					research use and project designing
Developing of a stand-alone and a properly equipped soil mechanics laboratory in the country.	To facilitate required scientific analysis and one-stop support on the technicalities of infrastructure development.	MoWR	2013-2023	100	Availability of research data, reports etc for planning and designing water infrastructure projects
Ensuring participation of local people in the planning and designing of embankment and its maintenance	To increase local ownership on the project and will increase peoples' acceptance.	MoWR, BWDB	2013-2017	30	Increased local ownership and social acceptance of the technology
Policy and law					
Scheduling a structure maintenance plan with the participation of local people	To ensure proper maintenance of the embankment.	MoWR, BWDB	2013-2017	20	Increased involvement of the local people in the maintenance of the water infrastructures.

1.4.1.2. Technology action plan for Comprehensive disaster management incorporating early warning systems and involving community.

a) Aggregation and grouping of identified measures

Following identification of measures in the stakeholders' consultation workshop, the identified measures have been grouped under broader strategic measures presented in the table below;

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Table 8 : Grouping of measures under broader criteria

Technology	Strategic measures	Specific measure	Timeline	
			Short Term (1-5 years)	Long Term 1-10 years
Comprehensive disaster management incorporating early warning systems and involving community	Investment	Providing of increased finance to the DRR (Disaster Risk Reduction) sector with a focus of upgrading early warning system	√	
		Providing fund for the maintenance of survey satellite to ensure accurate data	√	
		Increasing DRR sector budgetary allocation for more research and understanding the impacts of slow onset events.	√	
		Making a sector and technology specific proposal and generating funds from the development partners and other international adaptation funding sources	√	
	Capacity development	Reviewing technical and institutional capacities of the existing DRR institutions	√	
		Creating collaboration with national and international level institutions for exchanging knowledge, data and satellite image etc.	√	
		Building capacity on the application of global climate models through increasing international collaboration with the atmospheric, oceanographic, mathematical research institutes in country and abroad		√
		Continuous improvement of the forecasting to provide longer lead time		√
	Organizational/ behavioral change	Developing of a stand-alone and a properly equipped research institute to monitor impacts of the slow onset event and developing a monitoring protocol and early warning system for this.		√
		Ensuring participation of local people and local institution in the dissemination of early warning system	√	
		Developing of an effective communication system for quick dissemination of disaster warning following the existing Standing	√	

		order for Disasters.		
	Policy and law	Providing free access to the technologies and devices used in weather forecasts and early warning systems e.g. Remote Sensing and Satellite Image Data, updated software for climate modeling etc. as well as high performing tools and technologies		√

b) Technology Action Plan

Table 9: Technology action plan for Comprehensive disaster management incorporating early warning systems and involving community

Sector: Water					
Specific technology: Comprehensive disaster management incorporating early warning systems and involving community					
Measures (Grouped under broader category)	Importance of the measure	Implementing agency	Timescale	Cost for the measures/ Unit ('000 USD)	Monitoring, Reporting and verification for measure
	1	**2**	**3**	**4**	**5**
Investment					
Providing of increased finance to the DRR (Disaster Risk Reduction) sector with a focus of upgrading early warning system	To ensure increased finance from Annual Development Programme (ADP).	Ministry of Disaster Management and Relief (MoDMR) , Department of Disaster Management (DDM), Ministry of Water Resources,	2013-2017	30	Increased level of budgetary allocation for DRR related activities
Providing fund for the maintenance of survey satellite to ensure accurate data	To ensure availability of survey satellite data quality	Ministry of Finance, MoDMR	2013-2017	25	Availability of survey satellite in the weather forecasting

					stations
Increasing DRR sector budgetary allocation for more research and understanding the impacts of slow onset events.	To facilitate actions and measures for addressing slow onset events	Ministry of Planning, Ministry of Finance, MoDMR	2013-2017	20	Available funds for research on the impacts of slow onset events
Making a sector and technology specific proposal and generating funds from the development partners and other international adaptation funding sources	To ensure immediate and long-term funds from international sources.	MoDMR, DDM,	2013-2017	35	Readily available detail const estimation for the policy makers and investors
Capacity development					
Reviewing technical and institutional capacities of the existing DRR institutions	To identify technical and institutional capacity gaps in dealing DRR.	MoDMR, DDM,	2013-2017	20	Identified capacity gap of the DRR sector institutions
Creating collaboration with national and international level institutions for exchanging knowledge, data and satellite image etc.	To get updated information, data and satellite image.	MoDMR, DDM, SPARSO, Bangladesh Meteorological Department (BMD). Red cross and Red Crescent Society,	2013-2017	25	Increased sharing of information, data and satellite image among experts and institutions.
Building capacity on the application of global climate models through increasing international collaboration with the atmospheric, oceanographic, mathematical research institutes in country and abroad	To build capacity of local experts. It also will reduce cost for hiring international experts.	MoDMR, DDM, SPARSO, Bangladesh Meteorological Department (BMD), Red cross and Red	2013-2023	30	DRR sector and meteorological institutions and staffed with skilled and expert human resource

		Crescent Society,			
Continuous improvement of the forecasting to provide longer lead time	To ensure dissemination of disaster warning well before on striking any disaster.	DDM, SPARSO, Bangladesh Meteorological Department (BMD),	2013-2023	30	Increased level of preparedness in facing disaster events
Organizational/ behavioral change					
Developing of a stand-alone and a properly equipped research institute to monitor impacts of the slow onset event and developing a monitoring protocol and early warning system for this.	To make available research based information on the impacts of slow onset events, which will help policy makers and investors to take necessary measures and action.	Ministry of Planning, Ministry of Finance, MoDMR	2013-2023	60	Availability of research data, reports etc for planning and designing water infrastructure projects
Ensuring participation of local people and local institution in the dissemination of early warning system	To facilitate quick understanding and dissemination of disaster early warnings	MoDMR, DDM, Red cross and Red Crescent Society, NGOs	2013-2017	30	Increased local ownership and social acceptance of the technology
Developing of an effective communication system for quick dissemination of disaster warning following the existing Standing Order for Disasters (SOD).	To encourage spontaneous response of all stakeholders in pre-disaster period	MoDMR, DDM, Red cross and Red Crescent Society, NGOs	2013-2017	20	Established an quick information dissemination system as per SOD
Policy and law					
Providing free access to the technologies and devices used in weather forecasts and early warning systems e.g. Remote Sensing and Satellite Image Data,	To reduce investment costs and will increase data quality	MoDMR, DDM,	2013-2023	40	Removed IPR barriers in accessing research tools and technology and reduced technology cost.

updated software for climate modeling etc. as well as high performing tools and technologies					

1.4.1.3. Technology action plan for Monitoring of sea level rise, tidal fluctuation, salinity intrusion, sedimentation and coastal erosion

a) Aggregation and grouping of identified measures

Following identification of measures in the stakeholders' consultation workshop, the identified measures have been grouped under broader strategic measures are presented in the table below:

Table 10: Grouping of measures under broader criteria

Technology	Strategic measures	Specific measure	Timeline	
			Short Term (1-5 years)	Long Term 1-10 years
Monitoring of sea level rise, tidal fluctuation, salinity intrusion, sedimentation and coastal erosion	Investment	Increasing sector specific budgetary allocation for the procurement and maintenance of monitoring devices	√	
		Providing fund for capacity building of the research organizations for advanced research of the impacts of climate change in water and related sectors.	√	
		Making a sector and technology specific proposal and generating funds from the development partners and other international adaptation funding sources	√	
	Capacity development	Building capacity of the public research institution on the application of global climate models through increasing international collaboration with the atmospheric, oceanographic, mathematical research institutes in country and abroad		√
		Training to the monitoring personnel on data collection and data administration for consistent and accurate data collection	√	
		Developing of a comprehensive monitoring tools on the basis of the	√	