

Research roadmap for IRIDeS' first decade

Contribute to establishing a foundation of disaster risk reduction, mitigation and mental preparation in readiness for the next earthquake

Project	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021		
Comprehensive research on the Great East Japan Earthquake (2011)	Detection of diastrophism from seafloor GPS observation stations	Elucidation of the 2011 off the Pacific coast of Tohoku Earthquake and tsunami generation mechanism			Upgrading of seafloor diastrophism and tsunami observation through the development of a seafloor GPS observation network	Elucidation of elementary processes in seismic and volcanic activity and short- and medium-term predictions		Development of next-generation tsunami early detection technology and improvement of tsunami warnings using an offshore observation network		Elucidation and modeling of the mega-earthquake epicenter process		
	Statistical analysis of seismic activity and diastrophism											
Digital archive system for natural disasters	Creation and operation of archives for passing on records, memories and lessons from the Great East Japan Earthquake			Establishment of a disaster science education system and creation of educational materials using archives			International standardization of digital archives and proposal of an archive system that can be used in times of disaster					
	Standardization of digital archive metadata											
Robotics and decontamination science for disaster management	Upgrading disaster rescue robot technologies and disaster area support			Development of sensing technologies geared to emergency disaster response needs			Development and implementation of robots geared to compound disasters involving earthquakes, tsunamis, fires, etc.					
	Development of decontamination technologies and disaster area support			Development of an academic system for decontamination science			Upgrading of decontamination technologies					
Evaluation of impact of Great East Japan Earthquake	Ascertaining surface seismic motion during earthquakes and building damage surveys		Elucidation of the damage process through the 2011 off the Pacific coast of Tohoku Earthquake and tsunami	Development of next-generation early warning system technologies		Development of technologies to improve urban disaster resilience through micro-sensing		Development of earthquake and tsunami warning systems geared to low-frequency mega-earthquakes			Proposal of a new risk reduction strategy for a resilient society	
	Building a tsunami damage coefficient based on the actual state of damage and evaluating the disaster reduction effect							Multiple disposition of basic social infrastructure and evaluation of failsafe functions				
Creation of sensing/monitoring systems for early warning systems	Ascertaining damage through remote sensing and space information processing			Upgrading of disaster area monitoring and damage estimation technologies								
Creation of a field addressing support for disaster-affected areas that includes the aftereffects of natural disasters	Boosting the efficacy of disaster detection and evacuation action		Conserving historical materials and extracting lessons			Establishing methods for conserving historical materials and cultural assets to pass on lessons learned from low-frequency mega-disasters						
	Establishing wide-area logistical plans and operations technologies			Establishing legislation for the support of disaster areas			Optimal logistics for support through local government wide-area partnership					
	Monitoring of reconstruction community-building and identification of issues			Making visible the recovery support and consensus-building process			Establishment of technologies for supporting disaster areas and social implementation					
Establishment of disaster science and medical service systems	Mental care to alleviate and reduce disaster stress					Proposal of an emergency medical care system geared to wide-area mega-disasters		Integration of emergency medicine geared to wide-area mega-disasters and medical information systems				
	Responding to infectious diseases in disaster areas, analysis of influence of disaster on mothers and children			Construction of infrastructure for disaster area health care systems								
	Analysis of issues in emergency medical care at times of disaster and medical information system requirements			Construction of medical information systems for times of disaster								
Construction of a new risk mitigation system	Development of disaster mitigation technologies for structures			Mega-disaster mitigation system proposals			Proposal of a comprehensive disaster mitigation system for wide-area compound mega-disasters					

Lessons from the 2011 Great East Japan Earthquake
Contribution to restoration and reconstruction following the disaster and rebuilding a resilient society