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Asian Disaster Preparedness Center

Community-based disaster management Sri Lanka
Program for Hydro-meteorological Disaster Mitigation in Secondary Cities in Asia

Safer Cities 23

Case studies on mitigating disasters in Asia and the Pacific

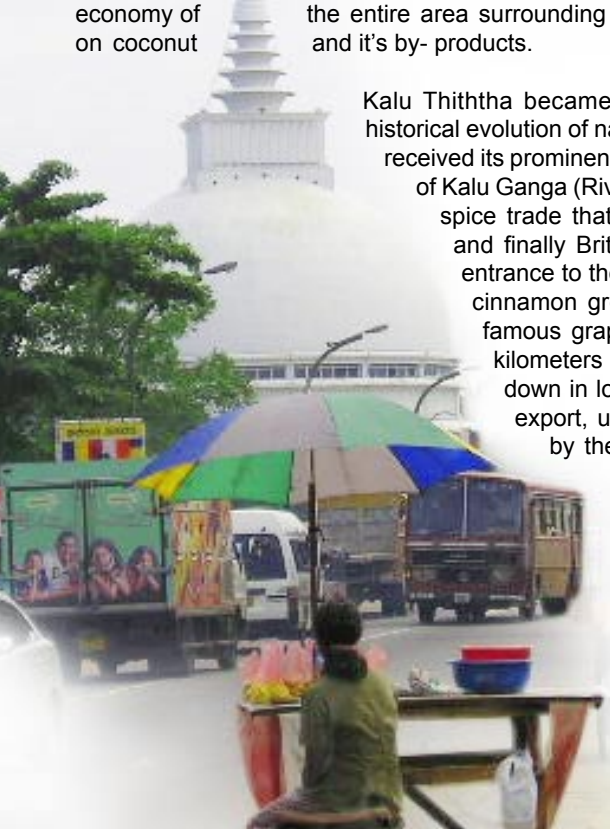
Urban Flood Risk Mitigation in Kalutara City, Sri Lanka

In December 2004 when Tsunami hit Sri Lanka and Kalutara being on the western coast, also became a victim of the disaster. A city, forgotten by the Govt. and donors, like many of other secondary cities has a history of frequent flooding and Kalutara district is always a sufferer from Kalu river flooding. So PROMISE project was a blessing and community overwhelmingly participated in activities connected. People understand well that they should be prepared to leave houses but not aware when they should do. People know that the area will get submerged and local flood will flow into their houses, but were not able to prevent it. They are low-income families and cannot afford to construct most wanted drains. So stories are similar and many. So, out of thousands of expectations, PROMISE gave a helping hand for few of them to come true. This is a study of the results of PROMISE where community participation is high in mitigating and preparing for flood disasters.

Historical Importance of Kalutara

Kalutara is a city located nearly 40 kilometers south of Colombo, the capital of Sri Lanka. The city is famous for its location on the bank of Kalu Ganga (River Black).

Kalu Thiththa was the name of present Kalutara in the history. It means the Sea port on the beach where Kalu Ganga (River Black) falls to the sea. The seafarers used this port to land their ships during their voyages on trade. The city's history goes back to the 11th Century when a South Indian Prince called Vickramapandya became the ruler of Kalu Thiththa when the powerful Pandyan dynasty of South India invaded the island in the 11th century. This ruler lived only a short period of one year as he was killed by the natives who rose against the invader. The written history of Kalu Thithta gives reference to King Parakramabahu II who ordered to plant coconut on the maritime stretch of the river delta 200 years after the Pandyan invasion. Since then the economy of the entire area surrounding the port has been largely dependent on coconut and it's by- products.



Kalu Thiththa became Kaluthota and later Kalutara in the historical evolution of names for easy usage. Present Kalutara received its prominence because of its location on the mouth of Kalu Ganga (River Black) especially for sea farers. The spice trade that brought first Portuguese then Dutch and finally British built fortresses to guard the river entrance to the interior, where the spices particularly cinnamon grew. The graphite mined in Dumbara, famous graphite deposits still available nearly 40 kilometers upstream of the Kalu Ganga, brought down in locally made boats through the river for export, using the Kalutara port in 19th century by the British. The British initiated the next change of the landscape of Kalutara by introducing Rubber seeds smuggled out of Brazil in bails of cotton. Today, large part of Kalutara is neatly planted with rubber trees that stand in clean and formal rows with their silvery trunks and high canopy.

Abstract

This case study based on Kalutara UC area in Sri Lanka illustrates the significance of actions by various stakeholders including community members. The case study presents different types of interventions for promoting flood preparedness actions in a secondary city in Sri Lanka

What's inside

November 2008

Duel Role of Kalu River : A Worrier and a Lifeline for Kalutara city

The Kalu Ganga, starts from the central hills of Sri Lanka. It is one of the four rivers that originates from a Sacred Hill for Buddhists known as Sri Pada, (Adam's Peak is the name in English in usage) located at 2250 msl. The total length of the river is 100 km from its origin to its mouth at Kalutara where it empties water to the Indian Ocean. The Kalu River is the third longest river in the country. With its catchment area of about 2,719 km^2, it discharges large volume of water of the magnitude of approximately 4,032×106 m^3 to the sea annually. The river basin lies entirely within the wet zone of the country. The average annual rainfall in the basin is 4000 mm, ranging from 6000 mm in mountainous areas and 2000 mm in the low plain areas. Between the source of the river and Ratnapura, a major city famous for its gems (precious stones) therefore known as City of Gems, the river stretch is narrow in the bed with high banks on both sides. The river drops from 2,250 msl to 14 msl within its first 36 km before it reaches Ratnapura city. It joins Wey River another river originates from the southern part of the mountain range of the central hills, at Ratnapura and then travels 75 km to meet the sea at Kalutara. A location map is shown in Figure 1.

Six major tributaries join the Kalu River between Ratnapura and Kalutara as shown in Figure 2. They are Niri Ella River, Kuru River, Galatura Oya, Yatipawwa Ela, Morawak Oya and Kuda Oya. Frequent flooding along the Kalu Ganga is a common phenomenon that people live around the banks of Kalu Ganga and its tributaries experience every year.

The main cause of flooding of Ratnapura town is the high annual rainfall in the catchment of 604 km2 above Ratnapura. The riverbed elevation at Ratnapura is only 11.70 msl and the length of the river course from Ratnapura to Kalutara is 76.5 km. Thus, the gradient of the riverbed is only 0.15 m per km. This explains its inadequacy to create higher velocities to discharge floods. In addition, there is a bottleneck at Ellagawa, which is about 30 km downstream of the Ratnapura town and 47 km upstream from the Kalutara town. This narrow gap retains the water for several days in the Ratnapura District before it releases to Kalutara District.

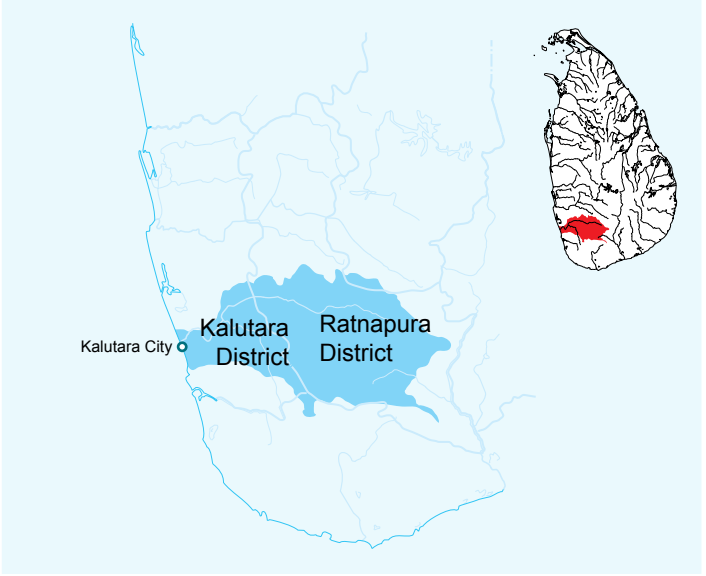
There is no significant development of water resources in the Kalu River basin apart from drinking water supply and minor irrigation schemes. The only notable development is across Kukule River, which is a tributary of the Kuda River where 80 MW hydropower scheme is functioning. The rainfall occur in the catchments of this hydro power scheme is another key factor that contributes floods in Kalutara. The opening of sluice gates allowing spilling of the reservoir during heavy rains was the cause for heavy floods in Kalutara in June 2008.

Floods along the Kalu Ganga from the most upstream major town, Ratnapura to the most downstream major town, Kalutara cause great inconvenience to the people economically and socially. Annual flood damages in Ratnapura and Kalutara districts are shown in Table 1.

The floods in May 2003 recorded highest damage since 1992. The landslides triggered by heavy rainfall caused severe impact on lives and economic assets of the people. The floods occurred in May 2008 also was serious after the floods in May 2003. The estimated damage of this flood is Rs. 23.0 million approximately. The frequency and the intensity of flooding in Kalutara city therefore necessitated seeking assistance of recent advances in the field of disaster preparedness and mitigation. Program for Hydro-Meteorological Disaster Mitigation for Secondary Cities in South and South East Asia (PROMISE) with financial support of United States Agency for International Development (USAID) implemented by the Asian Disaster Preparedness Center (ADPC) of Thailand offered what Kalutara as a secondary city that suffers annually due to floods, is looking for.

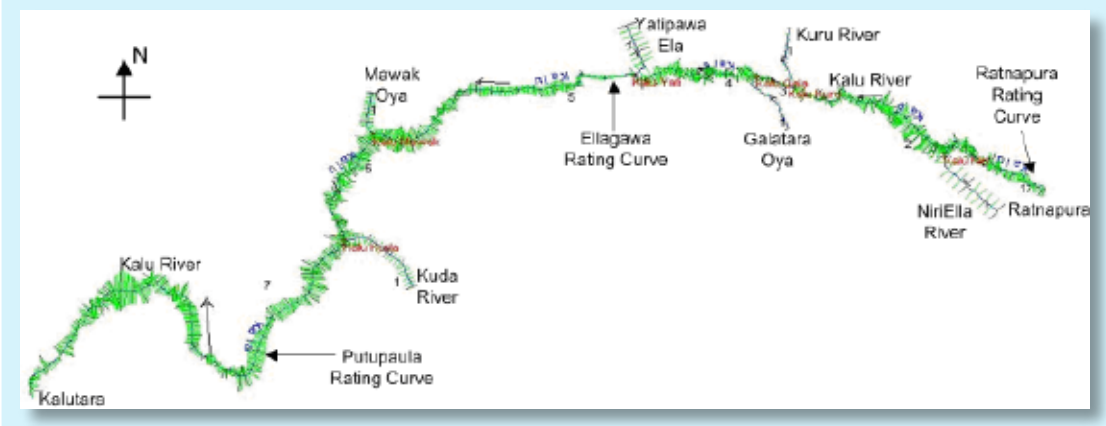
Community hazard mapping in Kalutara

Kalu Ganga basin **Figure 1**



Source: NBRO

Kalu River from Ratnapura to Kalutara **Figure 2**



Source: NBRO

Annual flood damages in Kalu River basin 1984 -2003 in million rupees — Table 1

Year	Annual flood damages		Year	Annual flood damages	
	Ratnapura	Kalutara		Ratnapura	Kalutara
1984	0.37	0.27	1994	3.01	2.19
1985	0.22	0.16	1995	5.64	1.31
1986	1.10	0.80	1996	N.A.	0.55
1987	0.05	0.03	1997	2.18	0.42
1988	0.23	0.17	1998	0.46	3.34
1989	3.94	2.88	1999	7.69	8.70
1990	3.11	2.27	2000	2.72	1.17
1991	6.34	4.62	2001	0.08	0.74
1992	12.42	9.06	2002	0.25	1.63
1993	2.41	1.76	2003	50.6	21.76

Source: " Pre Feasibility Study Assessment of Kalu Ganga Flood Protection with Special Reference to Ratnapura", UNDP

PROMISE in Kalutara Sri Lanka — Box 1

The PROMISE offered to Kalutara appropriately designed program to suit the needs of the city within the overall objectives of the larger program of PROMISE. Thus, it consisted mainly of the following;

1. Hazard mapping and vulnerability assessment- The vulnerability of the communities in terms of the geographic location of the city, its infrastructure and livelihoods
2. Kalu Ganga river flood forecasting and warning system
3. Demonstration activities as a measure for disaster preparedness and mitigation
4. Micro credit scheme as a measure of mitigation of flood impacts on the livelihood of urban poor
5. Activities to build the community awareness on flood risk management.

Lanka Jathika Sarvodaya Shramadana Sangamaya, the largest National Non Governmental Organization (NGO) with its extensive network within the country is the lead institute responsible for the delivery of PROMISE activities in Kalutara. This effort of Sarvodaya is supported by Kalutara Urban Council (KUC), Sri Lanka Institute of Local Governance, National Building Research Organization (NBRO) and Disaster Management Centre of Sri Lanka.

Hazard, Vulnerability, Risk and Capacity Assessment (HVRCA) - Team Work

PROMISE commenced its implementation in 2006 with an initial training program conducted on Community Based Disaster Risk Management for Sarvodaya members and other community level volunteers. The Community Based Disaster Risk Management Field Practitioner's handbook was developed in Sinhala, the local language to guide them in conducting field work. This Handbook is adopted as a Volunteer training module to be used in the training programs for the community volunteers. Sixteen cluster wards in the KUC that suffers in every flood event were the direct target group of PROMISE.

Community hazard mapping in Kalutara

Following the vulnerability assessments conducted in November 2006 using participatory risk assessment tools in the 16 wards of the KUC, community hazard maps were prepared. This exercise slightly changed the standard process of workshops to accommodate urban environment. Given the busy schedule of urban population, conducting HVR according to the standard process seems difficult. Hence SARVODAYA deviated slightly from the prescribed process but involved the community by holding "Pocket Meetings", a term in use for small group meetings, in identifying hazards they face and assessing the extent of their vulnerability and risks.

The HVRC exercise facilitated the regular updating of information and became a good platform to test how the political will and community priority should go together. Public concern expressed on local government intervention was a new experience for the people as well as to the Urban Council. The PROMISE provided an opportunity for building a good understanding that is mutually beneficial to both people and the Urban Council. This partnership reduced the burden of the Urban Council in addressing the issues alone.

The recent flood in Kalutara in May 2008, was a good example to demonstrate how the Urban Council is more responsive to the peoples' need now as a result of their participation in PROMISE. Al-Haj M. S. M. Mubarak, the Mayor of Kalutara Urban Council having received the first call announcing potential floods, immediately activated the Emergency Response plan and mobilized food for the flood victims through religious organizations while arranging evacuation of people from flood affected areas to safe shelters. It was the Urban Council that went first to assist people when floods surrounded their homes. The agencies of the central government reached the area much later according to Mr. Mubarak. The role of the Urban Council at the wake of the floods was highly appreciated by people as they never expected such a quick response from the Urban Council. The peoples' confidence on their Urban Council is gradually improving as a result of the changed role of the Urban Council. From an organization that used to provide very specific services authorized by law for its tax payers and performed regulatory functions, Kalutara Urban Council has transformed into an organization that serves peoples' need. The exposure to the PROMISE is the reason for this change, the Mayor attributes.

Participation by all

PROMISE conducted first responder training to a group of 30 volunteers. Sarvodaya has subsequently under taken training to build the capacity of selected volunteers of the city. PROMISE had provided first aid and other emergency response skills with the assistance of Medical Teams International. The outcome of this training is highly relevant to the situation in Kalutara when monsoon rains of two seasons bring heavy floods to the area. The sixteen youths trained in first aid and emergency response have become volunteers of DMC of Kalutara ready to provide their services in the event of any disaster, particularly floods.

Setting up Flood Forecasting and Early Warning Systems for Kalu River basin

A flood simulation model has been developed to predict water level along the river stretch from Ratnapura to Kalutara for different water flows in the river. The flows that are expected at the upstream ends of the Kalu River and its six major tributaries have been used as input data to the model. The rating curves that can be obtained from the model at any river cross section as one output provide the relationship between the flow and the water level, too. The design of the model was a result of comprehensive studies and joint efforts accomplished by Prof. K D W Nandalal of University of Peradeniya and Scientists of National Building Research Organization.

Mr. D K Varnis showing the Flood Marker installed at the boundary of his garden bordering the right bank of Kalu Ganga

Reading flood level during floods in June 2008 - at Thebuwana, on the left bank of Kalu River

Based on these confluences, the Kalu River is divided into 7 reaches in the model. The model, which uses the HEC-RAS hydrodynamic model, requires the topography (DEM), cross sections, upstream and downstream boundary conditions and hydraulic characteristics of the river to model it. The flood model was developed using flood levels of past 30 years and calibrated using known flood levels and volumes during flash floods in May 2003. The model provides the extent of inundation on both banks along the river. The three dimensional view of inundation area along the river is a useful result. The probability that water level at a downstream location rises above a certain level for different water levels observed at an upstream location can be obtained from the model. Thus, floods at downstream areas could be predicted based on flood water levels experience at upstream locations. This result can be used to provide early warning to people in downstream areas by upstream communities, based on the floods that they experience. However, the time such a flood will reach can not be exactly predicted due to the very complex rainfall/inflow patterns. However, for a smaller catchment, the flood warning ahead of 12 – 24 hrs can be very helpful to community in down stream areas. Nevertheless, when flood can inundate area in the night, the case is different and evacuation is difficult. The design of the flood models can be of immense use.

Based on the Model thus developed flood markers are installed in ten locations on both sides of the Kalu Ganga banks over a stretch of nearly 20 km of the tail end of the river from Kalawellawa to Kalutara Bridge. The communities are trained to assess the risk levels i.e warning, alert and evacuation, by reading the gauges. The floods occurred in June 2008 is a good opportunity to test the gauges. The problem encountered was the submerging of the roads before the flood reached the 'Warning' level at the gauges. This resulted in advance evacuation of people. The model needs to consider this result and revise accordingly.

Demonstrating Flood Disaster Preparedness and Mitigation

During the HVCA assessment, one of the tasks assigned to the community is to identify a number of risk mitigation activities that can be implemented on a participatory basis. PROMISE facilitated people to identify solutions to the issues they highlighted at the HVRC exercise and demonstration projects were based on these suggestions and the priority selections by community members. The construction of the drainage system at Dhaham Mawatha is one such project. With technical assistance of the Urban Council, the people of

Bindunu Ela after cleaning

Waste Collection Centre at Vivekarama Temple Premises being constructed

Mrs. Sheila Dissanayake showing her compost bin

Dhaham Mawatha constructed the drainage system that relieved 32 families who were inundated with overflow of water during the rains. The community feelings strengthened as a result of the perfectly well functioning drainage system is remarkable, particularly given the absence of such unity among the 'Urban dwellers'. Mr. D.J Andradi of Dhaham Mawatha one of the beneficiaries confirmed that the "Unity and togetherness" of the families at Dhaham Mawatha evolved as a result of the drainage system will be continued for further development of the community, having realized the strength of forming and working in a group rather than an individual.

The PROMISE facilitated an effective partnership with different stakeholders through a modest intervention at Dhaham Mawatha. The team effort of the partners that includes the Urban Council, its technical personnel, private sector construction firm, craftsmen and the people contributed to the success of this intervention. Nearly 40 craftsmen were trained in disaster resistant construction of structures in flood prone areas.

Bindunu Ela is a canal that flows through a densely populated area of Kalutara. The canal was the dumping ground for solid waste not only of the residents who live on the banks of the canal but also the passers by. The pollution due to waste disposal and wastewater discharged to the canal has caused health hazards. The people continue to dispose waste in to the canal while blaming city authorities for not taking action to clean the canal. Through the community meetings of PROMISE, the people of Bindunu Ela realized the need to dispose their waste in a more responsive manner than just dumping to the canal. The Buddhist priest Rev. Nelundande Wimalasara Thero of Vivekaramaya temple took the lead and helped people to organize themselves to manage the waste they generate. Reverent monk provided a piece of land to construct a collection centre for recyclable waste. The Death Relief Welfare Society of the village Kuda Wadduwa readily accepted to manage the Centre. The households were provided with compost bins to dispose their biologically degradable waste. The other items such as glass, tins, paper and plastic are now brought to the centre once a week. These items are sold to the buyers who are now linked with the centre. The revenue earned from the sales of recyclable waste is a good source of income to the Society that in turn helps the members in their need for help. i.e funerals. This Society is an important organization in the community and therefore the sustainability of the waste management after the completion of PROMISE is already ensured.

While waste is turned into a marketable product and a resource, another spread effect is gradually taking off the ground. That is the home gardens developed by the house wives using the compost produced. The home gardening was a concept introduced under the activities of PROMISE as part of its disaster preparedness and mitigation measures. It started with addressing the flooding of Bindunu Ela due to waste disposal. Once a system is introduced for the proper management of waste, its results spread to bring multiple benefits. The waste turned in to compost provides good manure for organic farming. The collected recyclable waste brings an income to a peoples' society in which many families are life long members.

Today home gardens have become a significant economic means to the families of Kalutara. In the face of soaring vegetable prices, home gardening has become an attractive livelihood for many. The women take pride of their own home garden according to Kamani Sagarika. The exposure given to the women in Bindunu Ela under the sponsorship of PROMISE has paid its dividends says Mrs. Shiela Dissanayake. They now look for every opportunity to learn more about home gardening after the awareness initially provided by the PROMISE she said. She further said that most of them who used to watch the television for favorite tele dramas now have switched on to watch programs on organic farming, home gardening and similar educational programs that clearly benefit them economically.

A home grocery under Micro Credit scheme

Micro Credit Scheme

PROMISE facilitated the introduction of micro credit scheme through assistance to introduce a pilot intervention for disaster mitigation among the urban poor whose livelihoods are highly vulnerable in the events of frequent floods in Kalutara. Sarvodaya with Sarvodaya Economic Enterprise Development Scheme (SEEDS) introduced the concept of micro credit with the technical support of PROMISE. The purpose of this attempt is to demonstrate that the urban poor are capable of facing the challenges entail in disasters if their livelihoods are not disturbed and not at risk of pushing them to the money lenders in the informal sector. Sarvodaya SEEDS selected ten beneficiaries who should be in the first round of micro credit scheme following an intensive awareness session with them. Almost all of these beneficiaries are the small self-employed people whose day to day functioning is disturbed during the floods. The micro credit facilities offered under the PROMISE became an eye opener for this group who were trapped in a vicious cycle of poverty due to the exploitative grip of the money lenders who appear as saviors soon after floods. The realization of the importance of micro credit in uplifting the livelihoods of the urban poor is a new experience for Sarvodaya that could be replicated as a measure for disaster mitigation.

School children at the Disaster Safety Day

Safe School Program

The Disaster Management Centre (DMC) of the Kalutara District has been instrumental in disaster preparedness in schools in Kalutara under Safe School program. The training on First Aid is well received by the children as such aspects are external to the standard curriculum of the school system. The children are the messengers to their parents on safe and clean environment. The schools are now linked with the DMC and NGOs involved in Disaster Management. The result of the awareness created among school children is already visible. They became volunteers to work with DMC and Sarvodaya should the need arises.

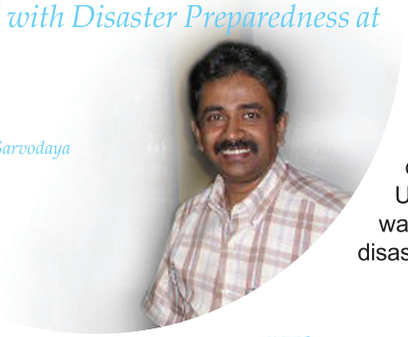
Mothers carrying their babies attending a meeting of PROMISE held at the Temple

Sustainability

The community participation generated as a result of PROMISE is very promising. The meetings organized by Sarvodaya in implementing PROMISE activities are well attended by hundreds of people particularly by women. Even the nursing mothers carrying their babies come to listen and to participate actively in the discussions. The mobilization of people and empowering them economically and socially is an effective blend for further germination of the seeds sown by the

PROMISE. The women of the adjacent village of Dawatagahawatta sent two representatives requesting PROMISE to extend its coverage to their village also. This reflects the effectiveness of the results of PROMISE that generate a demand rather than project pushing people to accept what the project offers.

"We are one of the biggest community development institutions in Sri Lanka. We are new to the field of Disaster Risk Management but PROMISE helped us to build much needed institutional capacity to deal with Disaster Preparedness at local level."

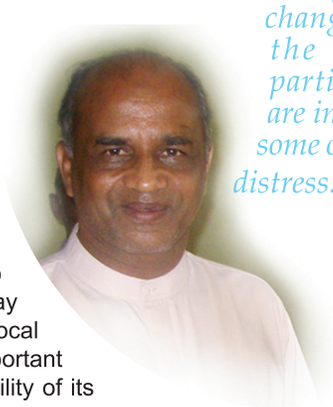


Dr.Vinya Ariyarathne
Executive Director - Sarvodaya

The people themselves have realized the need to participate and claim their ownership for the results of PROMISE. The Recyclable waste collection centre provides a good example. The temple lands are not normally given to outside activities other than religious functions. Waste is of particular concern as it carries dirt which is not normally permitted in sacred places like temples. The lead role played by the Buddhist monk to break away from conventional attitudes, realizing the need of the people is great. The continued support and leadership of the monk would ensure the sustainability of the success of the waste management introduced under PROMISE.

The response to disasters by Kalutara Urban Council has taken a new paradigm shift. A body that was limited to serve its legal mandate has changed to respond to the peoples' needs, particularly when they are in need the support of some organization at their distress. The manner that the Kalutara Urban Council responded to help the people when the floods surrounded them in May 2008 created confidence among the people on their Local Authority. The trust thus built is politically and socially important to the Local authority as well and therefore the probability of its continuity is high.

"The response to disasters by Kalutara Urban Council has taken a new paradigm shift. A body that was limited to serve its legal mandate has changed to respond to the peoples' needs, particularly when they are in need the support of some organization at their distress."



Al Haj M S M Mubarak
Mayor, Kalutara City

The demonstration projects implemented enabled people to realize the importance of being in a group or community as expressed by Mr. Andradi of Dhaham Mawatha. The years of suffering during rains due to inundation with overflowing surface water was relieved due to their active involvement in solving a problem common to all. Mr. Andradi confirmed that they will continue the team spirit built as a result of improved environment to acquire more benefits to the people of Dhaham Mawatha.

Disaster Safety Day

Government of Sri Lanka has declared December 26th as the Disaster Safety Day memorializing the great tragedy of Tsunami in 2004, which killed nearly 40,000 people in Sri Lanka. Various activities are taking place to raise the public awareness on disasters, impacts, and preparedness and mitigation measures. In 2006, Sarvodaya, supported by Disaster Management Centre of Kalutara district had organized a series of public awareness activities in Kalutara area. An Art competition and an essay competition drew more attention of school children and winners were awarded with valuable presents. Selected entries were among the display items at the exhibition along with awareness posters, slogans, booklets and other materials. Sarvodaya has organized a walk and a rally with the participation of around 2000 people including school children at the disaster safety day. .

Action Planning Workshop

In 2005, the Sri Lankan government has approved the Disaster Management Act, and the importance of national, provincial and local level disaster management plans were highlighted. Under the same act, Disaster Management Centre was strengthened by powers and authorities over disasters. One of the key responsibilities of the Disaster Management Centre was to establish Disaster Management plans at all three tiers of governing bodies and assure they are functioning. Kalutara Urban Council too required establishing Disaster Management Plan for the city. PROMISE involvement made the task easier for city administrators. In March 2008, an action planning workshop was held at Kalutara and attended by over 40 representatives from stakeholder organizations including community based organizations. Success was the comprehensive Disaster Management Plan for the city.

Land Use Planning Guidelines

The impact of flood situations in Kalutara demonstrates the pressing need to review land use planning practice and to raise public awareness on safe building techniques. Land use planning given its long implication is one aspect that needs to be considered in socio-economic planning and disaster mitigation. It ensures equitable access and sustainable use of land resources. The National

Levels of Risk and Ward data — **Table 2**

Risk category	Ward name	Land area (%)				
		Residential	Commercial	School	Religious	others
High risk	Sri Sumangala	55.6	0.35	0	2.53	2.15
	Kadaweeriya	43.06	5.64	12.48	1.5	3.32
	Arogayashalawa	53.36	0.71	0.95	.35	32.98
Moderate	Udyanaya	37.43	3.78	3.85	5.48	8.48
	Baskethall	56.9	0.25	7.72	.87	1.39
	Kuruduwatta	74.83	1.23	1.24	3.01	0
Low risk	Gudama	46.25	0.24	1.23	1.06	0
	Hinatiyangala	84.01	0.77	3.15	2.5	.06
	ashokaramaya	62.07	0.91	1.41	5.17	2.54

Source: NBRO

Disaster safety day Exhibition

Building Research Organization took the leading role in this important aspect. The study carried out using remote sensing techniques, field verifications and advocacy at local levels. The map with a scale of 1: 5000 was developed, verified by field checks and overlaid the human settlement data on the flood zonation map. This map helps to understand the vulnerable communities and their appropriate level of risks and the type of coverage of their lands. As given in Table 2, the analysis shows that except two (2) wards in Kaluthara Urban Council, other nine (9) wards out of 11 are exposed to high risk.

The study showed that the mainly flood threatened areas are residential land use. It also listed down human settlements and land use guidelines for three categories of risk areas. Construction guide lines and land use guidelines will help the developers' builders and individual house owners for safe construction.

Mainstreaming DRR in Local Governance

Local authorities are responsible for many regulatory and service functions where disaster is always linked with. They need to build the capacity of emergency services to support the national agencies for better response. Provision of mandates, delegating certain functions of DRR to LAs and capacity building of local authorities are some of the priority needs. In Sri Lanka, Municipal Councils and Urban Councils fall under the category of Urban Local Authorities (ULA). However, only a few ULAs are involved in disaster risk management directly or are indirectly integrating various risk management interventions within the responsibilities of local Government staff. To integrate DRR into local level planning would require a series of organized actions involving local government institutions, Provincial Council authorities and Ministries such as the Ministry of Provincial Councils and local Government.

National Training Course on DRR in Local Governance.

PROMISE encourages national and regional capacity building. In Sri Lanka, local govt. sector has a limited capacity to conduct such training due to resource scarcity. The Sri Lanka Institute of Local Governance (SLILG) needs to be enriched with skills and subject knowledge to conduct such training. With the PROMISE support, SLILG was successfully developed course materials to suit with the local context and conducted a pilot training course for local Govt. officials.

Lesson Learned

There are number of lessons that can be drawn, which have relevance to implementation of flood preparedness interventions in flood prone communities within Sri Lanka or elsewhere. The most significant lessons that can be drawn are:

- *Economic empowerment of people will add value* - When considering the importance of preparedness at the household level, it is important to undertake activities which will add value to their daily life. Such activities also capable of creating the awareness of community members. The success of the home gardening is entirely due to the economic importance of such activities at household level. The money spent on vegetables for home consumption is now saved while providing a nutritious meal to the family. The surplus of the home garden products earns an additional income to the family. More importantly the women who are the leaders of the home gardening enjoy the beauty of their garden and take a pride to share the experience with others. It has created a positive 'Demonstration Effect' that attracts potential beneficiaries spreading the wings of the success. For the success of any intervention it is essential to link the intervention with economics and economic empowerment of the people.
- *Creating more field level champion among policy-makers has a significant impact* - Advocacy for flood mitigation and preparedness is more effective when it can be done through the involvement of local champions. The Kalutara UC Mayor is one who has taken so much initiative in creating better and safer environment for the citizens within his local government area. He has become a champion in undertaking risk reduction at local level.
- *Local Level EWS* - The establishment of a community level mechanism to read, understand, dissemination of alert levels, decision making process for evacuation at community level etc are essential needs for protection against flash floods. The smaller catchments have a smaller lead time to disseminate messages and take actions. The community initiated systems are more effective as it generates more understanding and alertness among the community.
- *The important role played by the local partner in mobilizing and motivating the communities to undertake unfamiliar tasks for their own safety can not be undervalued* – In order to be sustainable and effective, the community level interventions have to be supported by external grass root institutions that have an acceptance at the community level at large. Sarvodaya, the implementing agency of PROMISE_SL enjoys support of a big network of more than 15,000 villages all over Sri Lanka. The role played by Sarvodaya was highly effective in mobilizing and motivating the community members to undertake unfamiliar work such as maintaining databases on river water levels at community level, dissemination of EW messages, decisions for evacuation actions, networking at risk communities for quick response to impending flood events etc. This helped in creating a significant impact among community members in making them to understand the importance of timely response to disaster events by themselves in order to reduce their consequences. Dr. Vinya Ariyaratne, the Executive Director and staff are constantly following the developments as they are located not very far from the Kalu catchment. The continuous involvement of implementing agency will ensure the success of the activity beyond the implementing period of the project.

About the Project

PROMISE – Sri Lanka is a two-year project whose goal is the reduced vulnerability of the urban communities in Kalutara through enhanced preparedness and mitigation of hydro meteorological disasters. The activities carried out the project are:

- Kalutara city and developing mitigation and preparedness plans
- Piloting community based flood forecasting and early warning system on Kalu river
- City level action planning for mitigation and risk reduction
- Implementation of small scale structural and non structural measures at community level
- Public awareness at school level
- Capacity building on Community Based Disaster Risk Management
- Capacity building on Search and Rescue and Medical first responder Training
- Institutionalization of Urban Governance and Disaster Risk Reduction – Training courses
- Mainstreaming DRR in Urban Local Governance – by identifying gaps in urban local regulations, codes, guidelines, mandates and other legal and administrative controls

The PROMISE-Sri Lanka has the following partners:

- Jathika Sarvodaya Shramadana Sangamaya
- Kalutara Urban Council (KUC),
- Sri Lanka Institute of Local Governance (SLILG),
- National Building Research Organization (NBRO),
- National Water Supply and Drainage Board of Sri Lanka (NWSDB),
- Disaster Management Centre (Kalutara)

About the Partner

Lanka Jathika Sarvodaya Shramadana Sangamaya is the largest National Non Governmental Organization (NGO) in Sri Lanka and the lead institute responsible for the delivery of PROMISE activities. The SARVODAYA established in 1958 is the premier social welfare organization in Sri Lanka. Founded by Dr. A T Ariyaratne, it is a non-Governmental, non-sectarian voluntary service organization, which has global linkages as the largest people's movement in Sri Lanka.

Today Sarvodaya is Sri Lanka's largest and most broadly embedded people's organization, with a network covering 15,000 villages, 345 divisional units, 34 district offices, 10 specialist Development Education Institutes. Sarvodaya Services are rendered through: 1) over 100,000 youth mobilized for peace building under Shantisena; 2) the country's largest micro-credit organization with a cumulative loan portfolio of over LKR one billion (Sarvodaya Economic Enterprise Development Services, or SEEDS); 3) a major welfare service organization serving over 1000 orphaned and destitute children, underage mothers, and elders (Sarvodaya Suwa Setha); 4) 4,335 pre-schools serving over 98,000 children.

It has been described as an international role model by international bodies. Its founder and charismatic leader, Dr A.T. Ariyaratne, whose visionary contributions have been recognized in multiple countries, continues to provide ideational leadership to the organization.

Sarvodaya, accepts and serves the situations prevailing and has contributed in post tsunami rehabilitation through welfare and constructing houses and schools for those destroyed by the event.
It's philosophy and community development model has an effective approach to communities in grass root level.

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Other Safer cities case studies

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Web sites

- Reliefweb
- Earth observatory, NASA
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Acknowledgment

Al Haj M S M Mubarak – Mayor, Kalutara City
Dr.Vinya Ariyarathne - Executive Director, Sarvodaya
Ms. Priyanka Mudalige- PROMISE Coordinator, Lanka Jathika Sarvodaya Shramadana Sangamaya, Sri Lanka
Mr. Prasntha Dharmasena – Scientist, Natinaol Building Research Organization, Sri Lanka
Community Leaders and Residents – Tebuwana, Bindunu Ela, Daham mawatha, Akkarawatte

 Publication of this case study was made possible through the support provided by the OFDA, USAID, under the terms of Cooperative Agreement No. DFD-G-00-05-00232-00.

PROMISE

During the implementation of the Asian Urban Disaster Mitigation Program (AUDMP), ADPC recognized the importance of interventions in urban areas and accordingly identified Urban Disaster Risk Management as one of its core thematic areas of work, experiences from which have also guided the selection of the target secondary cities. ADPC has developed 'Strategy 2020 for Urban Disaster Risk Mitigation in Asia' which aims to reach 200 cities by the year 2020.

The need to minimize the destructive impacts of these hydro-meteorological events on the vulnerable communities, particularly the urban communities and the economic infrastructure through enhanced preparedness and Mitigation is therefore the main trust of the present intervention in implementation of the Program for Hydro-Meteorological Disaster Mitigation in Secondary Cities in Asia (PROMISE).

ADPC considers PROMISE program as an opportunity to associate with many communities living in Asian cities vulnerable to hydro-meteorological hazards with the aim of reducing the impacts of such events and demonstrate innovative applications for community preparedness and mitigation.

This case study documents the efforts under a specific program objective to *increase stakeholder involvement and further enhancement of strategies, tools and methodologies related to community preparedness and mitigation of hydro-meteorological disasters in urban communities.*

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