

Extreme Weather events and other climate change related events	with other sectors and training of health personnel on EWS to adapt to adverse health effects of climate change
2. Transfer of knowledge and skills to Health Personnel	Capacity building of health personnel to improve performance with regard to climate change related adverse health effects
3. Technology for management of Healthcare Waste	Improvement of Health Care Waste Management in all health institutions, to minimize the effects of climate change related adverse health effects

## 2.2 Project Idea for Technology 1: Technology for Early Warning Systems and networking for information exchange on Extreme Weather events and other climate change related events.

The Project Idea:

*'Strengthening the existing health sector Early Warning Systems through networking and linking with other sectors and training of health personnel on EWS to adapt to adverse health effects of climate change'*

### 2.2.1 Introduction/Background

The activities of the Project Idea will be implemented in the island nation of Sri Lanka, located in south Asia. The project idea; *'Strengthening the health sector early warning mechanisms through networking with available EWS system, training of health personnel and linking with other sectors'* is a combination of sub-actions recognized in the Technology Action plan for priority Technology-1: *'Technology for Early Warning Systems and networking for information exchange on Extreme Weather events and other climate change related events'*

The Project Idea is for the entire island of Sri Lanka. The Central location will be the Focal Unit of the Ministry of Health and other settings will be at sub-national levels.

An Early Warning System which is in existence in Sri Lanka presently has many lapses. The main agency responsible is the National Disaster Management Centre (NDMC. 2005). Though the Health sector has a dedicated unit for Disaster Preparedness and Response Unit, the linkages with other sectors and intra-sector is poor. Moreover, there is no established links with other relevant sectors e.g. Meteorological Department, Mass Media, Mines Bureau. As a result other sectors do not get the health information in a timely manner and vice-versa. The finances provided for improvement of existing systems of EWS and

establish linkages are also not sufficient and one sub-action of this Project Idea is to explore avenues and to solicit more assistance from the government and other development partners through advocacy.

Though the preventive health workers possess some knowledge and skills, in Early Warning Mechanisms, especially to detect communicable diseases, the concept has to be expanded to non-communicable diseases, injuries, and other important health issues as well.

Next is the knowledge and skills among the health personnel on EWS. This is poor among the hospital care givers compared to preventive health workers. The general understanding is the EWS is only for hydro-meteorological and other disasters or emergencies but not for health. Early detection of cases with communicable diseases, and other impending adverse health events, proper information relaying through existing HIS is essential to control out breaks e.g. Dengue, injuries. Therefore, a sub-action included in this Project Idea to provide necessary knowledge and skills to health people.

Another important aspect is to establish a focal unit and a person in the ministry of health. Additionally focal points shall be identified, trained and positioned down to lowest levels of health institutions and a network shall be established for information exchange to prevent delays.

Furthermore, the proposed Project Idea identifies the need for research and development to discover feasible, appropriate and affordable EWS technologies to be implemented to ensure sustainability over time.

### **2.2.2 Objectives**

- To establish a network in the health sector and between other sectors for information sharing within three years covering 70% of districts and all other sectors at the central level
- To provide training, enhance knowledge and skills to health personnel for the purpose of proper functioning of EWS to 60 % health workers in eight years
- To promote R & D to ensure sustainability of aforesaid objectives in three years

### **2.2.3 The Measurable outputs**

- A functioning network made available at the end of three years, which is an expected output
- A focal point and a unit established in the ministry of health along with focal points at all levels of the health sector, which is a measurable output
- Training curricula developed and implemented.
- Health personnel trained at all levels over a period of eight years.
- R & D activities conducted, number of R & D findings disseminated to all relevant institutions in three years
- Regular policy, legislation and regulations analyses for climate change related Disaster Management is conducted and required adjustments done.

## **2.2.4 Relationship to the Country's Sustainable Development Priorities**

Climate Change affects human health adversely in many ways, which is a well known fact. The early identification of adverse health issues is imperative as a diseases and disability free society is an integral element of healthy nation which is essential for sustainable development. In other words health of a nation is directly proportional to sustainable development.

“*Mahinda Chintana – Vision for the New Future*”, the Government of Sri Lanka's Ten Year Development Policy Framework assigns very high priority to health sector. It emphasizes excellence in healthcare to be achieved through the provision of patient-focused, comprehensive and high quality service. Private sector involvement in the healthcare network will be encouraged under a well-regulated system in order to provide high quality and safe healthcare services. Furthermore, in Mahinda Chintana 2010, it is stressed that the necessary policy changes for the Central Environmental Authority to work in collaboration with the Ministry of Health to tackle issues in the spread of diseases due to the increase of environmental pollution and Global Environmental Changes.

Therefore, health of the nation is essential for the development of a country. EWS provides important early signals of impending adverse health effects which helps to prevent mass scale health problems.

## **2.2.5 Project Deliverables**

- A functioning and linkages of EWS with other sectors made available by the end of the project period
- Report on training and skills development needs assessment made available at the end of the initial year
- Training curricula for training and skills development of the health personnel will be made available at the end of the first year
- A national focal point and a unit will be established and focal points in the provinces, districts and divisions will be established at the end of three years,
- R & D reports on feasible, affordable and sustainable reports will be made available at the end of three years
- Health personnel in all districts will be trained by the end of eight years
- Policy, legislation and regulatory dialogue reports will be made available at the end of each project year

## **2.2.6 Project Scope and Possible Implementation**

The scope of the project idea is to strengthen the mechanisms available in the Health Sector to predict and identify impending health emergencies through, training of health personnel of the public health sector

(which include systems practiced in Sri Lanka other than Allopathic medicine) with the aim of preventing and mitigating adverse health effects of Climate Change. The project intends to establish a network to connect different administrative levels of health institutions through feasible, affordable and sustainable mechanisms. Additionally, to link the existing government EWS to health network to share information reliably and timely.

The main concept in this venture is to solicit the support of policy makers through advocacy. The boundary of the proposed project does not go beyond the effects of climate change; the endeavor is strictly a confined one to the EWS linked to Climate Change and related extreme events.

### 2.2.7 List of Project activities

1. Assessment and implementation of suitable and sustainable networking methods
2. Establish a functioning national focal unit and a linked focal points and functioning network at all administrative levels with instructions to report to the Officer in-Charge (National, Provincial, and District)
3. Research, identification and implementation of appropriate and affordable technologies
4. Train personnel to use the technologies to be used, including training needs assessment, preparation of training modules, pre-testing, identification of health personnel to be trained and trainers
5. Promote R & D in new innovations to be implemented for EWS
6. Carry out an analysis and identify reasons for underutilization of available human and physical resources and find lasting solutions to rectify issues

The proposed project is to be completed in 8 years. Some sub-activities will be done concurrently.

### 2.2.8 Timelines for Activities of the Proposed Project

**Table 2.1: Proposed Timelines for Implementation of project activities**

Activity	Time in Years							
	1	2	3	4	5	6	7	8
1. Assessment and implementation of suitable and sustainable networking methods	■							
2. Establish a functioning national focal unit and a linked focal points and functioning network at all administrative levels with instructions to report to the Officer in-Charge (National, Provincial, and District)	■							
3. Research, identification and implementation of		■	■	■				

appropriate and affordable technologies								
4. Train personnel to use the technologies to be used, including Training needs assessment, preparation of training modules, pre-testing, identification of health personnel to be trained and trainers								
5. Promote R & D in new innovations to be implemented for EWS								
6. Carry out an analysis and identify reasons for underutilization of available human and physical resources and find lasting solutions to rectify issues								

## 2.2.9 Budget/Resource requirements

Table 2.2: Approximate Budget Estimate for the Proposed Project

Activity	Budget (US\$)
1. Assessment and implementation of suitable and sustainable networking methods	10,000
2. Establish a functioning national focal unit and a linked focal points and functioning network at all administrative levels with instructions to report to the Officer in-Charge (National, Provincial, and District)	16,000
3. Research, identification and implementation of appropriate and affordable technologies	10,000
4. Train personnel to use the technologies to be used, including Training needs assessment, preparation of training modules, pre-testing, identification of health personnel to be trained and trainers	28,000
5. Promote R & D in new innovations to be implemented for EWS	40,000
6. Carry out an analysis and identify reasons for underutilization of available human and physical resources and find lasting solutions to rectify issues	2,500
<b>Subtotal: Total cost of project activities</b>	<b>106,500</b>
7. Administrative cost	10,650
<b>TOTAL</b>	<b>117,150</b>

The required amounts of finances will be obtained through government, other domestic sources and international partners. The activities of the project will be mainly funded by international agencies. The estimated cost of project activities would be \$US 106,500. Project management cost will be 10% of the total project cost; \$US 10,650. The total cost of the project including the administrative cost will be around

\$US 117,150. Co-financing opportunities will be explored with private sector and other interested parties, The EWS in general provide inputs to all aspects of development including industries and services,

### **2.2.10 Measurement/Evaluation**

The progress of activities under the project idea will be monitored quarterly basis by the implementing agencies through the existing monitoring mechanisms. The expert group entrusted with the evaluation (external evaluation) and progress assessment would be carried out at periodic intervals during the project period (annually or bi-annually) and the lessons learnt would be recorded and shared with all relevant parties. The necessary alterations and changes in plan of action will be done accordingly

### **2.2.11 Possible Complications/Challenge**

- EWS may not be an urgently needed project if there are other burning issues. Some other need may become a priority which will decrease the level of interest of the policy makers.
- HRH issues: recruitment, retention, specifically in underserved and geographically vulnerable areas.
- Breakdown of the systems due to unexpected catastrophe may be a complication as well as a challenge

### **2.2.12 Responsibilities and Coordination**

The proposed project activities will be coordinated by the National Focal Unit at the Ministry of Health and the **Ministry of Health will be responsible for the implementation of the Project** activities.

There are twenty five administrative districts in Sri Lanka. In each of this districts there is a coordination committee headed by the Government Agent and supported by a coordinator appointed by the National Disaster Management Center of the Ministry of Disaster Management. All sectors; Health and Hospitals, Education, Telecommunication, Water-supply, Electricity, Military, Police, Fire Department, Social Services, Local Government Agencies, NGOO, UN agencies are represented at their regular meetings. They are inter-linked in many ways; share information, prepare preventive plans, mitigation activities, Emergency Preparedness Plans, prepare contingency plans, sector specific plans and act cohesively in an emergency. They share information with the National authorities when and where necessary. Therefore, it is not only a health specific EWS system but an inter-sectoral link which is necessary to share information for immediate action. There are many short comings in the health sector and the idea of this proposal is to strengthen the EWS in the health sector to overcome the impending issues. Similarly, at the National level the Ministry of Health will have to take the lead in health related EWS activities with the other sector

representatives. The sub-national focal points will be responsible for organization of the implementation activities at their level with the support of the national counterpart.

The National focal point would be coordinating with the other sectors at National level and the sub-national inter-sector coordination to be done by the sub-national focal points.

The National and sub-national coordination will be maintained through the net work established. At all levels the Focal points will report on the progress of activities to their respective heads.

### 2.2.13 List of References

1. A participatory concept paper for the design of an effective all hazard public warning system, National Early Warning System Sri Lanka, LIRNEasia, March 2005
2. CIA world Fact Book; available online at <https://www.cia.gov/library/publications/the-world-factbook/geos/ce.html> [Accessed on 25th of November, 2012]
3. Climate Change and Human Health, *Risks and Responses*, Summary: WHO, WMO, UNEP; 2007. (ISBN 92 4 159081 5)
4. Disaster Management Centre, Government of Sri Lanka, *Multi Hazard Early Warning Systems*, Road Map for Disaster Risk Management, 2005:24-30 (supported by UNDP)
5. Glantz M.H., Usable Science: Early warning systems: Do's and Don'ts, Report of workshop, 20-23 October, Shanghai, China, 2003.
6. Grasso V.F., Beck J.L., Manfredi G., Automated decision procedure for earthquake early warning, *Journal of Engineering Structures*, 2007, in press.
7. Tubtiang A., ICT in pre-disaster awareness and preparedness, presented at the APT-ITU Joint Meeting for ICT role in disaster management, Bangkok, 28 February, 2005.