to upgrade the project in the coming years to cover all of the states and relevant districts in India. The Disaster Management Institute (Bhopal) is a nodal training provider working in co-operation with InWEnt Capacity Building International and the GTZ-ASEM under the Indo-German Bilateral Cooperation programme.

Goals and Objectives

The main objective of the project is the development and implementation of a system for human resource development that provides tools for training needs-analysis, a customer-tailored training standard, awareness-building capacities, quality control systems combined with accreditation procedures for training providers, training impact evaluation, and mock drills. An internet-based documentation and dissemination system is also vital. Train-the-trainers programmes have to be developed to cope with the need to upscale and reach the whole country.

The National Disaster Response Force with its network of training providers is the partner. The project is implemented in close cooperation and under the guidance of the Indian government's National Disaster Management Authority.

The Initiative

The scale of the problem posed by Industrial Disaster Risk Management (IDRM) in India represents a major challenge. There are approximately 1,700 Major Accident Hazard (MAH) units in the country, as well as a large number of small and medium enterprises. The challenge is to address business parts and general areas where India is still weak in enforcing provisions laid out in the Environment Protection Act and Disaster Management Act for effective on-site as well as off-site emergency management planning for both industry and local/regional governments. Disaster risk in the transportation of hazardous substances, operational issues of compliance, and the enforcement of existing rules are areas that require immediate attention. One of the most important initial steps is capacity building of all involved stakeholders through establishing and improving demand-oriented training capabilities of training providers and training facilities in industries as well as in institutions active in prevention and response.

At first, the project concentrates its human resource development activities in the areas of off-site plans, on-site plans and mock drills. The MAH industries have to prepare and implement on-site emergency plans and participate in the preparation of off-site emergency plans set up by district administrations in line with regulatory provisions. They also have to participate in mock drills to test the operation for the worst case scenario. The exercises that are implemented for industrial and natural disasters provide data for improving existing plans. Along with other duties, the state, district and local crisis groups involved in the project have the following cumulative responsibilities: reviewing all district off-site emergency plans; assisting the state government in planning and preparing for chemical accidents; natural hazards and their mitigation and management; continuously monitoring the post-accident situation; and conducting frequent full-scale mock drills.

The project began in December 2007. It is still in its initial phase, and is slated to end in December 2010. It is likely, however, that it will be extended so that the other pilot activities take place in all of India's states and use the experiences for an increased focus on natural Disaster Risk Management. The project is implemented in its first phase by the DMI (Bhopal - Madhya Pradesh) as India's nodal training institution for industrial disaster risk management, which is becoming an autonomous "Centre of Excellence" sponsored by InWEnt – Capacity Building International and by the "Advisory Service for Environmental Management" programme set up by GTZ-ASEM. It is also supported by the Indian government's National Disaster Management Authority (NDMA). The first initiatives are in Andhra Pradesh and other priority states like Gujarat, Rajasthan, Maharastra, Tamil Nadu and Assam. In the beginning, they will cover oil refineries and various types of chemical industries identified as MAH industries according to Indian laws. As the project develops further, other states and industries are going to be covered.

Partners in the implementation process are the MAH industries (private) and industrial estate authorities (public) who engage in both finance, design and the implementation of on-site and off-site emergency plans. The second phase, starting in 2009, will expand the project to natural disaster risk management with the focus on the National Disaster Response Force and their training infrastructure and cooperating training institutions.

Outcomes and Activities

For the first time in India, a national workshop (April 2008) has discussed the strategy for a pilot phase "Capacity Development for Disaster Risk Management (DRM)". The workshop brought together the Indian apex body for disaster management - the National Disaster Management Authority - with industrial associations, officers in charge of disaster risk management of major MAH industries, district collectors, the administrative heads of districts, chief inspectors of factories and boilers, the responsible authority for IDRM in each state, state industrial development corporations, state pollution control boards, the Central Labour Institute, emergency response centres, training providers for industrial managers, and the National Civil Defence College. An advisory board has also been constituted to follow the process, and is responsible for mitigating emerging discrepancies between public and private stakeholders. The detailed action plan is reflected in the decision to outline an operation plan for the next 3 years, and the basics of this operation plan were approved during the workshop. The discussions revealed the urgent need for a communication platform and facilitation of the possibility for frequent talks.

The specific target institutions/persons are:

- Authorities: those concerned with the District Disaster Plan under the Environment Protection Act and Disaster Management Act, as well as policymakers from the relevant ministries (both federal and state); district administration; state and district crisis groups;
- Emergency and rescue teams and emergency response agencies: police, fire stations, medical services, civil defence, the armed forces, Coast Guard, Home Guard, the transport agency from district administration;
- Industries: management and employees, both small and large scale;
- Public: including mutual aid response groups, NGOs and educational institutions; and
- Training providers: offering human resource development services for the targeted groups.

The Good Practice

Considering the natural, economic and social diversity of India, as well as its large population and differentiated structure, creating a national capacity building programme for Disaster Risk Management in India is a huge challenge. Disaster Risk Management is viewed as a continuum that can be divided into two major phases: (i) the proactive or pre-disaster phase (prevention, mitigation and preparedness), and (ii) the recovery or post-disaster phase (response, rehabilitation and reconstruction).

Capacity building provides the basis for a proactive strategy that starts with the creation of awareness about risk assessment, risk reduction, and risk prevention, while also examining potential threats or dangers and their mitigation. The appropriate expertise of key figures in education, health, science, administration, the corporate sector and civil society to respond to and deal with man-made disasters is also a focus. It will take a joint effort to overcome the lack of awareness that currently marks industries, state and district authorities, including the respective crisis groups, managers and planners of industrial estates, the population, and its civil organisations. The first step is to streamline mutual planning and implementation of human capacity building between all of these stakeholders on a refunding scheme, which is to be combined with a certification process. In the planning phase, the collective effort will lead to a new form of co-operation that is based on trust and consolidated learning processes.


Photo by Dr. Rakesh Dubey

The programme connects training institutions and public and private stakeholders. Nodal training institutions and those offering general and specialised training at different levels for different target groups are to become part of a national internet-based HRDP-IDRM platform. This will take the form of an "Authoring System" for strengthening information flow and knowledge management, and link various databases and information resources at both national and international levels.

1) Training-of-trainers programmes for the creation of a cadre of specialist trainers recruited from the private sector, the administrative sector, and a roster of resource persons in DRM.
2) The provision of a set of standardised and mutually-approved tools for capacity building management, total quality control, impact assessments and tested certification procedures.
3) A cluster of training programmes – basic level training programmes followed by intermediate training programmes and advanced training programmes (for improved knowledge, skills and attitudes).
4) The standardisation of training courses, especially for risk assessment, on-site and off-site emergency management plans, and curriculum development for the different target groups.
5) Modular skills training courses designed for different levels/specialisations in industries and administrations.
6) Awareness programmes designed for decision-makers in industry, public administration, and regulatory bodies for civil society and its organisations, including schools and colleges.
7) Guidelines for mock drills, including their mechanisms, to learn from deficits and optimise plans.
8) Distance education, e.g. development of e-learning packages for facilitating self-learning with the IDRM web platform.
9) Initiating the establishment of an independent organisation of accident investigation and documentation for learning from deficiencies.

The HRD-IDRM programme has the necessary modular structure to be upscaled across the nation, allowing it to reach not only key figures in administration, but also regional-level key stakeholders from affected peri-industrial areas. The system it develops and the modular design of its training programmes will allow disaster management mitigation and preparedness strategies to be incorporated into capacity building initiatives taken by other sectors: transport, health, public works, railways, infrastructure, water supply, education, and so forth. It will finally enable outreach programmes and skill upgrades in a large number of target groups at the local community level. The practical field is integrated into mock drill scenarios that bring together local and district administrations, local populations, first responders, planners, industries, and industrial area management.

The lessons learned from mock drills to date are:

- Disaster Management Plans of Industries and Districts are not according to guidelines. Plans of industries and districts are isolated. Revisits and reviews by professional disaster managers are of prime importance.
- There is a shortage of protective equipment among first responders.
- Senior managers are not conscious of safety issues.
- There are severe gaps in medical response – a shortage of stretchers, establishment of first aid posts, triage, and ambiguous findings concerning load carriers and hospital preparedness (surge capacity).
- There are no local supply and rescue teams.
- Fire-fighting equipment is inadequate and obsolete.
- An Incident Command System is a weak concept, and its functioning needs to be developed in respect to DRM.
- District administration response is modest.
- Communications are frequently duplicated.
- 'On-site' plans are practised only as a drill -- not for learning purposes -- and 'off-site' plans are not practised regularly.
- There is a lack of intensity when it comes to spreading general awareness in the neighbourhood community and adopting villages.
- Industry is very apprehensive to interacting with the media; transparent media management is necessary.

Photo by Dr. Rakesh Dubey

Lesson(s) Learned

Some general lessons learned can be summarised for ongoing projects:

General:

- Raising awareness in the public and the use of mass media has to be linked with Corporate Social Responsibility (CSR) in order to build partnerships with the private sector.
- A communication and information platform for both the public and the private sectors is vital to the discussion that has to take place to create trust and confidence between “regulators” of industries, training providers and public organisations and institutions.
- The web-based platform needs professional management and moderation.
- An ongoing dialogue between the private and public sector breaks down preconceptions, and allows people to concentrate on solving existing and emerging problems.
- Joint capacity building systems in DRM and training providers work as a catalyst in the discussion process, and can reduce emotional communication through managerial and professional skills training as well as through raising awareness.

Specific for the first phase on industrial DRM:

Proper guidelines are necessary in the following areas to reduce the risk of disaster:

- Identification of hazardous chemicals, processes and operations
- Release scenario -- consequences in terms of heat radiation, extreme pressure and toxicity
- Preparation of plot and site plans incorporating the contours of the damage
- Identification of vulnerable zones
- Classification of units that have the potential to create an off-site emergency
- Identification of important receptors (both environmental and physical) in the vulnerable zone
- Recording, investigation and publication of major cases
- Requirements of various departments for coping with emergency situations

In the absence of a spatial analysis of various outputs and information, the civil administrations, development authorities and response agencies are not in a position to take appropriate steps in disaster risk reduction strategies. This is due to poor awareness about the regulatory provisions and weaknesses in computing hazards and risk assessment. These shortcomings have resulted in incorrect consequence analyses, and these wrong analyses may lead to inadequate planning decisions by civil authorities and by industries.

Potential of Replication

The tools and instruments of the ‘Capacity Management Cycle’ and the train-the-trainers programmes in DRM are to a great extent not dependent on cultural factors, and can be used for the establishment of other large-scale capacity building systems that target private industries and their associations, government administrations, public and private training providers and local civil society.

Photo by Dr. Rakesh Dubey

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Indonesia

All together now: Indonesia's tourism industry is getting 'tsunami ready'

Ministry of Culture and Tourism of the Republic of Indonesia (BUDPAR) and Bali Hotels Association (BHA)

Photo by Alexander Kesper

Abstract

In order to improve the tsunami preparedness of the country's hotel industry the Indonesian Ministry of Culture and Tourism (BUDPAR) cooperates closely with the Bali Hotels Association (BHA). Together they have developed the 'Tsunami Ready Toolkit' which is geared to assist hotels to prepare for tsunamis. The toolkit consists of a collection of fact sheets and background information papers, SOP's and best practice examples. The initiative is supported by the German Centrum für Migration und Entwicklung (CIM). While BHA strives to prepare its member hotels for tsunami on the base of the toolkit, BUDPAR is familiarizing the hotel industry with its contents Indonesia wide.

Goals and Objectives

The major goal of the initiative is to assist the Indonesian hotel industry to prepare for tsunamis and so enhance the image of Indonesia as a safe tourist destination. Through the cooperation of the public and private sector it should be ensured that the toolbox becomes a practical information source, targeting the needs of the private sector. Public sector and hotel industry support each other to ensure an optimal spread and utilization of the toolkit. The long term goal of both partners is to raise awareness amongst tourism stakeholders for possible threats and to encourage them to address and tackle problems together. The stakeholders should become aware that a plus of security can also be a formidable marketing tool for a destination. That awareness together with a good understanding of the threats should make sustainable improvement and maintenance of security and safety standards in the commercial hotel and tourism industry more likely.


Photo by Horst Letz

The Initiative

Indonesia is the ultimate in diversity. Its tourism attractions range from ancient temples to rainforests, shopping and dining to golfing and spa holidays. Since Indonesia is also an island kingdom blessed with magnificent beaches most of the hotel industry is concentrated on its shores.

In order to improve the tsunami preparedness of the country's, hotel industry the Indonesian Ministry of Culture and Tourism (BUDPAR) cooperates closely with the Bali Hotels Association (BHA). Together they have developed and disseminated the 'Tsunami Ready Toolkit' which is geared to assisting hotels to prepare for tsunamis. BUDPAR as well as BHA have a joint interest in improving the image of Indonesia as a safe tourism destination. The initiative is supported by the German Centrum für Migration und Entwicklung (CIM).

BHA has provided input, expertise and manpower in order to produce the toolkit. The organization acts as a field laboratory and idea-giver to BUDPAR. Its 90 star rated member hotels have been encouraged to prepare for tsunamis on the basis of the toolbox. The toolkit consists of a collection of fact sheets and background information papers on subjects such as Information Sources, Department Close Down Procedures, Beach Evacuation, Planning of Evacuation Routes, Location of Evacuation Spots, Best Practice Examples, Natural Warning Signs, etc.

The creation of a common standard for evacuation route signs to be used within private hotel grounds was another milestone. The signs resemble the official Indonesian tsunami evacuation signs in order to avoid confusion when crossing from public into private hotel space. The signs are already used by BHA member hotels. Other hotels are encouraged to use the same design for their internal evacuation routes.

The toolkit is available free of charge and can be downloaded from several websites including BHA, UNESCO's Jakarta Tsunami Information Centre, PreventionWeb and the Pacific Disaster Net.

UNESCO Jakarta Tsunami Information Centre
www.jtic.org/en/jtic/index.php?option=com_content&task=view&id=451&Itemid=114

PreventionWeb
www.preventionweb.net/english/professional/publications/v.php?id=4043

Pacific Disaster Net
www.pacificdisaster.net/pdnadmin/data/documents/113672211.html


Photo by Horst Letz

The toolkit is a living document and updated whenever new information is available. BUDPAR is currently in the process of spreading the toolkit in Indonesia. Pilot areas which will be assisted to prepare by BUDPAR are Gili Trawangan, the Sengiggi area in Lombok and Manado. BHA started with Tanjung Benoa in Bali.

In Tanjung Benoa, BHA member hotels are not only preparing for themselves. The hotels also agreed to open their doors to the local community at risk who otherwise have only a very limited chance of survival due to a lack of suitable evacuation spots. The experience collected in Tanjung Benoa will be incorporated into additional fact sheets for the toolkit. BHA is also offering to assist the public with educational events and the set up of evacuation route signs in public spaces. By doing so, BHA contributes to the general safety of the community which is not directly related to tourism and helping BUDPAR to enhance Indonesia's image as a safe tourism destination.

The German Indonesian Tsunami Early Warning System's (GITEWS) community capacity building component which is run by Deutsche Gesellschaft für Technische Zusammenarbeit International Services (GTZ IS) is another important partner. GITEWS is providing the initiative with valuable input and cooperation.

Since the distribution of reliable and concise early warning information in Indonesia is still an issue, BHA connects via satellite based RANET to Badan Meteorology dan Geofisika (BMG) in Jakarta. BMG is Indonesia's official tsunami warning issuing body. After the reception and interpretation of BMG's tsunami information by BHA trained staff, the warnings are relayed to the member hotels. The collected experiences will also be incorporated into the toolkit and communicated by BUDPAR in order to encourage others to copy. In the future it is planned to develop a tsunami certification for hotels, based on the experiences of BUDPAR and BHA. The certification will not only provide a sustainable plus in security but can also be used as a marketing tool.

The project was started in March 2008 and the initiatives are still ongoing. Since the tsunami toolkit is already developed, special emphasis will now be put on the spread of its content and its familiarization within the hotel industry. Some hotels and places like Tanjung Benoa in Bali or Gili Trawangan will be prepared as best practice examples. Further toolkits for the hotel industry are planned on security and safety relevant subjects like bird flu, general hotel security, crisis communication etc. The government of Barbados is utilizing the toolbox for its own tsunami preparations.

Outcomes and Activities

The ministry works hand in hand with the private sector BHA to enhance the security of all stakeholders in the hotel industry. Through this partnership there is a high level of ownership on both sides. The cooperation also ensures that the product serves the purpose of both parties and provides practical information which can be implemented and used in 'real' conditions. Sustainability is ensured through putting a value on the security improvements and services by turning them into a marketing tool. Through exposure of the project and related initiatives to the media and recognition through bodies like ReliefWeb or the UNESCO Tsunami Information Centre, participants feel a sense of pride and encouragement. At the same time this kind of public exposure and recognition puts some pressure on the stakeholders to keep up and improve the new standard.

The generally positive response of the private sector and the media encourages the ministry to step up its initiatives in the field of disaster risk reduction. It is hoped that through the commitment and assistance of the private sector local administrations accelerate the marking of public evacuation routes and spots. Hotels have started realizing that they should not 'go it alone' and in some cases like in Tanjung Benoa, open their grounds to the public as safe heavens while at the same time providing resources for the education of the local population on tsunami relevant subjects as well as on evacuation procedures.

Photo by Alexander Kesper

The Good Practice

The initiative is a good practice because the ministry and the private sector joined forces to address and tackle a problem of nation-wide significance. It is a 'win win situation' for all because the stakeholders benefit through enhanced security and safety while being rewarded with positive public feedback for their endeavours. The toolkit is simple and has been developed together with the 'end-user' into a 'living document'. People care about it and are interested in its enhancement. That is an indicator for ownership.

Success factors are the commitment of the ministry as well as the private sector. Good communication is key to ensure that the toolbox remains relevant. Since the subject 'tsunami' still captures media attention it is relatively easy to get people's attention.

The toolkit was published on several internet sites. The ministry is running information campaigns in selected pilot areas. BHA is encouraging its members to prepare for tsunami on the basis of the toolkit. The organization provides support to its members in the form of expert visits to individual hotels, workshops and a dedicated contact person handling tsunami related enquiries.


Photo by Alexander Kesper

Lesson(s) Learned

As with security related issues sustainability is a problem. The challenge is to keep people's attention and commitment even though nothing happens for an extended period of time. It is innate to human nature to forget about threats and dangers if they are not obviously recognizable and felt regularly. Another challenge lays in the timely marking of evacuation routes in public spaces since many local administrations still require official clarification and input on the issue. It is always a challenge to transform awareness into sustainable action.

Potential of Replication

The toolkit already exists so everyone can draw from its content. The initiative can be copied wherever the public as well as private sector feel a common need and decide to tackle it together. However, it needs a dedicated person or group with the right back up and expertise to keep up the drive. It is helpful if the cooperation takes place in a field that is perceived as relevant by the general public as well as the media.

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Japan

Building public-private partnerships to ensure safe gas use

Tokyo Gas Company

Photo by Tokyo Gas Company

Abstract

Tokyo Gas supplies natural gas to 10 million customers in Tokyo and seven prefectures in the capital region, 24 hours a day, 365 days a year. To ensure that these 10 million customers have reliable and safe access to their gas service at any time, extensive earthquake disaster management policies have been adopted for unexpected emergencies. Tokyo Gas works together with governments and citizens to improve the disaster management capabilities of local communities. They focus on both, structure-oriented efforts, namely earthquake disaster management policies, and people-oriented efforts, that is, disaster management camps and interactive workshops, made possible through collaborative partnerships with local governments, citizens, and non-profit organizations (NPOs).

Goals and Objectives

The major goal is to improve the disaster management capabilities of the local community.

The Initiative

To ensure that customers are able to safely use their gas, Tokyo Gas has designed policies for the prevention, emergency, and restoration phases. It believes that customers need to be knowledgeable about their gas service. Tokyo Gas works with relevant institutions, including local government agencies that are essential to ensuring that customers accurately understand their gas service and disaster management issues. In addition to conducting public relations campaigns targeting the general public, the core constituency served, it is extremely important that, when emergencies strike, there are ties to local government disaster management officials, who serve as the core promoters of local disaster management efforts, local government community relations officials, who serve as the gateway to community associations, citizens with a special interest in disaster management (disaster management volunteers), citizens with strong community networks (disaster management volunteers), and NPOs. It is important that relationships are developed with these parties such that they get to know one another and can share opinions effectively, and developing various activities together.

Tokyo Gas adopted some basic guidelines for earthquake preparedness so that their systems are prepared for unpredictable disasters. Earthquakes pose a major threat to the gas supply. There are three key phases addressed in their earthquake management policies: prevention, emergency, and restoration. "Prevention policies" are in place for ensuring the continued supply of gas to as many customers as possible even in the event of a major earthquake. "Emergency policies" exist for preventing secondary disasters when an earthquake strikes and "restoration policies" are in place for restoring gas service as quickly as possible. By creating an extensive system that focuses on these three phases, impact of such disasters on the everyday lives of customers will be minimized.

The most important way to prevent disasters caused by earthquakes is to adopt prevention measures. To minimize the effect of disasters on its customers, Tokyo Gas ensures that the facilities and equipment used in the manufacture and delivery of natural gas are of solid quality and adopts safety measures that involve double and triple redundancies. The major facilities, where they have applied the latest knowledge and technologies available, are structured to be able to withstand even a massive earthquake on par with the Great Hanshin-Awaji Earthquake of 1995, which had a magnitude on the Richter Scale of 7.2 whereas that of Great Sichuan Earthquake in China in May 2008 was 7.8.

Tokyo Gas is prepared for the possibility of a major earthquake, and has adopted various measures to protect the safety of customers and their communities. Secondary disasters can be prevented through the activation of pre-installed safety devices, and the activation of disaster management systems that can remotely control the gas supply to an entire area. They have also established a framework for minimizing any inconvenience to customers by dividing segmented pipe network into blocks.

Photo by Tokyo Gas Company

Outcomes and Activities

Tokyo Gas is active in addressing general disaster management issues and organizes several activities in that area:

Disaster Management Fair

Tokyo Gas has long conducted annual disaster drills for its employees and also participated in local government disaster drills in its role as a lifeline service provider. In 2005, the company decided to replace the internal company disaster drills with a Disaster Management Fair to develop stronger ties with the local government agencies, citizens, and NPOs. This event is jointly organized by local government agencies, fire departments, and disaster management volunteer groups to improve the practical disaster management capabilities of the local community.

Disaster Management Camp

This is a program that gives elementary school students from the third to sixth grade an opportunity to experience a survival camp and exposes them to research findings presented during disaster management symposia. The program was conducted in collaboration with the NPO “I Love Tsuzuki” and with the involvement of local government agencies and university research labs. Students participate in disaster drills conducted by fire-fighters, as well as a wide variety of activities including disaster prevention neighbourhood walks to confirm potentially hazardous and potentially useful locations in an emergency, training in the preparation of hot meals using a portable gas stove (given that a disaster might disrupt lifelines), and practice restarting gas meters.

Emergency! Event “Kaeru Caravan!”

This event is organized in partnership with the NPO “Plus Arts” to help young families acquire the skills and knowledge they will need in an emergency through interactive workshops. A total of 11 workshops were conducted at the Environment and Energy Hall of Tokyo Gas in Yokohama. These workshops were originally developed as a result of experiences gained from the Great Hanshin-Awaji Earthquake. More than 2,000 visitors attend the workshops during the two-day event. It provided a fun environment for cultivating children's interest in disaster management issues and emphasized the reality that disaster preparedness efforts are not a special, one-time activity, but something needed to be done on an everyday basis.

Photo by Tokyo Gas Company

The Good Practice

Tokyo Gas is not only developing their physical infrastructure in preparation for an earthquake, but also is striving to improve the organizational infrastructure. Furthermore, local communities are improving their disaster management capabilities. The company is undertaking more effective efforts by working with government agencies and NPOs, and taking advantage of their unique strengths in terms of human resources and know-how.

To improve the disaster management capabilities of local communities, it is important to have clear ideas about what information will need to be communicated, and to whom and how it will be conveyed. It is also important that they share these ideas with relevant institutions, including NPOs and government agencies. Sharing them with the appropriate parties is essential to a successful implementation.

In preparation for restoration work in times of emergency, the company has strengthened collaboration amongst the whole of “ALL TOKYO GAS,” including affiliated companies, business partners and construction companies. A system is in place to mutually cooperate with gas companies across the nation in implementing large scale disaster-relief activities.

Lesson(s) Learned

The belief is that it is important to "ensure sustainability," particularly in terms of constructing public-private partnerships. This has been a major theme since 2005. The continuation of the efforts will help further strengthen the ties between volunteer organizations and local government agencies. The importance of expanding the target audience of the activities is also recognized. By working in an ever widening area with ever larger numbers of people, Tokyo Gas hopes to continue to promote efforts to improve community disaster management capabilities. Key lessons learned include:

(1) Be fully aware of the challenges. In this case, the wish to ensure that customers are fully aware of the safety measures of their gas meters and have programs available to teach the customers.
(2) Strive on a daily basis to develop relationships of mutual trust with the stakeholders with ties to a company.
(3) Share the issues identified with stakeholders, and take advantage of their knowledge and insight to work toward solutions.

Potential of Replication

Tokyo Gas offers the following advice to companies and organizations that are thinking about developing their own efforts based on the company’s model:

(1) Have clear ideas about what information will need to be communicated, and to whom and how it will be conveyed.
(2) Work with organizations with whom you can share those ideas. Hold as many meetings as necessary, and build relationships in which the parties have the freedom to share ideas openly with one another.
(3) In spite of the various problems that may arise in implementation, be sure to follow through with your plans.

These are the three most important points. They may seem fairly obvious, but they are the fundamentals for implementing a disaster management process, which are often neglected in many cases. They also constitute the fundamentals for conducting any business activity, and thus are well worth remembering.

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Japan

Promoting disaster reduction activity by consumers' co-operative union in collaboration with the government

Japanese Consumers' Co-operative Union (JCCU)

Photo by Kaoru Kameyama

Abstract

The "Our Community Disaster Reduction: Map Simulation" activity conducted by the Japanese Consumers' Co-operative Union (JCCU) in 2007 is a workshop-style program to promote disaster reduction. Participants incorporate disaster reduction information provided by the government, as well as disaster management information they already have, into a large map of their neighbourhoods, and then conduct mock disaster exercises using their maps and hypothetical disaster scenarios. Participants learn important disaster management information relevant to their community, particularly the lesson that individual household preparedness and the cooperation of neighbours are essential to reducing the damage caused by disasters.

This program has been developed in collaboration with the Cabinet Office of Japan and with the support of several local governments. These activities will be expanded nationwide in 2008. The development of co-operative relationships with university professors and fire fighting personnel is likely to help expand activities in even more ways.

Goals and Objectives

The purpose of these efforts is to help participants recognize the necessity of taking specific advance measures to protect themselves, such as strengthening the seismic resistance of their homes and installing furniture restraints. It also encourages neighbours and friends to talk with one another about community disaster management and what actions should be taken in an emergency.

The Initiative

Japanese Consumers Co-operative Union (JCCU) was established in 1951. As the sole national consumer co-op organization, JCCU fulfills the functions of formulating co-op national policies, coordinating member activities at the national level, representing co-op's views at the national and international levels, planning, development and supply of CO-OP brand products, import of consumer goods, etc. JCCU members' co-ops include retail, university, medical, insurance, and housing co-operatives with total membership exceeding 20 million. Co-op provides the structure and support for members to initiate, develop, organize and participate in activities that are meaningful and important to members' lives.

One example conducted by the JCCU along with member co-ops and their individual members is the "Our Community Disaster Reduction: Map Simulation" initiative, which is a workshop that uses large neighbourhood maps to help educate the residents of a particular neighbourhood. Local community residents work with one another to identify locations of evacuation shelters, fire stations, hospitals, and other facilities that would be important in a disaster. This way they learn about disaster management facilities and systems in place in their local neighbourhoods. Participants not only mark facilities on the map, but also the locations of households that might be more vulnerable to disasters, such as the homes of senior citizens living alone, handicapped individuals, pregnant women, infants, and foreign residents. As a next step, they use the completed maps to conduct simulations of what might happen in the neighbourhood in the event of a disaster. A facilitator reads a scenario that assumes a certain degree of earthquake damage, including fires, collapsed roads and toppled buildings. The participants then mark the map to indicate the damage likely to occur, and identify evacuation routes to designated evacuation shelters that will allow them to help the neighbourhood's more vulnerable residents along the way.

This program teaches participants the disaster management knowledge they will need to have to protect lives if an earthquake strikes in their neighbourhood. It is effectively designed, by using simulation exercises that cover the methods of survival in the immediate aftermath of an earthquake, to ensure that participants are aware of the importance of taking care of themselves and each other.

When the workshop was actually conducted, the participants came to realize just how little they had been prepared to reduce the effects of a disaster in their own lives. They came to better appreciate the importance of discussing disaster prevention with family members, taking efforts to seismically strengthen their homes, installing furniture restraints, and preparing a well-stocked emergency kit. Many participants also indicated that while they knew the importance of cooperating with neighbours in an emergency situation, they came to understand that such cooperation would be facilitated by daily interactions with those neighbours. The workshop was very effective in conveying these lessons.

Given the success of efforts undertaken in 2007, the JCCU decided to develop these activities nationwide. In 2008, workshops will be held in 150 locations nationwide. JCCU organizers have trained 200 facilitators to help expand this program even further, and are planning additional developments in 2009 and beyond.

These efforts have been underway since 2004 at one of the JCCU-member co-ops in Chiba Prefecture. JCCU determined that these activities were an outstanding example of best practices that should be spread nationwide. In 2007, the year when preparations were made to develop the program on a national scale, efforts were made to standardize the program and develop the necessary tools for implementation.

In 2007, model programs were implemented in Tokyo, Tachikawa City, Kyoto and Sendai. Other map simulation events were jointly sponsored by the Cabinet Office and JCCU. The event sponsored by Kyoto City also received support from local governments, while the events held in Sendai were supported by the local governments of Miyagi Prefecture and Sendai City. Local co-operatives provided assistance in the form of preparing large maps and writing instruments, procuring venues, and requesting the support of local governments.

Figure by JCCU: Facilitator Manual of Japanese Consumers' Co-operative Union

Outcomes and Activities

All the activities under this initiative were undertaken by co-operative workers who survived the Great Hanshin-Awaji Earthquake (January 1995), and who felt the need to sound the alarm regarding future earthquake disasters. JCCU has established a disaster reduction coordinator and is developing comprehensive earthquake and other disaster policies for its member co-operatives. The Chiba Prefecture activities indicated that disaster prevention policy programs can ensure the security and safety of co-operative members and represent a highly effective way to raise awareness of disaster prevention issues. It was decided that these kinds of activity should be conducted throughout JCCU's member co-operatives nationwide.

The Japanese government has stressed the need for individual citizens to engage in disaster preparedness as a means of reducing the damage caused by disasters and has called for civic campaigns to be conducted to highlight such efforts. In 2007, the Cabinet Office planned a model civic campaign called the "*Bosai* (Disaster Prevention) Café."

A Cabinet Office staff member observed the trial implementation of the program in Tokyo in May 2007 and concluded that it was a suitable match for the purposes of the "*Bosai* Café." The program was thus implemented in three cities in Tokyo. A total of 180 participants were involved in the program conducted in these three cities, with the cooperation of the Cabinet Office, and more than 500 participants were engaged, including those who participated in programs in other locations.

This program is unique in that it is not conducted in a one-way lecture-style format, but in the participatory style of workshop, where those who live together in a particular community form groups and discuss various issues with one another. This style is highly effective in terms of helping participants come to various realizations and to really see disaster prevention as an issue that is relevant to them. Highlights from the programs co-sponsored by the Cabinet Office were covered in newspaper and TV reports, and have also been posted on the Cabinet Office's website.

The Good Practice

A survey was conducted to identify how the attitudes of the program participants changed as a result of their involvement. Comments from participants included the following:

- "I was able to gain a real overview of my town through the map creation process. I realized that knowing one's neighbourhood well can really make a difference in one's response following a disaster."
- "I hadn't taken a single emergency preparedness measure, but I realized that it's not just about keeping an emergency supply of food and water, but about developing disaster reduction policies first."
- "Although I knew that 'disasters can happen to anybody,' I realized that my own family had not made any disaster preparations at all. I learned that it's not just about preparing a kit of items, but about being mentally prepared as well."
- "I moved my dresser and other items in my home and talked with my family about securing a safe place for emergencies. I realized that I had to look at disaster prevention as my own, personal problem, and that I had to convey the importance of this issue to the people around me."

It is particularly interesting that the participants did not simply think about what they had learned through their participation in the program, but that they decided to take efforts and to develop action plans based on their knowledge, such as discussing issues with their families, moving furniture around to avoid being crushed in their home, ensuring that their sleeping spaces were safe, and spreading the word about their experiences to their neighbours.

Communities are being revitalized through such efforts. Mutual assistance and cooperation among neighbours in different areas of endeavour are a long-held Japanese tradition, but today, as is the case in many other industrialized nations, community ties are weakening as a result of urbanization and the increased hollowing-out of rural areas. This makes it more difficult for community members to cooperate in times of emergency. The revival of communities in which neighbours watch out for and help one another, which is being promoted by these efforts, is consistent with the values and principles of a co-operative.

Local governments are also an important part of these efforts. Disaster reduction requires a combination of "self-help," "mutual aid" and "public assistance." The national government has been greatly appreciative of efforts by the JCCU to promote educational activities, highlighting the need for people to engage in self-help and mutual assistance, and to tie these effectively to the public assistance provided by the national government.

The Cabinet Office and JCCU disaster reduction coordinator have maintained constant communication regarding everyday disaster reduction efforts, and have been in close contact regarding preparations for this program, including every stage from planning to implementation. They have had multiple consultations regarding on-site surveys, the confirmation of educational materials, and panels and other displays regarding disaster reduction at the program venues. Thus, it was possible to proceed with the efforts by forging a good relationship with the Cabinet Office.

Lesson(s) Learned

When the participants have confidence in what they have learned, they actively try to spread the knowledge to their family and neighbours. In many cases, co-operative members who have already participated in the program have in turn become facilitators themselves, and have tried to gather neighbours living in their area to implement activities with them. Reports of past participants who have become facilitators themselves by mimicking their own facilitators have taught that the key to spreading this activity is training facilitators around the nation. Thus, a new Facilitator Manual was created. Facilitator training sessions will be held nationwide, and the hope is to train as many as 500 facilitators over the course of two years, 2008-2009. This is a challenging goal to meet.

Another challenge that should be addressed in the future, is following up with past program participants. Previous participants need to be asked, if they have conducted a survey of their own home's seismic resistance level, and if they have responded to any seismic strength shortcomings identified with seismic reinforcement work, or, if they have not, why not? There is a need to find out what kind of feedback they have received when discussing these issues with their families and neighbours, and what kinds of questions or concerns still remain. Those findings can

then be used to improve the management of this program by reflecting responses regarding the most common questions, concerns, and problems into the Facilitator Manual.

Further, there have been several reports of unscrupulous companies that have charged unfair prices to perform seismic reinforcement repairs or that have been negligent in their services, causing particular problems for senior citizens. The sense of mistrust and apprehension toward these fraudulent companies is one of the reasons that housing reinforcement efforts have not moved forward as quickly as they otherwise might. Ways need to be found to link co-operative-member home seismic reinforcement companies that perform work safely and at a reasonable price with these map simulation efforts.

Potential of Replication

These efforts are distinctive insofar as they are being spread to various regions by previous participants. Some program participants have indicated that they want to collaborate with the co-operative effort because they want to implement the program in their own children's schools. There have been several cases in which the program content has been incorporated as part of the school curriculum.

Several local governments, particularly their fire departments, have indicated that this program can be widely used to advance community disaster management efforts. Under this program, which was conducted among about 100 trainees in Hiroshima City in June 2008, 22 fire-fighters who wanted to increase their knowledge participated in the program along with ordinary citizens. Requests were also received from disaster management volunteer organizations that wished to disseminate the Facilitator Manual and expand this program to various communities.

This program is easy for any group or organization to replicate; people observe their own community to collect information about location of emergency hospital, drug store or hazardous area put it on the map with information from local government such as evacuation center, disaster-prevention facility, etc. Cooperation between the providers and recipients of administrative services gather to share both information and to find out each other’s deficiencies in order to make community disaster prevention measures better. JCCU is a member-based organization and therefore it is much easier to organize participants for these programs. Churches, school PTAs and community centers can easily introduce the program as they have their own local network.

In a disaster-prone country like Japan, it is essential to spread information aimed at reducing disaster damage to every possible corner of every community. This requires co-operative efforts among governments, businesses and civic organizations. Co-operatives can play a helpful role in this effort.

In response to the full launch of this program in 2008, the Cabinet Office has expressed its expectations that the program will grow and has promised to extend its support. The JCCU hopes to continue promoting seismic housing reinforcement and furniture restraint installation and to challenge communities to engage in "community development for strong disaster management" so that people's lives and property can be protected even when large-scale disasters strike.

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The Philippines

Private sector mobilization in empowering communities on disaster risk reduction (PRIME-DRR) – The Dingalan, Aurora experience

Corporate Network for Disaster Response (CNDR)

Photo by CARE Philippines

Abstract

The Corporate Network for Disaster Response (CNDR) has been engaged in a project of disaster risk reduction intervention in Dingalan, Aurora. The intervention comprises three elements: multi-hazard assessment, formulation of contingency plans and public information. The funds for the project were provided by the private sector. The project itself was implemented by one of CNDR's partners, CARE Philippines. The challenge was to convince the community of the importance of such measures and the value this initiative has for the community. During Typhoon Milenyo (2006) the preparedness of the community and success of the initiative was demonstrated. Efficient evacuation took place and stockpiled food was available.

Goals and Objectives

PRIME-DRR was implemented in the Municipality of Dingalan in Aurora Province. The goal had been to strengthen two barangays namely Umiray and Paltik and the Municipal Disaster Coordinating Council (MDCC) on disaster preparedness. On a wider scale, the project also catered to other barangays and the whole municipality through the conduct of municipal-wide hazard mapping and public information activities.

The Initiative

Considering the Philippine disaster situation, disaster management practitioners have continuously advocated for increasing the capacities of communities in order to make them resilient to disaster impacts. Toward this end the Corporate Network for Disaster Response (CNDR) launched a community-based disaster risk reduction intervention in Dingalan, Aurora. The CNDR is a network of business groups, associations, corporations and corporate foundations whose objective is to rationalize and institutionalize disaster management efforts of the business community.

The initiative PRIME-DRR in Dingalan includes three components: (1) multi-hazard assessment (MHA); (2) formulation of contingency plans at different levels; and (3) production of public information material. The MHA aimed to identify hazard prone and safe areas in Dingalan municipality through a multi-hazard, multi-disciplinary risk assessment. The risk assessment served as a basis for the formulation of contingency plans at the barangay (village) and municipal levels. The hazard assessment was conducted by national government agencies including the Philippine Institute of Volcanology and Seismology (PHIVOLCS), Philippine Atmospheric Geophysical and Astronomical Service Administration (PAGASA), and the Mines and GeoSciences Bureau (MGB).

The formulation of a contingency plan aimed to develop disaster preparedness capacity of communities in barangays of Umiray and Paltic, the municipal government, and the church's Social Action Center. This was strengthened by raising the public's awareness about local disaster risks, increasing their knowledge on what measures can be taken to reduce risks, and providing equipment that will help set in place a functional early warning system such as rain gauges, megaphones, and handheld radios. To complete the emergency response preparedness component, emergency response equipment was also distributed to the barangays including fire extinguishers, flashlights, batteries, raincoats, and first-aid kits. The messages in the public information aimed to increase the awareness and disaster reduction capacities of the general population and to target high-risk communities through effective dissemination of information, good practices and lessons learned among local authorities, church workers, and the public in general.

A visit to the project areas in 2006 revealed the increased level of preparedness of the communities covered by the project. In one disaster incident (Typhoon Milenyo, 2006), Barangay Paltic, located near the Subsob River, was able to immediately evacuate the barangay premises after signal no. 3 was broadcast over the province. Signal no. 4 is the highest alert level in the Philippines. Signal no. 3 means winds of 100 to 185 kph. It was also during this incident that the Municipal Disaster Coordinating Council (MDCC) was prepared for the evacuation and therefore proper coordination was undertaken. The MDCC was able to send dump trucks to help in the evacuation of the residents in Barangay Paltic and was ready with a stockpile of food for the evacuees. Municipal and barangay leaders contributed to this prompt and sound action based on the recently formulated disaster contingency plans at both levels, which have been developed under the PRIME-DRR initiative. In previous similar incidents, it took too much time before the Barangay Disaster Coordinating Council (BDCC) took action, so that the Subsob River flooded, and the whole barangay was isolated from the town proper.

The project commenced in June 2005 and ended in September 2006. A second phase was implemented under the ACCORD project (Strengthening

Assets and Capacities of Communities for Resilience to Disasters) jointly funded by CNDR, CARE and the European Commission.

Dingalan, Aurora is also included in the proposal for the second phase of ACCORD that was recently submitted to the European Commission covering several municipalities in Luzon, Visayas and Mindanao. If approved, CNDR will directly implement the project in Luzon and Visayas. PRIME-DRR was an initiative of CNDR and CARE Philippines with funding support from Bloomberg UK, Cannon, CARE Philippines, Carepak Moving and Storage, Coca-Cola Foundation, Fluor Daniel Philippines, Johnson&Johnson, Management Association of the Philippines, Philam Foundation, and SGV&Co. CARE Philippines directly implemented the project. CNDR, on the other hand, conducted monitoring and evaluation sessions with the project partners.

It served as the private sector counterpart representing the donors. Staff members of the CNDR secretariat also served as resource persons in the training activities.

From the public sector, the project involved the Municipal Local Government Unit (MLGU) of Dingalan, St. Patrick (Dingalan) Parish; and Barangay Councils of Paltic and Umiray. Specifically for the conduct of the hazard mapping, the project tapped the expertise of national and regional government agencies such as the Philippine Institute of Volcanology and Seismology (PHIVOLCS), Philippine Atmospheric Geophysical and Astronomical Service Administration (PAGASA) and the Region 3 office of the Mines and GeoSciences Bureau (MGB).

Outcomes and Activities

Project beneficiaries include the communities in barangays Poblacion, Paltic and Umiray. These areas sustained the most damages from the mudslides and typhoons in November and December 2004. Based on the 2004 socioeconomic profile report of the municipality, no less than 2,206 families or around 13,000 individuals from three barangays directly benefited from the project. The beneficiaries also included the Social Action Center of the parish of Dingalan, and the local government of the municipality of Dingalan, in particular its disaster coordinating council. At the community level, the project also collaborated with the BDCC. The Social Action Center and the Municipal Disaster Coordinating Council operate throughout the whole municipality. Thus, indirectly the whole population of Dingalan also benefited from the project.

PRIME-DRR in Dingalan focused on community trainings, multi-hazard mapping, and provision of emergency response equipments. These activities were directed towards the formulation and efficient implementation of contingency plans at the barangay and municipal level. It is pioneering in the sense that other private sector interventions for disaster risk reduction do not offer a package as comprehensive as PRIME-DRR. As a result, communities covered by the project were able to separately formulate their contingency plans, test this through a community drill and link it with the contingency plan of the municipal government.

Through the project, members of the BDCC better understood their roles and functions as defined in the contingency plans. The project clarified that the BDCC's functions are not limited to emergency periods and to a few barangay officials. As a result, the BDCC's work has improved and a relevant contingency plan that has gained significant support and continuity was developed

In a discussion with community representatives shortly before the closing of the project, the beneficiaries expressed their apprehension of the project during the inception phase. At the beginning of the initiative, they could not comprehend why CNDR's intervention was a package of community trainings while the 2004 Typhoon affected families were benefiting from housing projects. In the process, especially after the conduct of the community drill, they appreciated the fact that it is important to have a contingency plan at hand due to their susceptibility to disasters because of their location and the social and economic conditions of their community. It was also in this context that they appreciated the barangay-level multi-hazard maps that made them aware of the hazards that they will have to face and what particular areas are prone to each hazard. Knowing that the maps were results of scientific studies of experts increased the credibility of the project.

The communities of Dingalan are now better empowered to deal with disasters through their experience and involvement in this project. They sense an enhanced capacity for preparedness and response. The information provided by the hazard maps gave them a better understanding of what they are facing, while the community evacuation drill made them more familiar with the risks and the effective distribution of tasks and responsibilities to ensure better response.

The Good Practice

PRIME-DRR is an example of a comprehensive community-based disaster risk reduction intervention. It focused on the formulation of barangay and municipal contingency plans and factors that will help in the formulation as well as in the implementation of those plans. For CNDR, PRIME-DRR served as its way back into disaster preparedness. It became a showcase project demonstrating that the private sector can also play a role in this seemingly unpopular intervention. It proved that private sector resources are not only viable during emergency situations but are also crucial in the more developmental approach. CNDR was able to rationalize private sector resources.

Photo by CARE Philippines

Moreover, the mere fact that public and private partnership is fostered for disaster risk reduction objectives already makes PRIME-DRR a practice worth learning from and replicating. The cooperation between the project partners was very instrumental in achieving the goals of PRIME-DRR. During the ACCORD implementation, several problems occurred caused by the hesitance of the newly-elected municipal government officials to cooperate. Comparing the two projects, ACCORD was more high-profile and heavily-budgeted. And yet, PRIME-DRR proved to be more effective.

Photo by CARE Philippines

The municipality of Dingalan incurred significant devastation from Typhoons Violeta and Winnie in 2004. With the private sector responding vigorously to the disaster, CNDR was able to mobilize a considerable amount of funding for emergency response. Due to CNDR's extra effort of convincing the donors to fund not only emergency response activities, but an additional disaster risk reduction project in Dingalan was critical. With the concurrence of donors, CNDR was able to shift private sector funds from emergency response to disaster preparedness. This was a conscious effort of the network to promote a pro-active stance among the private sector and empower communities for risk reduction which closely follows the Hyogo Framework for Action. Since then, the CNDR has set aside funds for disaster risk interventions from donations gathered during emergency responses.

Given the low budget, CNDR was not able to directly implement the project. However, CNDR's long-time partnership with CARE Philippines, served as a perfect solution. With CARE Philippines' expertise in the field, CNDR was confident in pursuing the project.

For the implementation of the project, CARE Philippines hired two full-time field-based staff to manage the implementation of the project. Staff members of CNDR and CARE Philippines took turns in conducting the community trainings. The training activities not only increased the knowledge of the participants on disaster risk management, but also empowered and gave them confidence to share what they learned by becoming trainers themselves. A local training team organized from the training participants of the parish was the main partner for the project in training the communities of Paltic and Umiray.

Photo by CARE Philippines

Lesson(s) Learned

Several lessons were learned during the project:

- Cooperation is very crucial in any undertaking. Consistent with its effort to advocate for good governance and civil society participation, PRIME-DRR encouraged the municipal local government unit and the parish, which have been at odds in a number of issues, to work together and cooperate. Each group kept to themselves during the initial stages of the project. However, by providing venues for coordination, the project brought the two groups together and was able to slowly mend relations and encourage cooperation.
- Preparedness is possible even with limited resources. Disaster preparedness interventions are often heavily-budgeted projects and this usually discourages donors to undertake such endeavours. PRIME-DRR proves that preparedness measures can still be undertaken even with limited resources.
- Working with government units and agencies has its own pros and cons. On the one hand, since government agencies have the mandate and recognition as the authorities, the project was able to contribute to good governance and its outputs and outcomes which were recognized and accepted by the general public. On the other hand, the project timeframe and quality was set back owing to adjustments that had to be made to suit the availability of the agencies.
- A Community Risk Assessment (CRA) is vital in any DRR intervention. PRIME-DRR was conceptualized and implemented with only a small involvement of the communities and the municipal local government unit, which led to misconceptions and an uncooperative atmosphere. There was little room for them to understand the community risks and what interventions are needed as well as the importance of disaster risk reduction.

Major challenges:

- Disaster preparedness compared to development projects. PRIME-DRR was initiated in Dingalan at a time when various housing projects were being developed. With PRIME-DRR offering mostly community trainings the beneficiaries were not so cooperative in the beginning. It was only after efforts were made to convince them of the significance of disaster preparedness that they slowly became motivated. Eventually, through the conduct of the community drill, people were happy being chosen as direct beneficiaries of the project.
- Misconceptions in the conduct of multi-hazard mapping. Most of the beneficiaries felt that the multi-hazard maps conducted under the project would serve the purpose of declaring Dingalan as a no man's land. A massive information dissemination campaign was undertaken to address this concern.

There is room for improvement. For future undertakings, it would be beneficial to all partners if a comprehensive community risk assessment is conducted, so that people are part of the process of outlining the project. A community risk assessment is intended to make the people realize what the community needs.

Potential of Replication

While PRIME-DRR offers a comprehensive package of disaster risk reduction interventions, the budgetary requirements of the project are quite low, especially when compared to foreign-funded DRR interventions.Therefore, the project is a replicable practice, provided the cooperation of the respective partners from the private and public sector is realized throughout the implementation period and beyond. PRIME-DRR's primary goal is to contribute to increasing the capacities of the project beneficiaries, hence decreasing their vulnerabilities to the risk of disasters. PRIME-DRR can therefore be replicated in any community where risks are very high due to their susceptibility to disasters and their inherent vulnerabilities. In the same manner, the training activities of PRIME-DRR can be provided to other less-vulnerable organizations or stakeholders (e.g. youth, volunteers) that are willing to contribute.

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Photo by Siemens

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Social Investment and Philanthropy Partnerships

In social investment and philanthropy partnerships, the private sector provides financial support, contributes volunteers or expertise, or makes in-kind contributions, including product donations.

Africa and Asia

SkyHydrant – high-efficiency potable water filtration system for disaster prone, high-risk areas

Siemens AG

Photo by SIEMENS

Abstract

About 2.2 million people die annually from the effects of contaminated water, especially in disaster affected areas. When the infrastructure is destroyed, the number of victims rises due to the lack of potable water. In order to address this problem, Siemens in cooperation with the non-profit SkyJuice Foundation created the “SkyHydrant”, a highly efficient, potable water filtration unit that converts contaminated water into clean, potable water. The robust filtration system, based on the membrane technology of Siemens removes particulates, bacteria and pathogenic material and produces a minimum of 10,000 litres per day of potable water. The system provides a suitable emergency solution for disaster areas.

The project is part of Siemens ongoing Corporate Citizenship Programme “Siemens Caring Hands” in which all charitable activities are bundled under one roof. Because the Chairman of the SkyJuice Foundation is also the Business Development Manager at Siemens Water Technologies, the company has been committed to the project “SkyHydrant” from the beginning. With the commitment to disaster relief, the two partners quickly and effectively have helped people after major disasters in recent years and plan to intensify their efforts. For the humanitarian aid after natural disasters Siemens collects and manages donations at the international level often in close cooperation with affiliated regional companies in affected areas. With about 400,000 employees worldwide a great deal of aid is being generated.

Goals and Objectives

When disaster strikes, most often the water system infrastructure is capped. Due to unsafe drinking water contaminated with sewage and rural run-offs, the number of victims rises during the days and weeks after a disaster. The major objective of the project "SkyHydrant" was to adapt proven Siemens water technology, particularly membrane filtration systems, in order to prevent the outbreak of serious waterborne diseases and epidemics like cholera and diarrhoea. Adapted to people living in areas without any technical infrastructure, the SkyHydrant filtration units are transportable – even to remote and hard-to-reach areas – easy to operate and maintain, as well as cost-effective. Using a rather simple filtration process, SkyHydrants bridge the post-disaster period when infrastructure is damaged. Because the unit has an expected working life of approximately 10 years, it can also be deployed for ongoing disaster risk prevention activities for communities situated in high-risk areas prone to natural hazards.

The objectives of Siemens and the SkyJuice Foundation include assisting, providing, consulting and supplying potable water solutions to disaster areas, developing communities, countries and donor organisations, bearing in mind the immediate and medium term requirements of those individuals, communities and organisations.

Fostering and developing programmes to ensure the health of children in any country or community by providing access to affordable potable water should be based on equitable and sustainable practices. Additionally, support assistance and technical training should be given to the people in the disaster affected regions by emphasizing social and other aspects of sustainable, clean and safe potable water solutions. The goal of Siemens public-private partnership is to promote and organise sustainable water solutions associated with target countries and communities that focuses on potable water, effluent reuse and overall water management.

The Initiative

Within its Corporate Citizenship Programme for disaster relief, Siemens concentrates on water supply and access to water as important parts of all activities. Siemens uses its expertise and technical knowledge to repair infrastructure damage and bridge the immediate post-disaster period by alleviating shortages of drinking water.

Rhett Butler, Business Development Manager at Siemens Water Technologies in Australia, incorporated the SkyJuice Foundation in Sydney in 2005 as a non-profit charitable organisation. In cooperation with Siemens the "SkyHydrant", a potable water filtration system, was created for use in disaster impacted areas. The durable system could also be utilised in ongoing disaster risk prevention activities for people living in high-risk areas prone to frequent natural hazards such as cyclones, floods and earthquakes.

The SkyJuice Foundation and Siemens have supplied more than 450 SkyHydrant potable water units worldwide. Each filter produces up to 10,000 litres of safe pure drinking water per day depending on the source water. The robust filtration system can be easily transported, installed and maintained and can typically supply between 500 and 1,000 people. By deploying filter units in different countries, more than 22,000 people have benefited from the ongoing programme in the past few years. Over 200 SkyHydrants were deployed into the Indian Ocean tsunami-affected countries whilst further humanitarian installations have been commissioned in Sri Lanka, India, East Timor, Indonesia, Thailand, Cambodia, Pakistan, Vietnam, Bangladesh, Kenya, South Africa, Fiji, Oman, Peru, Mexico and the Maldives.

In November 2007, when Cyclone Sidr swept across exposed areas of Bangladesh, Siemens launched a variety of fundraising projects to help provide quick "outcome-focussed" assistance. The entire workforce of Siemens Bangladesh donated two days' salary. The company matched these contributions and installed 20 SkyHydrants, filtering bacteria from contaminated supplies.

Permanent installations of the system are anticipated throughout 2008 in Africa and the Asia-Pacific region. In May 2008, 15 filter units were utilized in the earthquake-affected Sichuan Province in China. Siemens and SkyJuice

Photo by SIEMENS

Foundation have partnered with the Chinese Ministry of Construction to install the filters.

The project is based on the public-private partnership between Siemens and the SkyJuice Foundation. Furthermore, other humanitarian organisations – such as UNICEF, OXFAM, Red Cross and CARITAS – are involved in the logistical support of the units. In an emergency, these organizations are critical links to the affected countries.

For sustainable implementation of the project the important stakeholders have to be involved in all stages of the process: the local community, authorities and organisations. The initiative showcases how partnerships with the private sector can reinforce the engagement of local welfare organisations towards an improved water infrastructure for areas in need.

Outcomes and Activities

Access to safe drinking water is a fundamental need and basic human right. The World Health Organisation estimates that about 1.2 billion people worldwide lack access to clean drinking water and more than 2.2 million people a year die from waterborne diseases. The potable filtration unit relieves this situation by providing effective water purification from surface water. Drinking water can be received directly from the filtration unit. With a nominal daily output of 10,000 litres, one single unit supplies water to communities with populations up to 500 people and when manifolded together the capacity is even higher. The system has shown a great impact. For example it was adopted after the tsunami in Asia (2004), in the aftermath of Cyclone Sidr in Bangladesh (2007) and Cyclone Nargis in Myanmar (2008). Additionally 10 units were donated to the people affected by the devastating earthquake in Sichuan province in China (2008).

The implementation improved the living conditions, health and future prospects of the residents affected dramatically.

The strong partnership between Siemens and the SkyJuice Foundation is essential to success. By combining Siemens filtration technology, its workforce funding and the potential of volunteers with SkyJuice experience in humanitarian projects, potable water has been provided to people in need. Another important aspect is that the costs for material and transport of the filter should be as low as possible. Therefore the technology behind the SkyHydrant is advanced continuously. Currently, it has been equipped with lightweight aluminium housing. As a result, the water filter (including its membrane) now weighs 15 instead of 25 kilos – thus cutting transport costs substantially and making the device more suitable for installation in disaster areas.

The Good Practice

Natural disasters are on the rise and often affect regions where Siemens maintains business operations. The company can therefore quickly react in disaster situations. The initial idea of the project and good practice was to utilise Siemens expertise in water technologies to get help to the victims. This project approach has the potential to be implemented in many other technical fields.

Key success has been to adapt existing high-efficiency water purification systems which are maintainable and affordable for people in emergency cases. Siemens developed an organisational process that has proven itself by quickly providing products and financial support. In close cooperation with the regional offices and affiliated companies in affected-countries, Siemens provides funds and makes its expertise available. Concerning the implementation of the SkyHydrants, Siemens and SkyJuice experts go to the scene of major disasters to assess how best to help and to support the local community with the installation of the water purification plant.

This filtration system is very innovative in that it adapts the latest water technology that fits the community circumstances in disaster areas. It operates under as little as 300 mm of gravity head and without the need for an electrical power supply. The filtration process combines filtration for primary disinfection and particulate removal with chlorine disinfection. The system membrane is robust, cleanable and durable. All operating and membrane cleaning functions are simple and manual. Volunteers can be trained in a short time to run the unit.

Lesson(s) Learned

To implement a sustainable water supply, not only technical skills are required but also the competency to analyze the on-site situation of the disaster-affected people. For example, people in the tsunami-affected areas in Asia refused to drink water from a water purification plant installed near to the place where community members had drowned. It is necessary to consider all cultural and social factors to ensure that the sustainable water supply works in humanitarian projects.

Because every disaster area has its own need and specific requirements, the filtration system has to be scalable and flexible. The system has to be adaptable to the on-site situation, for example, the pumps for the SkyHydrant could be operated with wind power or solar energy. To assess how best to adapt system, Siemens experts go to the scene of major disasters.

Photo by SIEMENS

Photo by SIEMENS

Potential of Replication

The lightweight system can easily be delivered to disaster areas, even to the most remote communities. With the installation of filtration units, the communities have a self-sustaining system that makes them independent from international aid supply during the rebuilding period.

SkyHydrant has a large benefit-to-cost ratio: The complete operating system with accessories and test kits unit is nominally priced at 2,500 Euros. Allocating the costs, the system could be operated on a user-pays basis for less than 50 cents per person per year.

The vision of the project is to extend the programme for salt water and to start collaborative actions to remedy arsenic-affected waters for over 300 million people worldwide. Also the development of new project “delivery” models is planned, so that delivery is appropriate to on-site economic situations. An initiative to raise awareness of safe water hygiene education programmes will also be offered.

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Japan

Puppet show project "Inamura no Hi" Sompo Japan's efforts to raise disaster awareness through puppet shows

Sompo Japan Insurance Inc.

Photo by Masao Hosono

Abstract

Sompo Japan Insurance Inc., established in October 1888 and known as "Sompo Japan," conducts business in 630 offices in Japan and 41 offices overseas, and features a nationwide claim service network comprised of 224 locations. As a good corporate citizen, Sompo Japan has engaged in a variety of socially beneficial activities since the 1970s in three areas: fine arts, welfare, and the environment. Recently, Sompo Japan has been promoting its socially beneficial activities in cooperation with civil society organizations (CSOs) in order to work closely with local communities.

"Inamura no Hi (The Fire of Rice Sheaves)" is a well-known Japanese story about tsunami disaster reduction that is based on the true story of a man who saved his fellow villagers during the Ansei-Nankai Tsunami (1854). Sompo Japan encouraged non-profit organizations (NPOs) to work on a project to create a puppet show version of "Inamura no Hi," with support from the Chikyu (Earth) Club Fund. Many Sompo Japan employee volunteers took part in staging the production.

Goals and Objectives

With a view to strengthening the disaster reduction capacity of communities by enhancing cooperation among various stakeholders including volunteers, Sompo Japan forged a framework of "Education for Disaster Reduction" with residents, local authorities, civil society organizations (CSOs), universities, governments and other companies. In the context of the framework and as part of Sompo Japan's activities, the "Inamura no Hi" project was developed to mobilize volunteer puppeteers to perform the famous story used for disaster reduction education, "Inamura no Hi" for children. The goal of the project was to enable the communities of Shizuoka Prefecture and other parts of Japan to cope with disasters by raising community awareness on disaster reduction, particularly through the children who have seen the puppet show. It is all the more significant because the message is being disseminated from Shizuoka Prefecture which may be hit by a large-scale earthquake at any time in the near future.

These efforts raised interest in the idea of conducting disaster reduction education in a way that resonates with children, and specifically in the possibility of using the "Inamura no Hi" puppet show to convey lessons about earthquake preparedness. In addition, scripts and information on how to present an "Inamura no Hi" puppet show, shadow puppet show, and picture card show have been posted on the website of the Cabinet Office of Japan since July 2005.

Many children and their parents have come to the theater and learned the importance of disaster reduction. The puppet theater project and subsequent developments are being expanded in order to deliver disaster reduction education throughout Japan and the world. Puppet shows are useful and powerful educational tools, and can be adapted to other types of education and to the cultural context of other countries.

The Initiative

Sompo Japan's Coordinator for Disaster Management lived through the Great Hanshin-Awaji Earthquake in January 1995, which caused more than 6,400 fatalities in and around Kobe. The experience sparked his desire to convey a message about the importance of human life and the threats posed by earthquakes and tsunamis to the children of Shizuoka Prefecture, an area where a large earthquake is expected to occur in the future. He appealed to puppet theater groups to develop a puppet show to promote disaster reduction. In June 2003, a group of 17 puppet theaters in Shizuoka Prefecture formed the NPO called the Puppet Show Project "Inamura no Hi (The Fire of Rice Sheaves)". Their activities were to be supported by Sompo Japan and other public and private stakeholders.

"Inamura no Hi" is the famous story of a man who noticed the very early signs of a large-scale tsunami and led his fellow villagers to higher grounds by burning harvested rice sheaves. This is based on a true story from the time of the Ansei-Nankai Tsunami (1854), which claimed around 3,000 lives in the coastal areas of western Japan.

The first play was performed in Shizuoka City in January 2004. Since then, the puppet show has been performed 36 times in and around Shizuoka Prefecture, an area that could experience a near-term large-scale earthquake that could be followed by a devastating tsunami. The puppet show has been used to convey the importance of human life and the threats posed by earthquakes and tsunamis to 9,400 children and adults. This project is recognized as a useful means of teaching the importance of disaster reduction to the general public worldwide.

In July 2005, the Cabinet Office of Japan established a web page that presents the story of "Inamura no Hi" including some of the scenes from the puppet show, in English and Japanese. Some members of a network of the NGO, Asian Disaster Reduction and Response Network (ADRRN), in cooperation with and supported by the Asian Disaster Reduction Center (ADRC) and the government of Japan, translated the picture book "Inamura no Hi" into nine languages for eight Asian countries (Bangladesh, India, Indonesia, Malaysia, Nepal, Philippines, Singapore, and Sri Lanka), and into French for several African countries. "Inamura no Hi" was publicized in July 2007 on the website of the IYPE Japan which is an implementation body in Japan for the International Year of Planet Earth (2007–2009) promoted by UNESCO, the International Union of Geological Sciences (IUGS), and other organizations. The IYPE Japan also expressed its intent to endorse the project.

"Inamura no Hi" was established under the initiative of Sompo Japan and receives some of its financial support from the company, but it is also working in collaboration with the Shizuoka Prefectural Earthquake Preparedness and Education Center, Shizuoka University, Chiba Institute of Science, the Shizuoka Disaster Volunteer Coordinator Conference, the Shizuoka Volunteer Group Conference, and some local organizations to carry out activities closely linked to the community. It disseminates information on disaster reduction to the world, through the puppet show, in collaboration with experts on earthquakes and tsunamis involved with the IYPE Japan, the Earthquake Research Institute of the University of Tokyo, Nagoya University, Tohoku University, Kogakuin University, and a group of researchers that have been working on recovery since the Sumatra earthquake and tsunami and who are funded by the Japan Science and Technology Agency (JST). It also works with puppeteers from the Japan Puppet Show Network and the Modern Puppet Center.

The activities of the Puppet Show Project are conducted mainly in Shizuoka Prefecture. The project members sometimes conduct activities in other locations, such as Wakayama, where “Inamura no Hi” was born, Nagoya, for the EXPO 2005 AICHI, Yokohama for the "Yokohama Bosai [disaster reduction] Fair 2007," and Tokyo. All of the group's activities in these locations were carried out in close collaboration with public institutions. "Inamura no Hi" was also performed at the United Nations World Conference on Disaster Reduction (WCDR) held in Kobe in January 2005 in commemoration of the 10th anniversary of the Great Hanshin-Awaji Earthquake.

Outcomes and Activities

This project has been successful thanks to the active collaboration between the puppeteers and the volunteers of private corporations, including Sompo Japan, all of whom have been dedicated to promoting corporate social responsibility (CSR) activities in the field of disaster reduction. It has also been successful because of the support of public institutions such as the Shizuoka Prefectural Earthquake Preparedness Education Center, the Shizuoka Disaster Volunteer Coordinator Conference, and Shizuoka University.

The puppet shows are designed for children and their families. If the message of the play can be easily understood by children, it will also be understood by adults and its lessons can be spread within the family. When children understand the importance of disaster reduction, their understanding will continue throughout their lives.

As a result of the project, disaster reduction programs using puppet shows are becoming more and more prevalent in other prefectures in Japan, as well as other countries in Asia. For example, the puppeteers have expanded the project, with support from the Nippon Foundation and Japan Arts Council, to develop travelling performances at schools for deaf children in 100 locations nationwide over the course of three years. The performances will begin in October 2008 in Kawasaki City.

The Good Practice

Since disaster reduction activities tend to be viewed as somewhat depressing and serious, the importance of disaster reduction is not a popular subject for discussion. Puppet shows provide a lot of pleasure to children and allow them to have fun while they learn about the importance of disaster reduction and the need for disaster preparedness. The NPO Puppet Show Project "Inamura no Hi" has been supported by corporations such as Yamasa Corporation and Sompo Japan, and has received spectator encouragement from its many performances and the Sompo Japan Chikyu (Earth) Club.

Adults and children alike are moved by puppet shows on disaster reduction. The effectiveness of this method of teaching the essence of disaster reduction has been proven in Shizuoka, a prefecture with advanced disaster reduction strategies. Disaster reduction education is taught not only through puppet shows, but through a variety of media that resonate with children, including shadow plays, picture-story shows, and songs. In other words, it is important to try to create and develop new disaster reduction art forms.

These amateur activities have inspired the professional puppet company “Deaf Puppet Theater Hitomi.” The company has been giving public performances in Japan and abroad for nearly 30 years. They have turned Inamura no Hi into a puppet show to teach deaf children about disaster reduction.

Lesson(s) Learned

Most project participants face challenges in their ability to continue the puppet show because they have other jobs and participate in other puppet show teams or volunteer activities. Moreover, their homes are somewhat far from central Shizuoka, and it takes them a considerable amount of time and money to maintain the project. The puppet theater has many times faced the threat of being disbanded. Even after the NPO was incorporated, it was weakly financed and lacked adequate administrative capacity. However, the NPO several times managed to avoid dissolution, and everyone involved is working to ensure the continuation of its activities. The hope is to teach children in the audience about respect for human life, and the dangers related to earthquakes and tsunamis. The efforts have been supported by many people in various sectors, including government, universities, mass media, and disaster reduction volunteer organizations.

All disaster reduction activities, including research and development on local disaster management plans, and the development by business continuity management (BCM) strategies are important. However, it is of the utmost importance that the public is taught about the importance of human life and how disaster reduction efforts can save their lives.


Photo by Masao Hosono

Potential of Replication

Collaborations between puppet theatre groups and earthquake/tsunami researchers and disaster reduction officials, as well as disaster reduction solutions that are supported by government agencies, universities, disaster reduction volunteers, local media, and corporations help lead to the creation of disaster-resistant communities.

The Puppet Theatre enjoys an audience of a large number of children all over the world. By combining the advanced knowledge of scientists and researchers with the rich and diverse expressive capabilities of puppeteers, this puppet theatre project confirms the effectiveness of disaster reduction solutions that are supported by the local communities. The effectiveness of this method is not limited to disaster reduction. It can also be applied more broadly to provide sustainable education on such topics as global warming, new influenza countermeasures, and the problems facing the handicapped.

If the Puppet Show Project "Inamura no Hi" helps the children of the world have fun while learning about global-scale problems, it should inspire them to share what they learn with their families. A belief is that as families go, so go communities; as communities go, so goes the nation; and as the nation goes, so will go the world.

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“Inamura no Hi” and Tsunami Disaster Management: www.tokeikyou.or.jp/bousai/inamura-top_j.htm (Japanese only);
International Year of Planet Earth Japan (IYPE Japan): www.gsj.jp/iype/en/docs/psp-inamura.html,
Yamasa Corporation: www.yamasa.com/history/sevens.html;
“Inamura-no-Hi” no Yakata (Tsunami Education Center): www.town.hirogawa.wakayama.jp/inamuranohi/english/index.html;
“Inamura no Hi”: www.inamuranohi.jp/english.html

Samoa

Building Samoa's disaster risk management capacity and capability: A partnership approach

Ministry of Natural Resources and Environment

Photo by Debbie Cunningham, Kestrel Group Ltd

Abstract

Many Pacific Island coastal communities are highly vulnerable to coastal hazards such as cyclones, tsunami and storm surges. Increasing coastal development combined with limited land use planning and development practices often increases these communities' exposure to risk and reduces their capacity to adapt to climate change. A project undertaken in Samoa attempted to reduce the vulnerability of coastal communities and strengthen institutional and community capability to manage disasters. The project integrated infrastructure mitigation, environmental management and land use planning at the community level with practical disaster management actions. The project involved private sector organisations in developing the National Disaster Management Plan and integrated national response arrangements into individual organisation's service continuity and emergency response plans.

This project emphasized how through an effective partnership between public and private organisations the sustainability and effectiveness of disaster risk management programmes can be greatly enhanced. Community development agencies, government ministries, first responders and utilities (e.g. power, water, telecommunications) worked together to improve a national disaster management structure for Samoa, which included legislation, a National Disaster Management

Goals and Objectives

The main goal of the project was to strengthen the disaster management capacity and capability of the country through effective engagement of the public and private sectors.

Plan, and consistent and integrated agency service continuity and emergency response plans. A key focus of the project was exploring the interdependencies that the public and private organisations have on each other and how through sharing resources and skills, Samoa would be better able to prepare, respond and recover from major disasters.

The Initiative

The project was a World Bank-funded initiative and led locally by the Planning and Urban Management Agency (PUMA) and National Disaster Management Office (NDMO) of the Ministry of Natural Resources and Environment (MNRE) of the Government of Samoa. The Government of Samoa commissioned BECA International Consultants (BECA) and Kestrel Group, both New Zealand based consultancies, to undertake the project. One of the main streams of work of the project was the development of a national level framework (legislation and national plan) for disaster management, institutional strengthening of the National Disaster Management Office and engagement of private sector agencies in disaster risk management.

Specific outcomes of this component of the project included:

- Samoa Disaster and Emergency Management Act (2007).
- Samoa National Disaster Management Plan (2006), which included as part of its development a national risk assessment, gap analysis and a 5-year implementation programme.
- A Disaster Awareness Community Strategy.
- Over 20 individual agency service continuity and emergency response plans.
- Three national simulations (response exercises).
- Strengthened in-house capability for disaster management.

Photo by Debbie Cunningham, Kestrel Group Ltd

Outcomes and Activities

The development of a national framework for disaster risk management (DRM) must include the buy-in and participation of private sector companies as the capacity and capability of the country comprises the collective resources and skills of the entire community. Samoa has recognised this by establishing an inclusive approach to DRM planning. Key private and public sector agencies have been named in the legislation and are actively required to participate on the Disaster Advisory Committee, the committee that advises cabinet (National Disaster Council) on DRM policy and also during response and recovery. These agencies are also required to develop their own agency response plans in order to be able to deliver their agreed upon roles in a major emergency.

Private and public sector agencies (community development agencies, government ministries, first responders and utilities) participated in a series of activities:

- Workshops on the National Plan to ensure they had meaningful input into its development;
- Simulations designed to increase understanding of the national response arrangements and the roles and responsibilities of various agencies in an emergency; and
- Workshops and one-on-one assistance from the consultant team to assist agencies to improve or develop their own service continuity and emergency response plans which emphasised links to the national response arrangements.

The process resulted in increased levels of inter-agency cooperation and understanding of how agencies are dependent on each other in terms of services needed to respond to and recover from a disaster. Agencies were encouraged to improve or develop their own emergency response plans and this resulted in a greater appreciation of the importance of business continuity management as a key component in an individual agency's disaster resilience. The Ministry of Natural Resources and Environment awarded a certificate to all agencies who participated in the programme.

The Good Practice

The elements of good practice in this project are:

- Recognition at the beginning of the project of the importance of partnerships and meaningful consultation. The concept of partnership underpinned the entire project. This had the effect of creating a shared ownership of community risk by the agencies involved.
- Identification of respective roles and responsibilities across mitigation, preparedness, response and recovery. This enabled a clear understanding of what the government could and would do and what the private sector could and would do as mutually supportive roles.
- As well as involving all the agencies together in the simulations and planning sessions, some workshops were sector-based, where agencies were grouped into one of four sectors:
  - First responders (e.g. fire, police, hospitals and public health, agriculture and fisheries),
  - Ministries and various other government agencies,
  - Utilities and infrastructure (e.g. power, water, port, airport, telecommunications, fuel, etc), and
  - Community focused agencies such as the High Commissions and aid agencies.

  This increased networking led to improved relationships between agencies, better cooperation and less duplication of effort within some sectors, particularly in areas such as public education and public information. It also led to agreements to share resources and skills – particularly when joint planning revealed how scarce resources such as satellite phones were on the islands.


Photo by Debbie Cunningham, Kestrel Group Ltd

- A focus on increasing the understanding of the interdependencies between organisations and the importance of factoring this into service continuity and emergency response plans. For example, the appreciation that functioning communications were needed in order to repair and restore other utility services, such as water and power, meant that back-up communication systems were given a higher priority by some utilities in their respective planning.

Photo by Karen Stephens, Kestrel Group Ltd

Key success factors have been:

- National frameworks, support and commitment at the government level. These have been important to ensure sustainability, build trust and give credibility to the partnerships.
- Recognition and celebration of the partnership established through awards and certificates which were presented at the end of the project by the Ministry of Natural Resources and Environment to acknowledge the considerable effort by agencies involved. Public recognition of agencies was also made in the media.
- Use of innovative and simple response plan templates, worksheets and questionnaires enabled agencies to actively participate and to take away material they could directly incorporate into plans and procedures.

Lesson(s) Learned

Key lessons learned included the following:

- Formally recognising the private sector in disaster management planning and response arrangements enables more effective partnerships to be created.
- Involving the private sector in directly developing national plans and policy frameworks leads to the private sector taking a greater share of the responsibility for managing the collective risk. This spreads the effort and increases the resilience of the entire community.
- The value of a partnership approach in terms of increasing the capacity and capability of the country through increased knowledge of and access to resources and skills.

Major challenges:

- Keeping all agencies motivated and engaged throughout the process. This was managed through incentives such as awards and public recognition, a focus on building relationships and demonstrating the value of the process from a business perspective.

Potential of Replication

This initiative should be able to be replicated easily elsewhere. Specific adaptations would need to be taken into account:

- The consultation style would need to be adapted to the culture and traditions of the country concerned; and
- The long term success and sustainability of the benefits of undertaking the project will rely on national policy and frameworks being in place and which formally recognise the importance of the private sector in disaster management planning and arrangements.

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Worldwide

Real-time and scenario loss estimates for earthquakes worldwide

World Agency of Planetary Monitoring and Earthquake Risk Reduction (WAPMERR)

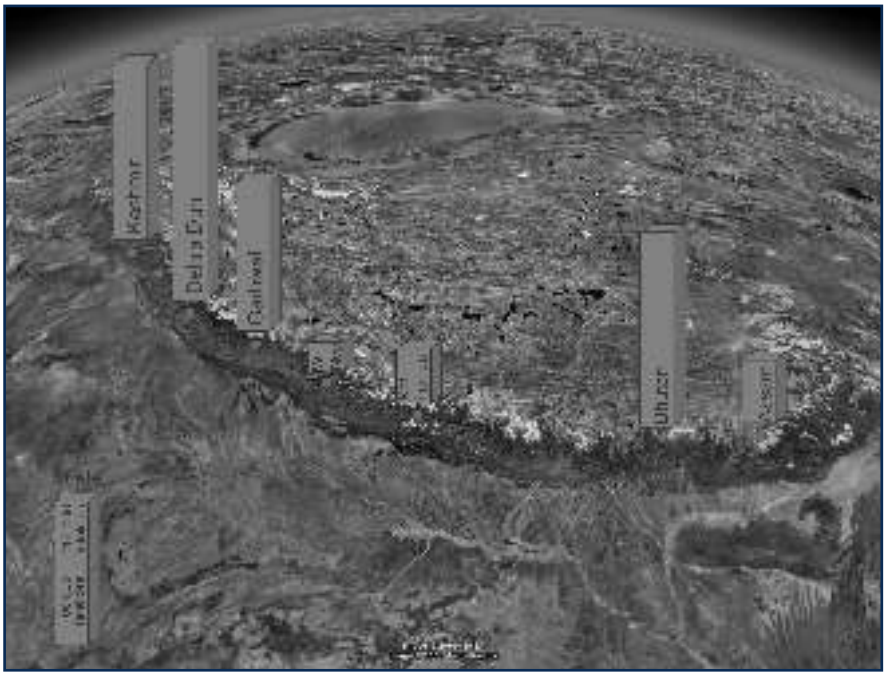

Figure by WAPMERR: Losses by Earthquakes in the Himalaya

Abstract

WAPMERR, jointly with Swiss Seismological Service (SED) and funded by Swiss Agency for Development and Cooperation (SADC), operates a 24 hour 7 days a week earthquake alert service available by email or telephone warning to anyone interested. These loss estimates are reviewed by an expert, before they are distributed within 30 minutes (on average) after any strong earthquake worldwide (generally M ≥ 6) and contain the following information: estimated range of fatalities, estimated range of number of injured, list of settlements with expected shaking intensity and casualties, map of settlements showing the expected mean damage state of buildings, commentary on possible error sources influencing these estimates. This service is intended to speed up international rescue efforts and to furnish rapidly quantitative information on how large and in which settlements an earthquake disaster would be. WAPMERR also calculates and publishes loss estimates for scenarios of strong earthquakes that are likely to occur in the future. These loss predictions are intended to stimulate mitigation measures against future earthquake disasters.

Goals and Objectives

The major goal of the project is to inform rescue agencies, disaster managers and governments within less than an hour on the probable extent of a disaster when an earthquake strikes. A result of WAPMERR efforts is that aid has been offered in order to rescue the injured after earthquakes with record speed.

The Initiative

After devastating earthquakes, the extent of the disaster is often not known for several days. Given that injured people trapped beneath collapsed buildings can be saved only within the first three days an immediate quantitative assessment of the likely losses is important. The earlier rescuers and government know how serious an earthquake disaster is, the more effective can they plan rescue and rehabilitation efforts. For this reason the World Agency of Planetary Monitoring and Earthquake Risk Reduction (WAPMERR) was founded in 2001 with the purpose of assisting developing countries in reducing earthquake risk and speeding up rescue operations.

The team that collaborates in these efforts is made up of WAPMERR, the Swiss Seismological Service (SED) and Swiss Agency for Development and Cooperation (SADC). When a strong earthquake occurs somewhere on the planet, reviewed estimates of location, depth and magnitude are distributed within about 20 minutes by the US Geological Survey. A computer at the SED transmits this information by SMS to the WAPMERR duty person, day or night, who then calculates the expected losses. A report on the losses is then distributed by WAPMERR to anyone who desires by email. In case of serious disasters the duty person of the SADC, and others who wish to receive this service, are alerted by telephone. The Swiss Agency for Development and Cooperation and the Swiss Seismological Service are public, whereas the World Agency of Planetary Monitoring and Earthquake Risk Reduction is private.

For nearly five years, WAPMERR has provided quantitative estimates of losses in real-time after any earthquake of interest worldwide (generally magnitudes larger than 6 on the Richter scale). In alert email messages and on their website, WAPMERR specifies the total numbers of fatalities and of the number of injured expected, as well as their distribution in settlements. In addition, WAPMERR estimates the percentage of buildings per damage class in each settlement and publishes a map showing the average degree of damage in each settlement. For large earthquakes in populated areas, the list distributed includes about 3,000 settlements. WAPMERR has issued more than 400 alerts with a median delay time of 30 minutes after the respective earthquake. WAPMERR alert service is free of charge and available to anyone who requests it.

The following map of estimated mean damage grade in settlements affected by the magnitude 7.9 earthquake of 12 May 2008 in Sichuan, China. The epicentre is marked by a ring. WAPMERR alerted the Swiss rescue team by telephone 21 minutes after the earthquake that a serious earthquake disaster had occurred in Sichuan. The map shown here was contained in the revised alert (5.5 hours after the quake) that stated that the fatalities to be expected are likely to number between 20,000 and 90,000.

WAPMERR also calculates loss scenarios for earthquakes that have an increased probability to occur in the future. For example, a warning had been published in the March 2005 issue of Natural Hazards that in Kashmir 67,000 to 127,000 fatalities should be expected in a possible future earthquake. On 8 October 2005 an earthquake in Kashmir killed 85,000 people. In this study, WAPMERR also defined quantitatively what they think may be the 50 cities most at risk in the Himalayan mountains. In the July 2008 issue of Seismological Research Letters WAPMERR published an article in which they point out that major earthquake disasters may be expected in southern Myanmar. Currently WAPMERR is working on estimating the expected losses

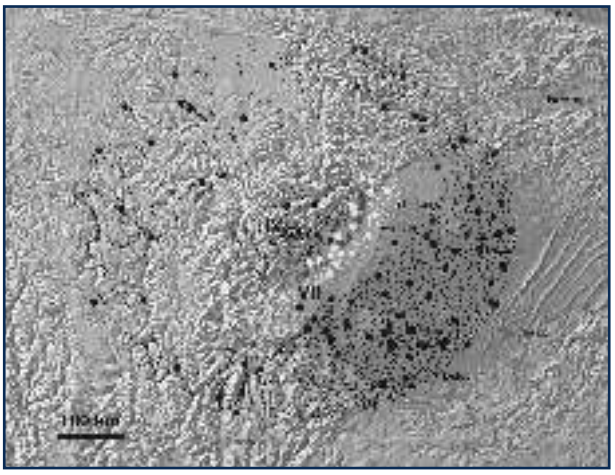

Figure by WAPMERR: Estimanted losses in Sichuan

for large earthquakes in zones with high probability of occurrence determined by the M8-MSc algorithm developed by an international group of seismologists. Given that the magnitudes expected are larger than 8, WAPMERR forecasts that major disasters will occur in some of these cases, but not in others, where no major population centres are close. They identified two harbour cities in central Chile, where mitigating efforts would seem likely to save lives and costs in the future.

Given that their worldwide dataset on building properties is incomplete and many approximations are made in estimating the human losses, the loss estimating tool needs to be improved. WAPMERR, jointly with the SED, are in the middle of a 3-year project to augment the database and to rewrite the program, based on the experiences they have gathered during the last five years. This will be an open-source tool available to all qualified professionals.

The project applies expertise only available in the most developed countries to disasters in developing countries without the necessary local experts. It was started in the fall of 2003 and is funded for another 2 years. WAPMERR implemented the project jointly with the SED, and with funding from the SADC.

This is a worldwide project with the capability of estimating losses in about 2 million settlements. A global initiative is under way to incorporate this project in an international effort to reduce earthquake risk. There is a great need to include a worldwide data set on location and building type for schools and hospitals. If such a dataset can be assembled, WAPMERR will be able to tell rescuers and governments how strong the shaking was in severe earthquakes and give an approximate probability of the damage level expected. Clearly, this information would be of great help for rescuers to direct their efforts toward the most sensitive facilities in the community.

WAPMERR is building up a database of high resolution satellite images of large cities in earthquake prone areas. These images may be used by rescue teams for orientation in case of disasters, to count the number of buildings in cities where this information is not available, and to derive information on the capability of buildings to resist strong ground shaking. WAPMERR has the capability of constructing 3D models of cities based on high resolution satellite images.

WAPMERR is further assembling a database on city-models for large urban areas in developing countries. These models contain information on population, the quality and distribution of the building stock, and soil conditions. These three parameters are usually

Outcomes and Activities

The project targets a billion people in developing countries. It is an innovative project as at the present no one else is capable of rendering this service. It provides estimates of losses likely to occur in future earthquakes, thus mitigating measures may be taken.

The Good Practice

This is a good practice because peoples' lives can be saved. The key to success of the project has been the expertise and dedication within the organizations WAPMERR and SED. It has been implemented by establishing in Geneva an around-the-clock alert service for earthquakes above magnitude 6, worldwide. The most advanced modelling methods available concerning the earthquake process, seismic wave propagation and earthquake engineering are being implemented for rapidly estimating the human losses after earthquakes.

Lesson(s) Learned

One lesson learned is that WAPMERR is capable of distinguishing disastrous from non-consequential earthquakes within less than one hour in 95% of the cases. A second lesson learned is that disaster managers in some countries are unaware of WAPMERR's capability and fail to take action when WAPMERR provides advice. The difficulties range from hardware failure to lack of adequate data on soil conditions, population distribution and building stock properties in developing countries. Especially regrettable is the fact that the locations and size of schools and hospitals has not been provided to WAPMERR. Thus, valuable information on the probable state of these and other critical facilities cannot be developed by WAPMERR. Based on the lessons learned, WAPMERR is now assembling a second generation, improved program to calculate losses and an expanded database that will lead to more reliable loss estimates.

Potential of Replication

Scenario loss estimates are the base for mitigation measures at the country level. The program helps to create those. The second generation tool and database is open source software. Each country can run the tool with its own database. Therefore it can be easily used in any country.

Figure by WAPMERR: 3D Map of Dubai

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Photo by Asahi Glass Company, Ltd.

3

Core Business Partnerships

In core business partnerships, partners collaborate to create employment and foster entrepreneurship, contribute to economic growth, generate tax revenues, implement social, environmental or ethical standards and provide appropriate and affordable goods and services.

Africa and Asia

Safety net for the poor

Allianz SE

Photo by CARE India

Abstract

Insurance is a common concept in developed countries. This is different for some emerging economies and many developing countries, where insurance penetration is low and the idea of pooling a risk among several members of a community in an organised fashion is rare. Currently, more than 2.5 billion people live in extreme poverty without access to basic services. Research has found that these people face risks more often, and with a greater relative financial impact. This is in part due to living in high-risk areas, such as flood plains or areas with extreme weather, as well as due to a lack of sanitation, access to clean water, hazardous working conditions, and poor nutrition.

The 2004 Indian Ocean tsunami, but also more recent natural catastrophes in Burma and China, demonstrated how volatile many people's livelihoods are and how endangered they are to falling into the poverty trap once being hit by a disaster. The events after the 2004 tsunami led to the cynical situation that the company's Holding Board was being given all financial figures on the impact, yet, the actual financial impact of one of this century's worst natural catastrophes did not leave any mark on the balance sheet of one of the world's largest insurers. This prompted the company to search for ways of providing developing communities with viable insurance options that fit their needs and help to establish a social safety net and an effective way of reducing poverty.

Goals and Objectives

The goal is to provide insurance to low-income households that have no access to insurance otherwise. Microinsurance has shown to be an important tool to eradicate poverty worldwide and provide access for people at the bottom of the social pyramid to financial services and hence economic development.

Allianz SE's engagement is long-term as the company seeks to enter into these markets to build long-term client relations. Allianz is not expecting considerable short-term profits from microinsurance, given the low insurance premiums. The company is confident in building better brand awareness and hopes that the clients will live a better life and remember them in the future once they have progressed economically.

The Initiative

Microinsurance is a social business that has both a social impact and provides a long-term financial return while establishing customer loyalty. The initiative concerns microinsurance work where Allianz SE partners with non-governmental organizations (CARE International, Planet Finance) and with technical assistance organizations to establish market demand, research customer needs, train microfinance institutions and roll-out microinsurance schemes.

Allianz SE is engaged in microinsurance in India, Indonesia, Columbia, Egypt, Senegal, Cameroon and Madagascar by selling microinsurance schemes and policies that can help people in poor communities to avoid falling into the poverty trap. Allianz is offering the following microinsurance products: life, credit life (also as a sharia-compliant version), death and disability, accident, property and casualty, and mutual health insurance. Allianz SE strives to constantly innovate the products to cater for the needs of poor people and plans to expand into additional African countries.

In order to implement the project, market research focus group discussions were implemented to ascertain the people's needs. Later, strategic education of the people took place on two levels, technical training with the German Technical Cooperation Agency (GTZ) and the United Nations Development Program (UNDP). Consumer risk awareness programs with local partner non-governmental organizations (NGOs) also took place. Jointly with those organizations, the company developed ties to local grassroots NGOs and microfinance institutions (MFIs) and educated them on microinsurance issues. Allianz SE currently has almost 200 such partners in India, five in Indonesia and ten in Africa. Together with their partners Allianz SE has distributed almost two million microinsurance policies, mostly in India, but also in Indonesia, Columbia and Africa to direct beneficiaries.

The parties involved included:
Private Sector: Allianz SE
Public Sector: GTZ, UNDP, CARE International, and Planet Finance


Photo by CARE India

Outcomes and Activities

India – Bajaj Allianz

India was the initial focus for the microinsurance venture. Bajaj Allianz launched its first microinsurance product in 2003, and went on to cover more than 1.6 million customers and is continuing to grow very fast. The humanitarian crisis which followed the tsunami in 2004 prompted Allianz to team up with CARE International, an organization with extensive experience in post-disaster and microfinance in India.

The partnership is focusing on providing tailor-made packages specifically for people who live near the coast and work in fishing, agriculture and plantations. Rather than downscaling existing products, Allianz thoroughly researched people's need by setting up focus groups of villagers. With CARE International the Bajaj Allianz will distribute about 100,000 policies, as of end of 2008. They offer a bundled product, covering the risks of accident, death and loss of household assets, natural disaster and fire. Further the product offers an educational allowance to a child and provides funeral expenses in case of fatal accidents as well as hospital cash.

Furthermore, Bajaj Allianz and CARE offer a community-based health insurance scheme that is a first in India's private sector because it works as a co-operative system. This fund is probably the world's most innovative and financially viable mechanism to offer health insurance for the poor. Entire villages work together as a group to insure their residents against illness; they handle the transactions of the premiums themselves, the average annual cost of which is around seven euros for a family of four.

Indonesia

In 2005, Allianz teamed up with GTZ and UNDP in Indonesia, where only 5 million out of 238 million people have individual life insurance. The estimated microinsurance market in 2015 is at 12 million people. Under the credit-life insurance product 'Payung Keluarga', (meaning 'family umbrella') life insurance is made available for as little as 0.45 € per year. Features, such as policies compliant with Islamic law and co-insurance for spouses, as well as a new distribution concept make the products more flexible and accessible for customers. By the end of 2008 Allianz expects 100.000 policies to be sold.

Africa: Egypt, Senegal and Cameroon

In Africa, Allianz has worked in collaboration with Planet Guarantee and a number of European re-insurers to develop a pilot project offering death and disability insurance. As part of the program, financial literacy training is made available to the non-governmental sector.

The Good Practice

Managing people's risk is the core task of an insurer. So far, this principle has too often only been applied to well-off clients, neglecting those that are in fact most exposed to external shocks and risks. This approach is gaining ever greater importance in the light of increasing climate change induced extreme weather events. Microinsurance is meant to help people with a low income to gain access to insurance and hence starve off the risks of natural disasters and prevent them from falling into the poverty trap so that they can develop upwards on the economic ladder. This example is a good practice because Allianz is capitalizing on its strengths and core capabilities, thereby providing a safety net to the poor.

Photo by CARE India

The innovative elements of the initiatives are threefold. First, the focus has been on the education on insurance and awareness-raising toward insurance. Jointly with CARE, Allianz wants to educate communities on the basic principles of insurance. While it is an unknown concept to many people, given the high financial illiteracy in many areas, the idea of community solidarity and commonly sharing risks is known to some of the poor rural communities.

The idea is to build on that local common knowledge. CARE has developed an awareness raising campaign that explains insurance in a playful way. During these events, hundreds of villagers, mostly woman, are gathered. The "show" features a puppet theatre that explains insurance.

Secondly, people are educated about the burden-sharing feature of microinsurance where everyone in the community pays a small amount of money, and thereby receives medical help in case of an emergency. This is the principle of mutual insurance that Allianz and CARE are jointly teaching communities in southern India during a pilot scheme. It only works if a whole village is willing to accept the scheme – otherwise the risk of an adverse selection would be too high (i.e., only those people want health insurance that are ill). The villagers set up the community fund with the help of Allianz and CARE. Parts of the funds are passed to Allianz in a type of reinsurance agreement to cover higher expenses and hospitalization. CARE and Allianz jointly appoint a referral doctor in that case.

Photo by CARE India

Thirdly, Allianz is analyzing the clients' needs. Rather than using off-the-shelve insurance products that are being downscaled to fit customer needs, Allianz and its partners have undertaken focus groups to establish people's needs. The result in India is a "bundled product" that covers many things from hospital cash, to household insurance, to an educational grant for the children in case the insured dies as well as other features.

Lesson(s) Learned

The key lesson is the need to sustain the constant drive for innovation to provide coverage for the poor. Working under the pressure to be efficient as an insurer implies the need to develop products that are profitable and adaptable to the peoples needs. A company also needs to look for further product development such as index-based weather derivatives and new technologies.

The major challenges in this case are at the strategic level by developing a business case rather than a philanthropic activity and on an operating level to gain technical know-how and build capacities. Fundamental to success is the necessity to overcome the financial illiteracy and educate the people on the principles of insurance.

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India

Private funds for a public good - Public private partnership initiative with the steel industry in India

The United Nations Development Program (UNDP)

Photo by UNDP (India) Uttar Pradesh Office

Abstract

Uttar Pradesh is a province in Northern India, close to the Himalayas that has a population of 180 million (2001 census). Three quarters of the province is located in seismic zones III and IV with a moderate to severe risk of earthquake. India is divided into 5 zones, according to vulnerability to earthquakes with Zone V having the highest risk. However, earthquake resistant measures have not been incorporated in the design and construction of most buildings in the province, rendering them likely to collapse during earthquakes and thereby endangering the lives of the occupants. The UNDP Disaster Risk Management (DRM) Program and the provincial government of Uttar Pradesh decided to take steps to address the issue and improve the safety of the children in this region.

Goals and Objectives

The basic aim is to develop goodwill for the company, and a very basic understanding of the company's products. The hope, and experience, is that this effort would lead to higher sales of company products. The objective of the masons training program was to educate the masons, many of whom were illiterate or semi-literate, in the methods of building better and in a more resilient manner so that the structures were able to withstand the impact of disasters, especially earthquakes.

The Initiative

One of the challenges before any organization or government in the field of disaster risk reduction (DRR) is to find resources for the activities that need to be accomplished for the implementation of the Hyogo Framework for Action. For effective implementation of disaster risk reduction techniques, capacity building and skill development is required on a large scale. Training and capacity building programs require funds, especially when the target group is of a substantial number and the training has to reach out to all stakeholders through a cascading approach. As there is currently not sufficient awareness of DRR in South Asia, the number of potential targets for the training programs is large and the training has to begin with basic concepts, as the people are usually not aware of the meaning and implications of DRR. With this challenge in mind, the UNDP started seeking alternative sources of funds, which could supplement the limited budget available from the government and the UNDP.

A logical and simple option in such a situation is to tap the resources of private sector companies and corporate entities. Companies have substantial funds available for market development, promotion and marketing. The funds can be spent on any activity that can be used to attract more consumers to the products of the company. Often the conditionality is that the funds have to be used for customer development.

TATA Steel was the logical choice. TATA Steel is India's largest integrated private sector steel company. Established in 1907, its steel plant at Jamshedpur produces four million tons of steel products per annum. The company is backward integrated with privately owned iron ore mines and collieries. With its competitive advantage in raw materials, efficient operations and the benefits of a recently completed USD2.3 billion program of modernization, TATA Steel is among the lowest cost steel producers in the world.

As a large program for training of masons was already being implemented by the government, the possibility of funding was discussed with the company officials. TATA Steel divulged that they already have a program for orientation of masons and home builders. In these orientations the possible customers are explained the benefits of using the company's products. They are explained the details of the quality of the steel and the reasons for preferring this steel over steel manufactured by other companies.

The impact was the ultimate training of 10,000 masons in Uttar Pradesh in safe construction methods. This number was from the larger DRM program. The model was later adopted by the Government of India for replication in other provinces. The project was first initiated in April 2006 and is still operational. In fact, after adoption by the Government of India, this initiative has been replicated in other provinces of the country. The activity has been scaled up to the national level, with TATA Steel participating in other provinces.

Outcomes and Activities

Initially, 21 training sessions were conducted for 50 masons each, making a total of 1050 masons trained. In addition 18 orientation sessions were conducted for 360 architects. The results of the training were that the masons grasped the methods for making their construction safer. They took pride in the fact that they could now build better and safer. They reported that as artisans their only desire is that their product should stand the test of time.

The Good Practice

This public private partnership ensured the conducting of more training sessions than would have been possible with the original government budget. TATA Steel initially supported 21 training programs. Later, with the demonstrated success of this initiative more training programs were sponsored. Discussions are being held at national level between the Government of India and TATA Steel to explore the possibility of replication in other parts of India. As a direct consequence of this initiative, a long term relationship has developed between the DRR program, the government and the corporate entity.

Photo by UNDP (India) Uttar Pradesh Office

The success of the initiative comes from the fact that it was adopted by the Government of India for replication in other provinces. Another success was that the message went across to a primarily illiterate and semi-literate audience. The initiative helped to build a partnership between the Government and a private company, forging a healthy relationship in an area sometimes mired with suspicion and controversy.

The masons training held under the DRR program is a 5 day technical event. Experts explain the process of construction; show pictures, give examples, and then the masons get a chance to do hands-on activity. During the course of the training, the masons build a model, using the techniques of safer construction. This helps to learn by doing. This also leads to the construction of a seismically safe structure which can be exhibited to other masons and villagers long after the training is over. In effect, this model functions as a permanent exhibit.

TATA Steel was keen to get involved in the 5 day masons training. They could see that this was a more tangible method of forming bonds with their customers. The cost of the training was Indian Rupees 57,000 (USD1,350) for the 5 day training for 50 masons. This cost included the expenses for the 2 trainers. These trainers were government employed Junior Engineers who had already been trained as master trainers. During the negotiations it was agreed that the Government of Uttar Pradesh and TATA Steel would share 40% of the cost of the training, with the provincial government bearing the remaining 60% cost. TATA Steel would display their company banner and products in a sales kiosk at the venue of the training.

Photo by UNDP (India) Uttar Pradesh Office

The initiative was based on a win-win relationship between the government and the private entities. The government gained by being able to organize more training events with the additional funding from the company. The company gained by an increased coverage of its product publicity program. Both parties also gained from the goodwill of the other.

Lesson(s) Learned

The key lesson learned has been that PPP is possible when both the private and the public view each other with open minds and no suspicion. Once a mutually beneficial model can be developed the PPP can be a success. The search for the likely company who could finance activity in DRR has to be based on the strengths of the company. The major products would be an indicator of the likely interest of the company to participate in DRR activities. For a program on training of masons for safer construction techniques, the logical choice of companies are those involved in manufacturing of construction material. Such companies already have customer development programs under which they orient the key stakeholders of housing construction – the home owners, the masons and bar benders.

Potential of Replication

The initiative was replicated by the Government of India in other provinces based on discussions between the Ministry of Home Affairs, Government of India and the TATA Steel representatives. The modalities for replication in other provinces were decided upon and the first step for replication would be to identify private sector players whose target audience is the same as the government program.

Photo by UNDP (India) Uttar Pradesh Office

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Jamaica

Hurricane Dean case study

United Company RUSAL

Photo by UC RUSAL

Abstract

Hurricane Dean was a powerful tropical cyclone of the 2007 Atlantic hurricane season. It was the most intense Atlantic hurricane since Hurricane Wilma of 2005, and tied for the seventh most intense Atlantic hurricane ever recorded as well as the third most intense Atlantic hurricane ever at landfall. The Hurricane Dean case study is an example of company-wide storm prevention procedures employed by UC RUSAL units in Jamaica. Hurricane preparation procedures are an integral part of the management practices at all United Company RUSAL (UC Rusal) units in Jamaica. The practices comply with ISO 9001 standards. The goal of the established procedures is to minimize the effects of any storm by achieving a state of preparedness prior to arrival of the storm, and to be prepared for rapid and efficient rehabilitation and start-up of operations.

Goals and Objectives

The Caribbean area is subject to the risk of hurricanes and tornadoes between August and December. Though the severity of storms varies from year to year, any commercial operations in this region should take into account these risks and should prepare accordingly. That is why hurricane preparation procedures are the integral part of the management practices at all UC Rusal units in Jamaica.

The goal of the established procedures is to minimize the effects of any storm by achieving a state of preparedness prior to arrival of the storm, and to be prepared for rapid and efficient re-habilitation and start up of operations.

The Initiative

United Company RUSAL is a global leader in the aluminium industry, accounting for approximately 12% and 15% of global production of aluminium and alumina respectively. The company was founded in March 2007 through the merger of RUSAL, SUAL, and the alumina assets of Glencore. United Company RUSAL sells its products in 70 countries worldwide and employs 100,000 people in 19 countries, across 5 continents. The company operates a number of plants in the Caribbean region.

The hurricane preparation procedures are a vital part of operations in the region. Hurricane preparation procedures were first implemented in September 1991 at plants in Jamaica, which are now part of UC RUSAL. The storm preparation and prevention procedures comply with ISO 9001 standards and are used at all UC RUSAL facilities in Jamaica including the West Indies Alumina Company (WINDALCO) and Alumina Partners of Jamaica (AlPART) plants, bauxite mines, port facilities, railroad, and farms owned by the company.

ISO 9001 certification is an internationally recognized standard, which certifies that quality management and consistent business processes are being applied by the company seeking certification. For both its customers, partners and employees, knowing that a company is ISO-certified is important since it gives assurance that the company has a standard set of practices and procedures that ensure the predictable results of operations and delivery. The same is applicable to hurricane preparation procedures, which describes precisely the preparation practices ensuring predicable results of preparation efforts. An important aspect of ISO 9001 is the control over changes and improvements. The fact that the company's procedures are ISO 9001 certified also means that the company does control improvements and adjustments of the practices thus continuously enhancing its efficiency. That is why lessons learned after each hurricane are not forgotten and are incorporated into the hurricane preparation procedures which follow standard rules and practices. Though business practices may vary from company to company the common principles are the same in all of the organizations which are ISO certified.

In 2007 Hurricane Dean represented a major threat to Jamaica. After receiving the first warnings, the standard hurricane preparation procedures were followed. The Safety Superintendent plays a key role in the disaster prevention practices. The staff uses all available sources to maintain a continuous storm watch and note the progress of all storms within a reported radius of 2,413 km (1500 miles) of the plant, reporting any storm within a radius of 1,287 km (800 miles) of the island to the management team. The job includes also to analyze and identify possible hazards and bring it to the attention of the relevant department manager. Once the possible threat is identified the Safety Superintendent informs all of the employees of the plant of the possible danger.

Once the danger was analyzed, the decision to shutdown all operations were taken at 2 pm on 16 August 2007, 72 hours before the possible hurricane hit. The shutdown plan was performed successfully. It was important to double check all of the infrastructure facilities and make sure that the plant and all of the people are prepared to face the major hurricane hit. Contractors and employees were evacuated from the site. An emergency team was formed to stay at the plant during the hurricane.

The hurricane hit Jamaica on 19 August 2007. It damaged power lines, roads, port infrastructures and residential areas. The impact on the island was severe. According to some estimates the damages to the Jamaican economy were estimated at over USD4 billion dollars. However, the impact on UC RUSAL plants and facilities were considered minimal.

The emergency team worked well at all locations and developed counter-measures which proved to be effective. Equipment loss estimates and restart procedures commenced afterwards. A number of lessons were learned from Hurricane Dean and improvements in corporate emergency procedures were initiated.

Outcomes and Activities

Monitoring and early detection of potential threats is critical. The appointment of a Safety Superintendent who tracks the progress and possible risk of emerging hurricanes and storms in the region allows more accurate and independent information flow on the development of possible threats in the area during the storm season. The use of different sources of information (Crown Weather, National Hurricane Center, and Caribbean Weather Center) for analysis improves the overall efficiency of forecasts. Development of storm systems is tracked daily and published plant-wide. Meetings with directors are organized in case of potential storms and hurricanes forming in the area within 96 hours before a potential hit. Such meetings allow for early coordination of future actions. In order to minimize possible risks during the hurricane season, it is essential that all facilities are kept free of scrap and other loose materials at all times during the season.

A number of preparation measures worked well including the following:

The power house was stable before, during and after the hurricane. Dollos, a barrier, protecting the port area structure and the sacrificial channel at the main pier draft was an effective structure. Furthermore, the railway line had been improved. Safety and security awareness supported the fact that the emergency crew could run the plant during the hurricane. The people presence and the employee and community assistance after the hurricane was satisfactory. Moreover, the building and mining preparedness worked efficiently. Critical raw material inventory preparedness for bauxite, heavy oil, caustic, diesel, etc performed well.

Photo by UC RUSAL

The Good Practice

Each role and phase in the hurricane preparation procedures is well-defined and described in detail. After receiving the first warning all employees at all UC RUSAL units are aware of the necessary activities and checks in order to prepare for the coming storm. The established policy and procedures set out responsibilities by area and function. They address the security of infrastructure, equipment and operating supplies, as well as the safety of people during and after the storm and the proper shutdown and start-up of the plants.

The Safety Superintendent initiates the Weather Advisory Service and issues periodic information bulletins. All managers are responsible for ensuring that their areas of the plant, port, and mines are inspected to identify materials, equipment or installations that could become windborne during the storm. For example, the supervisor on each shift should conduct a survey of their areas for loose articles, boards, unfastened bauxite conveyor sides and covers, scaffolding, empty drums, unfastened coupling guards, screen covers, holding tank hatches, etc. The key staff members hold meetings to review the storm defense plan for their particular areas and preliminary plans for defense are made, including an inventory of raw material, tank levels and the selection of employees who will stay at the plant, port or mines during the storm. Instrument and electrical area team leaders inspect and test communications systems and equipment.

Lesson(s) Learned

A number of lessons were learned from the Hurricane Dean case study. Improvements in the open, precipitation area are required, as well as improvements in the infrastructure to provide better protection in the future to minimize equipment losses. Furthermore, improvements geared to start-up procedures within 48 hours after hurricane are needed. The practices are routinely reviewed and improvements are made after each new storm. The lessons learned enable the improvement and updating of procedures which eliminate potential threats and risks to human lives and equipment in the future. As a result, the hurricane impact is maintained at minimal level.

Photo by UC RUSAL

Potential of Replication

The procedures comply with the standard ISO 9001 format. There should be no difficulty in applying the same practices at different plants exposed to the risks from hurricane and severe storms.

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Japan

Glass Power Campaign: Providing safety and ease of mind through glass

AGC (Asahi Glass Company, Ltd.)

Photo by Asahi Glass Company, Ltd.

Abstract

The Glass Power Campaign, being carried out by Asahi Glass Company, Ltd. (AGC), consists of activities aimed at promoting a widespread awareness that glass can make contributions in areas related to natural disasters and various environmental problems on a global basis. Activities under the Glass Power Campaign include transmitting information about global warming adaptation and disaster reduction countermeasures through the use of glass, the undertaking of the disaster resistant glass donation program and giving lessons about glass at primary schools.

The donation program is a PPP program conducted with the aim of replacing windowpanes installed at designated evacuation centers throughout Japan with laminated glass and disaster-resistant glass. Once registered with the program on the internet, one can simply click on the website's button and vote for the selection of evacuation centers for the donation. As of July 2008, such donations were planned for 17 designated evacuation centers.

Goals and Objectives

The goal of the campaign is to update the building code to make laminated glass mandatory in all emergency shelters. Increased sales of laminated glass will also result in increased revenues.

In this manner, the Glass Power Campaign is contributing to a greater awareness of disaster prevention and helping to fortify disaster prevention countermeasures. The campaign enjoys increasing support from national and regional government bodies and business partners, and in March 2007 it was introduced at an international conference on disaster reduction held jointly by the World Bank, the United Nations, and the World Economic Forum at the headquarters of the World Bank in the United States as an advanced disaster prevention activity by a private company. The Campaign is also introduced on the website of the Cabinet Office of Japan.

The Initiative

Of the various kinds of glass products, windowpanes might be one of the most familiar in our daily lives. Windowpanes protect people from wind and rain and keep out the heat and cold. Windowpanes are thus very useful, but in past disasters such as earthquakes, windowpanes have sometimes caused serious damage: people have been injured by broken glass and evacuation centers have been rendered unusable due to broken windowpanes.

When Niigata Prefecture, located in northwestern Japan, was hit by a devastating earthquake in October 2004, a large number of people had to be evacuated to shelters (mainly school gyms) and remain there for several days due to the prolonged occurrence of large aftershocks. The evacuees were afraid that the windowpanes might shatter into small pieces and cause injuries. They therefore had to be uncomfortably squeezed into the center of the building to avoid the potential of windowpane breakage.

AGC, as a glass manufacturer, was shocked to learn about this situation and decided to launch the “Glass Power Campaign” in response. This campaign is a mean of addressing global environmental problems, including natural disasters, and of raising public awareness on the disaster resistance properties of laminated glass. Laminated glass does not shatter into small pieces, but instead stays in place in the windowpanes even if it breaks or cracks. Its use could help make evacuees more safe and comfortable.

A website dedicated to the campaign was launched to provide information on laminated glass that can be used to protect people. The company decided to donate laminated glass to schools and invite registered website users to select their preferred donation sites. Users who were happy with the campaign could invite their relatives, friends, and colleagues to join the campaign as well.

Progress has been made since 2005. On 19 February 2008, the Ministry of Education, Culture, Sports, Science and Technology of Japan (MEXT) advised that window safety should be taken into consideration when performing seismic retrofitting on schools. Yamagata City has been requiring the use of laminated glass in public building renovations since the end of 2007. The town of Mori in Hokkaido Prefecture established a disaster risk management plan in 2008, which specifies that laminated glass should be used in strategic buildings such as shelters and lifeline operation centers. On 13 June 2008, MEXT announced that special funding will be provided for glass replacement when school buildings are reinforced for earthquakes.

The success of the program has been covered in many newspapers, TV and other media, and the information is spreading among local governments. Some cities have started to select laminated glass when renovating public buildings designated to serve as evacuation shelters.

The project was started in October 2005 and is being carried out throughout Japan. It was originally planned to last two years. The first phase ended in October 2007. However, AGC decided to continue the project for two more years. It is now in the second phase and is scheduled to continue until October 2009. The parties involved include website users (from children to adults), AGC's glass distributors and clients, the Cabinet Office of the Government of Japan, local governments, education authorities, university professors, and the media.

The project has even attracted the attention of opinion leaders such as Professor Ryoji Noyori, the 2001 Nobel Prize Laureate in Chemistry. The project is promoted on the official websites of seven cities. This is considered as a corporate social responsibility (CSR) project, with full funding provided by AGC. Goto Tomorrow Co., Ltd. is partnering with AGC on the planning and implementation process of the project.

Outcomes and Activities

AGC donated laminated glass and the installation costs to 15 shelters in the first two years and plans to make donations to five more shelters in 2008. One of the key performance indicators for this project is the number of registered users on the campaign website. The target number in the second phase is 20,000 and as of the end of June 2008, over 17,000 people are registered. This project is unique in its use of a donation system. Recipient shelters are selected through online voting. The project has several impacts for disaster risk reduction. More laminated glass saves more lives in typhoons as well as earthquakes.

The first step in implementing the project was to inform AGC employees, distributors and suppliers about this donation campaign. It gives employees a sense of pride in their company, while it demonstrates AGC's leadership to its distributors, and engenders the respect of its suppliers. Hence, these partners proactively and proudly inform others of the project and invite more people to register.

The website has been attractively designed to encourage users to visit it more frequently and invite their friends to do the same. Some games have also been posted on the website, and other donation programs, such as a program to send 10,000 notebooks and 10,000 pencils to children who were affected by the Sichuan Earthquake.

The Good Practice

Since AGC is a glass manufacturer, it can provide the best solutions for glass-related problems. It is the company's social responsibility to use glass to protect people. The campaign gained more interest by local authorities and the media when AGC provided laminated glass window donations for evacuation shelters. It is a good practice because it uses the internet to communicate the advantages of laminated glass for disaster resistance directly to citizens in a way that is quick, easy and economical. As the number of registered website users is increasing, the public authorities will pay more attention to the company's disaster risk reduction activities and will listen more carefully to the company's message. The Glass Power Campaign has achieved tangible results in promoting disaster prevention, and in raising public awareness about the importance of disaster prevention.

Photo by Asahi Glass Company, Ltd.

Lesson(s) Learned

The key lessons learned from this project are:

- As a glass company, AGC has the responsibility to reduce glass-related disaster risks and to provide the best solutions available. However, some public agencies may be hesitant to meet with company representatives because of the assumption that they will be trying to promote their company's products. The donation component of the project and the number of registered website users will help them to better understand the project's purpose.

- People generally do not know much about glass and initially tend to be somewhat afraid of it. It was difficult to convince them of the advantages of laminated glass at the beginning of the project, but the internet site facilitated the dissemination of information and enhanced their knowledge about laminated glass as well as their understanding of the need for disaster risk reduction.

- Creating a website that would be attractive enough to ensure high traffic was a major challenge. Even websites with a serious message and accurate information do not tend to attract high traffic volumes. Disaster risk reduction is not generally a fun topic, so people tend not to visit related sites. The voting system was crucial to the success in attracting visitors to the site. Updating the content was also critical.

Figure by Asahi Glass Company, Ltd: Project Website of the Glass Power Campaign

Potential of Replication

The project methodology is very simple and would not be difficult to replicate by manufacturers in different industries, such as furniture manufacturers, ceiling material manufacturers, and others who make products relevant to disaster risk reduction. More laminated glass means greater numbers of people protected and higher revenues for the glass industry. Glass manufacturers in other countries could easily replicate the project.

Manufacturers of products for disaster risk reduction need to understand the following:

- Their products protect people and are conducive to environmental preservation.
- Selling more of their products, due to higher visibility, brings more revenue.
- Their products improve employee satisfaction, customer satisfaction, and company liability.

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Sri Lanka

Micro-credit scheme for better livelihood for communities living in disaster prone areas of Kalutara (Sri Lanka)

Asian Disaster Preparedness Center (ADPC)

Photo by Sarvodaya

Abstract

In disaster preparedness and mitigation, secondary cities receive low priority from the government and the local authorities do not have enough resources nor the capacity to meet the needs of the city on their own. To address this issue and to support such cities in selected Asian countries, the Asian Disaster Preparedness Center (ADPC) launched the program called Hydro-Meteorological Disaster Mitigation in Secondary Cities (PROMISE) with financial aid from USAID. In most secondary cities, losses are assessed on the state level and seldom in detail at the community level. Under PROMISE, Kalutara was selected as a city to implement the programme and the NGO Lanka Jathika Sarvodaya Shramadana Sangamaya served as the local partner. Economic vulnerability was identified as one of the major problems to be addressed. The disruption of livelihoods, as a result of disasters, makes low-income groups living in vulnerable areas face severe hardships in their daily life. To give a helping hand to such communities, a pilot project was implemented with the partnership of the Asian Disaster Preparedness Center (ADPC), Sarvodaya and Lagoswatte Sarvodaya Eco Village (CBO) of that area. A micro-credit loan system was provided to the needy families through the Sarvodaya banking facility. It supports the start, improvement or sustaining of a livelihood, so that their livelihood is not disrupted and the situation of reverting into informal loans is prevented.

Goals and Objectives

PROMISE has launched a micro-credit scheme, as a part of non-structural mitigation and preparedness measures for the benefit of vulnerable communities in Kalutara. Lanka Jathika Sarvodaya Shramadana Sangamaya, is the largest national NGO in Sri Lanka and the lead institute responsible for the delivery of PROMISE activities. SEEDS is the economic arm of Sarvodaya and plays the role of a private bank in financing the project. The main objective of SEEDS is to alleviate poverty by promoting economic empowerment of people for a sustainable livelihood. It was transformed as a separate legal entity by incorporating its services as a limited liability company.

The Initiative

This pilot project “Micro-Credit Scheme for Better Livelihoods” is an activity for disaster preparedness and mitigation in easing economic losses. During post-disaster periods, the chain of income generation activities of people who have highly informal means of living, frequently becomes disrupted. The groups suffering directly are mainly the low-income families who live in vulnerable areas. The losses they suffer often lead to long term indirect economic effects on the livelihoods of the urban poor. Their clients and the market for their products are lost, and therefore they are compelled to sell their property, tools, equipment and machines, which they urgently need for production processes. In addition to their daily living needs, post disaster situations demand more financial aid to upkeep their lives. When the routine livelihood is disturbed, cash flow capacity of most households will be drained off. Coping strategies such as borrowing money from informal lenders limits their options for managing risk and often deteriorates their financial stability. It is accepted that the informal loan is part of the routine system of the urban poor.

ADPC has identified Kalutara as one of six cities, to implement the Program for Hydro- Meteorological Disaster Mitigation in Secondary Cities (PROMISE) in Asia. The Program is funded by USAID/OFDA and implemented by ADPC through the local partner, Sarvodaya Sharamadana Sangamaya, a respected NGO in Sri Lanka. Mitigation and preparedness is one of the four components of the Program. Sarvodaya has identified economic vulnerability due to disasters as one of the issues to be addressed. Kalutara city is situated on the western coastal belt towards the Southern part of Sri Lanka and about 40 km from Colombo. The city is famous for its location on the bank of the Kalu River. The main hazard leading to disaster striking the community living in Kalutara are floods.


Photo by Sarvodaya

Outcomes and Activities

The 'Micro-Credit Scheme' is a revolving fund, which facilitates the livelihood creation, development and rehabilitation activities of communities at a low-income level. For the Kalutara area, the scheme is supported by ADPC with PROMISE providing technical support to develop the micro-credit scheme using the vulnerability assessments carried out during the project. This activity was coordinated by Sarvodaya Community Disaster Management Center as a NGO, and Lagoswatta Sarvodaya Eco village at Kaluatara as the CBO. The financial execution is run by the Sarvodaya Economic Enterprise Development Services Ltd (SEEDS). The scheme consists of basic credit policies set up by SEEDS at the local level with the idea of giving funds that will satisfy the needs in livelihood development. The system helps people to solve problems within their social structure and is able to give them more confidence in earning a living.

The project was planned in 2007 and the first round of credit facilities was implemented in the first quarter of 2008. It was carried out in several stages. First, Sarvodaya identified the most vulnerable communities to floods, their appropriate level of risk and the frequency of disasters during the last 5-10 years, through a hazard and vulnerability assessment. This was carried out with the help of the government officer in charge of the village. Second, a workshop was conducted to make the vulnerable people aware of micro-credit schemes, facilities, interests and recovery periods.

Participants were also offered technical knowledge to be able to get a maximum rate of return and to select appropriate investments in livelihood development. In addition, awareness was created on how to facilitate rehabilitation activities, as well as livelihood creation and development. Third, applications were submitted and a preliminary screening was done to select potential recipients. Emphasis was placed on people living in high risk areas and exposed to a high frequency of floods, single parent families, and applicants with a highly informal livelihood. Fourth, a team from Sarvodaya visited the places of entrepreneurship to examine the credibility of information forwarded by the applicants. After the second round of selection, applications were sorted according to a priority order following preset criteria. Finally, ten applicants were selected and provided with credit facilities. SEEDS will follow up on repayments and other financial obligations. Once sufficient money is collected through payment of installments, a second round of credit grants will continue. Financial facilities were provided for running small shops to sell grocery items, vegetables, food items and minor retail items. Some women purchased sewing machines to knit clothes to sell at open markets or to have a small home-based showroom. Others purchased tools for homemade food products, processed fruits and vegetables and packaging. Some purchased tools for carpentry workshops and aquatic products.

The Good Practice

People living in vulnerable communities are not familiar with micro-credit facilities nor are they able to afford to pay premiums in ordinary terms. Besides, the necessary financial infrastructure does not exist in common terms. Concerning informal loan options, individuals and societies are sometimes reluctant to provide loans as repayment is uncertain and usually charge heavy interests. The micro-credit scheme offers priority to the poorest families, especially worst cases such as single parent families. During disaster recovery periods, when income is running out, they often do not have enough savings, except some commodities initially given as emergency social welfare by a government agency. Therefore, the scheme reaches the neediest at a point in time when it is most needed. In addition, the system prevents people being attracted by unlawful and socially unacceptable means of living. Self-employed or home-based women benefited from the scheme. Women often find themselves more vulnerable than men holding responsibilities for family earning and living expenses.

Another best practice is the creation or strengthening of personal or family visions in the future. Ordinary people are able to develop their business plans systematically. They are supported with technical know-how and market links to the Industrial Development Board through the interventions of Sarvodaya.

Lesson(s) Learned

Many women attended the awareness programmes, often being the prime potential recipients. It should be recognized that women are the primary resource users and serve as good managers who seek to identify needs, control and manage the business while taking care of their extended families, children, home and neighbourhood. With the limited assets, spaces and systems available, they struggle for reduction of economic vulnerability and to keep the living pattern of their family in spite of the losses during and after disaster periods.

The main problem is the marketing strategy for products. Sarvodaya has its own system for outlets under its small industries development sector. For those who need assistance to sell their products, they can use that facility. Items such as clothing and woodwork can be marketed that way. Women entrepreneurs were linked with Sarvodaya Women's movement to obtain more technical support. From there on, it is the credit facility recipients' initiative and interest to expand their business capacity further.

Another challenge is the limited funds that are available for an increasing number of potential participants. Since the micro-credit scheme is a pilot project, further extensions can be addressed once the first round of credit schemes is over. However, the governing body close to the community is the local authority and its intervention is needed as a crucial support factor when these activities are implemented at local level.

Potential of Replication

Sarvodaya is the largest NGO in the country and is well recognized. It has been operational for almost 50 years. Its operational area covers 15,000 villages, 345 divisional units, and 34 district offices and 10 specialist Development Education Institutes. Further, the Sarvodaya Economic Enterprise Development Services (SEEDS) is the economic arm of Sarvodaya and the country's largest micro-credit organization with a cumulative loan portfolio of over USD1 million. SEEDS' professional financial services are provided by trained and experienced staff mainly for low-income groups. So when Sarvodaya approaches the people, due recognition is already available to implement a project. Using this recognition and trust, economically active vulnerable communities can make optimum use of the micro-credit facilities. This scheme can be easily replicated in other disaster prone areas and for larger groups, as the Sarvodaya Community organizations are well established over the country. Initially, some external support is required to start the project, as local authorities with its limited capacity and resources are not able to focus on developing sustainable livelihoods unless donor assistance is found.

Once sustainability is established, the project ceases to exist and the micro-credit scheme continues with its revolving nature. However, during the first few years, if there are heavy losses and many defaulters, the continuation for longer years cannot be assured. Since the SEEDS has experience in dealing with micro-credit to low-income communities, the problem of defaulting can be minimized. While the potential demand for micro-credit schemes is analyzed, a few questions need to be raised. What are the costs? How reliable is the loan recovery process? If the answers received are positive, continuation can be considered. With the periodical evaluation by Sarvodaya, the Community Disaster Management Centre and SEEDS, the project is expected to expand and be replicated in the coming years.

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Acronyms

ADPC	Asian Disaster Preparedness Centre
ADRAN	Asian Disaster Reduction and Response Network
ADRC	Asian Disaster Reduction Center
AFPCN	Association Française pour la Prévention des Risques Naturelles
AFPS	Association Française de Génie Parasismique
BCM	Business Continuity Management
BHA	Bali Hotels Association
BMG	Badan Meteorology dan Geofisika
BUDPAR	Ministry of Culture and Tourism of the Republic of Indonesia
CBO	Community-based Organisation
CEPRI	Centre Européen pour la Prévention des Risques d'Inondation
CIM	German Centrum für Migration und Entwicklung
CNDR	Corporate Network for Disaster Response
CRA	Community Risk Assessment
CSO	Civil Society Organization
CSR	Corporate Social Responsibility
DRM	Disaster Risk Management
FEMA	Federal Emergency Management Agency
FFSA	Fédération Française des Sociétés d'Assurance
GEMA	Groupement des Entreprises Mutuelles d'Assurance
GIS	Geographic Information System
GITEWS	German Indonesian Tsunami Early Warning System
GTZ	German Technical Cooperation Agency
GTZ IS	Gesellschaft für Technische Zusammenarbeit International Services
HCFDC	Haut Comité Français pour la Défense Civile
HRDP	Human Resource Development Programme
InWEnt	Internationale Weiterbildung und Entwicklung GmbH Capacity Building
IPGR	Institut pour la Prévention et la Gestion des Risques Urbains
IRMA	Institut des Risques Majeurs
IUGS	International Union of Geological Sciences
IYPE	International Year of Planet Earth
JCCU	Japanese Consumers' Co-operative Union
JST	Japan Science and Technology Agency
MAIF	Mutuelle assurance des instituteurs de France
MAH	Major Accident Hazard
MDCC	Municipal Disaster Coordinating Council (Philippines)
MEXT	Ministry of Education, Culture, Sports, Science and Technology of Japan
MFI	Micro-Finance Institutions
MHA	Multi-Hazard Assessment
MNRE	Ministry of Natural Resources and Environment (Samoa)
MRN	Mission Risques Naturels
NDMA	National Disaster Management Authority (India)
NDMO	National Disaster Management Office (Samoa)
NGO	Non-Governmental Organization
NPO	Non-Profit Organization
PPP	Public-Private Partnership

PUMA	Planning and Urban Management Agency (Samoa)
SADC	Swiss Agency for Development and Cooperation
SED	Swiss Seismological Service
SHF	Société Hydrotechnique Française
SMABTP	Société Mutuelle Assurance du Bâtiment et Travaux Publics
UNDP	United Nations Development Program
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNISDR	United Nations International Strategy for Disaster Reduction
USAID/OFDA	US Agency for International Development Office of Foreign Disaster Assistance
WAPMERR	World Agency of Planetary Monitoring and Earthquake Risk Reduction

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