Annexes

National Early Warning System: Sri Lanka

A Participatory Concept Paper for the Design of an Effective All-Hazard Public Warning System

Annex 1: Consolidated input from Consultation Processes

1. **Expert Consultation**, January 26 2005, 3-7pm; Taj Samudra, (Colombo, Sri Lanka)
2. **Video-Press Conference**, February 10th 2005, 10am-12pm, Distance Learning Center (Sri Lanka), Simon Fraser University (Canada), University of Hawai'i at Hilo (USA)
3. **Web discussion,** www.lirneasia.net, 1 January-20 February 2005
4. **Audience input from meeting organized by Ceylon Chamber of Commerce**, February 17th 2005, 4:30-6:00 pm, Chamber of Commerce Auditorium, (Colombo, Sri Lanka)
5. **Written comments**, received 27 January-19 February 2005

Comment/Suggestion and Source	Response	Explanation
Governance		
Ownership/Leadership		
System has to be resilient to government change. *Luxman Siriwardena, Director, External Relations – LIRNE*asia	***Accepted***	
Need to ensure plans do not get put aside (as in the past); People should hold government accountable *Mitra Ariyasinghe, Retired Snr DIG*	***Accepted***	
Credibility		
Credibility must be built into institutions, to avoid false warnings, and to ensure that people take warnings seriously, and react rapidly. *Vajira Premawardhana, Finance Expert* *Dr. S.P.F Senaratne, Consultant Anthropologist* *Dr. Buddhi Weerasinghe, Formerly with Asian Disaster Preparedness Centre*	***Accepted***	
Means of authentication must be available for people to verify warning. *Chamal de Silva*	***Accepted***	
It is not enough to say that false alarms are a political issue and that politicians need to make the decision. Culture of awareness must be developed in parallel to enable people to understand warnings and decide what actions to take for themselves *Earl Kessler, Asian Disaster Preparedness Center*	***Partially accepted; some parts outside the scope of present activity***	How and whether the respondents at the community level react to a warning is beyond the scope of the early warning system as conceptualized. The Vanguard Foundation hopes to work on this aspect in future.
There should also be certain ethical protection from media and other pressure groups in the event of forecast becoming wrong so that the credibility of the warning system is not tarnished, unnecessarily. *Nishantha Kamaladasa, Director: Center for Housing Planning and Building*	***Outside the scope of present activity***	No one can guarantee protection from media criticism. This is a feature of public service.

Central authority is needed to issue warning in order to ensure credibility *Upali Mallawaarachchi Consultant engineer: ADB Projects Division, Road Development Authority*	***Accepted***	
System should be kept non-political to get buy-in of people *Mitra Ariyasinghe, Retired Snr DIG*	***Accepted***	
Accountability		
National hazard warning system should be provided entirely by the private sector: Private sector is capable and can be motivated through profits; Government is incapable of providing and lacks stronger motive than 'altruism' and should be excluded. At the most government can provide a legal umbrella under which non government actors can do the job. *Luxman Siriwardena, Director, External Relations –* LIRNE*asia*	***Partially accepted***	The government is the only entity that can and should take the ultimate responsibility of making the 'final call.' Private sector will not want to do this, and people may not see such an entity as an 'authoritative' source of warning. The mechanisms and functioning of the system can be taken on by private/civil sectors, but government must take ultimate responsibility.
System has to come from government, while appreciating the role of NGOs *Geethi Karunaratne, Consultant*	***Partially accepted***	System should be a partnership between the government *and* other public (including NGOs) and private entities
Need a good piece of legislation that cuts across all relevant subject areas affected by hazards *Dr. Buddhi Weerasinghe, Formerly with Asian Disaster Preparedness Centre*	***Outside the scope of present activity***	The government's 2005 February urgent bill on disaster management may be a response; it does not deal with warnings.
A single institutional mechanism may not be applicable to all disaster situations. Those which are local in nature need to have local mechanisms. Each type of disaster should be taken separately, with separate mechanisms for detection, vulnerability assessment and warning dissemination. *Nishantha Kamaladasa, Director: Center for Housing Planning and Building*	***Partially accepted***	Agree on value of keeping hazard detection and monitoring with experts and separate. There are considerable economies of scope in locating the management of disaster warning system within a single institutional mechanism. The fragmentation of warning lends itself to problems of accountability and credibility.
System needs to be capable of handling all kinds of disasters: natural, man made (multi-hazard approach) *Hilru Siddeeque, Consultant/Director: Citigardens* *P.Karunaratne, Tamil Municipal Council* *Vajira Premawardhana, finance expert*	***Accepted***	
Dams are solely owned by government but responsibility for safety is vested with	***Outside the scope.***	This report cannot get into the level of detail that is

operators. Financial allocation for maintenance/management is handled by different groups within the government; the government increasingly fails to provide adequate funds for dam maintenance and safety; no legislation is available for operational procedures; warning systems are not available. *Badra Kamaladasa, Dept of Irrigation*	***Partially accepted***	required to solve . The particular area of dam safety however, will be dealt with in a different activity to be carried out by LIRNE*asia* and the Vanguard Foundation
Disaster warning system should be part of broader national disaster management organization; should be institutionalized (e.g. Securities and Exchange commission), responsible only to parliament, with the head (a professional) appointed by parliament. Final call responsibility should be on him. Disaster managing authority should be empowered to direct all resources in emergency. Warning system and disaster management should be funded adequately through the government (perhaps through exclusive tax) *Vajira Premawardhana, finance expert*	***Partially accepted*** ***Accepted*** ***Accepted***	Appointments have to go beyond the regular parliamentary appointment procedure to ensure resilience to government change (e.g., the Constitutional Council approach followed by the PUCSL). Need to go beyond SEC, which is subject to interference by Ministry of Finance.
Indemnity is needed for people involved in the warning system, so they can exercise their duty without having to face consequences later (law suits, etc.). Legislation needs to be formulated. *Nishantha Kamaladasa, Director: Center for Housing Planning and Building*	***Partially accepted***	Indemnity is particularly important for actions of private sector entities taken in good faith. Whether public servants need additional protections is questionable.
Disaster Management Bill (drafted in 2003) should be enacted and implemented. *Ramraj Narandram, D.R.M, UNDP* Should be amended and presented to Parliament again *Vice President Institute of Engineers*	***No longer relevant with Parliament taking up new legislation***	The enactment of comprehensive legislation is outside the scope of the report. It is noteworthy that the IESL recommendations have not been incorporated into the Bill and that warning is not included.
Different models needed for different areas. *Participant at Chambers of Commerce event*	***Not Accepted***	Impractical. But there should be no monopoly on public warning. Ideally, community initiatives will be compatible with NEWS:SL
Need to safeguard system from misuse, for e.g., by politicians; otherwise credibility will be at stake. *Prasantha Fernando*	***Accepted***	
Experts can be held accountable for taking the final call, IF he (or she) is entrusted with a civil responsibility in the exercise of their professional authority. Examples of Japan and Mauritius demonstrated this, where the Director of Meteorology are empowered to issue warning without prior recourse or	***Accepted***	

approval from 'a politician'. *Terry Jeggle, International Strategy for Disaster Reduction*		
Need for an Interim Solution/System		
What temporary measures can be implemented until a permanent solution is devised and implemented? *Journalist at News Conference*		This is really the responsibility of the present government; the final concept paper will propose solutions that can be implemented quickly.
Need an interim/immediate solution, through public-private partnerships, making use of *existing* systems and capabilities; these can be integrated and developed into a continually evolving national warning system *Priyantha K. Weerabahu*	***Accepted***	
System should be piloted in the next rainy season *(Tour Operator from Habarana)*	***Outside the scope of present activity.***	
Regional / Global linkages		
An international observation and prediction system closely coordinated with national emergency services is needed in order for the public to receive timely warning…national emergency managers would closely cooperate with regional centers to facilitate rapid data exchange and coordination of warning information. (from the 10-Year GEOSS Implementation Plan Reference Document, which was accepted by the Earth Observation Summit as the basis for implementing the Global Earth Observations System of Systems (GEOSS)) http://earthobservations.org/ *Eliot Christian, (US Geological Survey*	***Accepted***	
System must make use of and articulate with existing regional and global warning systems. *Upali Mallawaarachchi Consultant engineer: ADB Projects Division, Road Development Authority* *Vajira Premawardhana, finance expert*	***Accepted***	
Role of ICTs/Communications		
Further role of ICT industry include creating and maintaining a comprehensive database for the warning system and disaster management authority *Vajira Premawardhana, finance expert*	***Outside the scope of present activity***	
Government can make use of existing (technology) systems and capabilities that exist within the private sector. *Chandresa Abeyratne, CEO, Fentons*	***Accepted***	
Communications relating to post-disaster	***Outside the***	

issues should be dealt with *Gerald de Saram, CIC*	***scope of present activity***	
Take stock of existing communications systems defined broadly as not merely "warning systems" (i.e. broadcasters, service providers, other utilities, public and private transport networks, insurance, hotels, NGOs) and determine which of these could be harnessed most effectively in a disaster warning system *Dominic Scott, Cisco Systems*	***Accepted***	
Use location-based SMS and radio warning alerts *Chamal de Silva*	***Accepted***	
The communications strategy used should be based on the level and intensity of usage – for e.g. radio (80% penetration), TV (75% penetration), mobile and fixed phones (25% penetration), PCs with Internet/email connections (2% penetration). It is easier to broadcast messages/alerts via radio, TV and mobiles than via fixed phone; radios, TVs and mobiles (SMS) can be used real time unlike emails. These modalities can and should be used in a complementary fashion *Chanuka Wattegama*	***Accepted***	
Use a TV camera channel (currently used in Hong Kong to relay road and weather conditions around the city) with the following specifications: • Black and white channel • Commercial advertising limited to one insertion/hour –which again would be an awareness message to the public • 24 hours parallel call-in number • Emergency telephone numbers displayed on the screen in the form of crawlers *Hameedia Stores (Pvt) Ltd., General Manager*	***Principle is accepted***	Actual implementation must take into account systems that are already in place. What works in an affluent city state may not work in Sri Lanka, especially in the East Coast which is most vulnerable.
National emergency managers should trigger an integrated warning system that can activate multiple communications media with a single alert message. Alerts then would be converted automatically into forms suitable for available communication technologies: voice on radio and telephones, text captions on television, messages on highway signs, or signals for sirens. This all-hazard public warning technology could be implemented using the GEOSS architecture that encourages system	***Accepted***	

interfaces using international standards such as the Common Alerting Protocol (CAP). *Eliot Christian, US Geological Survey*		
Should start with a proven, quick and relatively cheap working infrastructure and a reliable communication network, leaving room for extensions, additions and upgrading. Planning is necessary. *Sylvia Kuus*	***Accepted***	
Partnerships		
Community level		
Community needs to be integrated into the system *Upali Mallawaarachchi Consultant engineer: ADB Projects Division, Road Development Authority*	***Accepted***	
Need community based initiatives, as in Bangladesh cyclone warning system *Dr. Buddhi Weerasinghe, Formerly with Asian Disaster Preparedness Centre*	***Accepted***	
Make use of existing infrastructures and systems – church bells, mosques, etc *Sandya Salgado, CEO Ogilvy Outreach* *A.S Jayawardena, former Governor, Central Bank* Traditional means may not be affected by electricity failures, etc. *Vajira Premawardhana, finance expert*	***Accepted***	
System has to be relevant to the population, otherwise it will fail. Train those who have a stake in the community *Dr. Buddhi Weerasinghe, Former Asian Disaster Preparedness Centre*	***Accepted***	Training not within scope of present activity, but The Vanguard Foundation will do this in future.
Use what has worked best — community level mechanisms. Start from bottom and strengthen upwards. Technology that can be used by community must be adopted *Dr. Vinya Ariyaratne, Executive Director, Sarvodaya*	***Accepted***	
Need network of trustworthy people, spread out all around the island to get information and data, who report to a central authority who analyze the data and disseminate the warning messages to recipients. *Chamal de Silva*	***Partially accepted***	Not a network of trusted people, but the general public, government, private-sector and civil-society actors
Hazards can be prioritized, based on statistical probability—what the most likely disaster may be; this can be linked 'to whom'. Communities can be disaggregated. Prioritize education to the targeted areas. *Harsha de Silva, Senior Economist,* LIRNE*asia*	***Accepted, but not fully within scope***	

ITDG [Intermediate Technology for Development Group] has two pilot community warning systems in Nepal and Pakistan, where the community watches and disseminates warnings. Warning is internalized; community has a stake in its effectiveness. *Rohana Weragoda, ITDG*	***Accepted***	
Public-Private Partnerships		
Warning system should be integrated throughout all levels of society – business sector *Chandra Jayaratne, Managing Director: Eagle Insurance*	***Accepted***	
Public-private partnerships and cooperation with *all* sectors are important *E.S.Silva, Deputy Director, Department of Meteorology* *Vice Presidents, Institute of Engineers*	***Accepted***	
Certain stakeholder industries should be targeted, e.g. Insurance industry also has a role to play, influencing good practice in mitigation and preparation enforcing conditions on insurance seekers that will mitigate potential loss from hazards. Insurance industry can set up guidelines and benchmarks. Hotels can play role in education *Pradeep Fernando*	***Accepted***	
Possibility of making use of existing cess in insurance industry to contribute to finding of warning system. *Wickremasinghe, President, Brokers Association*	***Accepted***	
Key stakeholder supporter must join in any such initiative to ensure long term efficiency and effectiveness and the potential network partners in the region and globally *Chandra Jayaratne, Managing Director, Eagle Insurance CO. Ltd*	***Accepted***	
Warning systems should be benchmarked (e.g 'star' rating system in hotel industry) as an incentive for organizations to develop and maintain effective warning systems *Priyantha K. Weerabahu*	***Accepted, but may be too detailed for this report***	
Possibility of collaboration with similar organizations, like Vishwa Gnana Kendras. This will ensure accountability and local information. *Participant at Chamber meeting*	***Partially accepted***	Communication system must be sorted out first. An organization whose sole focus is public warning is needed, which can work with other organizations at different level, for system to be most effective. VGKs have other mandates but can play a role.

Possibility of Vishwa Gnana Kendras and ICT centers where persons receiving free education and skills options be required to scan web for any news and information of value for the centre. *Chandra Jayaratne, Managing Director, Eagle Insurance Co. Ltd*	***Partially accepted***	Web scraping is a good idea, but not necessarily decentralized and done by unskilled people. Automatic searching plus skilled assessment is what is needed.
A key institute involved in receiving and disseminating disaster warning is Ceylon Electricity Board's (CEB) System Control Centre. (CEB-SCC). Especially with regard to flooding, they are aware of water levels in reservoirs; they need to know if impending disaster to take appropriate action with regard to the supply of electricity; they also have an effective communication system; furthermore, electricity is needed for the warning system itself to function. *Lakshitha Weerasinghe*	***Partially accepted. Too detailed for this report, but important information***	Will be useful in dam project
It may be worthwhile to calculate the cost of the private sector share of the warning system (public good) and consider the feasibility of packaging the same with the delivery of insurance products (private goods) across the board. Insurance industry has a clear motive to collaborate because if they can increase the risk-averse nature of behavior of their policy holders. *Harsha de Silva, Senior Economist, LIRNEasia*	***Accepted, but too detailed for this report***	
In packaging public goods together with private goods, there is a danger of neglect, where delivery of the good/service is prioritized according to profit potential. Danger of private sector losing interest if the system isn't used due to disasters not occurring over a period of time. In packaging public goods with specific private goods such as insurance, the burden of the public good falls ultimately onto the consumer of the private good – not necessarily every citizen of the country. *Chanuka Wattegama, Researcher, LIRNEasia*	***Partially accepted***	The "packaging" will be done in accordance with an appropriate incentive structure that matches the risk averse behavior of the market. This will of course only yield a "partial" solution as the tourist/hotels and insurance industries for e.g. would only cater to their clients. The remaining bit – the non-rival and non-excludable portion would have to be financed via taxation, donor monies etc.
Private sector participation should not be limited to tourism and insurance industries *Terry Jeggle, International Strategy for Disaster Reduction*	***Accepted***	

The insurance industry may not be the "obvious candidate" neither is it competent to operate a national warning system. One should note that actuarial considerations and financial tradeoffs are quite distinct from engaging in the conduct of the warning processes envisioned *Terry Jeggle, International Strategy for Disaster Reduction*	***Accepted***
Education and Awareness Raising	
Education and awareness raising for people to understand and take appropriate action *Hilru Siddeeque, Consultant/Director: Citigardens* *General Manager, Hameedia Stores (Pvt) Ltd* *Lakshitha Weerasinghe*	***Accepted, but covered in detail in this report***
Education has to be ensured at *all* levels of society *Upali Mallawaarachchi Consultant engineer: ADB Projects Division, Road Development Authority*	***Accepted, but covered in detail in this report***
Education must be continuous, for it to have impact on effective response to disaster warning. *Sandya Salgado, CEO Ogilvy Outreach* *GeorgeCurtis, University of Hawaii at Hilo, Hawaii* *Mitra Ariyasinghe, Retired Snr DIG*	***Accepted, but covered in detail in this report***
Education must cover multiple hazards, even those that seem 'alien' to Sri Lanka at a given time *Chanuka Wattegama, Researcher,* LIRNE*asia* *Vajira Premawardhana, finance expert* *Lakshitha Weerasinghe*	***Accepted, but covered in detail in this report***
Education can be demand driven, if you focus on industries which have incentives to get involved in education initiatives. E.g. Hotel industry *Pradeep Fernando*	***Accepted, but covered in detail in this report***
Education needed; need for training and simulations and capacity building to occur on a regular basis in schools and businesses and government. The Warning System is not one person or one agency but the string of them that know what to do and say when necessary. *Earl Kessler, Asian Disaster Preparedness Center*	***Accepted, but covered in detail in this report***
Public is unaware of what emergency services exist and how to contact them; public needs to be made aware. *Representative of LankaBell*	***Accepted***
Education of officials is also crucial in saving lives and minimizing impact of disaster, so they may respond appropriately, to direct civilians in emergency. *George Curtis, University of Hawaii at Hilo*	***Accepted***

Education and awareness raising should be through all possible media, and incorporated into every-day lives of people *Donald Gaminitillake*	***Accepted, but covered in detail in this report***
Attitudinal Changes	
Culture and attitudes of people need to be changed, stimulating them to react to warning information rapidly and appropriately *E.S.Silva, Deputy Director, Department of Meteorology* *Vajira Premawardhana, finance expert*	***Accepted***
Set of values need to be adhered to by the people who get involve in disaster warnings, such as protecting life being the primary concern and all other concerns (political, status, ownership, etc.) are secondary; selfless commitment in discharging the duties, etc etc. *Nishantha Kamaladasa, Director: Center for Housing Planning and Building*	***Accepted***
Attitude towards response/reaction to warning in Sri Lanka is lethargic, due to not being used to receiving reliable and timely warning information in the past. *Vajira Premawardhana, finance expert*	***Accepted***
Attitudinal vulnerabilities must be looked after (as part of a holistic approach): 'dependency, resistance to change, politicization and honchoisim, indiscipline, a nonsystematic emotional chaos/anarchy that takes over at times of crises' *Shehara de Silva*	***Agree, but outside scope***
People do not easily take heed of warning; from experience: people wait for re-confirmation of warning before taking action. possible reason for this is a lack of education at 'normal' times *Mitra Ariyasinghe, Retired Snr DIG*	***Accepted***
Confidence of public officials must also be improved, empowering them to take decisions without worry of reconfirmation *Mitra Ariyasinghe, Retired Snr DIG*	***Accepted, subject to accountability requirements***
Risk Identification and preparedness requires a change in mindset of many of stakeholders and beneficiaries, and recognize that this is a long-term process requiring longer term investment with a focus of the younger generations. Attitudinal change is also needed from all potential partners (e.g. police, health sector, etc) *Chandra Jayaratne, Managing Director: Eagle Insurance*	***Agree***

General; Approach; other issues to be addressed		
Discussion of institutional model too early; first we need assessment of risk. We also need good piece of legislation that cuts across all affected areas *Dr. Buddhi Weerasinghe, formerly with Asian Disaster Preparedness Centre*	***Not accepted***	Action is needed immediately, while memories are still fresh, otherwise it will get shelved as in the past.
Cannot treat early warning independently of disaster management; they must be integrated, or else the result will be 'reaction' rather than 'prevention.' Early warning should also be integrated with risk reduction. *Ramraj Narandram, D.R.M, UNDP*	***Partially agree, but . . .***	It is recognized that early warning is but a *single* component in a risk management system, where *each* component is critical; however the scope of this concept paper is warning only, because it is an accomplishable/ manageable component, in which the Vanguard/LIRNE*asia* collaboration has capacity and expertise. Where government is dysfunctional, small, workable areas must be carved out and fixed. In a comprehensive/holistic approach, inertia or failure or one part could hold the rest of the process of implementation back. Incorporating ITDG inputs.
Need a more 'holistic' approach; relief and mitigation aspects are ignored. Vulnerability assessments (physical, social, attitudinal and systemic) are especially required in Sri Lanka. Need to look beyond Hawai'i benchmarks and see what is applicable/best suited for Sri Lanka. Work with organizations such as ITDG who have done substantive background research. *Shehara de Silva*	***Not first best solution, agree.***	
More effort needs to be put into research of risks and vulnerability. Environmental protection for mitigation is also needed. *Chamal de Silva*		
More holistic approach is needed. other components are also critical *A.S.Jayawardena, Former Governor, Central Bank of Sri Lanka*		
Detection must be also addressed in warning system; this is essential for authentication of warning. *Chamber meeting participant*	***Agree, but assume detection is looked after***	Warning system must build good interfaces with detection agencies, rather than amalgamate them all into one organization.
Other proactive actions can be taken for warnings to be effective in a multi-hazard approach; e.g. capital investment in mitigation, information on vulnerable geographic areas that create the information base for sound warning to be made and decisions to be taken. The information needed for warning is not just monitoring devises of events but information on impact to focus warnings to be made. *Earl Kessler, Asian Disaster Preparedness Center*	***Agree, but outside the scope of present activity***	
Maintenance / Continuity of the system		
System needs to be maintained once	***Accepted***	

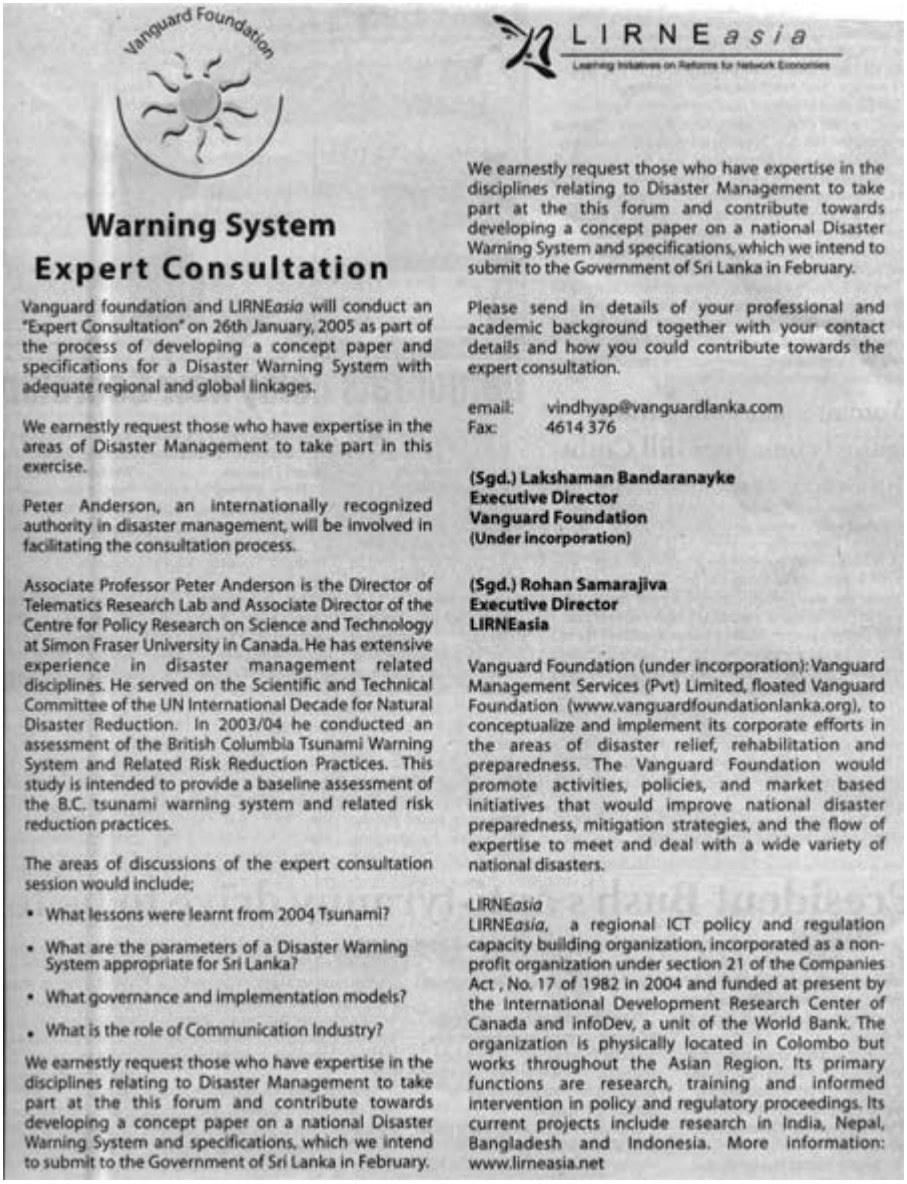
implemented; need mechanisms to ensure continual maintenance of the system at all times *Upali Mallawaarachchi Consultant engineer: ADB Projects Division, Road Development Authority* *M.C.M Farook, Assistant Director, TRCSL*		
Maintenance of facilities is generally ignored; need 'diligent maintenance and strict monitoring' of systems and institutions *Dr Gamini Weerasekera*	***Accepted***	
Continual training of persons and testing of the system is necessary *Priyantha K. Weerabahu*	***Accepted***	
All possible media should be used for warning dissemination: electronic, print, traditional, modern, ICT based, etc. Whatever the means, it should be used by the public in their day-to-day lives, and they should be familiar with them, to ensure continuity. Should be effective and economical so that people don't perceive them as useless. *Chanuka Wattegama, Researcher,* LIRNE*asia*	***Accepted***	
Existing/Previous Systems		
Mahaweli: hand-operated sirens for signaling flood water release are used in addition to loud speakers vehicles in instance of release of water from dam (Pologolla) *Chandra Perera, Executive Director, Mahaweli Authority of Sri Lanka Sri Lanka*	***Acknowledged***	Relevant to dam project
Real-time flood warning system in Sri Lanka existed, 20 years ago in Nilwala basin: fully automatic – when water levels went over a certain amount, a warning was issued; when a flood was imminent, a warning was issued to related organizations (GA's, Police stations, Irrigation Dept., etc) for them to take mitigation action. Was shut down during 1989-91 troubles. *Chinthaka Wijayaweera, Monitoring Officer: Irrigation Department*	***Acknowledged***	Relevant to dam/flood projects
Need to take lessons from why that system was discontinued *N. Kamaladasa, Director, Center for Housing Planning and Building*	***Agree***	
Automobile Association used to have a road warning system for floods *Tour Operator, Habarana*	***Too detailed for present report, but accepted the principle***	
Tailoring warning information for different communities		

Need to communicate the right information to the right people *Shehara de Silva*	***Accepted***	
Warning must be tailored to specific communities and their vulnerabilities; different communities (e.g fisherman vis-à-vis tour operator) need different information. *Earl Kessler, Asian Disaster Preparedness Center*	***Partially accepted***	Operational details that are not necessary at this stage.

Recruitment/Invitation of Participants:

A: Expert Consultation:

i) *Newspaper advertisement inviting participants -* Appeared in Sunday Times, January 22nd 2005



Vanguard Foundation

LIRNE*asia*
Learning Initiatives on Reforms for Network Economies

Warning System
Expert Consultation

Vanguard foundation and LIRNE*asia* will conduct an "Expert Consultation" on 26th January, 2005 as part of the process of developing a concept paper and specifications for a Disaster Warning System with adequate regional and global linkages.

We earnestly request those who have expertise in the areas of Disaster Management to take part in this exercise.

Peter Anderson, an internationally recognized authority in disaster management, will be involved in facilitating the consultation process.

Associate Professor Peter Anderson is the Director of Telematics Research Lab and Associate Director of the Centre for Policy Research on Science and Technology at Simon Fraser University in Canada. He has extensive experience in disaster management related disciplines. He served on the Scientific and Technical Committee of the UN International Decade for Natural Disaster Reduction. In 2003/04 he conducted an assessment of the British Columbia Tsunami Warning System and Related Risk Reduction Practices. This study is intended to provide a baseline assessment of the B.C. tsunami warning system and related risk reduction practices.

The areas of discussions of the expert consultation session would include;

- What lessons were learnt from 2004 Tsunami?
- What are the parameters of a Disaster Warning System appropriate for Sri Lanka?
- What governance and implementation models?
- What is the role of Communication Industry?

We earnestly request those who have expertise in the disciplines relating to Disaster Management to take part at the this forum and contribute towards developing a concept paper on a national Disaster Warning System and specifications, which we intend to submit to the Government of Sri Lanka in February.

We earnestly request those who have expertise in the disciplines relating to Disaster Management to take part at the this forum and contribute towards developing a concept paper on a national Disaster Warning System and specifications, which we intend to submit to the Government of Sri Lanka in February.

Please send in details of your professional and academic background together with your contact details and how you could contribute towards the expert consultation.

email: vindhyap@vanguardlanka.com
Fax: 4614 376

(Sgd.) Lakshaman Bandaranayke
Executive Director
Vanguard Foundation
(Under incorporation)

(Sgd.) Rohan Samarajiva
Executive Director
LIRNEasia

Vanguard Foundation (under incorporation): Vanguard Management Services (Pvt) Limited, floated Vanguard Foundation (www.vanguardfoundationlanka.org), to conceptualize and implement its corporate efforts in the areas of disaster relief, rehabilitation and preparedness. The Vanguard Foundation would promote activities, policies, and market based initiatives that would improve national disaster preparedness, mitigation strategies, and the flow of expertise to meet and deal with a wide variety of national disasters.

LIRNE*asia*
LIRNE*asia*, a regional ICT policy and regulation capacity building organization, incorporated as a non-profit organization under section 21 of the Companies Act , No. 17 of 1982 in 2004 and funded at present by the International Development Research Center of Canada and infoDev, a unit of the World Bank. The organization is physically located in Colombo but works throughout the Asian Region. Its primary functions are research, training and informed intervention in policy and regulatory proceedings. Its current projects include research in India, Nepal, Bangladesh and Indonesia. More information: www.lirneasia.net

ii) *Letter of invitation to Sri Lankan Asian Disaster Preparedness Centre Alumni*

January 11, 2005

Dear Sir/Madam,

Vanguard Foundation- LIRNE*asia* Expert Consultation
on
Disaster Warning System

Vanguard foundation and LIRNE*asia* will conduct an "Expert Consultation" as part of the process of developing a concept paper and specifications for a Disaster Warning System with adequate regional and global linkages.

We believe that as a Sri Lankan alumnus of the Asian Disaster Preparedness Centre (ADPC) in Bangkok you could make a significant contribution to the success of this event. As such we would like to invite you to participate in this event, details of which are given below.

Date : January 26 ,2005
Time : 3.00-7.00 PM
Venue : Taj Samudra
RSVP : vindhyap@vanguardlanka.com (M) 0777 557 348

Peter Anderson and Catherine Hickson will take part as international experts.

Associate Professor Peter Anderson is the Director of Telematics Research Lab and Associate Director of the Centre for Policy Research on Science and Technology at Simon Fraser University in Canada. He has extensive experience in disaster management related disciplines. He served on the Scientific and Technical Committee of the UN International Decade for Natural Disaster Reduction.

Catherine Hickson is attached to the Geological Survey and Natural Resources Canada of the Canadian Government. She is also an Adjunct Professor of the University of British Columbia. Her areas of core expertise include emergency preparedness and public education.

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- What lessons were learnt from 2004 Tsunami?
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We earnestly request your participation at the this forum and your contribution towards developing a concept paper on a national Disaster Warning System and specifications, which we intend to submit to the Government of Sri Lanka in February.

Warmest regards

Yours truly,

A S Jayawardene
Chairman – Board of Trustees
Vanguard Foundation
(Former Governor, Central Bank of Sri Lanka)

Lakshaman Bandaranayake
Executive Director
Vanguard Foundation

Rohan Samarajiva
Executive Director
Executive Director
LIRNE*asia*

Vanguard Foundation: Vanguard Management Services (Pvt) Limited, floated **Vanguard Foundation** (under incorporation- www.vanguardfoundationlanka.org), to conceptualize and implement its corporate efforts in the areas of disaster relief, rehabilitation and preparedness. The Vanguard Foundation would promote activities, polices, and market based initiatives that would improve national disaster preparedness, mitigation strategies, and the flow of expertise to meet and deal with a wide variety of national disasters.

LIRNEasia,

LIRNE*asia*, a regional ICT policy and regulation capacity building organization, incorporated as a non-profit organization under section 21 of the Companies Act, No. 17 of 1982 in 2004 and funded at present by the International Development Research Centre of Canada and *info*Dev, a unit of the World Bank. The organization is physically located in Colombo but works throughout the Asian region. Its primary functions are research, training and informed intervention in policy and regulatory proceedings. Its current projects include research in India, Nepal, Bangladesh and Indonesia. More information: www.lirneasia.net

B: Video Press Conference

Letter of invitation:

Dear Sir / Madam

Vanguard Foundation and Lirne*asia* is pleased to invite you to an international Video Conference and the Presentation of an Interim Concept Paper on a Disaster Warning System for Sri Lanka.

Time : 10.15 am

Date : Thursday 10th February 2005

Venue: Sri Lanka Institute of Development Administration, 4th Floor, Distant Learning Centre, 28/10 Malalasekera Mawatha (Longdon Place-near BMICH), Colombo 07.

International Videoconference

International Experts from Vancouver Canada and Hawaii USA would be taking part in the Video News Conference. Participating journalists would have an opportunity to pose questions interactively.

Prof Peter Anderson – Vancouver, Canada
Prof Anderson is an emergency communications specialist and is Director, Telematics Research Lab, School of Communication Simon Fraser University. He is a co-author of the Sri Lanka concept paper.

Prof Anderson had been involved in the design and implementation of a number of international disaster information systems including the United Nations International Emergency Readiness, Response and Recovery Information System (IERRRIS), and HazardNet (A UN demo project with the US National Weather Service) as well as a number of disaster related communications projects for the Canadian government.
One of his earliest efforts was the design and implementation of the Australian Disaster Management Information Network (ADMIN), which was the world's first fully distributed national disaster management computer information network.

Dr Catherine Hickson - Canada
A volcanologist from Canadian Geological Survey and Natural Resources Canada. Dr Hickson has specializes in earthquake related hazards. Her most recent activities include advising South American governments (in the Andean Region) on disaster mitigation and on building disaster resistant communities.

Prof George D. Curtis - Hawaii

University of Hawaii, Hilo. Professor Curtis is a specialist in tsunamis and is an advisor to Hawaii civil defense authorities who are responsible for disaster mitigation and recovery activities. He is also an advisor to the Pacific Tsunami Museum.

From Sri Lanka

A panel of local professionals led by Prof. Rohan Samarajiva, Director of Lirne*asia* and former Director General of the Telecommunications Regulatory Commission would be in Colombo. Prof Samarajiva is a co-author of the National All Hazards Warning System concept paper.

Public Comments

Vanguard Foundation and Lirne*asia* are seeking public comments on the Interim Concept Paper on a National All Hazards Warning System for Sri Lanka.
The Concept Paper flows from initial ideas and options developed by local researchers and an international expert on disaster communication.
An Expert Consultation was held on January 26th in Colombo. The invitees to the consultation included alumni of the Asian Disaster Preparedness Centre in Bangkok and those who responded to newspaper advertisements.
The final report would be handed over to government authorities on 26th February, two months after the tsunami disaster hit Sri Lanka.
This interim concept paper is now available on the Internet at http://www.vanguardfoundationlanka.org and http://www.lirneasia.net. Input received at this juncture would be given due consideration and integrated into the final concept paper.

RSVP : D.Fernando - 46414333

C: Meeting organized by Ceylon Chamber of Commerce:

Meeting on a Draft Concept Paper: "National All-Hazards Warning System for Sri Lanka"

The Vanguard Foundation, a not-for-profit organization which is in the process of launching a series of initiatives to enhance emergency preparedness of Sri Lanka and **LIRNE*asia*** have jointly developed a Concept Paper titled "Specifications for National All-Hazards Warning System". This paper is based on international and local expertise and the input from an expert consultation held on January 26th, 2005.

The paper is now open for comments. It is intended that the final report will be handed over to the appropriate authorities in government on or around the 26th of February, 2005, two months to the day from Sri Lanka's greatest calamity.

We are sending a copy of the Executive Summary. The complete document could be downloaded from www.lirneasia.net. Should you wish to obtain an electronic copy of the paper, please email damthif@vangaurdlanka.com .

We request you to review the paper and forward your comments to asia@lirne.net . All comments received prior to February 19th will be taken into account in finalizing the report. It is intended that the final report will be handed over to the appropriate authorities in government on or around the 26th of February, 2005, two months to the day from Sri Lanka's greatest calamity.

Ceylon Chamber of Commerce has organized a meeting to review the concept paper and the details of the meetings are given below.

Date : 17th February, 2005
Time : 4.30 PM
Venue : Auditorium, Chamber of Commerce, Navam Mawatha

The agenda entails presentations on salient features of the Concept Paper followed by an open forum.

- Rationale for and parameters of a national all-hazards warning system
- Governance issues

We invite you to attend this meeting and contribute towards developing the final version of the concept paper.
We look forward to your continued support.
Warmest Regards

....
Lakshaman Bandaranayke — Rohan Samarajiva
The Vanguard Foundation — LIRNE*asia*

Vanguard Foundation (under incorporation**)**:

Vanguard Management Services (Pvt) Limited, floated **Vanguard Foundation** (www.vanguardfoundationlanka.org), to conceptualize and implement its corporate efforts in the areas of disaster relief, rehabilitation and preparedness. The Vanguard Foundation would promote activities, polices, and market based initiatives that would improve national disaster preparedness, mitigation strategies, and the flow of expertise to meet and deal with a wide variety of national disasters.

LIRNE*asia*

LIRNE*asia*, (www.lirneasia.net), a regional ICT policy and regulation capacity building organization, incorporated as a non-profit organization. The organization works throughout the Asian Region. Its primary functions are research, training and informed intervention in policy and regulatory proceedings. Its current projects include research in India, Nepal, Bangladesh and Indonesia.

Annex 2: List of Consulted Persons[1]

I. Expert Consultation, January 26 2005, 3-7pm; Taj Samudra, (Colombo, Sri Lanka)

Name	Designation	Affiliation
A. Abraham	Managing Director	
A. Jeewendra Perera		Vecton TV (UK)
A.S Jayawardena	Former Governor- Central Bank	
Badra Kamaladasa		Irrigation Department
Buddhi Weerasinghe		(Formerly of Asian Disaster Preparedness Center, Thailand)
Catherine Hickson		Natural Resources Canada
C. L. Wattegama	Researcher	LIRNE*asia*
Chandimal		TNL TV (Telshan Networks)
Chandra Perera	Executive Director	Mahaweli Authority of Sri Lanka
Chinthaka Wijayaweera	Monitoring Officer	Irrigation Department
C. Jayaratne		
D. Abeysekera	Attorney-at-Law	
E.S Silva	Deputy Director	Department Of Meteorology
Geethi Karunaratne	Consultant	Centre For Housing Planning And Building
H.D.P Keerthirathne	Director General	Sri Lanka Red Cross Society,
Harsha De Silva	Senior Economist	LIRNE*asia*
Hilru Siddeeque	Consultant/ Director	Citi Gardens
I.M.S.P Jayawardena	Meteorologist	Department Of Meteorology

[1] Note: Information that has been extracted from hand-written attendee lists may be misspelled / incomplete

J Ratnayake	Assistant Director	Telecommunication Regulatory Commission of Sri Lanka
Jinendra Kothalawala	Research Director	AC Nielson Colombo (Pvt) Ltd
Joy Danniel	ICT Development Advisor	UNDP
K Nanayakkara	Engineer	Centre For Housing Planning And Building
K.S de Silva	Director Finance	National Building Research Organization
L S Mohamed		Sri Lanka Broadcasting Corporation
Lalith Chandrapala	Deputy Director	Department Of Meteorology
Lionel Hewawasam	Deputy Director	Centre For Housing Planning And Building
Luxman Siriwardena	Director, External Relations	LIRNE*asia*
L.V Talagala	Consultant	Lankan Hydraulic Institute
M.C.M Farook	Assistant Director	Telecommunication Regulatory Commission of Sri Lanka
Malith Mendis	Chief Executive/ Director	Colombo Hydraulic Institute
N. Gunewardana	Director	VMS
N Kamaladasa	Director	Centre For Housing Planning And Building
Nuwan Kumarasinghe	Electronic Engineer	Department Of Meteorology
P.G.D.J Pebotuwa	Wildlife Ranger	Department Of Wildlife Conservation
P.Karunarathne	Director [Training]	Colombo Municipal Council
P.P.G Dias	Deputy Director	Irrigation Department
Pradeep Fernando		
Priyanwada Ranawaka	Journalist	The Sunday Times
R.A.C Rananga		
R. Wijesinghe	Business Consultant	Enterprise Technology (Pvt) Ltd.,
Ramraj Narasingham	DRM	UNDP
Sally Campbell		Daily Mirror
S.F.P Senaratne	Consultant Anthropologist	
S M Weerakoon	Head- Risk Management	Eagle Insurance Company

S Premalal	Meteorologist	Department Of Meteorology
Sabina Fernando	Senior Researcher	LIRNE*asia*
Sally Campbell	Country Director	Daily Mirror
Sandya Salgado	CEO	Ogilvy Outreach
Thimsy Faheem	Editor	The Economic Times
Upali Mallawaarachchi	Consultant Engineer	ADB Projects Division – Road Authority
Vajira Premawardhana		
Vinya Ariyaratne	Executive Director	Sarvodaya

II. Video-Press Conference, February 10th 2005, 10am-12pm, Distance Learning Center (Sri Lanka), Simon Fraser University (Canada), University of Hawai'i at Hilo (USA)

Name	**Designation**	**Affiliation**
Amal Jayasinghe	Chief Of Business	AFP
Amila Balasooriya	Producer	Swarnavahini
Anisa Niyas	Journalist	Business Today
Asantha Sirimane	Business Editor	Lanka Business Online
Chandimal		TNL TV
Dilshani Samaraweera	Journalist	LBO/ETV
Dinesh Gunaratne	Cameraman	S.L.R.C
Errol Crutchley	Journalist	Business Standard
Lakshme Parasuran	Journalist	Thinakarran/Lakehouse
Lathikka A. Niriella	Journalist	Daily Mirror
Lionel Yodhasinghe	Deputy Editor	ANCL
Namini Wijedasa	Journalist	The Sunday Island/Upali Newspapers
Nishani Lasith Herath	Journalist	Silumina/ Lakehouse

Randhika		TNL TV
Sangeeth Kalubowila	Director- News	SLRC
Shehan Baryanage	News Manager	Art Tv
Shyam Nuwan	Journalist	Divaina/Upali Newspapers
Tharaker Jayathiake	Journalist	SLBC
Yohan Perera	Journalist	Daily Mirror

III. Meeting organized by Ceylon Chamber of Commerce, February 17th 2005, 4:30-6:00 pm, Chamber of Commerce Auditorium, (Colombo, Sri Lanka)

Name	**Designation**	**Affiliation**
A.M.J.S Amarakoon	Vetenairy Surgeon	Gold Gun Feed Mills
Amal Dias	AGM	ESI
Amanda	Risk Management	AAI
Arthur Yapa	Senior Engineer	
Asela Angammana	Director	
Asoka Weerasinghe	Director	Sri Lanka Church Child Care Association
Buddhi Weerasinghe		
Bv J L Niroshan Vey		SEDEC
C W Abeyratne	Managing Director	Fentons Ltd
Chella Padmanathan	Consultant	CCF_ Sri Lanka
D.P M	Vice President	IESL- Institute of Engineers Of Sri Lanka
D.S Walpola		
Divanie de Fonseka	Programme coordinator	SEDEC
H Wijesinghe	Managing Director	ICIB
H.P Prumasiri	President	SLVA

Harsha De Silva	Senior Economist	LIRNE*asia*
Imran Buhary	Management Accountant	Jetwing Hotels Ltd
Imran K	Director	
J Gnanasekera		
Justin Perera	Director	CIC
K A S Deepalal	Programme Officer	Caritas Sri Lanka
K Nanayakkara	Engineer	CHPB
K Navaratnnes	Medical Officer	P L Q
K. D Ramanayake	Deputy Director	Central Bank
Kumar Weerasuriya	Vice President	NDB Bank
M.T Helambaarchchy	Internal Controller	LOIB
Martin Wickramananda		
Mithara Ariyasinghe	Director	MBC Networks / Retires Senior DIG
Mohan Abeyratne	Deputy Director General	
N Kamaladasa	Director	CHPB
Nalin Attygalle	President	SLIM
Nimal Perera	Chairman	Premier Pacific
Nimal Perera	Marine Surveyor	
Niranjan Nagendra	General Manager	Eagle Insurance
Nissanka Weerasekera		Aureos
P I	Chairman	Ceylon Insurance Brokers Ltd
P.P.G Dias	Deputy Director	
Palitha Shanmugam		Sampath Bank
Patrick Bulner	General Manager	I S P Networks(Pvt) Ltd
Prasanna Tissera	Risk Management	HNBA
R J Kamaladasa	Freelance Journalist	Lakehouse

R.Pilla	Director	
R.S John	Consultant	WHO
Ramani K	Journalist	Lake House
Ranee Ratnayake		A and A International Opticians
Ravi R		Lanka Bell Ltd
Rohana Werangoda	Project Manager	ITTG South Asia
Ruwan	Assistant Manager	HNBA
S Bartholomeuz	Senior Manager	Lanka Bell Ltd
S Ranmal	Retired Harbor Master	
S.I Fernando	Consultant	Zenith Insurance Brokers
Saliya R	Photographer	Lake House
Samantha Perera	Chief Engineer	
Siri De Silva	Chairman	Adventures Lanka (Pvt) Ltd
Subash Daluwatta		Protec Services(Pvt)Ltd
Susantha Weerakone	Risk Management	Eagle Insurance
T Manam	Engineer	
T. Subash	Engineer	I P S Network
Tilak Conrad	CEO	Copyline
Tissa Jayatilake	Secretary	SLVA
Ulnike Polratz	PR	CPM
Upul Wijesinghe	General Manager	Eagle Insurance
Vajira Premawardhana	Finance Expert	
Visal Wickramaratne	Director/ GM	Watawala Plantations
Wayne Petrass	Specialist Consultant	Hydro Tasmaia
Y Gunasekera	Head , Corp Coms	JKH
	Senior Manager	CIB

IV. International experts consulted

Name	Affiliation
Catherine Hickson	Geological Survey of Canada
Dominic Scott	CISCO systems
Earl Kessler	Asian Disaster Preparedness Center, Bangkok, Thailand
Eliot Christian	United States Geological Survey
George Curtis	University of Hawai'I, Hilo, USA
Terry Jeggle	International Strategy for Disaster Reduction

Annex 3: Agendas- Consultation meetings

I. Expert Consultation, January 26 2005, 3-7pm; Taj Samudra, (Colombo, Sri Lanka)

Expert Consultation on National All Hazards Warning System (NAHWS) Vanguard Foundation-LIRNE*asia* Crystal Room (Lower), Taj Samudra January 26th , 2005		
Time	**Session**	**Moderator/Speaker**
3.00 -3.30	Arrival of participants and Tea	
3.30-3.45	Welcome and introduction	Lakshaman Bandaranayke, Vanguard Management Services
	Opening Remarks	A S Jayawardena, Former Governor, Central Bank
3.45-4.00 4.00-4.30	Presentation: *What lessons were learnt from 2004 Tsunami?* Discussion	Harsha de Silva, LIRNE*asia*
4.30-4.45 4.45-5.15	Presentation: *What are the parameters of DWS?* Discussion	Peter Anderson, Simon Fraser University
5.15-5.30	Tea Break	
5.30-5.45 5.45- 6.15	Presentation: *Governance and implementation models for a National All-Hazards Warning System* Discussion	Malathy Knight-John, LIRNE*asia* /Institute of Policy Studies
6.15-6.30	Presentation: *What is the role of Communication Industry?*	Rohan Samarajiva, LIRNE*asia*
6.30-6.50	Open Forum	Chandra Jayaratne, Eagle Insurance
6.50-7.00	Summary and conclusion	Catherine Hickson

II. Video-Press Conference, February 10th 2005, 10am-12pm, Distance Learning Center (Sri Lanka), Simon Fraser University (Canada), University of Hawai'i at Hilo (USA)

Draft Concept Paper "Specifications of a National All-Hazards Warning System" Video Press Conference 10am, 10 February 2005		
Time	**Session**	**Moderator/Speaker**
10.00-10.15	Arrival and Tea	
10.15-10.20	Welcome & introduction	Lakshaman Bandaranayke, Vanguard Management Services
10.20-10.35	Opening comments from international consultant (co-author) and experts	Peter Anderson, Simon Fraser University, Canada Catherine Hickson, Geological Survey of Canada George Curtis, University of Hawai'i at Hilo, Hawaii
10.35-11.00	*Presentation*: Specifications of a National All-Hazards Warning System for Sri Lanka	Rohan Samarajiva, LIRNE*asia*
11.00-1.50	Questions from the press	
11.50-12.00	Closing remarks	Lakshaman Bandaranayke, Vanguard Management Services

III. Meeting organized by Ceylon Chamber of Commerce, February 17th 2005, 4:30-6:00 pm, Chamber of Commerce Auditorium, (Colombo, Sri Lanka)

Draft Concept Paper "Specifications of a National All-Hazards Warning System" Review Meeting Convened by Ceylon Chamber of Commerce 4.30 PM, 17th February 2005		
Time	**Session**	**Moderator/Speaker**
4.30-4.35	Welcome Address/Opening Remarks	Chandra Jayaratne, Eagle Insurance Company
4.35-4.45	The objectives and process of development of concept paper	Lakshaman Bandaranayke, Vanguard Management Services
4.45-5.05	*Presentation*: Rationale for, and the parameters of, a national all-hazards warning system	Rohan Samarajiva, LIRNE*asia*
5.05-5.15	*Presentation*: Governance issues	Malathy Knight-John, LIRNE*asia* /Institute of Policy Studies
5.15-6.00	Open Forum	Chandra Jayaratne, Eagle Insurance Company
6.00-6.05	Way forward	Lakshaman Bandaranayke, Vanguard Management Services

Annex 4: News Releases, Selected Media Coverage and Web Coverage

I. News Releases

A. Concept Paper: 'National All-Hazards Warning System for Sri Lanka'

February 2005

National All-Hazards Warning System for Sri Lanka

A preliminary report on a disaster warning system for Sri Lanka has recommended that the country move towards a multi-hazard warning system for the country.

"Sri Lanka should resist the temptation of a special purpose tsunami public warning dissemination network, which would not have the advantage of regular use, testing and maintenance that comes with a multi-hazard warning system," an interim concept paper on a national hazard warning system for the country said.
"A single national multi-hazard warning system that incorporates all new and existing warning systems is likely to be more effective and sustainable because it will be central to daily life. Obviously, no single method will reach all people and an infrastructure is needed to integrate and support multiple methods and channels to disseminate messages."

The interim concept paper on the "Specifications of a National All-Hazards Warning System for Sri Lanka", released by the non-profit organizations Vanguard Foundation and Lirne*asia* is based on initial ideas developed with international expert advice and a transparent expert consultation process in Sri Lanka.

On January 26th an expert consultation process was conducted with international experts and the local alumni of Asian Disaster Preparedness Centre.

"Pubic warning of hazards is not simply a technology, the report said. "But rather a unified system constituted by four critical and inter-related elements."

These include hazard identification, risk assessment and vulnerability analysis, emergency management structure, and local dissemination.

In addition to warning the public, an effective warning system also must provide information about how to prevent and protect against disasters.

The report says the government should ideally supply warning systems, because it is a public good. The alternative was to supply it through the market by bundling it with a private good.

"The insurance industry may have incentives to operate a national all-hazards warning system, given its interests in minimizing losses to life and property," the report observed.
"Another industry that may have an interest in supplying hazard warnings is the tourism industry.

The report concluded that such efforts were unlikely to result in a national all hazards warning system.
But if official action is delayed such partial actions may provide second or third best solutions while the government assembles and appropriate strategy.

Report is available for your comments on http:// www.vanguardfoundationlanka.org and http://www.lirneasia.net.

B. Video-Press Conference, February 10th 2005, 10am-12pm, Distance Learning Center (Sri Lanka), Simon Fraser University (Canada), University of Hawai'i at Hilo (USA)

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II: Selected Media Coverage Early Warning System

A. Print & Online Media (available on the Internet)

Curiouser and Curioser - Sri Lanka Tsunami
Lanka Business Online
Publication date: 4-1-2005

Assignment highlights Sri Lanka's lack of early warning system
Correspondent: Anna Horsbrugh Porter
BBC World Service
Publication date: 14-1-2005

All Systems Go
Lanka Business Online
Publication date: 27-01-2005

'Tsunami' panic in the coastline
BBC Sinhala
Publication date: 28-1-2005

Getting Ready
By Charitha Fernando
Lanka Business Online
Publication date: 30-1-2005

SRI LANKA: Thousands of villagers on southern and eastern coasts flee their homes after false tsunami warning
By Anthony David
AsiaMedia Contributing Writer
Publication date: 2-2-2005

Number Please
Lanka Business Online
Publication date: 10-02-2005

Prioritizing warning systems to mitigate disaster
Sunday Observer
By Lionel Yodhasinghe
Publication date: 13-02-2005

Eye Opener
Lanka Business Online
Publication date: 13-02-2005

Single-multihazard warning system recommended for Sri Lanka
By Namini Wijedasa
The Island
Publication Date : 14-02-2005

SLID meeting on disaster preparedness
Daily News
Publication date: 18-2-2005

The Lotus Eaters
Lanka Business Online
Publication date: 20-2-2005

Tsunami warning system proposed
Simon Fraser University News
By Marianne Meadahl
Publication: 24-02-2005 vol. 32, no. 4

Working towards a 'Hazard Warning' system
Sunday Observer
By Ranga Kamaladasa
Publication date: 27-02-2005

Also feature interviews with Rohan Samarajiva in Sinhala newspapers, Irida Divayina, Lankadipa, Irudina, Lakbima

Electronic media

BBC World Service, "*Assignment*," 13 January 2005

Sirasa TV and MTV, Interviews with Rohan Samarajiva and Peter Anderson, 24 January 2005

Sirasa TV, panel discussion featuring Rohan Samarajiva, aired 6, 9, 10 February 2005

Swarnavahini featured video news conference on 17 February 2005

Rupavahini featured video news conference on 18 February 2005

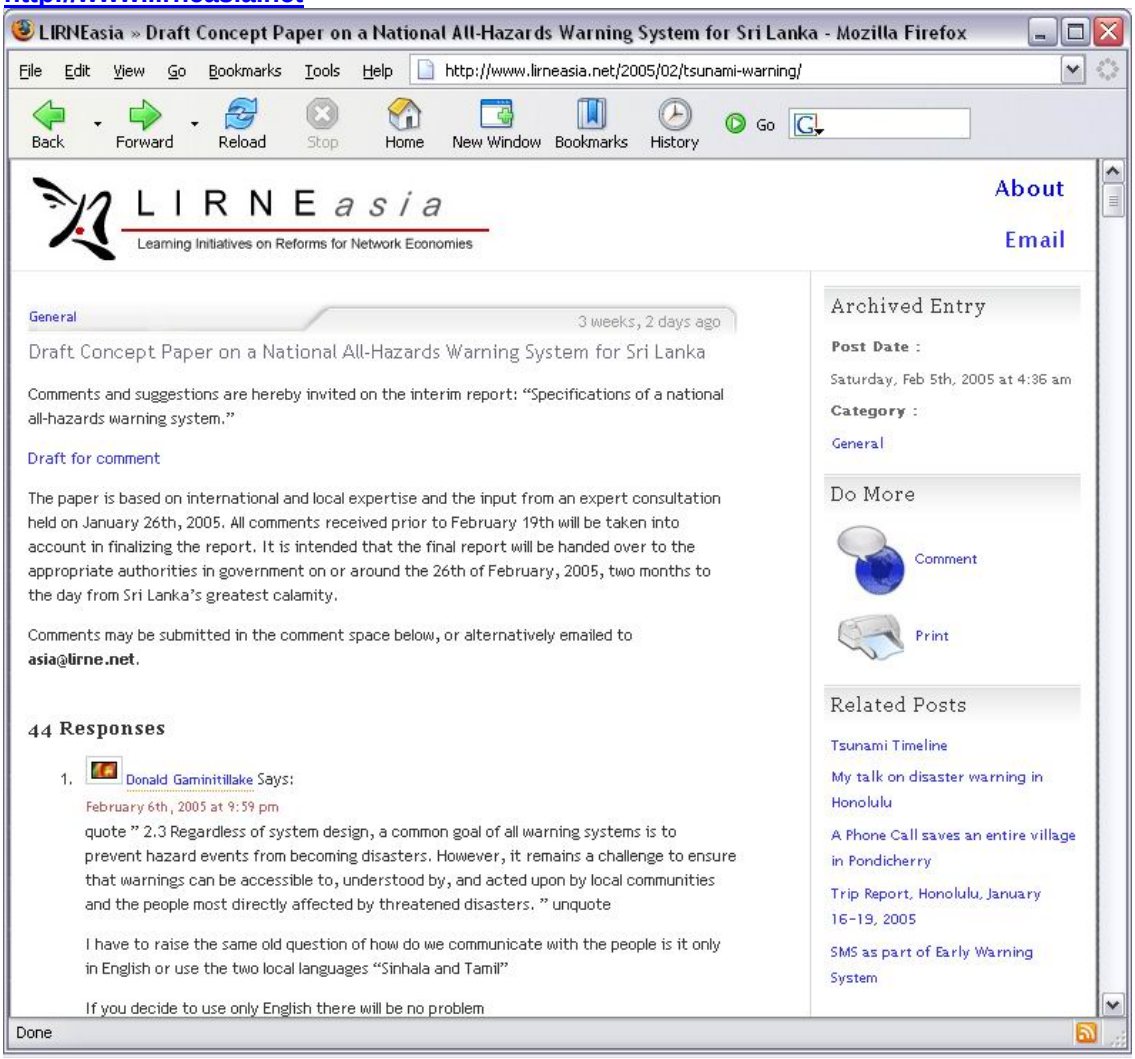
ArTv featured video news conference on 18 February 2005

ETV featured 30 minute program of panel with Chandra Jayaratna, Nishantha Kamaladasa, Malathy Knight-John and Samarajiva, 19,20 February 2005

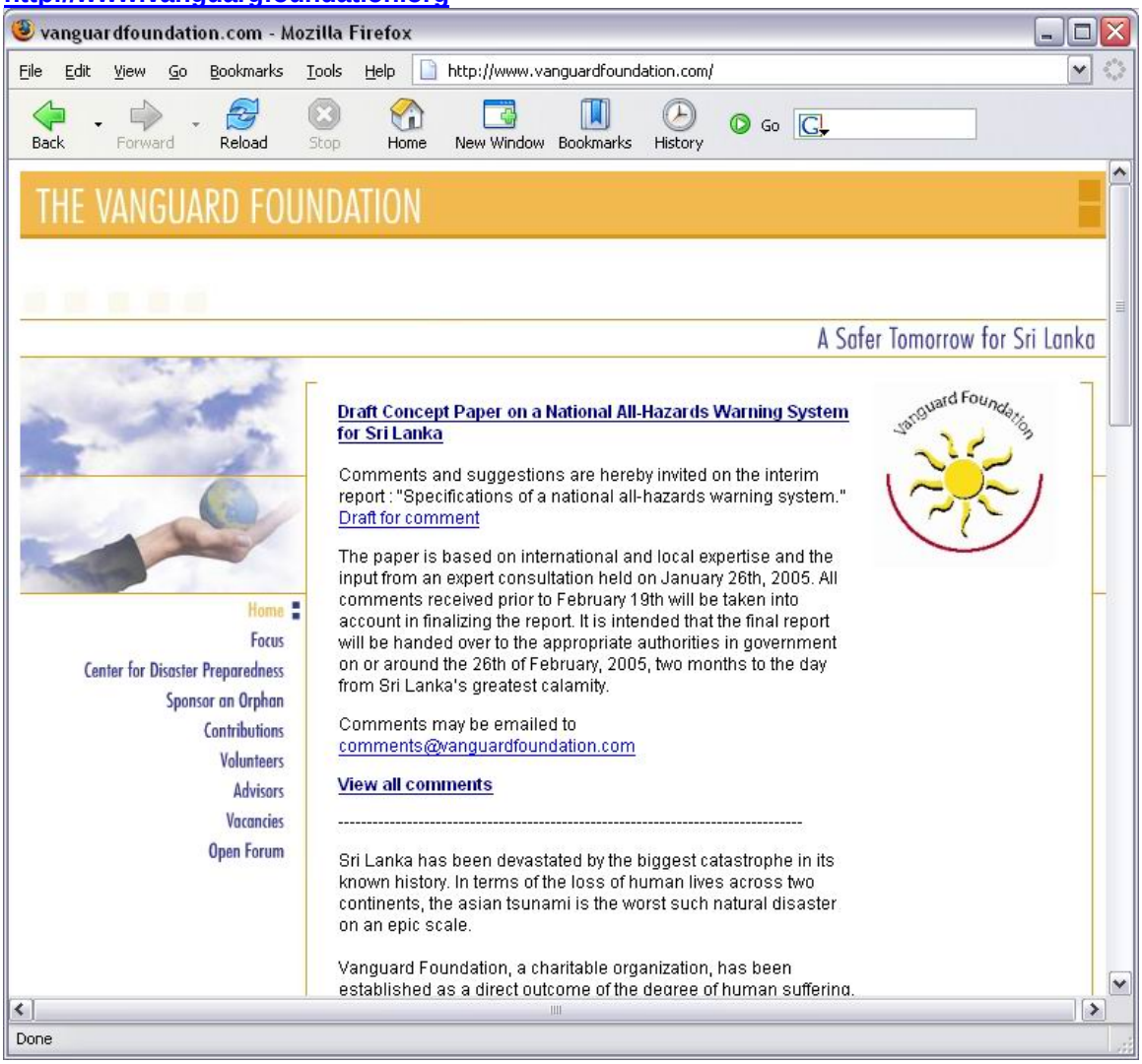
TNL carried Sinhala 30 minute panel discussion with Chandra Jayaratna, Nishantha Kamaladasa, Chanuka Wattegama and Samarajiva, 21 February 2005

III. Web Coverage

http://www.lirneasia.net



http://www.vanguardfoundation.org



Annex 5: Qualifications of International Expert and Leader of Sri Lanka Team

(a) International Expert: Associate Professor Peter Anderson, Director, Telematics Research Lab, School of Communication, Simon Fraser University, Canada
(b) Leader of Sri Lanka Team: Professor Rohan Samarajiva, Executive Director, LIRNE*asia*, Sri Lanka

(a) Peter Anderson

1987 -1990	Development and implementation of the Emergency Preparedness Information Exchange (EPIX) - Canada's first national emergency planning computer bulletin board system. System utilized a personal computer that was accessible through a dial-up modem connection (sponsored by Emergency Preparedness Canada).
1990 - 1992	Design and implementation of the Australian Disaster Management Information Network (ADMIN), world's first fully distributed national disaster management computer information network (based on EPIX). Over a three year period, a network of bulletin board systems was constructed to interconnect 29 agencies from across Australia, including the key federal and state emergency management agencies. (Project was coordinated and implemented through Centre for International Research on Communication and Information Technologies, in conjunction with Australian counter-disaster agencies.
1993	Migration of original EPIX PC-based BBS to the Internet as a text-based "gopher" service. EPIX becomes world's first Internet-based disaster management information server and the primary portal for accessing all known sources of hazard and disaster information on the Internet at that time. Was utilized by the UN, international and national agencies as a catalyst for developing their own services.
1993 - 2003	Implementation at SFU of world's first Internet gateway to distribute internationally all disaster situation reports and appeals for assistance on behalf of the United Nations. Was the exclusive distribution system for first five years, and gradually became the back up system as UN took over this function. After 10 years of service, we officially switched off our server in 2003.
1993 - 1995	Study of the use of microcomputers and computer networks in emergency management. Research included a survey of Canadian local government emergency planners and emergency social services directors to determine current computer usage patterns and to identify support requirements for participation in the development of a new provincial emergency management information system.
1994	January 17 Northridge Earthquake, California. EPIX becomes the mirror (backup) site for California Governor's Office of Emergency Services for distributing near-real time State emergency information to response agencies and news media. Bulletins were posted and archived on the EPIX gopher server beginning with the first North Ridge Earthquake bulletin. System was used as an alternate site for other California incident information for three years following Northridge. One of the world's first examples of electronic mutual aid via the Internet.

1994	Evaluator of telecommunications needs and operations during CANATEX 2, a Canadian national emergency exercise to test the National Earthquake Support Plan for British Columbia and its interface with the British Columbia Earthquake Response Plan – with Doug Elliot, former network manager for B.C. Tel (commissioned by Industry Canada).
1995	Study of the requirements for an integrated national emergency management information system (commissioned by Emergency Preparedness Canada).
1995	Design, implementation and hosting of Internet sites at SFU for Emergency Preparedness Canada, Industry Canada-Emergency Telecommunications, and Transport Canada-Aviation Safety (Pacific Region). Canada's first federal emergency management Internet services.
1994-1995	Prototype design for the United Nations International Emergency Readiness, Response and Recovery Information System (IERRRIS) (in collaboration with United Nations Department of Humanitarian Affairs). Successor became known as ReliefWeb.
1995 -2003	Implementation and hosting of Internet sites at SFU for the United Nations International Decade for Natural Disaster Reduction (IDNR) and current successor International Strategy for Disaster Reduction (ISDR) programs.
1995-1998	Design, implementation and hosting of HazardNet, a United Nations International Decade for Natural Disaster Reduction Demonstration Project to enhance the timeliness, quality, quantity, specificity and accessibility of information for persons and organizations world-wide concerned with preventing, mitigating or preparing for large-scale natural and technological emergencies (in collaboration with the UN Environment Programme, U.S. National Weather Service and IDNDR). This was one of the world's first attempts to use World Wide Web attributes (including graphics) to integrate hazard and disaster management activities on an international level, especially for early warning.
1995 - present	Collaboration and hosting of British Columbia Provincial Emergency Program Web Site – estimated to have had up to 1.5 million hits per day during the height of Firestorm 2003 wildland-urban interface fires.
1995 1998	Design and implementation of SAFEGUARD NET, an Internet-based information system to support Safe Guard, a national public recognition program aimed at increasing public awareness of emergency preparedness in Canada. (on behalf of Emergency Preparedness Canada).
1995	Design and testing of the Virtual Emergency Management Information System (VEMIS). VEMIS is an experimental alternative backbone networking system comprising both wireline and wireless components to provide robust, fault tolerant fixed and mobile communications to enable emergency managers to participate in critical decision-making processes regardless of physical location. First phase entailed the design and construction of a 56 Kbps wireless Internet system in 1995 to provide alternative Internet access throughout the B.C. Lower Mainland. Out-of-region communication was available via satellite. This was one of the first wide area wireless Internet systems developed for emergency management. One of the goals was to eventually link all key Emergency Operations Centres in the Lower Mainland. The current phase entails rolling out a broadband wireless IP network, interconnected to our national high speed fibre network as well as a special satellite gateway at SFU (collaboration between

	SFU Telematics Research Lab, federal Communications Research Centre and Industry Canada).
1996	Evaluation of information services strategies for the Asian Disaster Preparedness Center, Thailand.
1996	Design, implementation and hosting at SFU of NATO-Civil Protection Committee Internet-based system to facilitate civil emergency planning and mutual assistance among NATO and Partnership for Peace countries (developed in partnership with Industry Canada, Emergency Preparedness Canada and the U.S. Federal Emergency Management Agency).
1997-2000	Member, Scientific and Technical Committee of UN International Decade for Natural Disaster Reduction. We were the main advisory committee to the UN Secretary General and General Assembly on disaster reduction strategies during this period.
1997	Facilitator and manager of federal Emergency Preparedness Canada Internet site and associated services in support of federal government assistance to Manitoba flood victims.
1998	Examination of emergency communications requirements of the British Columbia Provincial Emergency Program (commissioned by B.C. Provincial Emergency Program).
1998	Advisor to British Columbia Provincial Emergency Program on emergency telecommunications requirements during Salmon Arm Forest Fire evacuation.
1999	Advisor to British Columbia Provincial Emergency Program on emergency telecommunications requirements for 1999 provincial flood emergency preparations and response.
1999	Examination of emergency communications requirements of the British Columbia Ministry of Social Development and Economic Security (commissioned by the Ministry).
1999/00	Development of a mirror (backup) WWW site and HF packet radio email gateway for Emergency Preparedness Canada in support of national Y2K preparedness activities.
1999/00	Study of the use of cellular telephones within the Canadian emergency management community (commissioned by Emergency Preparedness Canada). Available at: http://www.ocipep.gc.ca/research/resactivites/CI/1999-D005_e.asp
2001	Enhancing Canadian emergency information exchange through development of new media applications, including Internet gateways to cellular/PCS and other wireless services (study commissioned by Emergency Preparedness Canada).
2001	Member of a small project team that developed the requirements for a new national public emergency information system in Singapore.
2002	B.C. spring floods – traveled throughout flood threatened or impacted regions of B.C. with digital camera equipment and wireless communications to document potential and real flood impacts and relay images to the B.C. Provincial Regional Emergency Operations Centres and the Provincial Emergency Coordination Centre.

2002-2004 Real-time Emergency Management via Satellite (REMSAT). Provision of assured emergency network access using satellite gateways, terrestrial wireless WANs and new hand-held terminal technology at disaster sites (collaboration between SFU Telematics Research Lab, Telesat Canada, BC Forest Services, Communications Research Centre, BC Ambulance Service, Canadian Space Agency and European Space Agency). SFU provided conceptual and technical design input for key features of the REMSAT system, especially hand held terminal units. Also, in conjunction with B.C. Provincial Emergency Program, assisted in the development of a new concept of operations for use in flood events.

2003 Firestorm 2003. As a member of the Advance Planning Unit at the Kamloops Provincial Regional Emergency Operations Centre, I was responsible for identifying all critical communications infrastructure at risk from forest fires in the Central Region and developing plans for protecting sites, assessing impacts from their loss, and developing and implementing plans for back up communications arrangements. One breakthrough was the development of an electronic mapping system to facilitate this work as well as apply it to other critical infrastructure areas such dangerous goods, oil and gas pipelines, bridges, reception centres, etc.

Other SFU support included hosting the PEP primary and backup websites, providing special emergency Internet accounts, equipment and a special satellite link for BC Forest Services.

2003-2004 Member, Greater Vancouver Joint Emergency Liaison Committee - Emergency Telecommunications Sub-committee that is charged with researching and making recommendations for a next-generation wireless system to facilitate inter-municipal emergency communications in the Greater Vancouver Region.

2003-2004 Assessment of the B.C. Tsunami Warning System and Related Risk Reduction Practices. This study is intended to provide a baseline assessment of the B.C. tsunami warning system and related risk reduction practices (particularly as they affect rural and remote regions) along with recommendations for further enhancements in light of changing coastal social and economic conditions that now include expanded tourism (especially cruise ships and eco-tourism), aquiculture and possibly offshore oil and gas exploration in the next decade. (funded by Office of Critical Infrastructure Protection and Emergency Preparedness Canada and available at: http://www.ocipep.gc.ca/research/resactivites/CI/2003-D001_e.asp).

2004 Advanced Mobile Emergency Communications Prototype Project (AMEC). A specialized vehicle capable of rapidly deploying advanced communications throughout regions of British Columbia accessible by road. It is equipped with a range of facilities including terrestrial radio and satellite communications, telephone, video, Internet and other systems to enable the vehicle to become a field relay or gateway for critical communications from any location that the vehicle can access - in rural as well as urban areas. This prototype is one of the most advanced in Canada and is intended to serve the needs of British Columbia. The project is funded through a special grant from Western Economic Development Canada, with additional support from Industry Canada's Communications Research Centre, Canada Foundation for Innovation and SFU's Telematics Research Lab. Other collaborators and/or sponsors include the BC Provincial Emergency Program, Infosat, Mitel Corporation, Ralph's Radio and Mobile Satellite Ventures.

AMEC was successfully deployed for the first time at Boston Bar fires in August to support PEP and Office of the Fire Commissioner.

2003-2004 Developing Internet access points for North Shore Rescue. We are creating a series of wireless Internet access hot spots at the strategic locations along the West and North Vancouver mountains and canyons from where North Shore Rescue stages its search and rescue operations. These arrangements enable the Rescue Communications vehicle to have instant Internet access upon arrival.

Other areas of support

Amateur and Search and Rescue Radio

- We host radio repeater sites and Internet gateways for Burnaby Amateur Radio Club and the key Vancouver area amateur television and packet radio clubs.
- We also host a repeater site for North Shore Rescue to help extend radio coverage in the Seymour Mountain and Indian Arm regions for SAR operations.

Web Hosting

Over the years, we have helped in the development and hosting of Internet sites for many local and regional organizations including:

- Emergency Preparedness for Industry and Commerce Committee (EPICC)
- Emergency Planners and Managers Association of BC (EPMA)
- Vancouver Emergency Preparedness Conference
- Emergency Social Services Association (ESSA)
- British Columbia Amateur Radio Coordination Council (BCARCC)
- SAR Info (for search and rescue interests).

With the exception of a few sites, we have supported almost all of these activities through our own research funding initiatives.

Related Teaching and Graduate Studies

- I teach a popular 4th year undergraduate course entitled, “Communication to Mitigate Disasters” that introduces soon-to-be-graduating students to contemporary emergency management concepts and practices – Over 500 students have taken this course. I also supervise graduate students at SFU and other universities in this field.

- Creation of scholarship fund to support graduate studies in this field - in conjunction with the Vancouver Emergency Preparedness Conference

Academic and Professional Research

- One of the many benefits of pursuing these activities from an academic perspective is the opportunity to promote socially important interdisciplinary research and cross-professional interaction. Most of the activities described above are applied research projects that embody these features. I continue to participate in a number of interdisciplinary academic research programs and publish in both professional and academic journals and books. I have been an invited speaker at many local, national and international conferences and workshops. International appearances have included

events in the U.S., Australia, Thailand, China, Singapore, Chile, Estonia, and Western Europe. Through the Telematics Research Lab and personal endeavours, we have also been very successful in attracting research funding that exceeds $3 million in the past decade

(b) Rohan Samarajiva

- Participated in emergency broadcasts issuing warnings re the two cyclones of 1978 by the Sri Lanka Broadcasting Corporation, 1978.
- Organized an ICTs and disaster warning workshop for the Arthur C. Clarke Centre for Modern Technologies, 1986.
- Represented Sri Lanka at the Tampere Intergovernmental Conference on Emergency Telecommunications in Tampere, Finland, May 1998.
- Chaired ad hoc committee to resolve contentious language on the draft convention and succeeded in achieving a solution acceptable to all parties leading to adoption of the Tampere Convention on the Provision of Telecommunication Resources for Disaster Mitigation and Relief Operations, May 1998.
- Initiated and supervised the participatory process leading to the *Final Report of the Pilot Study on the Use of Telecommunications in Disaster and Emergency Situations in Sri Lanka*, January 1999.
- Contributed to the submission of the Cabinet Paper the led to decision to ratify the Tampere Convention on the Provision of Telecommunication Resources for Disaster Mitigation and Relief Operations and to assign disaster telecom responsibilities to the Telecom Regulatory Commission, 1999.
- Samarajiva, R. (2001). Disaster preparedness and recovery: A priority for telecom regulatory agencies in liberalized environments. *International Journal of Regulation and Governance*, 1(2): 1-16; also in *Proceedings of the Policy and Development Summit, ITU Telecom Africa 2001*. Johannesburg, December 2001. http://www.itu.int/TELECOM/aft2001/cfp/auth/4858/pap_4858.pdf
- Srivastava, L. and R. Samarajiva (2003), Regulatory design for disaster preparedness and recovery by infrastructure providers: South Asian experience, in *Critical infrastructures: State of the art in research and application*, eds. W. A. H. Thissen & P. M. Herder, pp. 103-120. Boston: Kluwer Academic Publishers.
- Samarajiva, R. "What happened in Sri Lanka and why it won't be so bad next time," presentation at closing plenary of Pacific Telecom Council conference, Honolulu, Hawai'i, 19th January 2005.

Annex 6: Timeline of events, 26 December 2004

From Lanka Business Online, based on a timeline developed by Rohan Samarajiva, Anuradha Samarajiva, Subhanu Samarajiva and Divakar Goswami on January 2-3, 2005. All times were taken from the listed sources. Subsequent information shows some time were inexact: for example, it is now accepted that Kalmunai was hit at 0836 hrs, not at 0827 hrs.

--All times provisional--

Timeline to disaster.

First Hour

SL TIME	EVENT	DISTRICT	NUMBER DEAD	SOURCE
6:59	Large earthquake strikes off the tip of Sumatra, Indonesia			NYT multimedia
7:05	Tremors experienced in some parts of the country			Sunday Times, Jan 02, 2005,
7:06	Pallekele Seismological Station relays data of seaquake from seismometer to GSMB in Colombo			Sunday Times, Jan 02, 2005,
7:10	GSMB director feels tremor and alerts staff			Sunday Times, Jan 02, 2005,
7:14	Pacific Tsunami Warning Center (PTWC) issues bulletin about earthquake, estimates magnitude 8.0			Pacific Tsunami Warning Center
7:58	Agence France-Presse reports earthquake (not tsunami)			NYT multimedia

Second Hour

8:04	PTWC revises magnitude to 8.5, mentions potential for local tsunami			NYT multimedia
8:27	Kalmunai hit	Ampara	10436	Sunday Times, Jan 02, 2005,
8:30	Kattankudy, East coast Sri Lanka flooded by 9 feet of water			Tamil Net *Note: LTTE time 8:00am*
8:30	PTWC contacts Australia Emergency Management, already aware of earthquake			NYT multimedia

8:40	Batticaloa hit	Batticaloa	2254	Sunday Times, Jan 02, 2005,
8:52	Yala hit			Sunday Times, Jan 02, 2005,
8:55	Mullaitivu hit	Mullaitivu	2000	Sunday Times, Jan 02, 2005,
8:55	Trincomalee hit	Trincomalee	947	Sunday Times, Jan 02, 2005,
8:57	News agency report - earthquake sets off big waves on coast			NYT multimedia

Hour Three

9:00	AFP correspondent in Colombo gets first call from Trinco re: sea coming in			AFP correspondent
9:00	Velvettiturai hit	Jaffna	2640	Sunday Times, Jan 02, 2005,
9:00	Hambantota hit	Hambantota	4500	Sunday Times, Jan 02, 2005,
9:15	Washington Post correspondent reports tsunami hitting Weligama			Washingtonpost
9:15	Matara hit	Matara	1061	Sunday Times, Jan 02, 2005,
9:15	Galle hit	Galle	3724	Sunday Times, Jan 02, 2005,
9:15	Panadura hit?			Sunday Times, Jan 02, 2005,
9:20	News agency report - houses swept away in coastal regions of Aceh province, Indonesia			www.ukssc.org.uk
9:20	Kalutara hit	Kalutara	213	Sunday Times, Jan 02, 2005,
9:30	AFP correspondent in Colombo gets second call from Matara re: sea coming in			AFP correspondent

9:30	PTWC scientists see wire reports on Internet about Sri Lankan casualties			NYT multimedia
9:30	Negombo hit	Gampaha	7	Sunday Times, Jan 02, 2005,
9:34	1st Lankan news report - tidal wave hit Sri Lanka's coastal region, putting areas under water			Lanka Business Online
9:41	News agency report - flash flood hit Banda Aceh city and receded, origin of water unknown			NYT multimedia
9:46	AFP report - thousands displaced as massive tidal waves hit Sri Lanka			AFP correspondent

Hour Four

10:00	American Ambassador in Sri Lanka calls PTWC for notification of aftershocks			NYT multimedia
10:00	Waves hit Unawatuna, according to an eyewitness journalist			BBC South Asia
10:00	GSMB director receives confirmation of tsunami hitting Sri Lanka from US Geological Survey Bureau			Sunday Times, Jan 02, 2005,
10:06	News agency report - mild tremors on India's east coast, no reports of damage or death			NYT multimedia
10:13	News report - 500 feared dead in East and South coast of Sri Lanka			Tamil Net
10:27	News agency report - local police say it is not yet known if Indonesian earthquake and waves in Sri Lanka are related			NYT multimedia

Fifth Hour

11:25	Harvard University seismology department estimates earthquake magnitude at 8.9			NYT multimedia
11:39	News agency report - earthquake rocks Southeast Asia, setting off tsunamis that killed more than 150 in Sri Lanka, sent residents rushing to higher ground in Indonesia and washed into the Indian city of Madras and the Thai resort island of Phuket			NYT multimedia

Sixth Hour - Noon

12:00	PTWC advises US Pacific Command in Hawaii of potential for more tsunami impacts in western Indian Ocean			NYT multimedia
12:13	News agency report - Sri Lanka deploys military and asks India for help. Trincomalee submerged under several feet of water			NYT multimedia
12:42	News agency report - Thai PM orders evacuation of tsunami-hit area in three provinces, including tourist island Phuket			NYT multimedia
12:53	bbc.co.uk carries its first tsunami story			BBC South Asia

Seventh Hour - Afternoon

13:09	News agency report - Male', capital of Maldives is flooded			NYT multimedia
13:57	News agency report - Penang Island, Malaysia hit by tsunami. Six people dead			NYT multimedia
14:15	PTWC speaks with US State Department, advises of potential threat to Madagascar and Africa			NYT multimedia

Note - NYT Multimedia refers to: New York Times Online Multimedia Feature “A Disaster Unfolds” January 1, 2005 - NYT Multimedia
Note - time conversions found using online converter: http://www.timezoneconverter.com

	physical and scientific events
	events reported in media
	media events

Available at http://www.lankabusinessonline.com/new_full_story.php?subcatcode=1&subcatname=&newscode=1259259104

Annex 7: Sinhala and Tamil Translations of Interim Report Executive Summary

-distributed at Video Press Conference and Chambers of Commerce meeting, and made available at www.lirneasia.net

A: *Sinhala*

ශ්‍රී ලංකාවට බහුවිධ ආපදා අනතුරු ඇඟවීමේ පද්ධතියක් - අතුරු සංකල්ප වාර්තාව

රොහාන් සමරජීව - ලර්න් ඒෂියා, ශ්‍රී ලංකාව
පීටර් එස්. ඇන්ඩර්සන් - සිමන් ෆ්‍රාසර් විශ්ව විද්‍යාලය, කැනඩාව
අයේෂා සයිනුඩීන් - ලර්න් ඒෂියා, ශ්‍රී ලංකාව

වාර්තාවේ මූලික සමාලෝචනය

0.1 ශ්‍රී ලංකාවට පොදු අනතුරු හැඟවීමේ පද්ධතියක් තිබීමේ තදබල අවශ්‍යතාව, 2004 වසරේ ඉන්දීය සාගරයේ සුනාමිය නිසා සිදු වූ, පෙර නොවූවිරූ බේදනීය, , ජීවිත හානියෙන් පසුව වඩාත් ඉස්මතු වේ.
මහජන අනතුරු ඇඟවීමක් යනු ක්‍රියාපටිපාටියක් ඇති පද්ධතියක් මිස තාක්ෂණයක් නොවේ; එය යම් අනතුරක් කළින් හඳුනා ගැනීම, සහ එහි බලපෑම කෙතෙක් විය හැකි ද නිශ්චය කිරීම යන සියලු දෑ වල එකතුවකි. එයට ගොදුරු විය හැකි ජනතාව දැනුවත් කිරීමට යෝග්‍යය මගක් සෙවීම සහ අවසාන වශයෙන් අනතුරෙන් ඇතිවිය හැකි හානිකර ප්‍රතිවිපාක මගහැරීමට, කල් වේලා ඇතිව අවශ්‍ය තැන්වලට අනතුර පිලිබඳව දැනුම් දීමේ මගක් සෙවීමත් ය.
කෙටියෙන් කිවතොත්, අනතුරක් බේදවාචයක් බවට පත්වීම වැලැක්වීමට ජනයාට ක්‍රියාත්මක විය හැකි අනතුරු හැඟවීමේ පද්ධතියක්.

02 නිසි අනතුරු හැඟවීමක් මඟින් ජීවිත බේරෙනු ඇත. ආර්ථික හානි අවම වනු ඇත. සමාජයක් තුළ ඇතිවන පීඩනය හා ඇනහිටීම අවම වෙනු ඇත. එමෙන්ම, පොදු ජනයා තුළ විශ්වාසයක් සහ ආරක්ෂිත හැඟීමක් ඇති වනු ඇත.
නිසි අනතුරු හැඟවීමක් යනු අනතුරක බලපෑම අවම කල හැකි, ඊට පෙර සූදානමක් ඇති, ඊට ප්‍රතිචාර දැක්විය හැකි හා පසුව නැවතත් යථා තත්ත්වයට පත්කර හැකි විධිමත් ආපදා කළමනාකරණ පද්ධතියක එක් තීරණාත්මක අංගයකි.
මේ බව පසක් කොට ගන්නා අතර, මෙම සංකල්ප පත්‍රයේ කෙන්ද්‍රය වන්නේ අනතුරු හැඟවීමේ අංගයයි.
අනතුරු හැඟවීම සමස්ත ආපදා කළමනාකරණ පද්ධතියේ ඉතා වැදගත් සංඝටකයකි. 2004 වර්ෂයේ ඉන්දීය සාගරයේ ඇතිවූ සුනාමි අවස්ථාවේදී මෙවැන්නක් ක්‍රියාත්මක වූයේ නැත. දැනට යෝජනා වී ඇති, කලාපීය විපත් හඳුනාගැනීමේ පද්ධතිය වැඩිදියුණු කිරීමේ වැඩසටහනෙන් ශ්‍රී ලංකාවට වාසියක් ගැනීමට නම්, අනතුරු හැඟවීමේ පද්ධතිය ඉක්මනින් ම ශක්තිමත් කළ යුතුයි.
ඵලදායී ජාතික ආර්ථික අනතුරු හැඟවීමේ පද්ධතියක් සඳහා දේශීය, කලාපීය සහ ජාත්‍යන්තර අනතුරු හඳුනාගැනීමේ පද්ධති සමඟ සම්බන්ධ වීම ඉතා වැදගත් වෙයි.
අනතුරු හැඟවීමේ ඵලදායීතාව රඳ පවතින්නේ, මහජනයා දැනුවත් කිරීම, උනන්දුව පවත්වා ගැනීම, සැලසුම්කරණය සහ පරීක්ෂා කර බැලීම මතයි.

03.මහජනයාට අනතුරු හැඟවීම් යනු, හුදෙක් තාක්ෂණයක් පමණක් නොවෙයි. එය, මිනා සබඳතාවක් සහිතව එකිනෙක බැඳුනු විවිධ ක්‍රියාවලි 4 කින් සංකලනය වූ පද්ධතියකි.

- විපත් නිර්ණය කිරීම, අනතුරු සමාලෝචනය, අවදානම
- හඳුනාගැනීම් සහ නිරීක්ෂණය
- හදිසි අවස්ථා කළමණාකරණ ව්‍යුහය
- ක්ෂේත්‍රයේ ක්‍රියාත්මකභාවය

04. තවද, මහජනයාට අනතුරු හැඟවීමට අමතරව, ඒ සඳහා පිහිටුවෙන ඵළදායී පද්ධතියක් මගින්, විපතක් මග හරවා ගැනීමට හා එවැන්නකින් ආරක්ෂාවීමට මෙන්ම, ඒ ඒ අවස්ථා වලදී අවශ්‍ය සහනසේවා පිළිබඳවත්, විපත් ස්ථානයක් යථා තත්ත්වයට පත් කිරීම හා පුනුරුත්ථාපන කටයුතු පිළිබඳවත් අවශ්‍ය තොරතුරු හා දැනුම ලබා දිය යුතුයි.

05. සුනාමි අනතුරකට පමණක් සංවේදී විය හැකි විශේෂිත අනතුරු හැඟවීමේ පද්ධතියක් පිහිටුවීමේ උත්සහයකට පමණක් නොයෑමට ශ්‍රී ලංකාව වග බලා ගත යුතුයි.
නිරන්තරයෙන් භාවිත කළ හැකි, පරීක්ෂා කර බැලීම පහසු, එමෙන්ම, මෙහෙයවීම සහ පවත්වාගැනීම සරල, විවිධ ආපදා වලදී යොදා ගත හැකි බහුවිධ අනතුරු දැන ගැනීමේ පුළුල් හැකියාවක් සහිත පද්ධතියක් පිහිටුවීමට අවශ්‍යය.
මෙරට වැසියන්ගේ දිනචර්යාව අනුව වඩාත්ම ඵලදායී සහ තිරසාර වනු ඇත්තේ, දැනට ක්‍රියාත්මක තත්ත්වයේ පවතින, අනතුරු හැඟවීමේ පද්ධති සියල්ල මෙන්ම, අලුතින් පිහිටුවෙන එවැනි පද්ධති ද ඇතුළත් වන ලෙස ස්ථාපනය කෙරෙන තනි මධ්‍යගත අනතුරු හැඟවීමේ පද්ධතියක්.
අනතුරු මොහොතක අනතුරු හැඟවීමේ පද්ධතියක් ප්‍රයෝජනවත් වීමට නම්, ඕනෑම ශ්‍රී ලාංකිකයෙකුටම, ඕනෑම අවස්ථාවක, එනම් ඔවුන් කොතැනක සිටිය ද, කුමක් කරමින් සිටිය ද, දිනයේ කුමන වේලාවක වුව ද, බාධාවකින් තොරව පිවිසිය හැකි මෙන්ම සෑම තත්ත්වයක් යටතේම ක්‍රියාත්මක වීම ඉතා වැදගත්.
සෑම පුද්ගලයෙකුම කරා ලඟාවිය හැකි තනි ක්‍රමයක් තිබිය නොහැකි අතර, විවිධ ක්‍රම හා නාලිකා ඔස්සේ පණිවුඩ බෙදහැරිය හැකි යටිතල ව්‍යුහයක් තිබිය යුතුය.
ආණ්ඩුවට මෙය තනියෙන් කළ නොහැක්කකි.
ආණ්ඩුවට අනුබද්ධිත අධිකාරීන් මගින් දැනුම් දීම් නිකුත් කළ හැකි වුව ද, ඒවා බෙදා හැරිය හැකි මාර්ග රාඳ පවතින්නේ ජාල මගින් සම්බන්ධිත, පෞද්ගලික මෙහෙයවීම් යටතේ ක්‍රියාත්මක යටිතල ව්‍යුහයන් හා මානව සම්පත් මතය.
එහෙයින්, පුළුල් ප්‍රවේශයක් සහිත දැනුම් දීම් කිරීමට නම්, පොදු හා පෞද්ගලික හවුල් ව්‍යාපාර අවශ්‍ය වේ. මෙම ජාලගත හවුල් ව්‍යාපාර මගින් දැනට පවත්නා හා මතුවෙමින් පවත්නා ප්‍රවණතා ඔස්සේ, ජාතික දැනුම් දීමේ පද්ධතියක් ක්‍රියාවට නැංවීමට හැකි ප්‍රතිපත්තියක් ගොඩ නැගිය යුතුය.

06. අනතුරු හැඟවීම් වඩාත් ඵලදායී ලෙස ක්‍රියාත්මක කිරීමේ දී, විදුලි සංදේශ සේවා සහ විද්‍යුත් ජනමාධ්‍ය සේවා වෙත තීරණාත්මක කාර්යභාරයක් කළ හැක.
විදුලි සන්දේශ සේවා සැලකීමේ දී, විදුලි සන්දේශ සේවා නියාමන කොමිෂන් සභාව 1999 වසරේ දී සැකසූ වාර්තාවේ නිර්දේශ, සෙලියුලර් කෙටි පණිවුඩ හෙවත් SMS සහ සෙලියුලර් ගුවන්විදුලි සේවා වැනි තාක්ෂණික පහසුකම් හඳුන්වාදීමට අවශ්‍ය අතිරේක ක්‍රියාමාර්ග ද සමඟ ක්‍රියාවට නැංවීම වැදගත් වෙයි.
ශ්‍රී ලංකාවේ නිවාස වලින් 75% කට වැඩි සංඛ්‍යාවකට රූපවාහිනියක් හෝ ගුවන්විදුලියක් තිබෙන නිසා, විද්‍යුත් ප්‍රචාරය, අනතුරු දැනුම් දීමට සමත් ප්‍රධාන මාර්ගයකි.
එනමුත්, ශ්‍රී ලංකාවේ නාලිකා හා මාධ්‍ය රාශියක් ඇති හෙයින් මේවා මගින් දැනුම් දීම් නිසි කලට, නිසි ආකාරයෙන් ප්‍රචාරය වන්නේ ද යන්න විමසා බැලීමට පූර්ව සැලසුමක් හා සමායෝජනයක් කෙරෙහි අවධානය ලක් විය යුතුයි.
හදිසි අවස්ථාවකදී රටේ මධ්‍යගත පද්ධතියකට ස්වයංක්‍රීයව ක්‍රියාත්මක කළ හැකි ගුවන්විදුලි යන්ත්‍ර හා රූපවාහිනි යන්ත්‍ර තිබීම වැනි විකල්ප මංපෙත් ද ගවේෂණය කළ යුතුයි.

07. මහජන අනතුරු දැනුම් දීමේ පද්ධතියක් යනු, පොදු සේවාවකි.
එය රජය සැපයිය යුතුය.
අප ලද අත්දැකීමෙන් පෙනී යන්නේ, ශ්‍රී ලංකා ආණ්ඩුව තම පුරවැසියන්ට මෙම සේවාව ලබා දීම පැහැර හැර ඇති බවයි.
සුනාමි බේදවාචකයෙන් පසුව, ආණ්ඩුව මෙම කාර්යභාරය භාරගන්නේ නම්, මනා ලෙස ඒම කාර්යය ඉටුවේ ද යන්න සහතික කිරීමට, මහජන උපයෝගිතා කොමිෂම වැනි නියමන ආයතන මගින් සකසාගත් ආරක්ෂක පද්ධති අවශ්‍ය වේ.

මෙවැන්නක පහත සඳහන් ලක්ෂණ තිබිය යුතුය. නිසි විශේෂඥ දැනුම හා තාක්ෂණික මෙවලම් යෙදවීම අවශ්‍ය තරම් අරමුදල් තිබීම සාමාන්‍යයෙන් දැකියහැකි දේශපාලනික බාධා කිරීම් වලින් තොරවීම විනිවිදභාවය හා මහජනයාට වගකිවයුතු යුතුභාවය.

08. අනතුරු දැනුම් දීම් පදනම් වන්නේ, අසම්පූර්ණ තොරතුරු හා තීරණ මතයි.
බොහෝ සමාජවල, අනතුරු දැනුම් දීම් පිලිබඳව අවසාන තීරණය ගනු ලබන්නේ, ජනතා ඡන්දය මගින් වගකීමට බැඳී සිටින දේශපාලනික අධිකාරීන් මගිනි.
නමුත් ඔවුන් තීරණ ගන්නේ, සවාධීන හා ව්‍යක්තීමය විශේෂඥයන් සපයන උපදේශ මතය. ශ්‍රී ලංකාවේ දැනට ඇති තත්වය යටතේ, දේශපාලඥයෙකුට එවැනි තීරණයක් ගැනීමට ලැබිය හැකි අවකාශය අඩුය.
කෙසේවෙතත් ඔහු ගත් වැරදි තීරණයක් නිසා විශේෂඥයෙකු වරදකරුවකු කිරීම අසීරු බව අවධාරණය කල යුතුය.

09. රජය පොදු සුබසෙත උදෙසා අනතුරු හැඟවීමක් කිරීමේ විකල්පය වන්නේ, එය වෙළෙඳපෙළ හරහා පෞද්ගලික අංශයේ සේවාවක් සමග එක්කර සැපයීමයි.
ජීවිත හා දේපළ වලට ඇතිවිය හැකි පාඩුව අවම කිරීමට රක්ෂණ ව්‍යාපාරයට යම් අනුබලයක් ඇතිනිසා, බහුවිධ ආපදා දැනුම් දීමේ ජාතික පද්ධතියක් ක්‍රියා කිරීමට ඔවුන්ව පෙලඹවිය හැකියි.
කෙසේවුවද, ශ්‍රී ලංකාවේ අඩුවෙන් ව්‍යප්ත වී ඇති රක්ෂණ ව්‍යාපාරය සලකන විට, විශාල පිරිසකට වාසි විය හැකි ක්‍රියාවලියක් සඳහා, රක්ෂණාවර ලබන කුඩා කොටසක් මත වියදම පැටවීමට ඔවුන් මැලිවිය හැකියි.
සංචාරක ව්‍යාපාරය, අනතුරු දැනුම් දීමේ පද්ධතියක් සැපයීමට උනන්දු විය හැකි තවත් ව්‍යාපාරයකි.
මෙහිදී, සිය අමුත්තන් උදෙසා ප්‍රාදේශීය වශයෙන් ක්‍රියාකරවන සීමිත අනතුරු ඇඟවීමේ පද්ධති ක්‍රියාත්මක කරවන හෝටල් මගින්, බහුවිධ අනතුරු ආවරණය කෙරෙන පද්ධතියක් නිර්මාණය සඳහා දායකත්වයක් ලැබේ ද යන්න සැක සහිත ය.
රාජ්‍යය නොවන ආයතන මගින් අනතුරු ඇඟවීමේ පද්ධතියක් ක්‍රියා කරවීමට ඉදිරිපත් වුණත්, අනතුරු අනාවරණය කිරීමට අවශ්‍ය දත්ත සහ නීතිමය ආරක්ෂාවක්ද රජය මොවුන්ට සපයා දිය යුතුයි.

10. ඵලදායි බහුවිධ අනතුරු ඇඟවීමේ පද්ධතියක් ආණ්ඩුව පිහිටුවන තුරු, පෞද්ගලික සහ සිවිල් සමාජ කණ්ඩායම් අතර ඇති මෙවැනි පද්ධති වලට මුල්පිරීමේ උද්‍යෝගය පවත්වාගෙන යෑම නිර්දේශ කෙරේ.
ආණ්ඩුව සුදුසු උපායමාර්ගයක් සොයන තුරු, දෙවැනි හෝ තෙවැනි හොඳම විසඳුම් සපයමින්, ඵලදායි ජාතික පද්ධතියක් කරා දායක විය හැකි, ඒ ඒ ව්‍යාපාර මගින්, යථාර්තය පිලිබිඹු වන, ප්‍රාදේශීය හා සීමිත ක්‍රියා ක්‍රියාවලි හඳුනාගැනීම යෝග්‍ය වන්නේය.

B. *Tamil*:

epiwNtw;Wf; fUj;Jf;fspd; njhFg;G.

0.1 ,e;J kfh rKj;jpuj;jpy; > 2004 Mk; Mz;L jhf;fpa mfhykhdJk; mrhjhudJkhdJkhd Rdhkpg; Ngupog;Gf; fhuzkhf tUthd kf;fs; vr;rupf;if Kiw xd;wpd; mtrpak; Fwpj;J typAWj;jg;gl;Ls;sJ. ,J xU Rdhkp njhlu;ghd vr;rupf;if KiwNa md;wp njhopy; El;g tplak; my;y. milahsj;ij cWjpg;gLj;jy; Nguopit kjpg;gply; > kw;Wk; Nghjpasthd vr;rupf;ifia ntspg;gLj;jy; MFk;. Mjw;fpzq;f ghupa mdu;j;jj;jpy; ,Ue;J kf;fis fhg;ghw;WjYk; cs;slq;Fk;. RUq;fr; nrhy;tjhdhy; ghupa mdu;j;jj;jpy; ,Ue;J kf;fisf; fhg;ghw;Wjy; vdf; nfhs;syhk;. cupaKiwapy; vr;rupg;gjd; %yk; nghUshjhu ,og;Gfisf; fl;Lg;gLj;jy; kw;Wk; kf;fspd; kdjpy; Rdhkp mr;rj;jpy; ,Ue;J ek;gpf;ifia tsu;g;gjd; %yk; ghJfhg;Gj; jd;ikia kf;fspilNa cWjpg;gLj;jYk; mlq;Fk;.

0.2 cupa vr;rupf;ifia mspg;gJ mghaj;ij tiuaWf;Fk; jpl;lj;ij nray;gLj;Jk; xU eilKiw MFk;. ,J rkd;gLj;jy; > jahu; epiyia Vw;gLj;jy; kw;Wk; r%f epiyf;F tUjy; vd;gdTk; cs;slq;Fk;. Rdhkp njhlu;ghd vr;rupf;if vd;gJ mghaj;ij eptu;j;jp nra;tjpy; xUgq;if tpf;fpd;wJ. fle;j Mz;L Rdhkp jhf;fpa NghJ vr;rupf;if eltbf;iffs; Nkw;nfhs;sg;gltpy;iy. ehl;bd; ed;ik fUjp cldbahf ,e;j vr;rupf;if Kiw m%y;gLj;j Ntz;baJ mtrpakhFk;. ,jdhy; mdu;j;jj;ij Kd;diuNa mwpAk; jpl;lk; mtrpak; vd;gJld; Njrpa vr;rupf;if Kiwf;F > cs;Su; > gpuhe;jpa kw;Wk; ru;tNjr mdu;j;jk; mwpAk; jpl;lq;fSld; ,izf;fg;gLtJk; kpfTk; mtrpakhfpwJ. ,e;jj; jpl;lj;jpd; ntw;wp nghJkf;fSf;fhd Gupe;Jzu;T > jhf;fj;jpd; jd;ikia Gupe;J nraw;gLtJ > jpl;lkply; kw;Wk; gayPl;rpj;jy; Nghd;wtw;wpy; jq;fpapUf;fpd;wJ.

0.3 mdu;j;jk; Fwpj;j nghJkf;fSf;fhd vr;rupf;if xU njhopy; El;g eltbf;if my;y. mJ xd;Wld; xd;W gpizf;fg;gl;l 4 Kiwfisf; nfhz;lJ. Mdu;j;jj;ij ,dk; fhzy; > mghaj;ijf; fzpj;jy; > kw;Wk; mjd; jd;ikia czu;e;J nfhs;Sjy; > fz;L gpbj;jYk; mtjhdpj;jYk; > mtrufhy epiyikia cs;Supy; gpur;rhug;gLj;jy;.

0.4 ,J jtpu kf;fSf;F mdu;j;jk; Fwpj;J vr;rupg;gJld; mJ gad; cs;s vr;rupf;if KiwahfTk; mika Ntz;Lk; ,J jtpu mspf;fg;gLk; jftYf;fika mdu;j;jj;jpy; ,Ue;J vg;gb ghJfhg;ig Vw;gLj;jpf; nfhs;sy; > kw;Wk; cldbahd epthuzk; > kPs; rkd; epiyf;F tUtJld; GdUj;jhud Kaw;rpfs; vd;gd cupa Neuj;jpy; Nkw;nfhs;sg;glNtz;Lk;.

05 ,yq;if xU tpNrl Kiwapy; vr;rupf;Fk; tiyg; gpd;diyf; nfhz;bUj;jy; mtrpak;. gy; Nehf;Fldhd mgha KiwAld; ,j;jpl;lk; njhlu;r;rpahd ghtid > gupNrhjid > kw;Wk; guhkupg;Gfisf; iff; nfhs;s Kbahj epiyiaf; nfhz;Ls;sJ. ,yq;ifau;fSf;fhd Kd;$l;ba vr;rupf;ifia ntspg;gLj;Jk; NghJ mtu;fs; vq;F ,Uf;fpwhu;fs; vd;gNjh ,uNth gfNyh vd;w tifapy; ve;j Neuk; vd;gNjh Kf;fpak; ,y;iy. vr;rupf;ifr; rkpf;Q;iQ mtu;fisr; nrd;wilaNtz;Lk;. ,e;j mgha mwptpj;jy; Kiw jdpahd xU tifahfNth my;yJ tiuaWf;fg;gl;l KiwapNyh mikahky; kf;fisr; nrd;wiltjw;F rpwe;j cl;fl;likg;G topahf mika Ntz;Lk;. murpdhy; kl;Lk; ,e;j vr;rupf;ifj; jpl;lj;ij toq;f Kbahj. Murhq;fj;jpd; mjpfhu G+u;tkhd epWtdq;fspd; Clhf vr;rupf;if tpLf;fyhk;. Mdhy; rfy kf;fSf;Fk; ,e;j vr;rupf;if nrd;wila Ntz;Lkhdhy; jdpahu; tiyg;gpd;dy; ClhfTk; > cl;fl;likg;G kw;Wk;; kw;Wk; kdpjtsg; gpuNahfj;jpd; ClhfTk; nraw;gLj;j KbAk;. ru;tNjr vr;rupf;iffs; nghJ kw;Wk; jdpahu; gq;fspg;GfSld; Njrpa Kiwapyhd tiyg; gpd;dy; Kiw mwpKfg;gLj;jg;gl Ntz;baJ mtrpakhFk;.

06 tUthd mdu;j;j vr;rupf;ifia njhopw;gLj;Jtjw;F njhiyj; njhlu;G kw;Wk; xyp xspgug;G jug;gpdhy; Kf;fpa gq;fspg;ig toq;f KbAk;. njhiyj; njhlu;G tplaj;jpy; 1999 Mk; Mz;L njhiyj; njhlu;G Mizf; FOtpd; mwpf;if m%y;gLj;jg;gl Ntz;Lk;. ,J jtpu S.M.S kw;Wk; nry; xypgug;G Kiwfs; njhopy;gLj;jg;gl Ntz;Lk;. 75 rjtPj;jpw;Fk; mjpfkhd tPLfs; > njhiyf;fhl;rp kw;Wk; thndhyp my;yJ ,uz;Lk; cs;sgbahy; kpd; mZtpy; xypgug;G Nritfs; Kf;fpa gq;if mspf;f KbAk;. vg;gb ,Ug;gpDk; vr;rupf;ifr; nra;jpfs; xUq;fpizf;fg;gl;l fl;Lf;Nfhg;ghd miy tupirapd; Clhf njhopy;gLj;jg;gl Ntz;Lk;. mtru nra;jpfs; gupkhw;wg;gLk; NghJ jd;dpaf;f njhiyf;fhl;rp kw;Wk; thndhypfspd; ,af;fk; Fwpj;Jk; Muhag;gl Ntz;Lk;.

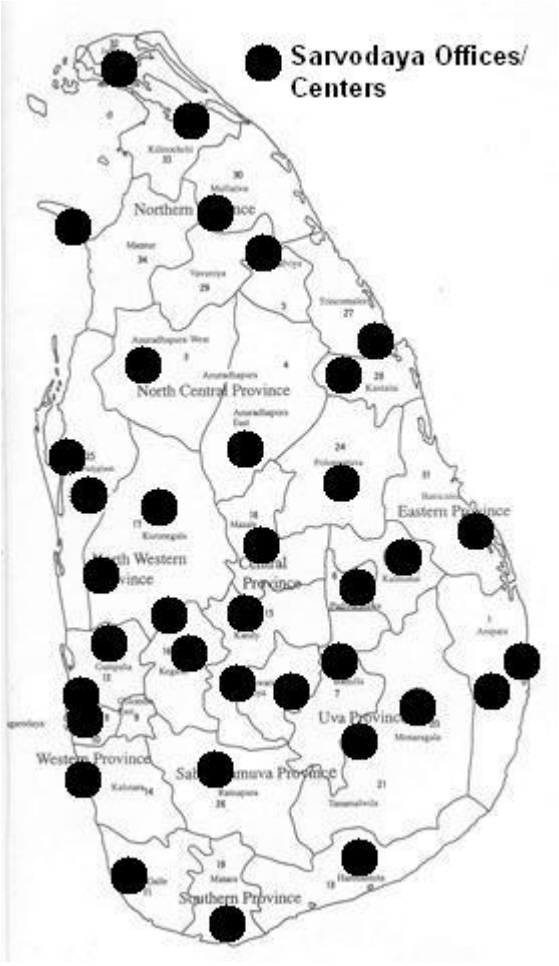
0.7 nghJkf;fspd; ed;ikf;fhf Nkw;nfhs;sg;gLk; mgha mwptpg;Gf;fs; tu;j;jf uPjpahf Nkw;nfhs;sf; $baJ. ,jw;fhd epjpia muNr toq;f Ntz;Lk;. ,yq;if murhq;fk; gpuiIfSf;F cupa Kiwapy; mgha mwptpj;jy;fis toq;f jtwptpl;lJ vd;gJ mDgtuPjpahf njupe;Js;sJ. Rdhkp mdu;j;jj;jpd; gpd;dhd eltbf;iffis ,yq;if muR nghWg;Ngw;Fkhdhy; mjp cau; juj;ijg; ngw nghJg; gpuNahf Mizafk; Nghd;w epWtdq;fspd; juj;ij xj;jpUf;f KbAk;. Mt;thwhapd; cupa epGzj;Jtk; kw;Wk; fUtpfs; gpuNahfpf;fg;gl Ntz;Lk;. Nghjpastpyhd epjp xJf;fPL > ehshe;j murpay; FWf;fPL ,d;ik kw;Wk; ntspg;gilahd fzf;fha;Tld; nray;gly; mtrpak;.

08 Kw;whf ntspg;gLj;jg;glhj jfty; kw; Wk; capa Kiwapy; rPu;j}Yf;fpg; ghu;f;fhj mbg;gilapNly Na mdu;j;j mwptpg;Gf;fs; cs;sd. mdu;j;j vr;rupf;if Fwpj;j ,Wjp KbT vLj;jy; kw; Wk; Fwpg;ghf kf;fis ,lk; ngwr; nra;tj Nghd;w eltbf;iffis Nju;jy; %yk; ntw;wp ngw;w mjpfhu kl;lj;jpdNu Ntw; nfhs;fpd;wdu;. vg;gbap Ug;gpLk; epGdu;fspd; MMyhrdfSf;F mikthfNti mtu;fs; Kbit vLf;fpd;wdu;. jw;Nghija ,yq;ifapd; #o;epiyapy; murpay; thjpfs; ,Wjp Kbntlg;gjw;F rpwpastpyhd Mju Nti cs;sj. vg;gb ,Ue;j nghOjp Yk; vLf;fg;gLk; eltbf;iffspy; Fiwghlfs; Nfhd;Wk; gl;rj;jpy; epGdu;fs; vtu; kfj; Fw;wk; Klj;jg;gLjpy;iy vd;gj Fwpg;gpfj;jf;fj.

0.9 mdu;j;j mgha vr;rupf;iffis murhq;fk; Nkw;nfhs;tjw;F khw;whf jdpahu; mikg;Gf;fs; Kd;ndLj;jr; nry;Yk; tplaq;fs; Fwpj;Jk; fUj;j ntspg;gl;Ls;sj. fhg;GWjp epWtdq;fs; mdu;j;j mgha vr;rupf;iffis ifahs mDkjpf;fg;gLk; gl;rj;jpy; cw;rhf%l;Lfpd;w mDs;yq;fis toq;f Kd;tuyhk;. ,j;jfa gpuNahfq;fs; %yk; capu; clk;fspd; Nrjj;jf; Fwf;fKbAk;.

10 ,e;j epiyapy; murhq;fk; cldbahf Njppa uPjpahd vr;rupf;if Kiwik xd;iw Nkw;nfhstjpy; ,lu;ghLfs; kw;Wk; jhkjk; Vw;gLkhapd; Vw;Wf; nfhs;sf; $ba jdpahu; kw;Wk; rptpy; mikg;Gf;fis ,e;j Kaw;rpia Muk;gpg;gjw;F rpghupK nra;aNlz;Lk;. Mj;Jld; ,e;j eltbf;iffis cs;Su; kag;gLj;Jt Jld; mjDld; nhlu;G gl;l nhopw; Jiwapd; ciptaAk; ngw;Wf; nfhs;tNj ,uz;lhtJk; %d;wht Jkhd rpwe;j jPu;thf mika KbAk; . mjw;F murhq;fKk; jdJ gq;fspg;ig toq;Fjpd; %yk; Njppa uPjpahd ga Ds;s vr;rupf;if Kiw xd;iw Nfhw;Wtpf;f KbAk;.

Annex 8: Sarvodaya Network[2]



[2] Note: this map was compiled from incomplete information, but is reflective of Sarvodaya's national presence.

Annex 9: Dam Safety Issues

Comments on the report – Draft concept paper on a national all-hazard warning system
Badra Kamaladasa, Department of Irrigation

01. I am looking at this report in the angle of a Dam Engineer. Since dams could fail and consequences are very costly, warning system is imperative. I have simplified the situation of dams in Sri Lanka comparing with those in the other countries for designers of a warning system to appreciate the impact and what and how a warning system could contribute to reduce this impact.

Sri Lanka	**Other countries**
Dams are solely owned by government (responsibility of safety vested with operators while financial allocation for maintenance/ management handle by entirely different group within the Government).	There are private owners/operators (responsibility of safety vested with the group who decide on financial allocations for safety)
Reservoirs are not revenue generated infrastructure but only a service provider for irrigation where the bulk of receivers are subsistence farmers (except CEB dams). Government increasingly fails to provide adequate funds for dam maintenance and safety.	Reservoirs are the capital assets of the business in providing domestic water and electricity. Business is able to raise necessary funds from their clients for dam maintenance and safety.
No legislation is available for operational procedures, other than organization statutes	Responsibility of safety is fixed by legal provisions
Dams are situated in remote areas Officers are not provided with minimum facilities for close supervision	Dams situated in remote areas are given sufficient attention
Dams are accessible to general public (Except Mahaweli high dams) from whom information are received.	Dams are out of bound for security reasons.
Warning systems are not available	Warning systems are available
Majority of dams and appurtenant structures face the aging dilemma. Economy of the country prevents any modernization. The responsibility of operation and safety auditing is vested in one organization.	Modernisation and improvements are a continuous process. The responsibility of operation and safety auditing rest with two independent institutions.

02 As regard to floods, Irrigation Department is vested with the legislative powers of flood management. However very little had been done in managing floods effectively especially in the recent past due to various limitations. The new technology available for flood warning and mitigation has not been adequately used.

03. "All hazard warning Centre" will have to be accepted by the local community, through a proper transformation process as all this time they were relying on the a certain 'known' group. For example the residents in Kelani valley will respond to Irrigation Department warning only as they were used to that.

Annex 10: Summary Statistics of Tsunami Impact

Source: www.cnosrilanka.org, accessed 26 February 2004[3]

Tsunami Disaster, 26 December, 2004

Last updated :16:00 hrs **As at 01/02/2005**

Situation Report

Province	District	Affected Families	Displaced Families	Displaced Persons			Deaths	Injured	Missing	Damaged Houses		No. of Camps
				In Welfare Centers	With Relatives and Friends	Total				Completely	Partially	
	Jaffna	12,714	10,639	10,198	29,919	40,117	2,640	1,647	540	6,084	1,114	* * 17
	Killinochchi	2,295	318	305	1,298	1,603	560	670	1	1,250	4,250	2
Northern	Mullaitivu		6,007	11,993	10,564	22,557	3,000	2,590	433	5,033	400	23
	Trincomalee	30,545	30,545	19,515	64,055	83,570	1,078	1,328	45	4,830	3,835	42
	Batticaloa	63,717	12,494	26,827	35,409	62,236	2,840	2,375	952	15,477	5,541	47
Eastern	Ampara	53,132	37,801	57,595	76,402	133,997	10,436	6,771	404	18,977	8,628	72
	Hambantota	16,994	3,334	574	17,168	17,742	4,500	361	963	2,303	1,744	10
	Matara	20,675	2,779	2,655	9,017	11,672	1,342	6,652	612	2,362	5,659	25
Southern	Galle	24,583	864	2,863	119,071	121,934	4,218	313	554	5,970	6,529	30
	Kalutara	6,905	6,905	2,953	21,740	24,693	271	401	174	2,780	3,116	16
	Colombo	9,647	5,290	5,565	26,086	31,651	79	64	12	3,398	2,210	27
Western	Gampaha	6,827	308	876	573	1,449	6	3	5	292	307	2
North Western	Puttlam	232	18	66		66	4	1	3	23	72	2
	Total	**248,266**	**117,302**	**141,985**	**411,302**	**553,287**	**30,974**	**23,176**	**4,698**	**68,779**	**43,405**	**315**

[3] Note: this site was no longer available after c. 01 March 2005

Note: These figures are tentative and presented here as reported by the respective District Secretaries
Displaced Persons refer to People who are in the IDP camps and or staying with relative's and friend's houses
**** Hamlets 71**
*** The figures of Trincomalee District is changed according to the report submitted by GA, Trincomalee on 01st February 2005
Source: District Secretaries
Emergency Operation Room of the Disaster Management Centre
Ministry of Women Empowerment and Social Welfare
Sethsiripaya - Baththaramulla