

U.S. ~ ASEAN EMERGENCY PREPAREDNESS WORKSHOP

Developing Partnerships for Disaster Management and Mitigation

BANGKOK, THAILAND

TABLE OF CONTENTS

Agenda

Participant List

Biographies

About USTDA

Corporate Sponsors

Survey

Additional Resources



U.S. ~ ASEAN EMERGENCY PREPAREDNESS WORKSHOP

Developing Partnerships for Disaster Management and Mitigation

BANGKOK, THAILAND

Workshop Agenda

WEDNESDAY, MAY 30, 2012

All Day	Workshop Secretariat
7:30am–9:00am	Registration
9:00am–10:00am	<p>Welcome Plenary Session</p> <p>Mr. Geoffrey Jackson, Director for Policy and Program, U.S. Trade and Development Agency (USTDA) Acting Pol. Lt. Arthit Boonyasophat, Deputy Director General, Department of Disaster Prevention and Mitigation (DDPM), Thailand Ms. Judith B. Cefkin, Deputy Chief of Mission, U.S. Embassy Bangkok Mr. Josh Cartin, Deputy Representative of the U.S. Mission to ASEAN</p>
10:00am–10:30am	Networking Break
10:30am–12:00pm	<p>ASEAN Cooperation for Emergency Preparedness</p> <ul style="list-style-type: none"> * Implementing National Action Plans (NAP) on Disaster Risk Reduction (DRR) and strengthening legal and institutional frameworks. * Linking and implementing disaster & emergency response logistics systems in Southeast Asia. * Enhancing strategies for private sector cooperation and coordination for risk reduction and disaster response. <p>Moderator: Mr. Mark Dunn, Regional Manager for Asia, U.S. Trade and Development Agency (USTDA) Mr. Larry Maramis, Director for Cross-Sectoral Cooperation, ASEAN Secretariat Dr. Charles McCreery, Director, Pacific Tsunami Warning Center, National Oceanic and Atmospheric Administration (NOAA) Mr. NMSI Arambepola, Acting Executive Director, Asian Disaster Preparedness Center (ADPC) Ms. Clair Deevy, Citizenship Lead APAC, Microsoft Dr. Maryam Golnaraghi, Chief, Disaster Risk Reduction Program, World Meteorological Organization (WMO)</p>
12:00pm–1:25pm	<p>Luncheon Keynote Address Sponsored by Jacobs</p> <p>Mr. William L. Carwile, Associate Administrator of Response and Recovery, Federal Emergency Management Agency (FEMA) Introduction By Mr. Douglas Mouton, Vice President, Jacobs</p>
1:25pm–2:50pm	<p>Early Forecasting: Technology Applications and Disaster Risk Reduction</p> <ul style="list-style-type: none"> * Using Enterprise GIS for multi-hazard mapping and vulnerability assessments. * Technology to help monitor disaster risk, current hazards, vulnerability, and capacity. * Establishing interoperability of meteorological data with existing systems. * Disseminating data to effectively plan for and respond to disasters. <p>Moderator: Ms. Pinsuda Alexander, Country Manager for Southeast Asia, U.S. Trade and Development Agency (USTDA) Mr. Chris Chiesa, Deputy Executive Director, Pacific Disaster Center (PDC) Dr. Paul Chan, Executive Vice President, I.M. Systems Group, Inc. (IMSG) Dr. Wassila Thiaw, Meteorologist, National Weather Service (NWS), Climate Prediction Center, NOAA Mr. Shane Booker, Director of Solutions, International Business, ESI Acquisitions LLC Mr. Cao Tuan Minh, Deputy Director General, Central Project Office & Director of Natural Disaster Risk Management Ministry of Agriculture and Rural Development (MARD), Vietnam</p>
2:50pm–4:15pm	<p>Prevention and Mitigation: Building Disaster-Resilient Communities</p> <ul style="list-style-type: none"> * Risk assessment of disaster prone cities in Southeast Asia. * Engineering and design solutions for prevention and mitigation. * Community based training and monitoring. * Surveillance and prevention solutions for emergency response and evacuation. <p>Moderator: Mr. Curtis Barrett, Technical Consultant Mr. Rodney W. Chapin, Senior Vice President, CDM Smith Mr. Rod Snider, Senior Advisor, Disaster Preparedness, International Services, American Red Cross Dr. H. Kit Miyamoto, President & CEO, Miyamoto International & Commissioner, California Seismic Safety Commission Mr. Harvinder Singh, Managing Director, PSI Incontrol Sdn Bhd</p>



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4:15pm-4:45pm	Networking Break
4:45pm-5:45pm	<p style="text-align: center;">Mobilizing Financial Resources for Management and Mitigation</p> <ul style="list-style-type: none"> * Disaster risk fiscal methodology and management in Southeast Asia. * Disaster risk financing instruments for mitigation investments, finance and insurance. * Financing approaches for operations and technology adoption. * Identifying funding resources, application criteria and opportunities for regional cooperation. <p>Moderator: Dr. Maryam Golnaraghi, Chief, Disaster Risk Reduction Program, World Meteorological Organization (WMO) Ms. Pinsuda Alexander, Country Manager for Southeast Asia, U.S. Trade and Development Agency (USTDA) Dr. Iwan Gunawan, Senior Disaster Management Adviser, World Bank Ms. Erin Magee, Program Officer, Office of U.S. Foreign Disaster Assistance (OFDA), USAID Bangkok Mr. George Kelakos, Advisor, Hilco Trading LLC</p>
6:30pm	<p style="text-align: center;">Welcome Reception Sponsored By American Signal Corporation</p> <p style="text-align: center;">Jim Thompson House, 6 Soi Kasemsan 2, Rama 1 Road, Bangkok, Thailand Welcome By The Honorable Kristie A. Kenney, Ambassador of the United States to Thailand</p>

THURSDAY, MAY 31, 2012

9:00am-10:45am	<p style="text-align: center;">Public Safety and Mass Warning Communications Systems</p> <ul style="list-style-type: none"> * The adoption of multi-point communication and public dissemination systems. * Building upon existing systems and capabilities (such as DISCNet, OSADI and OSA-Map) and other national and regional systems to strengthen regional early warning capacity. * National and regional capacity for early warning, including the establishment of a functioning multi-hazard regional platform and related protocols to enhance decision support capabilities. <p>Moderator: Dr. Tavida Kamolvej, Expert, School of Political Science/Emergency Response, Thammasat University Mr. Curtis Barrett, Technical Consultant Mr. Chris Roller, Sales Manager, American Signal Corporation Mr. Brad Minnis, Senior Director, Safety & Security, Juniper Networks Dr. P.J. Harjadi, Deputy Director General of Geophysics; Meteorological, Climatological and Geophysical Agency (BMKG), Indonesia Admiral Kohlak Charoenrook, Advisor, National Disaster Warning Center (NDWC), Thailand</p>
10:45am-11:15am	Networking Break
11:15am-12:35pm	<p style="text-align: center;">Terrestrial and Satellite Telecommunications Applications for Emergency Response</p> <ul style="list-style-type: none"> * Satellite-based, hazard-specific disaster monitoring systems. * Communications services to aid in search and rescue operations. * Hybrid satellite and terrestrial systems for quickly deployable and adaptable emergency mobile communications. * Information-sharing platforms for early warning, response and disaster communications. * Reinforcing telecommunications services during response operations. <p>Moderator and Speaker: Dr. Saud Amer, International Remote Sensing and Water Resources Specialist, United States Geological Survey (USGS) Mr. Robert Jubach, General Manager, Meteorologist, Hydrologic Research Center (HRC) Mr. David Lum, Director, Asia/Pacific Regulatory, Product & Support Operations, Motorola Solutions, Inc. Mr. Vaibhav Magow, Regional Sales Director – APAC, International Division, Hughes Network Systems, LLC Dr. Sukit Viseshsin, Spatial Products Department Manager, ESRI Thailand Mr. Catalino Davis, Deputy Administrator for Engineering and Administration Services, Philippine Atmospheric, Geophysical, and Astronomical Services Administration (PAGASA)</p>



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12:35pm- 1:50pm	<p align="center">Luncheon Keynote Address: An ASEAN Vision for Regional Disaster Response</p> <p align="center">Mr. Said Faisal, Executive Director, ASEAN Coordinating Center for Humanitarian Assistance on Disaster Management Introduction By: Mr. Larry Maramis, Director for Cross-Sectoral Cooperation, ASEAN Secretariat</p>
1:50pm- 3:15pm	<p align="center">Disaster Management and Preparedness: A Role for the Private Sector</p> <ul style="list-style-type: none"> * Information sharing and coordination between governments and the private sector during disaster planning, response and recovery efforts. * Public-private collaboration and networking to support private sector roles, including: impacted organization, response resource, partner in preparedness, and economic recovery. <p>Moderator: Ms. Diana Rossiter, Acting Director of the Program Evaluation Office, U.S. Trade and Development Agency (USTDA) Mr. Douglas Mouton, Vice President, Jacobs Mr. Dick Salvi, Senior Director, Corporate Services, Western Digital Corporation Mr. Medi Herlianto, Director of Community Development, Sector Prevention and Preparedness, National Agency for Disaster Management (BNPB), Indonesia Mr. Hong-Eng Koh, Senior Director (Global Lead), Justice & Public Safety, Global Public Sector Industry Business Unit, Oracle Ms. Ann Lavin, Head, Policy and Government Affairs, Southeast Asia, Google</p>
3:15pm- 3:30pm	<p align="center">Networking Break</p>
3:30pm- 4:00pm	<p align="center">Workshop Conclusion and Next Steps</p> <p>Moderator: Mr. Geoffrey Jackson, Director for Policy and Program, U.S. Trade and Development Agency (USTDA)</p>

FRIDAY, JUNE 1, 2012

8:30am- 2:30pm	<p align="center">Group Site Visit (By Invitation Only)</p> <p>This site visit will provide delegates an opportunity for interactive demonstrations and discussion related to response and recovery during the 2011 floods in Thailand.</p>
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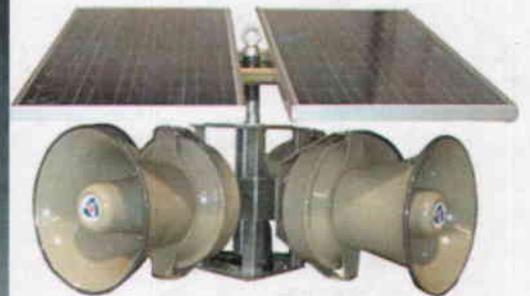
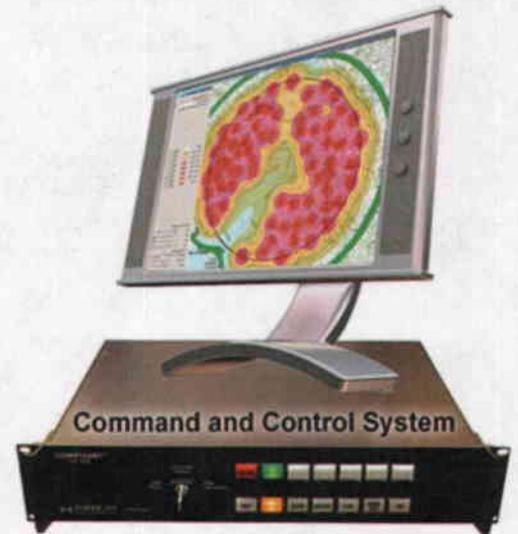
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American Signal can provide additional information and assist with any project design.

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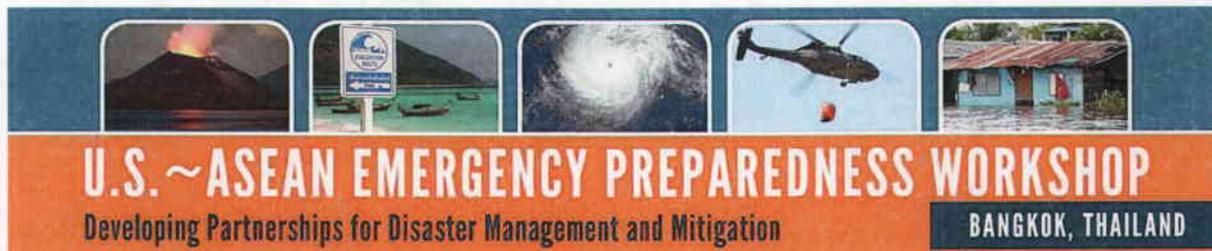
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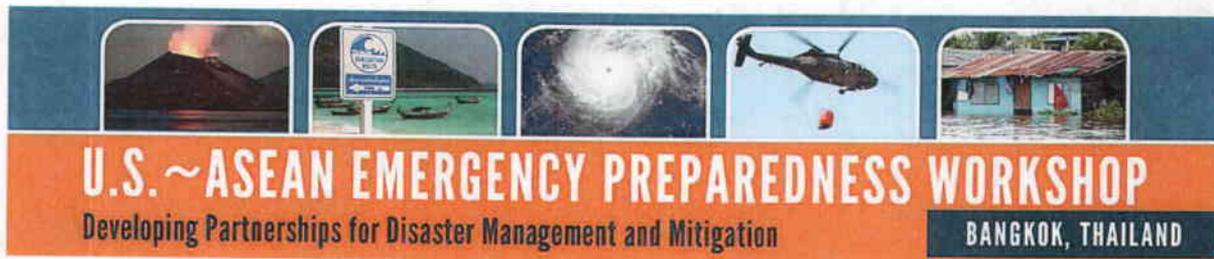
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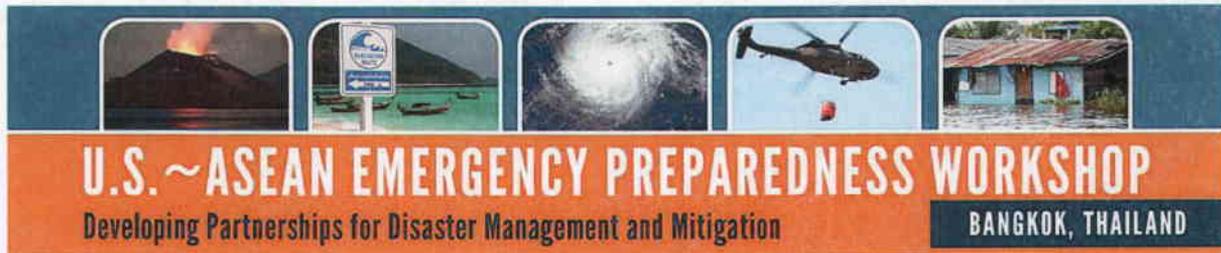
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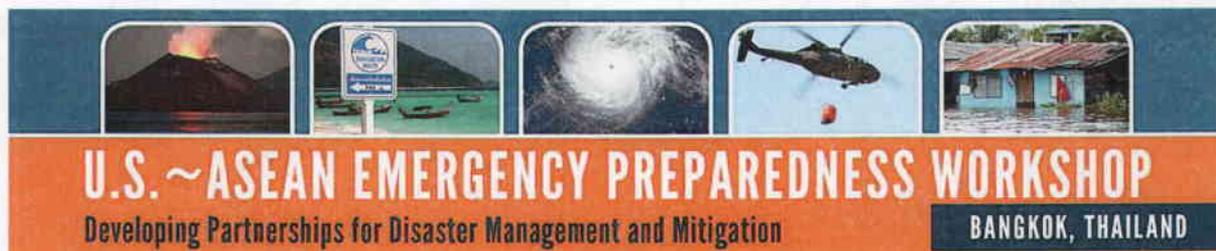
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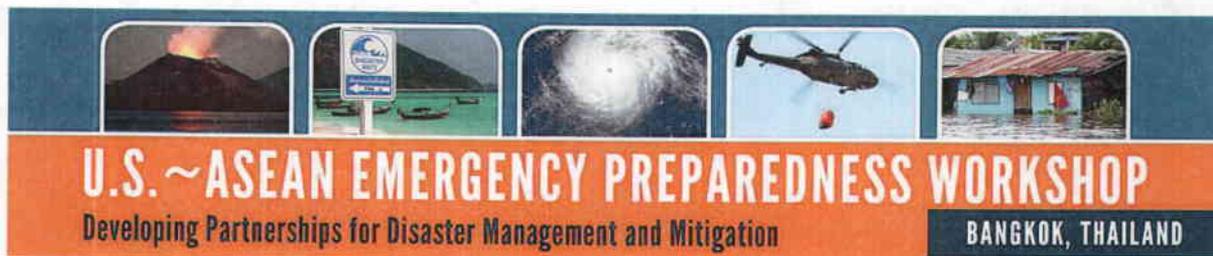
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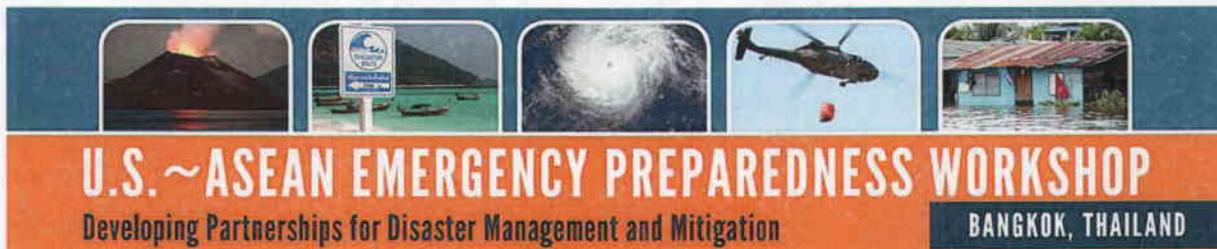
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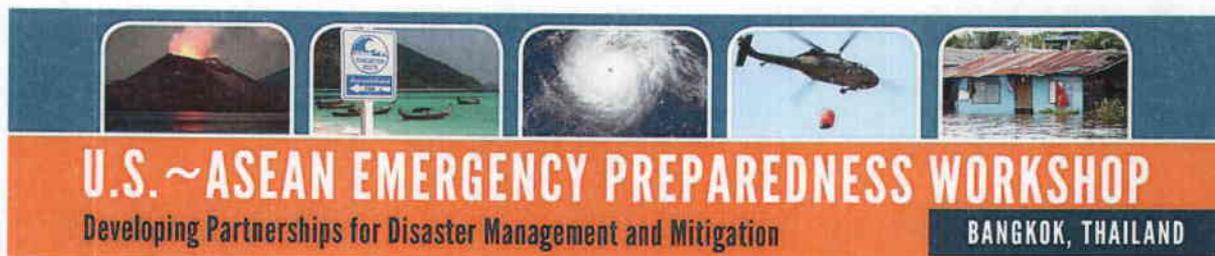
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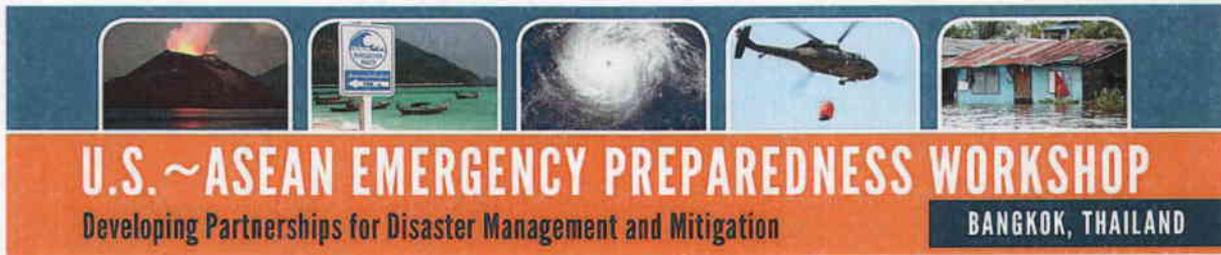
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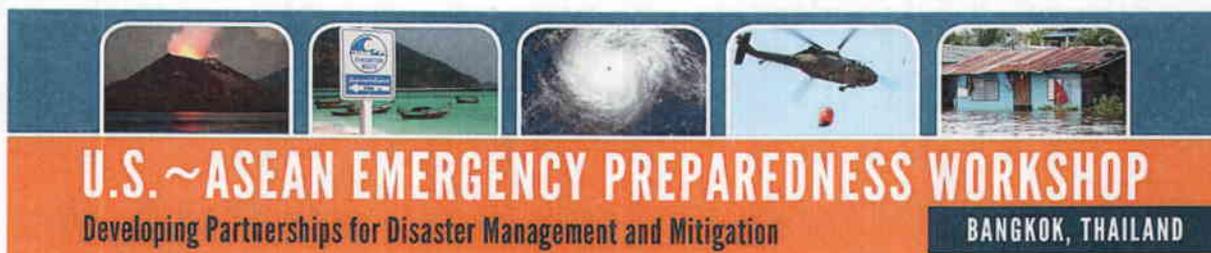
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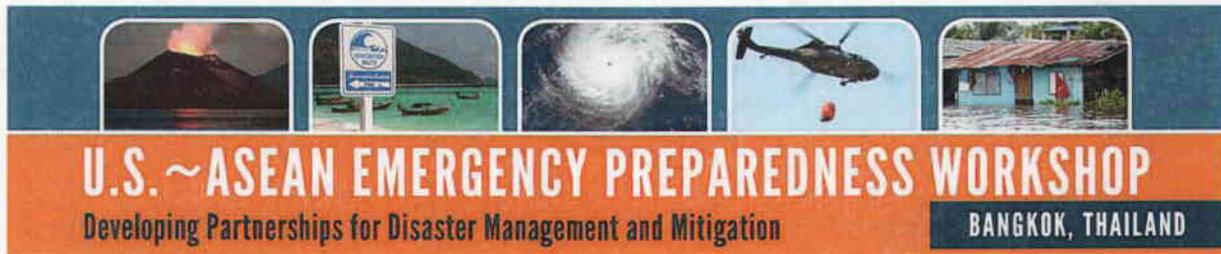
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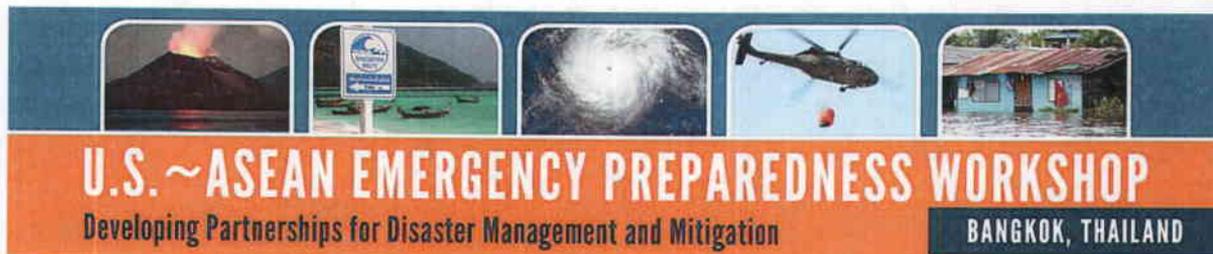
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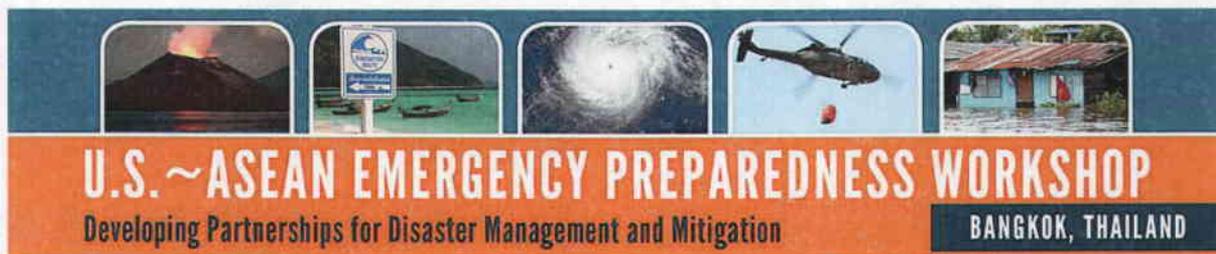
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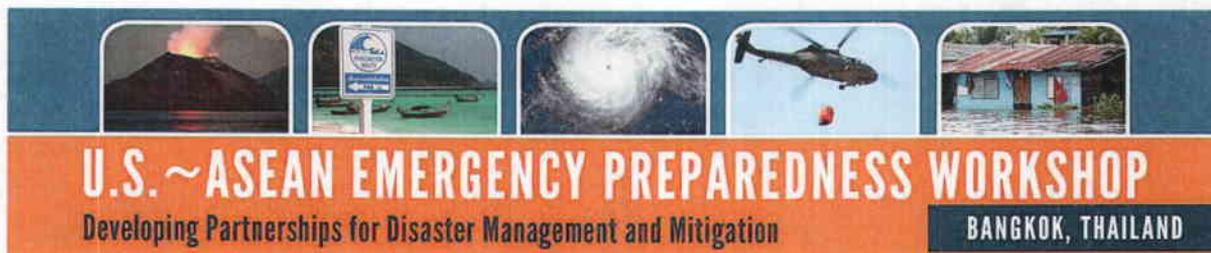
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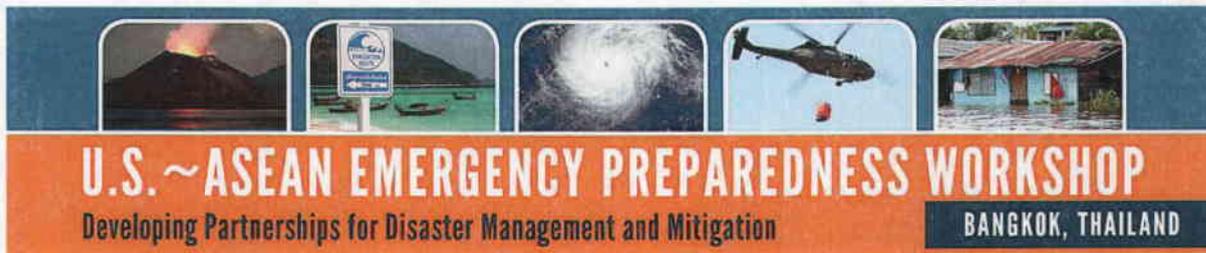
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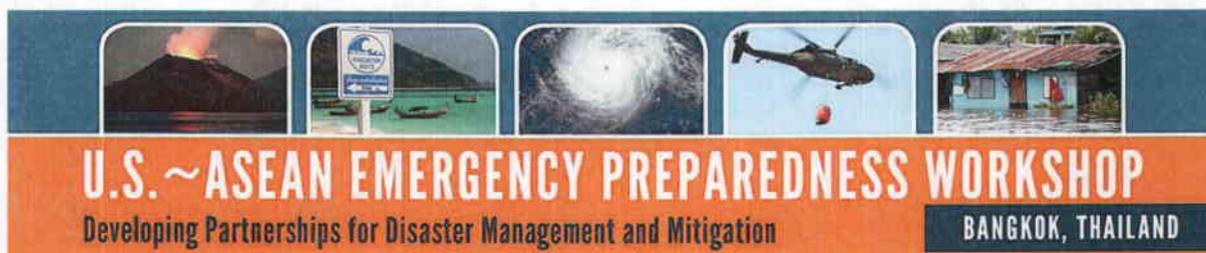
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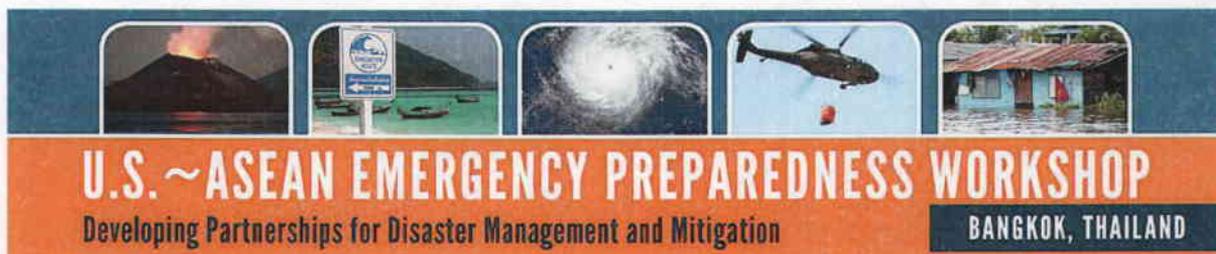
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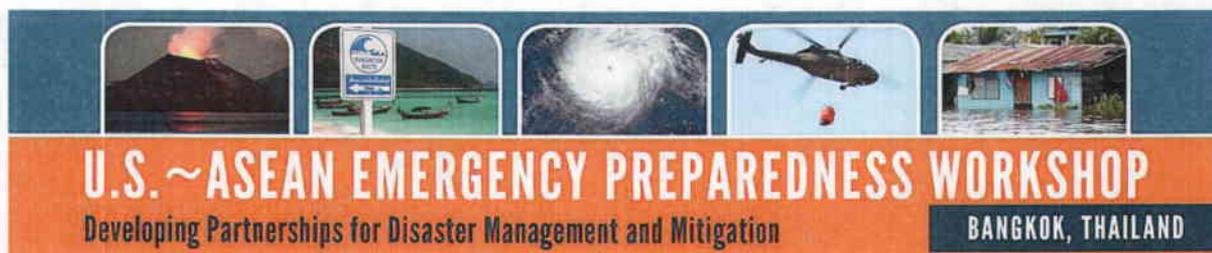
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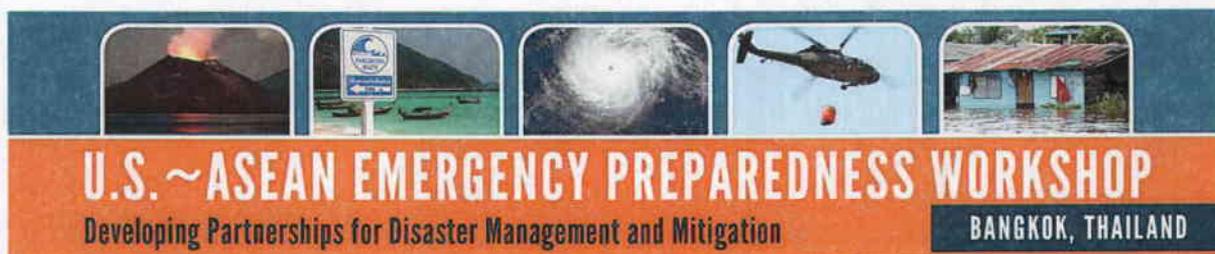
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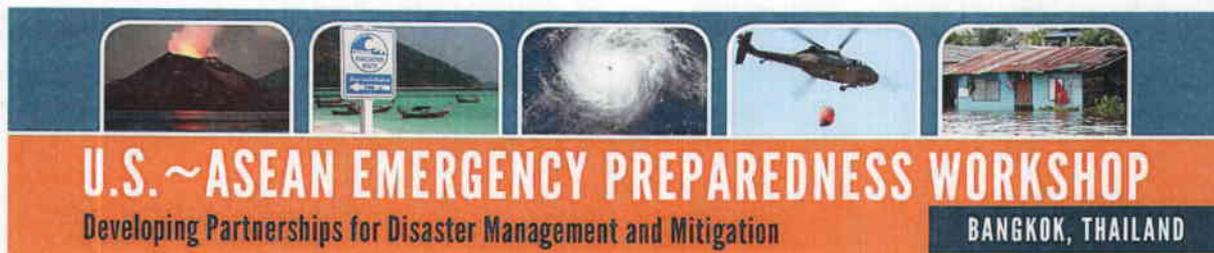
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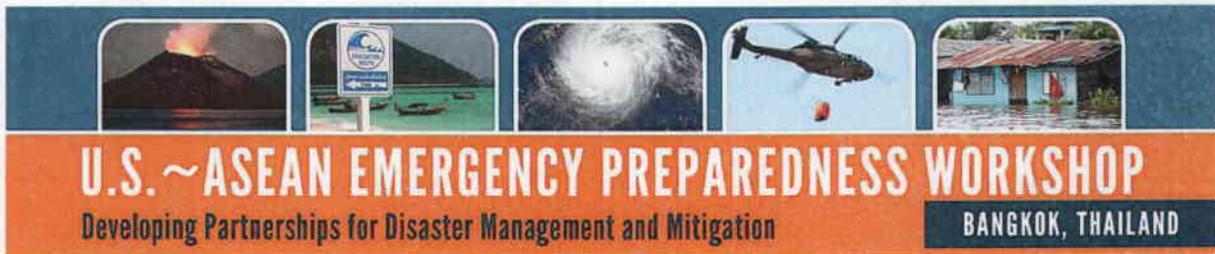
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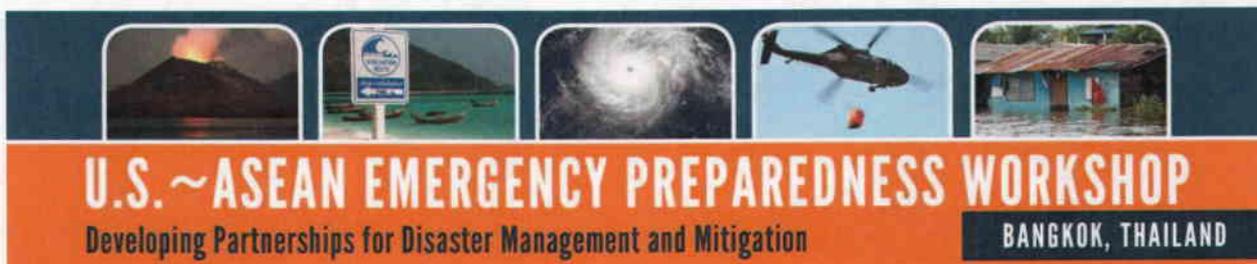
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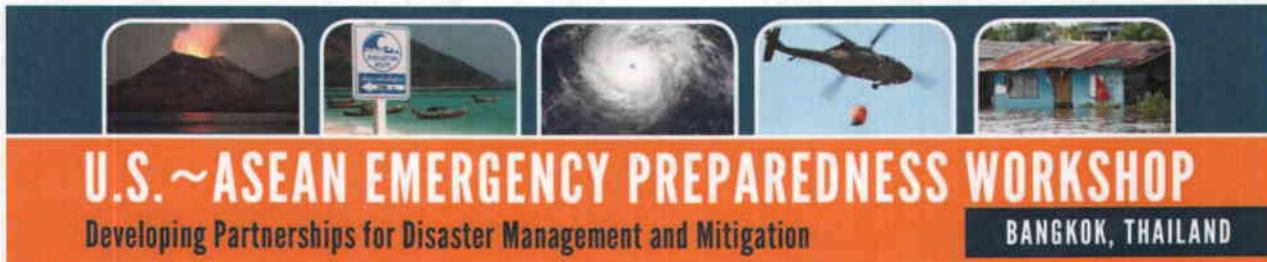
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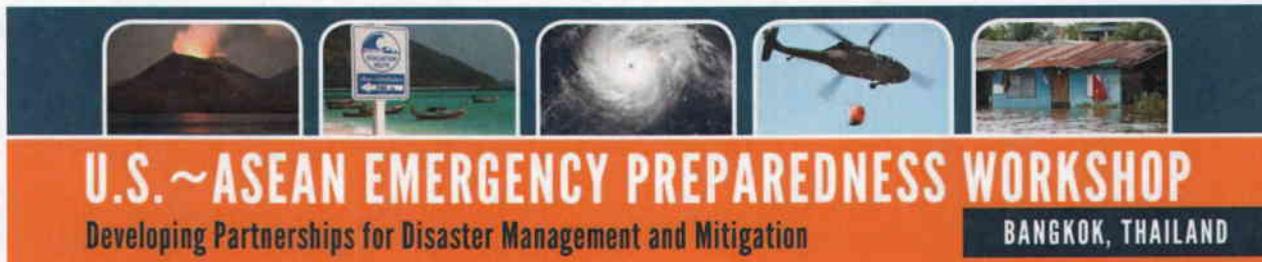
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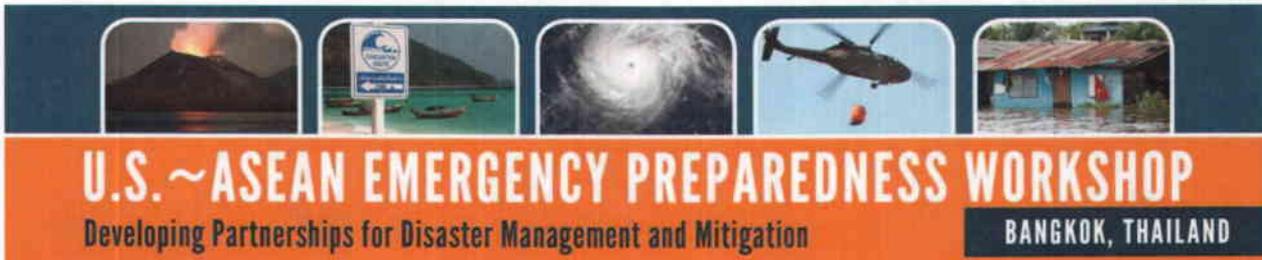
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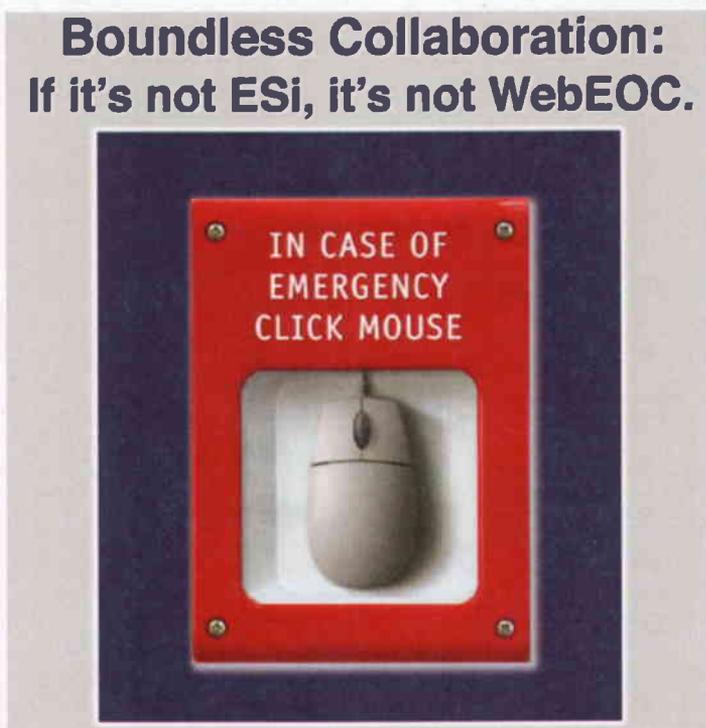
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Saud Amer currently serves as an International Remote Sensing and Water Resources Specialist for the United States Geological Survey (USGS), a position he has held since 2007. In this capacity, he is responsible for planning, negotiating, and executing short and long-term scientific agreements in the area of remote sensing applications to water resources. In addition, Dr. Amer provides oversight on water resource projects, including budgetary aspects, recruitment of personnel, and conformance to work plans and agreements. Dr. Amer is also working on several water resource projects and remote sensing applications for hydrologic studies in the Himalayan Hindu Kush Region (HHKR), Africa, and the Middle East.

Prior to his current role, Dr. Amer worked as a Senior Program Manager for Riverside Technology (RTi) from 2006 to 2007, where he served as the liaison for communications with the Government Contracting Officer (CO), the Contracting Officer's Representative (COR), and National Weather Service (NWS) management, personnel, and representatives. In addition, Dr. Amer was responsible for organizing, directing, and coordinating the planning and production of contract support activities. These included regularly meeting and coordinating activities with RTi and NWS management personnel in discussions on task progress, future projects, and performance.

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Mr. Arambepola holds a Diploma in Engineering Geology as well as a Master of Science degree in Exploration of Mineral Deposits. A chartered engineer, he is also a member of a number of professional bodies including the Institution of Mining and Metallurgy of the United Kingdom, the Institution of Engineers Sri Lanka, the International Society for Soil Mechanics and Foundation Engineering and the Geotechnical Society of Sri Lanka.

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Previously, Mr. Barrett was a Hydrologist with the National Weather Service and an expert on hydrologic forecast and warning system technology. Mr. Barrett was also the World Meteorological Organization's (WMO) Hydrologic Advisor to the President of Regional Association IV (RA-IV). He is currently managing implementation of an operational hydrologic program and associated technologies for the Czech Republic, Mexico, a project in which he has been involved since 1996.

Curtis Barrett coordinated and managed the NOAA International Tsunami project office. In addition, he coordinated the National Weather Service (NWS) International Hydro, meteorological projects within the International Activities office of the National Weather Service. He has managed many international technology transfer projects, including the Department of Commerce \$17 Million Hurricane MITCH Reconstruction project in Central America. Mr. Barrett received the Department of Commerce Bronze Medal Award for leading this two and a half year project.

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Mr. Barrett has also directed hydrometeorological projects across the world, including for the Panama Canal and the Huai River in China from 1993 to 1994, as well as the Nile River in Egypt from 1990 to 1999. From 1989 to 1991 He served as Chief Hydrologist for Handar Inc. and directed a significant effort to develop the automated flood warning system ALERT software for implementation nationwide. He also developed a Handbook on Automated Flood Warning Systems, which is used today.

In 1986, Mr. Barrett started an operational hydrologic forecasting small business that was funded by venture capital firms in the Washington, DC, area. River Services Inc. provided customized hydrologic forecasts to over 25 transportation companies, the Red Cross, Corps of Engineers, the U.S. Bureau of Reclamation, and many river-user communities.

From 1980 to 1987, Mr. Barrett served as the NWS Flash Flood Program Manager. He was also the Computer Hydrologist with NOAA/NWS River Forecast Center in Slidell, Louisiana from 1977 to 1980, where his duties included river and flood forecasts and technique development and computer software development. Mr. Barrett was a Hydrologist with the NOAA/NWS River Forecast Center in Kansas City, Missouri, from 1969 to 1977 where he started his professional career.

Mr. Barrett has been active in the American Society of Civil Engineers, serving as Past Chairman of the American Society of Civil Engineers' National Capital Section Water Resources Committee, Past President of the National Capital Section, and member of many committees.

Mr. Barrett received his Bachelor of Science in Hydrology from the University of Arizona in 1969, as well as his Master of Science in Water Resources Civil Engineering at Kansas University in 1974.

MR. EDUARDO G. BATAK
UNDER SECRETARY
NATIONAL DISASTER RISK REDUCTION AND MANAGEMENT COUNCIL
DEPARTMENT OF CIVIL DEFENSE, THE PHILIPPINES

Eduardo Batak currently serves as the Under Secretary for the Philippine National Disaster Risk Reduction and Management Council within the Office of the Civil, Veterans and Reserve Affairs, a position he has held since 2011.

Prior to his current role, Under Secretary Batak served as the Spokesman for the Office of Public Affairs within the Department of National Defense from 2010 to 2011. In addition, he served as Director of Flight Standards Inspectorate Service for the Civil Aviation Authority of the Philippines (CAAP) from 2008 to 2010. During this period, he served as the Head delegate to several foreign aviation authorities in Southeast Asia, including to China, South Korea, Japan, and Australia. He also served as Member of the Delegation to the International Civil Aviation Organization (ICAO) in 2009, after serving as CAAP's Head for the Federal Aviation Administration's (FAA) Corrective Action Plan in 2008.

From 1999 to 2000, Under Secretary Batak was the Executive Vice President of PNB Holdings Corporation. He served as a Consultant for Scholarship Plans Philippines in 1998, after having worked as the Acting Executive Director and Chief Technical Advisor for the Air Transportation Office of CAAP from 1997 to 1998. In this role, he worked on the FAA's Corrective Action Plan for Restoration of CAT I Chief Coordinator. Under Secretary Batak was also the Senior Vice President of Operations for AFP Savings and Loan Association in from 1995 to 1997.

From 1987 to 1992, he served as President of the Gen-Estate Development and Management Corporation, after working as Executive Vice President of Asian Agro-Aquatic Resources and Development Corporation from 1985 to 1986. In addition, from 1981 to 1984, Under Secretary Batak worked as the Executive Vice President and General Manager for Fortune Housing Development Corporation. From 1976 to 1980, he served as Head of Investment Operations and Portfolio Administrator for AFP Retirement and Separation Benefit Systems. During this period, Under Secretary Batak concurrently served as the Assistant Branch Chief for Plans and Executive Assistant to the Chairman for the Office of the Deputy Chief of Staff for Personnel, within the Office of the Chairman of the AFT Housing Board.

From 1970 to 1974, Under Secretary Batak served in the Philippine Air Force, where he was a Line Pilot for the U-17 and F-27 Fokker Aircraft.

Under Secretary Batak received a Bachelor of Science from the Philippine Military Academy in 1968. In addition, he received Military Pilot training at the Philippine Air force Flying School in 1970. He also received a Master of Business Management from the Asian Institute of Management in 1976.

MR. SHANE BOOKER
DIRECTOR OF SOLUTIONS, INTERNATIONAL BUSINESS
ESI ACQUISITIONS LLC

Shane Booker currently serves as Director of Solutions for International Business within ESI Acquisitions, a position he has held since 2011. In this capacity, he is responsible for international systems implementations, data integration, and custom solutions.

Prior to his current role, Mr. Booker served as Response Director for the Indiana State Department of Homeland Security from 2007 to 2011. His responsibilities included the coordination of overall emergency/disaster response operations in the State of Indiana. In addition, Mr. Booker redefined response and catastrophic response operations. He also managed the development of systems used to gather, analyze, and display geospatial information, which involved work with developers, data owners, and end customers to create a system to display the state's common operating picture.

From July to December of 2007, Mr. Booker worked as Regional Manager for ESI Acquisitions, where he served as a subject matter expert facilitator on emergency operations center management with WebEOC customers, at the state and local levels, across the United States. He also provided advanced technical support services relating to WebEOC management, custom board development, process and information flow integration, and emergency operations center visual display enhancements.

Prior to this role, from 2006 to 2007, Mr. Booker served as Emergency Operations Center Manager for the Marion County Emergency Management Agency in Indianapolis, Indiana. In this capacity, he implemented the use of a crisis management information system, WebEOC, for disaster and daily operations, in order to provide one common operating picture for central Indiana, through the maintenance of good situational awareness. In addition, he established information sharing between local public safety, and state and federal governmental agencies. Mr. Booker also integrated critical infrastructure and private sector partners.

Mr. Booker also served as Lieutenant for Indy Parks Ranger, Indianapolis, from 2000 to 2006. His responsibilities included the administration of human resource policy compliance, disciplinary hearings, internal investigations and policy mentoring for the Indy Parks law enforcement division. He also facilitated departmental liaison requirements to the Indianapolis Special Event Advisory Board and Indy Parks Special Use Committee. During this period, from 2002 to 2006, Mr. Booker concurrently served as Risk Management Coordinator for Indy Parks Ranger, where he created and implemented a functional risk-management plan for all Indy Parks facilities. He also assessed safety investigations, and maintained related accident and safety documentation.

Mr. Booker has over 13 years of public safety experience, ranging from local law enforcement, county emergency management, and state homeland security operations. He has transformed state level homeland security operations through the management of over \$6 million dollars' worth of projects. His professional experience includes work at both the local and state levels, including work during 11 presidentially-declared natural disasters. He has significant knowledge of information technology systems, with the vision for system integration to enhance situational awareness.

Mr. Booker completed courses from Michigan State University within the Park Law Enforcement and Ranger Institute in 2001 and the Law Enforcement Intelligence Toolbox in 2007.

ACTING POL. LT. ARTHIT BOONYASOPHAT
DEPUTY DIRECTOR GENERAL
DEPARTMENT OF DISASTER PREVENTION AND MITIGATION (DPPM)
MINISTRY OF INTERIOR, THAILAND

Arthit Boonyasophat currently serves as Deputy Director General for the Department of Disaster Prevention and Mitigation (DPPM) within the Ministry of Interior of Thailand.

Acting Pol. Lt. Boonyasophat has held numerous positions within the Ministry of the Interior, including District Chief for Ja-Nae, Narathiwat Province; Nongjik, Pattani Province; and Pong-nam-ron, Chanthaburi Province.

In addition, Acting Pol. Lt. Boonyasophat has served as Director of the Special Operations Division within the Bureau of Territorial Defense Volunteer Administration; and the Director of the Bureau of Social Psychological Policy Coordination for the Southern Border Provinces Administration Center.

He has also served in the Ministry of the Interior as Deputy Governor of Nan Province as well as of Samut-songkram Province.

Acting Pol. Lt. Boonyasophat holds a Bachelor of Arts in Political Science from Chulalongkorn University, Thailand. He also holds a Master of Public Administration from the National Institute of Development Administration (NIDA) in Bangkok, Thailand.

MR. TRI BUDIARTO
DIRECTOR OF EMERGENCY RESPONSE
NATIONAL AGENCY FOR DISASTER MANAGEMENT (BNPB), INDONESIA

Tri Budiarto currently serves as Director of Emergency Response within the National Agency for Disaster Management (BNPB) of Indonesia, a position he has held since 2011.

Prior to his current role, Mr. Budiarto served as Head of the Regional Agency for Disaster Management (BPBD) of West Kalimantan Province in Pontianak from 2009 to 2010. He also served as Head of the Agency for Environmental Impact Management (BAPEDALDA) of West Kalimantan Province in Pontianak from 2005 to 2009.

From 2004 to 2005, Mr. Budiarto served as Head of Forestry Office of West Kalimantan Province in Pontianak.

Mr. Budiarto received a Bachelor of Arts in Forestry from the University of Gadjah Mada, Indonesia. He also received a Master of Science in Sociology Science from the University of Tanjungpura.

HIS EXCELLENCY JATUPORN BURUSPAT
DIRECTOR GENERAL
DEPARTMENT OF WATER RESOURCES
MINISTRY OF NATURAL RESOURCES AND ENVIRONMENT, THAILAND

His Excellency Jatuporn Buruspat currently serves as the Director General of the Department of Water Resources within the Ministry of Natural Resources and Environment of Thailand.

Mr. Buruspat has also served as the Director of the Certification Program for the Thai Institute of Directors (IOD). In addition, he worked within District Officers Program Number 50 for the Institute of Administration Development within the Department of Provincial Administration. He also served Executive Administrators Program Number 48 within the Ministry of the Interior.

In addition to his current role, Mr. Buruspat serves as the Director of the Ratchaphruek College Council.

Mr. Buruspat received an Advanced Certificate of Politics and Governance in Democratic Systems for Executives Number 13 from King Prajadhipok's Institute. He has both a Bachelor of Arts and Master of Arts in Public Administration from the Chulalongkorn University, Thailand.

MR. JOSH CARTIN
DEPUTY REPRESENTATIVE
U.S. MISSION TO ASEAN
U.S. DEPARTMENT OF STATE

Josh Cartin currently serves as Deputy Representative for the U.S. Mission to the Association of Southeast Asian Nations (ASEAN) Affairs within the U.S. Department of State, a position he has held since January 2012. Working out of the U.S. Embassy Jakarta, Mr. Cartin is responsible for coordinating the establishment of a new resident U.S. Mission to ASEAN, and managing U.S. relations and programs with the ASEAN Secretariat. Mr. Cartin is also responsible for coordinating with the ASEAN Secretariat, the Government of Indonesia, and other entities to advance the operations of the U.S. Mission to ASEAN.

The establishment of the U.S. Permanent Mission to ASEAN underscores the importance the United States places on its engagement with Southeast Asia's nations and the United States' recognition of ASEAN as a crucial economic and security institution in the Asia-Pacific region. The mission enhances U.S. engagement with the region on the basis of shared goals and values, and works to advance our common interests with the ASEAN organization and all of its member countries.

Mr. Cartin arrived at the U.S. Embassy Jakarta in 2010 as the United States' first diplomatic official dedicated to overseeing U.S. relations and programs with ASEAN. He previously served as senior political officer in the U.S. Department of State's Office for Chinese and Mongolian Affairs. In 2009 he was detailed to the National Security Staff as Director for China, Mongolia and Taiwan, during which time he also covered Southeast Asia. Mr. Cartin served previous overseas tours in Beijing and Ecuador, and spent eight years in Asia and New York in the private sector.

Mr. Cartin received a Bachelor of Arts in Asian Studies from the University of California, Berkeley in 1994. He speaks Chinese, Spanish, and Bahasa.

MR. WILLIAM L. CARWILE
ASSOCIATE ADMINISTRATOR OF RESPONSE AND RECOVERY
FEDERAL EMERGENCY MANAGEMENT AGENCY (FEMA)
U.S. DEPARTMENT OF HOMELAND SECURITY (DHS)

William L. Carwile currently serves as the Associate Administrator of Response and Recovery within the Federal Emergency Management Agency (FEMA), within the U.S. Department of Homeland Security (DHS), a position he has held since December 2009. In this capacity, he is responsible for directing FEMA's Response, Recovery, and Logistics Directorates, as well as the Office of Federal Coordinating Officer (FCO) Operations. Additionally, he has ultimate responsibility for coordinating and synchronizing all of FEMA's Headquarter operational response activities during major disasters and/or emergency activations. Prior to this role, Mr. Carwile served as the Assistant Administrator for Disaster Operations from January until May of 2009. While serving in this capacity, Mr. Carwile transformed, restructured, and improved the overall operational readiness of the Disaster Operations Directorate.

Before returning to FEMA, Mr. Carwile held positions as an adjunct professor and subject matter expert for the Naval Postgraduate School (NPS), Texas A&M University, and the Homeland Security Institute from 2005 to 2009. In addition, he served as a Federal Coordinating Officer (FCO) and a number of other senior management positions in large federal disaster response operations between 1996 and 2005. As an FCO, he served as the representative of the President and DHS/FEMA during major disaster and emergency declarations; orchestrating federal resources and programs in support of state governors. Mr. Carwile also served as the Director of Pacific Area Office, FEMA Region IX from 1996 to 1999. He is also a retired U.S. Army Colonel, with a distinguished 30 year career in special forces, infantry, and headquarter organizations.

Mr. Carwile's emergency management leadership experience includes such large-scale disasters as Super Typhoon Paka in Guam; Hurricane Georges in Puerto Rico; Tropical Storm Allison in Louisiana; the New York City World Trade Center response; Super Typhoon Chataan in Guam; California Wildfires and response and recovery efforts for the four hurricanes that struck Florida in 2004. During Hurricane Katrina, he served as the FCO for the Mississippi response. In these and all other disasters, he demonstrated a full understanding of the supporting role of the federal government with state and local officials, and focused on building and maintaining strong intergovernmental and interagency partnerships to accomplish the national response.

Following his service in the 9/11 terrorist attack response, Mr. Carwile reconstituted the National Emergency Response Team. Efforts included developing a contingency plan and preparing the team for a Weapons of Mass Destruction (WMD) event or other catastrophic disaster. He deployed the team to the 2002 Winter Olympics where he supervised preparations for possible federal consequence management operations and served as the senior FEMA official in the FBI's Joint Operations Center. In 2004, Secretary Ridge awarded Mr. Carwile the Department of Homeland Security's Silver Medal. In addition, during the 2005 National Hurricane Conference, Mr. Carwile was awarded the Neil Frank Award for his part in developing a strong, stable, and effective state-federal team during the historic 2004 Florida Hurricanes.

Mr. Carwile received a Bachelor of Arts in Political Science from the University of Tulsa in 1967. In addition, he received a degree in National Security Studies from the United States Army War College in 1990, and a Master of Arts in Public Administration from Shippensburg University of Pennsylvania in 1990.

MS. JUDITH B. CEFKIN
DEPUTY CHIEF OF MISSION
U.S. EMBASSY BANGKOK

Judith Cefkin currently serves as the Deputy Chief of Mission for the U.S. Embassy Bangkok. Prior to her current role, she served as the Deputy Chief of Mission at the U.S. Embassy in Sarajevo, Bosnia and Herzegovina from 2006 to 2009, and as an examiner on the Foreign Service Board of Examiners.

In addition, Ms. Cefkin was previously stationed in Bangkok as the Ambassador's Staff Assistant and as a Political Officer from 1990 to 1993. Ms. Cefkin started her Foreign Service career in Mexico City in 1983.

Prior to entering the Foreign Service, Ms. Cefkin worked as a television news producer at network news affiliates in Denver and Houston. She also worked in Congress's Office of Technology Assessment and as a legislative intern in the United States Senate.

Ms. Cefkin received a Bachelor of Arts in Government from Smith College in 1975. She also received a Master of Arts in International Relations from the London School of Economics and Political Science in 1977.

DR. PAUL CHAN
EXECUTIVE VICE PRESIDENT
I.M. SYSTEMS GROUP, INC. (IMSG)

Paul Chan serves as the Executive Vice President of I.M. Systems Group (IMSG). In addition, he is a member of the U.S.-Vietnam Climate Change Working Group and has advised Vietnam's Hydro-Meteorological Service on modernization and on climate change adaptation. Dr. Chan is also a member of the U.S. Maryland State Governor's Climate Change Commission Working Group, and has authored the climate change public education policies for the state of Maryland.

Dr. Chan is also a Senior Visiting Scientist in climate science at Chapman University, California. His current research focus is natural hazard risk management and climate change adaptation. He co-chaired the 1st International Symposium for Climate Change Adaptation for the Asia and Pacific Region in Seoul, Korea, which was organized by the Korea Adaptation Center for Climate Change and the Korean Ministry of Environment.

Prior to his current position, Dr. Chan served as the Chief Information Officer for the National Weather Service (NWS). From 2002 and 2004, he led a team of economists to analyze the vulnerabilities in the U.S. food and agricultural system along with their impacts on the nation's economy. He received the Presidential Meritorious Executive Award for this work in 2004.

Dr. Chan began his career conducting climate research for National Aeronautics and Space Administration (NASA) and was the Director of NASA's climate data center between 1993 and 1998. He later joined the U.S. Department of Agriculture (USDA) Economic Research Services as its Chief Information Officer.

Dr. Chan holds a Master of Business Administration from the Wharton School of Business at the University of Pennsylvania. He also received a Master of Arts in Geophysics from Princeton University. He also holds a Doctor of Philosophy in Atmospheric Science from the University of Missouri.

MR. OU CHANDY
DEPUTY DIRECTOR OF PREPAREDNESS AND TRAINING DEPARTMENT
NATIONAL COMMITTEE FOR DISASTER MANAGEMENT (NCDM), CAMBODIA

Ou Chandy currently serves as the Deputy Director for Preparedness and Training Department within the National Committee for Disaster Management (NCDM), Cambodia, a position he has held since 1998. In this capacity, he provides recommendations to the Royal Government and issues principles, main policies and warnings on disaster preparedness and management. He also conducts capacity building activities, such as trainings, to members of the NCDM as well as to the Provincial Committee for Disaster Management (PCDM) and the District Committee for Disaster Management (DCDM).

Prior to his current role, from 1994 to 1998, Mr. Chandy served as the Chief of Personal for the Office of Youth Rehabilitation within the Ministry of Social Affairs, Veteran and Youth Rehabilitation.

Mr. Chandy holds a Bachelor of Management from the Cambodia University for Specialties. He also holds a Diploma of Planning from the National Planning School of Cambodia.

MR. RODNEY CHAPIN
SENIOR VICE PRESIDENT
CDM SMITH

Rodney Chapin currently serves as Senior Vice President for CDM Smith, where he manages the company's public sector business in Texas and New Mexico. He has served CDM in various positions for over 17 years. From 2005 to 2007, Mr. Chapin worked as a Senior Associate for SAIC.

Mr. Chapin has more than 18 years of experience in environmental engineering specializing in energy management strategies. He has served as Project Principal, Project Manager, and Process Design Engineer for municipal and industrial infrastructure planning and improvements efforts, with an emphasis on identifying and implementing energy conservation strategies as well as alternative delivery methods. His notable projects include the development and design of aeration facility retrofits and assessments. He has also implemented several projects at biogas facilities for numerous wastewater treatment plants throughout Texas.

Mr. Chapin holds a Bachelor of Science in Agricultural Engineering from Texas Tech University, which he received in 1990. He also received a Master of Science in Environmental Engineering Technology from Virginia Polytechnic Institute and State University in 1992.

ADMIRAL KOHLAK CHAROENROOK
ADVISOR
STANDING COMMITTEE ON NATURAL RESOURCES AND THE ENVIRONMENT
NATIONAL DISASTER WARNING CENTER (NDWC), THAILAND

Kohlak Charoenrook currently serves as an Advisor for the Standing Committee on Natural Resources and the Environment.

Prior to his current role, from 1990 to 1992, Admiral Charoenrook served as a member of the Senate of Royal Thai Kingdom. He was also a Member of the Legislative Assembly in 1991.

Admiral Charoenrook also served as Chairman of Flood Solving for the southern region of Thailand, and the Executive Advisor to the Chairman of the Thailand Water Law Drafting Working Group.

Admiral Charoenrook received an apprenticeship with the Royal Thai Navy in 1948. He graduated from the Spanish Naval Academy in 1959, with a specialty in Submarine Weapons Systems. He is certified in Staff and Naval Warfare for both the Royal Spanish Navy and the Royal Thai Navy. He also undertook studies in Politics and Public Administration from Prapokklao Institute of Thailand.

HIS EXCELLENCY NEANG CHHEN
DIRECTOR OF SEARCH AND RESCUE DEPARTMENT
NATIONAL COMMITTEE FOR DISASTER MANAGEMENT (NCDM), CAMBODIA

Neang Chhen currently serves as the Director of the Search and Rescue Department within the National Committee for Disaster Management (NCDM) of Cambodia, a position he has held since 2000. In this capacity, he orchestrates recovery operations from aircraft and ship accidents. He also develops principles, implementing regulations and instructions related to the coordination of search and rescue efforts in Cambodia. Prior to his current role, he served as Community Trainer of Disaster Management for Oxfam GB from 2003 to 2008.

From 1994 to 1998, Mr. Chhen worked as the Deputy Director of the Communication Department, within the Ministry of Social Affairs, Veteran and Youth Rehabilitation. He also served as the Deputy Chief of Administration for the Ministry of Commerce from 1991 to 1994. In addition, from 1982 to 1991, Mr. Chhen was the Chief of Security Office within the Ministry of Planning, after having served as a Security Officer within the Ministry of Industry, Mines and Energy from 1979 to 1982.

Mr. Chhen received a Diploma of Planning from the National Planning School, Cambodia in 1990. He received a Bachelor of Management from the National Institute of Business, Cambodia, in 2004. He also received a Diploma of General Administration from the Royal School of Administration, Cambodia, in 2010. Mr. Chhen has received several decorations, including the Medal Kingdom of Cambodia's Silver, Sena and Thebdint medals, awarded in 2002, 2009, and 2010 respectively.

MR. CHRIS CHIESA
DEPUTY EXECUTIVE DIRECTOR
PACIFIC DISASTER CENTER (PDC)

Chris Chiesa currently serves as the Deputy Executive Director of Pacific Disaster Center (PDC), a position he has held since 2010. In this capacity, Mr. Chiesa is responsible for PDC operations and program development, as well as value-added information development activities.

Prior to his current role, Mr. Chiesa has held various positions within PDC over the past ten years, including Chief Information Officer and the Director of Data and Information Resources Division. Mr. Chiesa has been responsible for the establishment of PDC's Enterprise Geospatial Data Environment, as well as the development of the Center's GIS-based "Global Hazards and Vulnerabilities Atlas" and the PDC-hosted DM geospatial information sharing service, the "Global Hazards Information Network." Before joining PDC, Mr. Chiesa worked as a Manager for the Environmental Research Institute of Michigan, from 1987 to 2001.

Mr. Chiesa has 25 years experience developing and managing enterprise product and service applications of geospatial information technologies, and has been actively involved in disaster management activities in the Asia-Pacific region for the past decade. He has extensive experience in the region including project-based activities in Vietnam, Thailand, the Philippines, Taiwan, and Korea. He has also supported regional efforts of the Asia-Pacific Economic Cooperation (APEC) Emergency Preparedness Working Group. His work has also taken him to Europe, South America and Africa.

Mr. Chiesa is active in regional and international professional associations, having served on the Board of Directors for the Hawaii Geographic Information Coordinating Council and presently as the Vice-Chair of the Navigators Council (aka Board of Director) for the Pacific Risk Management Ohana (PRiMO). He also serves on the International Advisory Board of Experts for The International Emergency Management Society's (TIEMS) Education Program.

Mr. Chiesa received a Bachelor of Science in Mechanical Engineering as well as a Master of Science in Natural Resource Management from the University of Michigan in 1985 and 1987 respectively. He also received a Master of Business Administration from the University of Arizona in 2002. His work has been widely recognized. He received both the Special Achievement in GIS Award by ESRI and the President's Award by the Hawaii Geographic Information Coordinating Council.

MR. CATALINO DAVIS
DEPUTY ADMINISTRATOR FOR ADMINISTRATIVE AND ENGINEERING SERVICES
PHILIPPINE ATMOSPHERIC, GEOPHYSICAL AND ASTRONOMICAL SERVICES
ADMINISTRATION (PAGASA), WEATHER BUREAU
DEPARTMENT OF COMMERCE AND INDUSTRY, THE PHILIPPINES

Catalino Davis currently serves as Deputy Administrator for Administrative and Engineering Services for the Philippine Atmospheric, Geophysical and Astronomical Services Administration (PAGASA), a position he has held since 2011.

Mr. Davis has served in PAGASA since January 1980. In addition, he has worked as Weather Services Chief within the Engineering and Technical Services Division from 2008 to 2011. From 2005 to 2008, he served as Assistant Weather Services Chief within the Engineering and Maintenance Division.

From 2000 to 2005, Mr. Davis served within the Field Operations Center. In addition, from 1998 to 2000, he served as Chief of Staff within the Office of the Director, after serving as Chief of Field Operations Management from 1989 to 1998.

Mr. Davis is a member of the Philippine Meteorological Society, as well as an Associate Member of the National Research Council of the Philippines. He also serves as Alternate Representative for the United Nations Educational, Scientific and Cultural Organization (UNESCO) National Committee on Marine Sciences.

Mr. Davis received a Bachelor of Science in Chemical Engineering from Southwestern University, Philippines, in 1977. In addition, he took courses to pursue a Master of Arts in Management from the University of San Jose-Recoletos, Philippines, in 1978. He received a Master in Public Administration in University of the Philippines-Diliman in 1999.

MS. CLAIR DEEVY
CITIZENSHIP LEAD, APAC
MICROSOFT CORPORATION

Clair Deevy currently serves as Citizenship Lead for APAC at Microsoft Corporation. In this capacity, she manages Microsoft's Community Affairs and Citizenship programs in Asia. Her responsibilities include the Microsoft Unlimited Potential (UP)-Community Technology Skills program, as well as nongovernmental organization (NGO) IT capacity building and Employee Engagement programs. These programs form part of the global UP initiative designed to help narrow the technology skills gap; aid global work-force development; and create social and economic opportunity by providing technology training through community technology centers.

The Community Technology Skills Program offers a comprehensive approach to broadening digital inclusion by bringing together critical components, including training grants, software donations, community learning curricula and a global support network called telecentre.org – now based in the Philippines.

Since the launch of the Microsoft UP-Community Technology Skills Program in 2003, more than \$450 million in cash, software and curriculum has been donated to more 1,000 projects in more than 106 countries.

In addition to her Unlimited Potential work, Ms. Deevy also manages Microsoft's policy communication to Government's across Asia. This encompasses several quarterly publications and web properties focusing on Microsoft's Unlimited Potential program and other policy initiatives.

Prior to her current role, Ms. Deevy managed the Corporate Social Responsibility (CSR) activities for the Commonwealth Bank of Australia. In this capacity, she managed a national employee volunteering and donations program as well as a diverse range of partnerships. These partnerships included work with the Conservation Volunteers Australia to encourage environmental stewardship in young Australians. She also formed partnerships with art organizations such as Opera Australia and the Australian Orchestra to bring their reach into schools.

Her work at Commonwealth Bank also involved managing programs for the Commonwealth Bank Foundation, focused on improving the Financial Literacy of young Australians. This role included chairing a national committee of educators to develop curriculum support and testing in the area of financial literacy for schools.

Working in the field of environmental stewardship, CSR and Cause Related Marketing for more than 12 years, Ms. Deevy's experience encompasses government, NGOs, corporations and corporate foundations. Ms. Deevy has volunteered for organizations such as Humor Foundation, Foundation for Young Australians and Osteoporosis Australia and has provided mentorship to budding social entrepreneurs through the Youth Leadership, Social Entrepreneur Program.

Ms. Deevy received a Bachelor of Applied Science in Environmental Management and a Master of Management from the Macquarie Graduate School of Management in Australia. In 2011, Ms. Deevy began her Professional Doctorate through the University of Canberra.

DR. RIDWAN DJAMALUDDIN
DEPUTY CHAIRMAN
AGENCY FOR THE ASSESSMENT AND APPLICATION OF TECHNOLOGY (BPPT),
INDONESIA

Ridwan Djamaluddin has served as Deputy Chairman at the Agency for the Assessment and Application of Technology (BPPT) for Indonesia since 2010.

Dr. Djamaluddin has worked within BPPT for more than 20 years. Prior to his current role, from 2009 to 2010, he served as the Director of the Center of Technology for Land Resources, Regional Development and Disaster Mitigation. From 2003 to 2009, he served as the Head of the Technology Center for Marine Survey. In addition, Dr. Djamaluddin worked as the Head of Natural Resource Characterization Division, part of the Center for Technology for Natural Resource Inventory from 2002 to 2003. During this period, he also served as Acting Director of the Center.

From 2000 to 2006, Dr. Djamaluddin worked as a Lecturer of Physical Geography for the University of Indonesia. He also lectured on Information Technology for Natural Resources Management at the Graduate School of Bogor Agricultural University from 2000 to 2004.

Prior to this role, Dr. Djamaluddin managed a Fire Danger Rating System project as a joint venture between BPPT and the Canadian International Development Agency (CIDA). During this period, he was also the Technical Coordinator for an Environmental Impact Assessment and Valuation of Oil Spill study in the Strait of Malacca, off the coast of Malaysia and Indonesia. In 2001, he performed an identical study for the Yogyakarta Waters of Indonesia.

Between 1999 and 2000, Dr. Djamaluddin worked on several remote sensing projects, as joint ventures between BPPT, Texaco, the National Aeronautics and Space Administration (NASA), and Terra Point USA. He serves as a Member of the National Council of Engineers of Indonesia, a role he has held since 2007.

Dr. Djamaluddin received a Bachelor of Engineering in Geology from the Bandung Institute of Technology in 1989. In addition, he received a Master of Science from the International Institute for Aerospace and Earth Sciences, Enschede, the Netherlands in 1993. He also received a Doctor of Philosophy from Texas A&M University in 1999.

MR. MARK DUNN
REGIONAL MANAGER FOR ASIA, THAILAND OFFICE
U.S. TRADE AND DEVELOPMENT AGENCY (USTDA)

Mark Dunn currently serves as Regional Manager for Asia at the U.S. Trade and Development Agency (USTDA), based in Bangkok, Thailand, a position he has held since 2008. In this capacity, he is responsible for managing USTDA's activities in South and Southeast Asia, directing business development efforts, coordinating with relevant Asian and U.S. government agencies, and marketing USTDA services to potential partners throughout Asia.

Prior to his current role, Mr. Dunn served as Senior Technical Manager for TERA International Group, Inc., where he oversaw all projects originating from the U.S.-based headquarters. The majority of his time was spent in Ulaanbaatar, Mongolia undertaking technical assistance and due diligence work for agencies such as the Millennium Challenge Corporation (MCC), the Asian Development Bank (ADB), and USTDA. He also developed a medium-term rolling investment plan for Mongolia's Ministry of Roads, Transport and Tourism and assisted with their long-term Transport Sector Strategy, in addition to undertaking specific infrastructure improvement projects in the road and rail subsectors.

Prior to joining TERA, Mr. Dunn worked in the private sector and continued working throughout Asia, undertaking consulting assignments that focused on the transportation sector. He served as Senior Manager at JBC International, where he operated as the project manager for a Customs Modernization project in China, and later acted as a Technical Advisor to the Port Authority of New York/New Jersey to examine supply chain security under the Department of Homeland Security's Operation Safe Commerce program.

From 2001 to 2003, Mr. Dunn served as USTDA's Country Manager for China and Mongolia. He had the opportunity to design and implement a strategy for USTDA's operations in China, where the Agency had been prohibited from working since 1989. By the time Mr. Dunn left USTDA in 2003, the China portfolio had grown to become the largest in the agency.

Mr. Dunn holds a Bachelor of Arts in International Relations from Carleton College in Northfield, Minnesota. In addition he holds a Master of Arts in International Affairs from American University in Washington, DC. His studies focused on Asia at both institutions. He has traveled and lived extensively throughout Asia as a student, consultant, and government official.

MR. SAID FAISAL
EXECUTIVE DIRECTOR
ASEAN COORDINATING CENTRE FOR HUMANITARIAN ASSISTANCE
ON DISASTER MANAGEMENT (AHA)

Said Faisal currently serves as the Executive Director of the ASEAN Coordinating Centre for Humanitarian Assistance on Disaster Management (AHA), a position he has held since the organization's launch in 2011. In this role, he oversees the operations of the AHA Centre, which is responsible for facilitating cooperation and coordination among ASEAN Countries, as well as with relevant United Nations and International Organizations.

Prior to joining the AHA Centre, Mr. Faisal served as the President's Delivery Unit for Development, Monitoring and Oversight, for the Government of Indonesia from 2010 to 2011, where he was assigned to assist in the establishment of the AHA Centre.

From 2009 to 2010, Mr. Faisal served as Senior Advisor to the Special Envoy Secretary General of ASEAN/Head of Operations for the ASEAN Humanitarian Task Force (AHTF). In this capacity, he facilitated the effective distribution and utilization of international assistance to support relief, recovery and reconstruction efforts in response to Cyclone Nargis in May 2008. The storm caused more than 140,000 deaths, with 2.4 million people severely affected with an estimated \$4.1 billion in damages.

Following the Indian Ocean tsunami of December 2004, Mr. Faisal was appointed to Deputy Head of Agency for the Rehabilitation and Reconstruction of Aceh and Nias (BRR) from 2005 to 2009. BRR is a ministerial-level executive agency established by the Government of Indonesia to coordinate and implement rehabilitation and reconstruction efforts in Aceh and Nias. The agency coordinated cooperation between 900 organizations and 40 countries and handles a budget of more \$7 billion.

Prior to joining BRR, Mr. Faisal worked at the International Finance Corporation (IFC) of the World Bank Jakarta, Indonesia, where he was responsible for the Bank's Business Enabling Environment program. The program expanded financial access for rural banks, microfinance institutions, and women entrepreneurs.

From 1999 to 2003, Mr. Faisal worked at the Jakarta Initiative Task Force (JITF) as Senior Manager. The JITF was established by the Government of Indonesia and is supported by the World Bank, Asian Development Bank and the U.S. Agency for International Development (USAID). The initiative's mission was to accelerate corporate debt restructuring in order to resume private sector growth after the country was hit by economic crises in 1997 and 1998. The Jakarta Initiative successfully facilitated \$20 billion in private sector debt restructuring in Indonesia as targeted by the International Monetary Fund (IMF). Mr. Faisal began his career for Phoenix Home Life, a financial services company based in Chicago, Illinois.

Mr. Faisal received a Bachelor of Arts in Economics and Management from Syiah Kuala University, Banda Aceh, Indonesia. In addition, he received a Master of Arts in Insurance and Finance from the University of Hartford, Connecticut.

MR. DELFIN GARCIA
PLANNING OFFICER
PHILIPPINE INSTITUTE OF VOLCANOLOGY AND SEISMOLOGY
DEPARTMENT OF SCIENCE AND TECHNOLOGY (DOST), THE PHILIPPINES

Delfin Garcia currently serves as Planning Officer for the Philippine Institute of Volcanology and Seismology within the Department of Science and Technology (DOST) of the Philippines.

Mr. Garcia received a Bachelor of Science in Mining Engineering from Mapua Institute of Technology, Manila, in 1976. He also pursued Post-Graduate work in Seismology and Earthquake Engineering at the International Institute of Seismology and Earthquake of the Building Research Institute of Japan in 1986.

DR. MARYAM GOLNARAGHI
CHIEF, DISASTER RISK REDUCTION PROGRAM
WORLD METEOROLOGICAL ORGANIZATION (WMO)

Maryam Golnaraghi serves as the Chief of the Disaster Risk Reduction Program within the World Meteorological Organization (WMO), a position she has held since 2005. In this capacity, Dr. Golnaraghi is responsible for the development of strategic, governance, institutional coordination, programmatic and financial aspects of this international program, with focus on weather, hydrological and climate services to support disaster risk assessment, early warning systems, sectoral risk management and financial risk transfer markets.

Dr. Golnaraghi also leads WMO activities in documenting national good practices and development of guidelines for the governments in these areas. She has initiated and is managing coordinated capacity development projects in over 40 countries in Asia, Central America, the Caribbean and South East Europe, in cooperation with a number of strategic partners.

Prior to joining the WMO, Dr. Golnaraghi worked as a consultant to develop strategic priorities of WMO, a specialized United Nations agency, on issues related to climate change. In 2008, she led a task team to develop components of the Global Framework for Climate Services for provision of climate information to support climate adaptation and risk management at the national level, which was adopted at the Third World Climate Conference in September 2009.

From 1996 to 2004, Dr. Golnaraghi served as President and Founder of Climate Risk Solutions (CRS), a research and consulting firm. In this role, Dr. Golnaraghi worked with government agencies in the United States, the private sector, academia and global climate centers to provide innovative climate risk management solutions for energy, agricultural and financial sectors. She also worked extensively in weather-indexed insurance and weather derivatives, and facilitated private/public partnerships in the United States. In addition, Dr. Golnaraghi developed training programs on climate risk management for companies, including developing specialized climate information products for sectoral risk management.

Dr. Golnaraghi also served as Senior Research Associate for Technology and Operations Management within Harvard Business School from 1993 to 1995, while serving as the Principal Investigator of a joint Center for International Earth Science Information Network (CIESIN) project with the Harvard Kennedy School of Government from 1993 to 1994.

Dr. Golnaraghi serves on a number of international committees and advisory boards. She was the executive editor of The Climate Report, a quarterly publication of CRS and currently serves on the editorial board of WMO and other publications. She has authored a number of papers in science and policy.

Dr. Golnaraghi holds a Bachelor of Science in Chemical Engineering from Cornell University. In addition, she holds a Master of Science in Applied Physics and a Doctor of Philosophy in Physical Oceanography from Harvard University.

DR. IWAN GUNAWAN
SENIOR DISASTER RISK MANAGEMENT ADVISOR
THE WORLD BANK

Iwan Gunawan currently serves as Senior Disaster Risk Management Advisor for the World Bank, a position he has held since 2008. In this role, Dr. Gunawan is responsible for building internal World Bank capacity to mainstream disaster risk reduction in sectoral investment programs and projects. In addition, he facilitates the implementation of Global Facility for Disaster Reduction and Recovery (GFDRR) activities in Indonesia as one of eight priority countries, and assists external partners in building synergy and partnerships to reduce risks and manage disaster and climate change impacts.

Prior to his current position Dr. Gunawan served as a Senior Program Coordinator for the ASEAN Australia Development Cooperation Program (AADCP), a joint initiative between the Australian Government and the ASEAN Secretariat from 2005 to 2008. Dr. Gunawan provided program oversight and strategic directions to the implementation of 10 economic governance flagship projects in support of regional economic integration and competitiveness. From 2004 to 2005, he worked as an Assistant Resident Representative and Head of Governance Unit for the United Nations Development Programme (UNDP) Indonesia country office, where he managed the Governance Unit and led the completion of program design, formulation and implementation of UNDP Indonesia's Governance portfolio. He also served as UNDP's Assistant Resident Representative and Head of Program Support and Communication Unit from 2003 to 2004.

In addition, Dr. Gunawan served as a Senior Officer within the Bureau of Program Coordination and External Relations for the ASEAN Secretariat in Jakarta from 2001 to 2003. In this capacity, he provided strategic planning for ASEAN development cooperation with dialogue partners and donors. From 1998 to 2001, Dr. Gunawan acted as Director for the Center for Technology for Natural Resources Inventory, part of the Agency for the Assessment and Application Technology (BPPT), Indonesia, where he was also a tenured Researcher from 1987 to 2001.

During this period, from 1997 to 1998, Dr. Gunawan was also the Head of the Sub-Directorate of Technology for Terrestrial Based Natural Resources Inventory for BPPT, as well as the Agency's Program Manager for Integrated Terrestrial Survey System Programs from 1995 to 1997.

Dr. Gunawan is the author of dozens of publications as well as the recipient of numerous awards, including the Twenty Years Service Medal of Honor as well as the Development Medal of Honor, both from the Government of Indonesia, in 2007 and 1998, respectively.

Dr. Gunawan received a Bachelor of Science in Geodetic Engineering from Gadjah Mada University in 1986. He received a Master of Science in Engineering Science from Louisiana State University in 1991. In addition, Dr. Gunawan received a Doctor of Philosophy in Regional Science/Geography from Texas A&M University in 1994.

MR. LE THANH HAI
DEPUTY MANAGER
SCIENCE TECHNOLOGY AND INTERNATIONAL COOPERATION OFFICE
NATIONAL HYDRO-METEOROLOGICAL SERVICE, VIETNAM

Le Thanh Hai currently serves as the Deputy Manager of the Science Technology and International Cooperation Office within the National Hydro-Meteorological Service of Vietnam, a position he has held since 2009. In this capacity, he assists the organization's executive team to develop strategies, programs, plans related to hydro-meteorological forecasting. In addition, Mr. Hai drafts regulations, rules, and socio-technical standardizations on hydro-meteorological forecasting.

Prior to his current role, Mr. Hai served as Participating Composer for a National Regulations for Extreme Weather warning and forecasting project. He also worked as the Deputy Manager for the Hydro-Meteorological and Environmental Station Network Center from 2003 to 2008. In 2006, Mr. Hai was the Participating Composer for a project on Regulations for Flood and Typhoon Forecasting in Vietnam.

From 2002 to 2003, he served as a Senior Forecaster for the Vietnam National Center for Hydro-Meteorology Forecasting, where he specialized in extreme weather forecasting. He also served as the Center's Forecaster and Group Leader for the Deputy Chief of Short-Range Forecasting Division from 1983 to 2002.

Mr. Hai received a Bachelor of Science in Meteorology from the Vietnam National University of Hanoi in 1981. He has received several merits and awards, including Certificates of Merits from the Ministry of Natural Resources and Environment in 2003 and 2006, as well as a Certificate of Merit for Excellent Officer at Ministry Level in 2008.

DR. P.J. PRIH HARJADI
DEPUTY DIRECTOR GENERAL FOR GEOPHYSICS
METEOROLOGICAL, CLIMATOLOGICAL AND GEOPHYSICAL AGENCY (BMKG),
INDONESIA

P.J. Prih Harjadi currently serves as the Deputy Director General of Geophysics within the Meteorological, Climatological and Geophysical Agency (BMKG) of Indonesia, a position he has held since 2006. In this role, he oversees the agency's duties in the field of meteorology, climatology, and geophysics. Prior to his current role, Dr. Harjadi held several positions of leadership within BMKG, including Head of Geophysical Research Section, the Head of Planning Division, and the Director of the Geophysical Center.

Dr. Harjadi was instrumental in preparing and implementing the establishment of Indonesia Tsunami Early Warning System (InaTEWS). This system has the ability to issue tsunami warnings within five minutes of an earthquake. InaTEWS is now considered one of the leading Regional Tsunami Service Providers (RTSP) for the Indian Ocean Tsunami Warning and Mitigation System (IOTWS), part of the Intergovernmental Oceanographic Commission (IOC) of United Nations Educational, Scientific and Cultural Organization (UNESCO). Dr. Harjadi is also a Vice Chair of the Intergovernmental Coordination Group of Indian Ocean Tsunami Warning and Mitigation Systems (ICG/IOTWS), a role he has held since 2011.

Dr. Harjadi received a Doctor of Philosophy in Geophysics from the University of Pierre Marie Curie, Paris VI, in 1990.

MR. MEDI HERLIANTO
DIRECTOR OF COMMUNITY DEVELOPMENT
SECTOR PREVENTION AND PREPAREDNESS
NATIONAL AGENCY FOR DISASTER MANAGEMENT (BNPB), INDONESIA

Medi Herlianto has served as Director of Community Development for Sector Prevention and Preparedness within the National Agency for Disaster Management (BNPB), Indonesia, since February 2012.

Mr. Herlianto has experience in post-disaster recovery action plans for major disasters like the 2009 West Sumatra earthquake in Indonesia. He also developed recovery action plans for several disasters in 2010, including the Flood-Wasior of West Papua; the eruption of Merapi Jogjakarta; and the Mentawai earthquake and tsunami.

Mr. Herlianto received a Bachelor of Science in Civil Engineering from the University of Bung Hatta in 1988. He also received a Master of River Management from the Ecole Nationale des Travaux Publics de l'Etat (ENTPE) of Lyon, which he received in 1991.

Ms. DANG THI HUONG
FLOOD AND STORM MANAGEMENT SPECIALIST
MINISTRY OF AGRICULTURE AND RURAL DEVELOPMENT (MARD), VIETNAM

Dang Thi Huong serves a Flood and Storm Management Specialist within the Ministry of Agriculture and Rural Development (MARD) of Vietnam, a position she has held since 2006. In this capacity, she verifies designs and cost estimates for settling urgent dike incidents. She also facilitates the daily collection of flood and storm management operational data for related ministries, sectors and provinces, including for the Central Committee for Flood and Storm Control (CCFSC).

In addition, Ms. Huong calculates the regulation of coordinated reservoirs in flood retention functions. She also leads proposals for dike protection, and develops plans to support flood and storm mitigation procedures.

Prior to her current role, from 2002 to 2006, Ms. Huong served as Engineering Consultant within the Centre for Dike Engineering. Her responsibilities included constructing plans and cost estimates for various projects, including a revetment initiative to protect A Vuong, Quang Nam province. In addition, she served on an Asian Development Bank (ADB) funded project for flood prevention in the Northern provinces. Ms. Huong also focused on a project to upgrade a dike in Cai Hai.

Ms. Huong received a Bachelor of Science in Water Resource Economics as well as a Master of Engineering in Water Resource Structures from Hanoi Water Resources University in 2002 and 2007 respectively.

MR. BUI QUANG HUY
HEAD, INFORMATION AND STATISTICS DEPARTMENT
NATIONAL DISASTER MANAGEMENT CENTER (NDCM)
MINISTRY OF AGRICULTURE AND RURAL DEVELOPMENT (MARD), VIETNAM

Bui Quang Huy currently serves as the Head of the Information and Statistics Department within the Disaster Management Center of Vietnam, a position he has held since 2009. In this role, Mr. Huy is responsible for legislation and program development relating to disaster management and climate change. He also develops research and produces reports relating to national disaster management strategy implementation and disaster management modeling.

In addition, Mr. Huy coordinates several disaster management projects for mitigating risk and enhancing local capacity for risk reduction in the northern mountainous regions of Vietnam. Finally, Mr. Huy engages in network developments in disaster management, including the developing of warning, informatics, and communication systems for disaster management.

Mr. Huy has participated in the development of several reports on disaster risk reduction and climate change management. These reports have resulted in legislative amendments to policies and laws on disaster management in Vietnam. In addition, Mr. Huy also coordinates several projects on disaster risk management and climate change reduction initiatives to enhance agriculture. In particular, he is the Coordinator for the Disaster Risk Management Capacity Building Program (GFDRR), which investigates the effects of disasters on soil erosion and agriculture. Mr. Huy also serves as the Senior Expert for a project to strengthen community capacity for disaster risk reduction in the northern mountainous regions of Vietnam.

Prior to his current role, from 1999 to 2009, Mr. Huy served as the Head of the Information and Statistics Division within the Department of Dike Management and Flood and Storm Control (DDMFC). His duties included the formulation of a development strategy for flood control and disaster reduction, as well as to draft regulatory legislation on dike management.

Mr. Huy coordinated and managed various projects throughout Vietnam, including projects for dike management, climate change mitigation, flood management and capacity building. He also served as the National Project Manager for the Office of Foreign Disaster Assistant (OFDA), part of the U.S. Agency for International Development (USAID) to support a comprehensive disaster management system in Vietnam. In addition, Mr. Huy was responsible for collaborating with domestic government agencies, such as the Ministry of Agriculture and Rural Development (MARD) of Vietnam. He also conducted research to develop reports on various issues in the country, including soil erosion, flood control, and dike management.

Mr. Huy received a Bachelor of Engineering in Water Resources from the University of Hanoi Water Resources in 1996. He also received a Master of Engineering in Coastal Zone Engineering and Management from the Asian Institute of Technology, Bangkok, in 1999.

DR. SAID IRANDOUST
PRESIDENT
ASIAN INSTITUTE OF TECHNOLOGY (AIT)

Said Irandoust currently serves as the President of the Asian Institute of Technology (AIT), a position he has held since 2005. As President, Dr. Irandoust advances the organization's mandate to promote technological change and sustainable development in the Asia-Pacific region through higher education, research and outreach. AIT is based in Thailand with affiliated Centers in Vietnam and Indonesia.

Prior to his current role, Dr. Irandoust served as Vice Chancellor of the University College of Borås, Sweden, from 2001 to 2005. His responsibilities included developing international partnerships with stakeholders and furthering the University's research environment. Dr. Irandoust also held various positions with Chalmers University of Technology of Sweden from 1990 to 2000, including Vice President. In this role, he initiated and supervised a number of development projects within higher learning, further education for professionals, and the university's international presence. During this period, Dr. Irandoust was also Chair of the Swedish Government's Committee for promoting mathematics, as well as a member of the Swedish Government's Committee for widening recruitment to universities. He also served as a Member of the Board of Engineers Without Borders and of the Board of the Swedish Foundation for International Cooperation in Research and Higher Education (STINT).

Dr. Irandoust earned the Medal of Progress from the President of the Republic of Azerbaijan in 2006. He is also the recipient of an Honorary Doctorate from the Plekhanov Russian Academy of Economics in Moscow.

Dr. Irandoust received a Master of Science in Chemical Engineering and a Doctor of Philosophy from Chalmers University of Technology in 1984 and 1989 respectively.

MR. GEOFFREY JACKSON
DIRECTOR FOR POLICY AND PROGRAM
U.S. TRADE AND DEVELOPMENT AGENCY (USTDA)

Geoffrey Jackson serves as the Director for Policy and Program at the U.S. Trade and Development Agency (USTDA). In this capacity, Mr. Jackson advises USTDA's Director on international trade and foreign assistance matters, and makes recommendations for possible USTDA program assistance to support U.S. policy objectives. He also supervises the agency's five regional teams and directs its programs in East Asia.

Prior to his current role, Mr. Jackson served as USTDA's Regional Director for Asia and the Pacific. He also worked as the agency's Regional Director for Central and Eastern Europe, and has served as the Regional Director for Africa and the Middle East.

Before joining USTDA in 1990, Mr. Jackson held positions in the Economic Development and International Trade Administrations of the U.S. Department of Commerce. These assignments involved multilateral development bank issues, commercial trade dispute settlement, country assignments, trade policy and international trade promotion. Prior to joining the Commerce Department, Mr. Jackson worked for the U.S. Coast Guard.

MR. ROBERT JUBACH
GENERAL MANAGER, METEOROLOGIST
HYDROLOGIC RESEARCH CENTER (HRC)

Robert Jubach currently serves as the General Manager for the Hydrologic Research Center (HRC), a position he has held since 2005. As General Manager, Mr. Jubach is responsible for day-to-day operations of the Center, including all administrative functions and the management of grants and contracts. Mr. Jubach also develops various applied hydrometeorological research efforts at HRC; facilitates transfer of the results of HRC research to international government and private sectors; and leads international prototype field implementations.

In addition, Mr. Jubach manages and develops HRC's international flash flood early warning projects, including implementations in Romania, South Africa, Central America, Djibouti, Southeast Asia, Haiti and Dominican Republic, Southern Africa, and the Black Sea and Middle East Regions. Mr. Jubach has also worked with the World Meteorological Organization (WMO) on the development of a disaster risk reduction program for Central America, focusing on flooding issues. He also coordinated the Disaster Management Support Project for the Government of India on behalf of the U.S. National Weather Service. This project included improving forecast capabilities for tropical cyclones; local severe storms; flash flood and flood forecast and warning systems; and forecast and warning communications.

Mr. Jubach was a member of the World Meteorological Organization Fact-Finding and Needs-Assessment Expert Mission to Pakistan in November 2010, after the devastating floods of July and August of 2010. The purpose of the mission was to assess the current capability of the Pakistan Meteorological Department (PMD) to evaluate the technical details of the Pakistan floods. The project also assessed damage to the hydrometeorological infrastructure; the capability of PMD flood monitoring and warning services; responses by stakeholders; and community-level dissemination and public awareness. Mr. Jubach is also the HRC Program Manager for a U.S. Agency for International Development (USAID) sponsored implementation of a flash flood guidance system that will be used by the PMD in the development of flash flood warnings throughout the country.

Previously, Mr. Jubach has served as a Hydrometeorological Consultant for the U.S. National Weather Service (NWS). In this capacity, he provided hydrometeorological project management services for the International Activities Office (IA) of the NWS in support of various international water resources management projects. Each of these projects involved the design and implementation of tasks related to meteorological and hydrologic forecasting technologies. Mr. Jubach coordinated all NWS activities in the Hurricane Reconstruction Program in Central America and the Caribbean following the devastation from Hurricanes Mitch and George in these regions. This effort involved evaluation and assessment of damage to the NMHS infrastructures, development of implementation plans and operations concepts for recovery and improved capacity of the services including, flood and flash flood early warning systems, and implementation of all recovery activities.

Prior to his current role, Mr. Jubach served as President of Nittany Environmental Management from 1996 to 2006, where he provided independent consulting services for environmental services in hazardous waste management, meteorology and hydrology. In addition, he provided consulting services to the U.S. National Weather Service for international technology transfer hydro-meteorology projects. Mr. Jubach was also Vice President and Chief Scientist for Tracer Technologies, Inc. and was Managing Director and Partner for Spectrum Environmental Sciences, both small environmental sciences firms. From 1972 to 1990, Mr. Jubach served as a Meteorologist for the NUS Corporation.

Mr. Jubach received a Bachelor of Science in Meteorology from Pennsylvania State University in 1971.

DR. TAVIDA KAMOLVEJ
VICE DEAN, ACADEMIC AFFAIRS
SCHOOL OF POLITICAL SCIENCE AND EMERGENCY RESPONSE
THAMMASAT UNIVERSITY, THAILAND

Tavida Kamolvej currently serves as the Vice Dean for Academic Affairs at the School of Political Science within Thammasat University of Thailand. In addition, Dr. Tavida serves as a Disaster and Emergency Management Advisor to the National Disaster Warning Center (NDWC) to develop an end-to-end disaster warning system.

In addition, Dr. Tavida serves as a Strategic Planning and Evaluation Advisor to the National Security Council (NSC) to establish a National Crisis Management Center (NCMC). She also serves as Member of the Advisory Committee to the Secretary General Office of the Ministry of Labor. Dr. Kamolvej serves a Trust Fund under the Ministry of Finance. She also works closely with the Bangkok Metropolitan Authority to develop a training session in disaster management and evaluate a community project for sustainable development.

At the international level, Dr. Tavida is the instructor and evaluator for the U.S. Department of State Senior Crisis Management Seminar Program in collaboration with American University of Washington, D.C. In addition, Dr. Tavida has been working as an Emergency Management Consultant to the Pacific Disaster Center (PDC) since 2005. In this capacity, she assists with the establishment of the early warning system and operational center for the Government of Thailand. In addition, she coordinates projects in Indonesia.

Dr. Tavida also serves as an expert in Community Resilience and Education for Disaster Management for a partnership between the United Nations Educational, Scientific and Cultural Organization (UNESCO), the Intergovernmental Oceanographic Committee (IOC) and the International Ocean Institute (IOI). In this role, she helps educate and train communities in potential risk areas in order to build capacity to cope with and mitigate disasters. Finally, Dr. Tavida collaborates with a variety of international organizations in developing training sessions for emergency response agencies, as well as youth programs for schools to help carry out community action plans in disaster management.

MR. LOH ENG KEE
REGIONAL DIRECTOR, NORTHERN REGION
MALAYSIAN METEOROLOGICAL DEPARTMENT
MINISTRY OF SCIENCE, TECHNOLOGY AND INNOVATION, MALAYSIA

Loh Eng Kee currently serves as the Regional Director for peninsular Northern Region for the Malaysian Meteorological Department (MMD) within the Ministry of Science, Technology and Innovation of Malaysia, a position he has held since 2007. In this role, he serves as the lead executive for the region's meteorological office. Prior to this role, Mr. Kee served as MMD's Regional Director for the state of Sarawak, a position he held from 1999 to 2011. From 1981 to 1999, he served as a Meteorological Officer for the Sarawak Meteorological Office.

Mr. Kee received a Bachelor of Science from the University of Malaysia in 1979, as well as a Master of Computing from the University of Western Sydney in 1998.

MR. GEORGE KELAKOS
ADVISOR
HILCO TRADING LLC

George Kelakos currently serves as an Advisor to Hilco Trading LLC. In addition to this role, Mr. Kelakos serves as a Partner within FSB FisherBroyles LLP, a full-service law firm based in Atlanta, Georgia, a position he has held since 2011. His responsibilities include domestic and cross-border insolvency and restructuring. He also represents buyers and sellers of intellectual property assets.

Since 2006, Mr. Kelakos has served as the Managing Director of Kelakos Advisors, a distressed merger, acquisition and transaction advisory firm that provides Asia-focused cross-border and IP buy and sell-side advisory services, as well as mediation services. Kelakos Advisors focuses on China and Southeast Asia and is also a mediator and transaction facilitator. Mr. Kelakos' current cross-border projects include in and out-bound Chinese and Thai projects.

In addition, Mr. Kelakos serves as a Consultant to the law firm of King & Wood, China's largest law firm. In this capacity, he concentrates his efforts on Southeast Asia and China-focused cross-border in and out-bound mergers and acquisitions, restructuring and insolvency matters.

From 2002 to 2005, Mr. Kelakos served as Counsel for Heller Ehrman, where he was a member of the firm's insolvency and international practices. In this role, he focused on cross-border engagements in China and Southeast Asia. From 2000 to 2002, Mr. Kelakos served as the Managing Director of Tonson Planners Ltd., a Bangkok-based consulting firm. He was responsible for providing consulting and advisory services to clients involved in commercial and real estate loan work-outs and Thai business reorganization, as well as debt restructuring cases.

From 1990 to 2002, Mr. Kelakos served as Founding Partner of Cohn and Kelakos LLP, a business bankruptcy and insolvency law boutique firm focused on company-side engagements and representation of Chapter 11 Bankruptcy trustees and receivers. During this period, he also served part time as the Managing Director of Tonson Partners, Ltd. a Bangkok-based advisory firm.

From 1980 to 1990, Mr. Kelakos was an Associate for Fine and Ambrogne, after having served as an Associate for Riemer and Braunstein from 1985 to 1989.

Mr. Kelakos has over 28 years of experience in the insolvency field as an attorney and adviser, as well as over 12 years of experience working on matters relating to Southeast Asia and Greater China. He has assisted the Government of the Kingdom of Thailand and the Association of Southeast Asian Nations (ASEAN) Secretariat on matters relating to bankruptcy law reform and the development and promotion of Western-style Alternative Dispute Resolution (ADR) practices and procedures.

Mr. Kelakos received a Bachelor of Arts in Politics from Brandeis University in 1979. He also received a Juris Doctor from the Sturm College of Law, University of Denver, in 1982.

THE HONORABLE KRISTIE A. KENNEY
AMBASSADOR OF THE UNITED STATES TO THAILAND
U.S. EMBASSY BANGKOK

Kristie Kenney currently serves as the Ambassador of the United States to Thailand at the U.S. Embassy Bangkok, a position she has held since 2011. In this capacity, she is the United States' most senior diplomat in Thailand, and handles all commercial and diplomatic matters.

Prior to her current role, Ambassador Kenney served as the first female U.S. Ambassador to the Philippines from 2006 to 2010. She began her career in diplomacy in 1981, and her overseas assignments have included serving as the U.S. Ambassador to Ecuador from 2002 to 2005. In addition, in 2002, Ambassador Kenney served as Senior Advisor to Assistant Secretary for International Narcotics and Law Enforcement. She has also held positions at U.S. Embassies in Jamaica, Switzerland, and Argentina.

Ambassador Kenney also served as the State Department Executive Secretary in Washington, D.C. and on the staff of the National Security Council at the White House. She speaks Spanish and French and has won several prominent awards for leadership.

Ambassador Kenney earned a Bachelor of Arts from Clemson University in 1977 as well as a Master of Arts in Latin American Studies from Tulane University in New Orleans.

MR. HONG-ENG KOH
SENIOR DIRECTOR (GLOBAL LEAD)
JUSTICE AND PUBLIC SAFETY
GLOBAL PUBLIC SECTOR INDUSTRY BUSINESS UNIT
ORACLE CORPORATION

Hong-Eng Koh currently serves as Senior Director and Global Lead for Justice and Public Safety (JPS), part of the Global Public Sector Industry Business Unit within Oracle Corporation, a position he has held since 2010. In this capacity, he leads Oracle's global JPS strategy, initiatives and activities, and serves as the company's JPS expert to prospective and current customers in the JPS market. In addition, Mr. Koh facilitates the development and adoption of solutions for JPS customers, through Oracle's broad range of technology, applications and hardware products, and third party products. Finally, Mr. Koh supports and enables the field teams and partners, for them to serve their JPS customers more effectively and efficiently. Mr. Koh joined the company through Oracle's acquisition of Sun Microsystems, Inc. in 2010.

From 2001 to 2010, Mr. Koh worked at Sun Microsystems in business development and sales leadership positions within the public sector industry. He also served as Sun's Global Lead for the JPS market, where he was actively involved in many JPS projects globally, including Citizens Registry/ID; ePassport; border control systems; advanced passenger information systems; licensing systems; command-control-communications (C3) systems; traffic incident management systems; national disaster warning systems; video surveillance systems; electronics surveillance systems; automated fingerprint identification systems; criminal records systems; investigation/case management systems; court case management systems; prisons management systems and ePolice. Mr. Koh held various other appointments at Sun, including Senior Investigation Officer, Head of Crime Prevention and Community Policing, Police Spokesman; and Head of Operations and Training of a division.

Prior to joining Sun, Mr. Koh worked in systems integration. He was involved in various mega government infrastructure and applications projects, including government-wide networking and messaging projects and the widely-acknowledged eGovernment initiatives by the Government of Singapore.

Mr. Koh began his career with the Singapore Police Force (SPF) after graduating under a SPF scholarship. He left SPF as Head of the Computer Systems Division, where he led the technical implementation of various police operational and administrative systems including SPF's first Internet project; one-stop change of address systems; investigation management systems; automated vehicle screening systems; resource activation management systems; casualty information systems; C3 systems and criminal intelligence systems.

During his years of service in SPF, he received various awards including the Commissioner's Commendation and High Commendation, Good Service Medal, Long Service Medal and Good Conduct Medal.

In addition, Mr. Koh also serves as the Vice President for Global Outreach of The Society for the Policing of Cyberspace (POLCYB), an international non-profit society that promotes global partnerships with international criminal justice and corporate agencies to combat and prevent cyberspace crimes.

Mr. Koh holds a degree in Mathematics from the National University of Singapore, which he received with Honors. He also holds a Master of Business Administration from the University of Leeds, United Kingdom, as well as a Specialist Diploma in eCommerce from the Nanyang Polytechnic, Singapore.

MR. SURINH KOUSONSAVATH
DEPUTY DIRECTOR OF AGRO-METEOROLOGICAL AND CLIMATIC DIVISION
DEPARTMENT OF METEOROLOGY AND HYDROLOGY
WATER RESOURCES & ENVIRONMENT ADMINISTRATION
PRIME MINISTER'S OFFICE, LAO PDR

Surinh Kousonsavath currently serves as the Deputy Director of Agro-Meteorological and Climatic Division within the Department of Meteorology and Hydrology within the Water Resources and Environment Administration of Lao PDR, a position he has held since 2009. In this capacity, he is responsible for data acquisition, analysis and distribution for hydrological and climatology issues within the country. In addition, Mr. Kousonsavath collaborates with national, regional and international organizations on policy and operative initiatives. He is also the Administration's liaison with Food and Agriculture Organization (FAO) of the United Nations; the United Nations Development Programme (UNDP) and other international organizations.

Prior to his current role, from 1999 to 2008, Mr. Kousonsavath served as the Deputy Director of the Agro and Station Network Division, where he acted as the division's specialist in weather observation and meteorological equipment installations. He also organized and conducted courses within the Division's training center. From 1991 to 1998, Mr. Kousonsavath worked as a weather forecaster within the Department of Meteorology and Hydrology. In this role, he conducted extensive research on the southwest monsoon system in the country.

Mr. Kousonsavath received a weather engineering degree in Vietnam in 1990.

MS. ANN LAVIN
HEAD OF POLICY AND GOVERNMENT AFFAIRS
SOUTHEAST ASIA
GOOGLE INC.

Ann Lavin currently serves as Head of Policy and Government Affairs for Southeast Asia within Google, Inc. In this capacity, she focuses on a range of issues including economic empowerment, content regulation, geopolitics, privacy, and general technology policy.

Ms. Lavin has spent over a decade living or working in Asia. She is currently based in Hong Kong but focuses on all Southeast Asia. Prior to joining Google, Ms. Lavin was a Senior Advisor with McLarty Associates, a U.S.-based strategic advisory firm. She also served as Vice President of the U.S.-ASEAN Business Council.

MR. RAYMUND E. LIBORO
DIRECTOR, SCIENCE AND TECHNOLOGY INFORMATION INSTITUTE (STII)
DEPARTMENT OF SCIENCE AND TECHNOLOGY (DOST), THE PHILIPPINES

Raymund Liboro currently serves as Director of the Science and Technology Information Institute (STII) within the Department of Science and Technology (DOST) of the Philippines, a position he has held since 2010. In this capacity, Mr. Liboro establishes standard operating procedures. He plans, programs, directs, coordinates and controls operational and administrative activities of the institute. In addition, Mr. Liboro promotes and maintains coordination between government and private sector engagement in information activities. He also negotiates and executes technical assistance programs from various partner countries.

Prior to his current role, in 2010, Mr. Liboro served as a Programming and Business Development Consultant for Countryside Associated Networks, a 24-hour local cable news and entertainment channel that operates on 28 local cable channels in the Philippines. In addition, he served as a Consultant for the Discovery Channel as well as for GEOMEDIA Inc. from 2009 to 2010. In this role, he was responsible for setting up Discovery Channel's production operations in the Philippines. He also created original local programming concepts, including the production of all on-air merchandising materials and launch of exclusive trade events.

Mr. Liboro also founded and served as President of the Pro-Boxing League, Inc. from 2003 to 2010, while simultaneously serving as the Founding President of the Center for Sports Communication from 2001 to 2010. Mr. Liboro worked as the Channel Head of Channel V, a 24-hour music-entertainment television network, in 2009. In this capacity, he was involved in strategic development to identify capabilities that the branded channel brings to the mother network and developed business activities and implemented processes for evaluating opportunities.

From 2008 to 2009, Mr. Liboro served as the Vice President of Makisig Network, Inc., where he managed the production and broadcast processes from pre- and post-production until final airing. He also created strategies for marketing and monetizing content through advertising and pay television revenue. Mr. Liboro worked as the Chief Executive Officer of Megamobile, Inc. from 2006 to 2008. His responsibilities included establishing Megamobile Value-Added Services (VAS) Content Provider systems, including TXT Domain, a mobile-PC VAS application. From 2000 to 2006, Mr. Liboro was the President of Isports Action Television after serving as the Chief Executive Officer of Image Solutions, Inc. from 1998 to 2000.

Mr. Liboro has had an active broadcasting career, acting as a Sportscaster for the Philippine Basketball Association. He has served as a Television and Radio Host on numerous programs, as well as an Executive Producer of several sports and entertainment programs.

Mr. Liboro received a Bachelor of Science in Economics from the University of The Philippines in 1991.

MR. SOUPHONESAY LORPHENGSY
DEPUTY HEAD, WELFARE AND DEVELOPMENT DIVISION
SOCIAL WELFARE DEPARTMENT
MINISTRY OF LABOUR AND SOCIAL WELFARE, LAO PDR

Souphonesay Lorphengsy serves as the Deputy Head of the Welfare and Development Division, part of the Social Welfare Department within the Ministry of Labour and Social Welfare of Lao PDR, a position he has held since 2009.

Prior to his current role, Mr. Lorphengsy served as Technical Staff for the Social Security Department within the Ministry of Labour and Social Welfare from 2001 to 2009. He also worked as a Teacher at National University of Laos from 1998 to 2001.

Mr. Lorphengsy received a Bachelor of Arts in Political Science and a Bachelor of Arts in English from the National University of Laos in 1998 and 2006 respectively. He also received a Master of Arts in Urban Environmental Management from the Asian Institute of Technology (AIT) in 2009.

MR. KINDAVONG LUANGLATH
DEPUTY DIRECTOR, NATIONAL DISASTER MANAGEMENT OFFICE
SOCIAL WELFARE DEPARTMENT
MINISTRY OF LABOUR AND SOCIAL WELFARE, LAO PDR

Kindavong Luanglath serves as Deputy Director for National Disaster Management Office (NDMO) within the Social Welfare Department, a position he has held since 2010.

From 2005 to 2009, Mr. Luanglath served as Technical Staff for the Planning Division within NDMO. He also served as NDMO's General Technical Staff from 1998 to 2004.

Mr. Luanglath received a Bachelor of Arts in English from the National University of Laos in 1996.

MR. DAVID LUM
DIRECTOR, ASIA/PACIFIC REGULATORY, PRODUCT & SUPPORT OPERATIONS
GOVERNMENT & PUBLIC SAFETY
MOTOROLA SOLUTIONS, INC.

David Lum currently serves as the Director, Asia/Pacific Regulatory, Product and Support Operations for Motorola Solutions. In this capacity, he provides extensive consultancy work to public safety agencies and promotes public safety spectrum allocation in the region.

Prior to his current role, from 1998 to 2003, Mr. Lum worked in Motorola's Business Development for Asia/Pacific division in Singapore. He promoted radio systems, advised on design, and represented Motorola at technical conferences and seminars to many senior level government officials. Mr. Lum has also contributed to the industry by writing magazine articles that have been published internationally.

Since 1993, Mr. Lum has served part time as a professor at the Lake Forest Graduate School of Management, where he teaches project management, global business and cultural diversity, and effective leadership to students pursuing their Masters in Business Administration. In addition, he served three years as President of the Asian Business Council, a twice award-winning employee-based network inside Motorola.

Mr. Lum also started two Toastmasters Clubs, served as President, and continues to serve as Past President in his club, where he is an Advanced Communicator Bronze. In addition, he contributes his time towards the National Association of Asian American Professionals (NAAAP), Chicago chapter, as a senior advisory council member. In this capacity, Mr. Lum helps Asians in the Chicago area to improve their professional career and leadership abilities through personal growth and leadership development. In addition, he serves as a National senior advisory board member with NAAAP National, where he is a frequent guest speaker, lecturer, and trainer on Asian affairs and leadership development.

Mr. Lum has over 28 years of experience in two-way voice and wireless data radio systems in mission-critical applications. For over 26 years, Mr. Lum has worked in the land mobile two-way radio business and has extensive experience in a wide variety of markets and applications that use two-way voice and wireless data radio systems in mission-critical applications. His work experience and responsibilities include product development; systems marketing; manufacturing; systems engineering; field engineering; project and program management; sales and engineering training; business development; product marketing; government regulatory affairs; and operations management.

Mr. Lum received a Bachelor of Science in Electrical Engineering from the University of Illinois at Urbana-Champaign. He also received a Master of Science in Management from the Lake Forest Graduate School of Management.

MS. ERIN MAGEE
PROGRAM OFFICER, EAST ASIA AND PACIFIC REGION
OFFICE OF U.S. FOREIGN DISASTER ASSISTANCE (OFDA)
U.S. AGENCY FOR INTERNATIONAL DEVELOPMENT (USAID)

Erin Magee currently serves as Program Officer for the East Asia and Pacific Region for the Office of U.S. Foreign Disaster Assistance (OFDA) within the U.S. Agency for International Development (USAID), a position she has held since 2008. In this capacity, she is responsible for assisting with the coordination and management of USAID/OFDA's humanitarian efforts throughout East Asia and the Pacific, including disaster response and disaster risk reduction initiatives.

Prior to her current role, Ms. Magee worked as an Information Officer with USAID/OFDA in Indonesia and Washington, D.C. During her time with USAID/OFDA, Ms. Magee has served on USAID Disaster Assistance Response Teams in Haiti and Japan. She has also participated in humanitarian responses in Kenya, Ethiopia, Sudan, the Philippines, Indonesia, and Thailand.

Prior to joining USAID/OFDA, Ms. Magee worked with ReliefWeb and the U.S. Mission to the United Nations in New York.

Ms. Magee received a Bachelor of Arts in International Relations from Northern Arizona University in 2004. She also received a Master of Arts in Diplomacy and International Relations from Seton Hall University in 2008.

MR. VAIBHAV MAGOW
REGIONAL SALES DIRECTOR, ASIA PACIFIC
INTERNATIONAL DIVISION
HUGHES NETWORK SYSTEMS

Vaibhav Magow currently serves as Regional Sales Director for Asia-Pacific in the International Division of Hughes Network Systems. In this capacity, he is responsible for the Sales and Business development of satellite products and services offered by Hughes Network Systems in the Asia Pacific market. Mr. Magow has been part of the Satellite Industry for the past 14 years and has worked with the Hughes Service Company in India.

Prior to his current role, Mr. Magow served as Senior Director, Fusion Services for Hughes. From the inception of the division, he created products and services for the Indian Market designed to bridge the digital divide. During his tenure, HughesNet Fusion grew to more than 20,000 terminals.

Mr. Magow holds a Bachelor of Science in Computer Engineering from the University of Pune, Maharashtra, India.

MR. LARRY MARAMIS
DIRECTOR FOR CROSS-SECTORAL COOPERATION
ASEAN SECRETARIAT

Larry Maramis serves as the Director for Cross-Sectoral Cooperation within the Association of South East Asian Nations (ASEAN) Secretariat. In this capacity, he promotes regional cooperation, and was closely engaged in the Secretariat's expansion to include Cambodia, Laos, Myanmar and Vietnam.

Prior to his current role, Mr. Maramis served as Director of the Development Program for the United Nations Development Programme (UNDP). In this role, he helped to identify local solutions for emerging development challenges. He also worked as UNDP's Deputy Resident Representative for Bangladesh. In addition, Mr. Maramis served as Project Manager of a regional technical assistance program within the Asian Development Bank (ADB), where he sought to improve regional responses to trans-boundary haze pollution caused by massive forest fires during the late 1990s.

Mr. Maramis has over 25 years of international development cooperation experience, with particular expertise in development planning and country program management and coordination. In addition, he specializes in providing advisory services in project management, change management, and in managing field operations and management systems for development agencies. Mr. Maramis has experience across Asia, including in Bangladesh, China, Nepal, Pakistan, Vietnam, and the Democratic Republic of Korea.

Mr. Maramis holds a degree in Political Science, International Politics and Public Administration from Victoria University of Wellington, New Zealand. He has also received additional qualifications in information and communications technology consulting, system analysis, computer programming and project management.

DR. CHARLES MCCREERY
DIRECTOR
PACIFIC TSUNAMI WARNING CENTER (PTWC)
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION (NOAA)

Charles McCreery currently serves as the Director for the Pacific Tsunami Warning Center (PTWC) within the National Oceanic and Atmospheric Administration (NOAA), a position he has held since 1997. In this capacity, he focuses on improving the tsunami warning system for the United States as well as for the rest of the world, in partnership with many other governments and institutions around the globe. During his tenure, Dr. McCreery has overseen three major tsunamis: the 2009 Samoa tsunami, the 2010 Chile tsunami and the 2011 Japan tsunami.

Prior to his current role, Dr. McCreery served as the Director of the International Tsunami Information Center from 1995 to 1997, in support of the international cooperation that is essential to the warning system. From 1993 to 1995, he worked as a Geophysicist for the Pacific Tsunami Warning Center, after serving as a Computer Specialist for PTWC in 1993.

In addition, Dr. McCreery served as an Assistant Geophysicist for the Hawaii Institute of Geophysics from 1992 to 1993, after serving as Research Associate from 1976 to 1992. In this latter role, he researched whether underwater sound from earthquakes could be used as a tsunamigenic discriminate.

Dr. McCreery received his Bachelor of Fine Arts in Printmaking as well as a Doctor of Philosophy in Geophysics from the University of Hawaii in 1975 and 1992 respectively.

MR. CAO TUAN MINH
DEPUTY DIRECTOR GENERAL, CENTRAL PROJECT OFFICE
MINISTRY OF AGRICULTURE AND RURAL DEVELOPMENT (MARD), VIETNAM

Cao Tuan Minh serves as the Deputy Director General for Central Project Office of the Ministry of Agriculture and Rural Development (MARD) in Vietnam. In this capacity, he manages several projects related to the response, preparedness, and mitigation of natural disasters in Vietnam.

The Natural Disaster Risk Management Program (NDRMP), funded by the World Bank, will implement critical disaster prevention and mitigation investments; finalize the national strategy for disaster risk management, and to develop and strengthen the institutional framework for implementing the strategy. The project will be implemented in twelve provinces and will facilitate (a) the implementation of high-priority investment sub-projects; (b) the implementation of a Community-based Disaster Risk Management (CBDRM) in 10 pilot communes; (c) full mobilization of contingency resources for post-disaster reconstruction; and (d) critical institutional strengthening and capacity-building activities. The estimated total cost of the project is over \$107 million dollars.

Mr. Minh also oversees the Vietnam Managing Natural Hazards (VN Haz) project, also funded by the World Bank. The project seeks to develop a national hazard prevention and mitigation strategy for 10 provinces in Central Vietnam. It would take place at the end of the year 2012 for five years project.

Mr. Minh began his career with the Hydraulic Engineering Design Company, where he served as Chief Engineer for Water Resources projects from 1977 to 1999.

Mr. Minh received a Bachelor's degree from Hanoi Water Resources University in 1977. In addition, he received a Master of Engineering from the University of Roorkee, India in 1989.

MR. BRAD MINNIS
SENIOR DIRECTOR, CORPORATE SAFETY & SECURITY
JUNIPER NETWORKS

Brad Minnis currently serves as Senior Director for Corporate Safety and Security at Juniper Networks. In this capacity, he is responsible for strategic design, implementation and management of the company's security, safety, environment, crisis management and business continuity functions.

Mr. Minnis has over 30 years of experience in the technology field and has managed Environmental, Health, Safety & Security (EHSS) operations for a number of high technology companies, including Juniper Networks, 3Com Corporation and National Semiconductor Corporation.

Mr. Minnis has extensive experience in security management and crisis response, having led corporate crisis management operations through natural and man-made disasters, military coups, supply chain disruptions and serious cyber events.

Mr. Minnis served for ten years in the United States Navy and has held leadership positions at the International Security Management Association (ISMA) and ASIS International. He is also a constituent of the U.S. Department of State's Overseas Security Advisory Council (OSAC) and the Pan-Asia Regional Council of OSAC.

Mr. Minnis is certified as a Protection Professional by the Professional Certification Board of ASIS International and holds two certificates in Environmental Health and Safety from the University of Connecticut.

MR. BRYCE R. MITCHELL
VICE PRESIDENT, INTERNATIONAL SALES & MARKETING
ESI ACQUISITIONS LLC

Bryce Mitchell currently serves as the Vice President of International Sales and Marketing for ESI Acquisitions, a position he has held since 2011. In this capacity, he manages ESI distributors as well as direct sales and marketing outside of North America. He is also responsible for strategic planning, implementation and ongoing operations of the international direct sales and distributor partner initiatives. In addition, Mr. Mitchell oversees the design and implementation of international marketing programs, campaigns and collateral. Finally, he is responsible for the initial requirements gathering, scoping and costing of ESI software and services for international clients.

Prior to his current role, from 2008 to 2011, Mr. Mitchell served as Managing Director of Emergeo Software Solutions, a provider of emergency management, environment health and safety, crisis information management systems (CIMS). His responsibilities included operational oversight within North America, Asia, Australia and the Middle East. Mr. Mitchell focused on strategic planning, implementation and ongoing operations of the international direct sales and channel partner initiatives. He was also responsible for the design and implementation of all marketing programs, campaigns and collateral. From 2007 to 2008, Mr. Mitchell worked as a Strategic Sales Management Coach and Facilitator for Strategic Accounts, Sales Operations for Asia Pacific Theater (APAC) for Cisco Systems. Here he was responsible for the development and implementation of the strategic account planning methodology, processes and tools in the Asia-Pacific region.

From 2002 to 2006, Mr. Mitchell founded and served as the Director and Executive Vice President of Sales for Securac Holdings, an integrated Governance, Risk and Compliance software solution provider. His responsibilities included strategic planning, implementation and ongoing operations of the global direct sales and channel partner initiatives. He also worked as Managing Director of International Sales and Operations for Knowledge Impact, a performance support software and professional services provider, from 2000 to 2002 after being promoted from Executive Vice President of Sales. From 1996 to 1999, Mr. Mitchell worked for Knowledge Alliance as the company's Executive Vice President of Sales and Operations for North America, after serving as Founder and President of Knowledge Source, a desktop, mainframe training and technical support company, from 1985 to 1996.

Mr. Mitchell has extensive experience in the design and implementation of complex command, control and emergency systems, and specializes in crisis information management systems, operational risk systems and related critical systems integration technologies. He has more than 25 years of experience in the development of and managing implementations for large scale computer software systems, as well as 12 years as a senior executive working with global clients on successful projects. He has nearly a decade of experience engaging in projects involving emergency management, crisis management and operational risk management systems.

Mr. Mitchell graduated with honors in Commercial Systems Development, Computer Sciences from the Southern Alberta Institute of Technology in Calgary, Alberta, Canada.

DR. H. KIT MIYAMOTO
PRESIDENT & CEO, MIYAMOTO INTERNATIONAL, INC.
COMMISSIONER, CALIFORNIA SEISMIC SAFETY COMMISSION

H. Kit Miyamoto is the Chief Executive Officer of Miyamoto International, a position he has held since 1990. Under his leadership, Miyamoto International has successfully completed more than 12,000 projects worldwide. Known for innovative engineering, Dr. Miyamoto has worked on many challenging projects that have received industry recognition, including the Structural Engineers Association of California (SEAOC) Excellence in Structural Engineering Award.

In addition, Dr. Miyamoto has served as the Commissioner for the California Seismic Safety Commission since 2011, as well as the Chairman of Global Risk Miyamoto since 2007. Global Risk Miyamoto was formed to provide the risk management community with accurately quantified site-specific risk identification and loss expectancies resulting from natural hazards such as earthquakes, windstorms, hurricanes, typhoons, and floods.

Dr. Miyamoto also serves as the President of Miyamoto Global Disaster Relief, a position he has held since 2011. Miyamoto Global Disaster Relief is a nonprofit technical organization that supports disaster mitigation response, relief and reconstruction efforts. The organization provides internationally recognized engineering, construction and management expertise at the critical phases of a disaster.

Dr. Miyamoto specializes in high-performance earthquake engineering, as well as disaster mitigation, response, and reconstruction. Previously, he worked as Director for SEAOC, as well as a Fellow for the American Society of Civil Engineers (ASCE). He was also an Adjunct Professor at California State University. His innovative research works have been published in leading scientific journals.

Dr. Miyamoto continues to work on major critical projects, including his role as an expert consultant to the World Bank on the seismic risk mitigation project for 2,000 schools in Istanbul. He also worked with the government of Haiti and the United Nations to conduct assessments on more than 400,000 earthquake-damaged structures. In addition, Dr. Miyamoto works with the United States Agency for International Development (USAID) and various nongovernmental organizations to implement reconstruction strategies for Haiti. He is a sought after keynote speaker and an international media spokesperson on earthquake structural engineering issues.

Dr. Miyamoto received a Bachelor of Science in Structural Engineering in 1989 from California State University, Chico, where he was later awarded Distinguished Alumni. In addition, he received a Master of Science in Structural Engineering from California State University, Sacramento in 1997. He also received a Doctor of Philosophy in Earthquake Engineering from the Tokyo Institute of Technology in 2010.

MR. DOUGLAS MOUTON
VICE PRESIDENT
JACOBS

Douglas Mouton is an executive and citizen-soldier with over 20 years of experience in the design and construction industry. Specializing in strategic leadership, large construction programs and contingency operations, his unique collection of technical expertise blends design, construction and program management with strategic planning, disaster preparedness and disaster response. His collaborative style of leadership has enabled his clients and teams to successfully plan and implement over \$5 billion dollars' worth of construction programs for public and private users worldwide.

Following Hurricane Katrina, Mr. Mouton led the Louisiana Army National Guard's (LANG) Master Plan and Reconstruction Program, guiding a 150-person, multi-disciplinary team through the chaotic aftermath of Katrina to a disciplined methodical master plan that secured funding and replaced the facilities to support the Homeland Security mission of the LANG. This repair and replacement program is the largest and fastest construction programs in LANG history.

Mr. Mouton facilitated the \$1.8 billion Post Katrina Master Plan and Reconstruction of the Recovery School District in New Orleans. He orchestrated the collaboration required for initial planning and implementation strategies, creating a comprehensive master plan that made the case for record funding authorizations for the reconstruction by the U.S. Federal Government. Mr. Mouton currently provides executive oversight to the 65 person team who is midway through implementation of this program.

Mr. Mouton also leads a \$1 billion Post Katrina Grants Management and Capital Improvement Program for the City of New Orleans. Leading a 35 person cross functional team, he assists the City in creating strategies to resolve long-standing funding delays while increasing grant authorizations to accelerate and fuel the reconstruction of Public Safety, Recreation and Public Works buildings and infrastructure.

Mr. Mouton provides program management support to the State of Louisiana to execute the largest single capital project investment in State history- a \$1.2 billion Post Katrina Replacement Hospital. This new hospital is a state of the art academic medical center to restore regional healthcare to Louisiana and train new doctors from various medical schools in New Orleans. Major milestones include the purchase of over 67 acres of urban land comprised of over 400 properties, as well as helping the State adopt and implement alternative construction delivery approval and procedures to utilize a construction manager at risk model.

Most recently, Mr. Mouton worked on the 2011 Flood Response and Recovery of Western Digital Facilities in Bang Pa-In and Navanakorn. He helped assess and react to the flood's immediate impact on the 36,000 person semi-conductor manufacturing campus. His efforts included underwater marine salvage, extraction and shipping of critical manufacturing tools to re-commissioning facilities. Mr. Mouton also worked alongside the client as the on-site project manager in the early stages of response and recovery, helping to enable the resumption of manufacturing operation only 45 days after the flood. Concurrent with the recovery, he worked to create a disaster preparedness plan for the facility, including a 2.5 kilometer flood wall that is currently being built in advance of next monsoon season.

Mr. Mouton received a Bachelor of Architecture from the University of Louisiana at Lafayette in 1990. He received a Master of Strategic Studies from the U.S. Army War College in 2008. He is a licensed and registered architect in over ten states. Mr. Mouton is also a Colonel in the Army National Guard and a combat veteran. His awards include the Legion of Merit and the Bronze Star.

MR. NOOR AFLAN BIN AWANG KACHI
ASSISTANT SUPERINTENDENT, FIRE AND RESCUE
FIRE AND RESCUE DEPARTMENT
MINISTRY OF HOME AFFAIRS, BRUNEI DARUSSALAM

Noor Aflan bin Awang Kachi currently serves as the Assistant Superintendent of Fire and Rescue for the Fire and Rescue Department within the Ministry of Home Affairs, Brunei Darussalam, a position he has held since May 2012.

Prior to his current role, Mr. bin Awang Kachi served as Personal Assistant to the Deputy Minister of Home Affairs from 2011 to 2012. From 2007 to 2011, he worked as Staff Officer to the Director of the Fire and Rescue Department. In this capacity, he focused on the management of the Department, including the administration of staff. He also maintained statistical data of fire response procedures.

From 2006 to 2007, Mr. bin Awang Kachi served as an Officer within the National Disaster Management Centre (NDMC) within the Ministry of Home Affairs of Brunei Darussalam. He was responsible for coordinating the Centre's relationship with various agencies and in the region, including the Association of Southeast Asian Nations (ASEAN) and the ASEAN Humanitarian Assistance (AHA) Centre. He also served as group leader for major disasters and emergencies in Brunei Darussalam.

In 2006, Mr. bin Awang Kachi served as Instructor Training Officer of the Fire and Rescue Training Centre of the Fire and Rescue Department within the Ministry of Home Affairs. In this role, he developed official training programs for the Centre, which became accredited by the Department.

Mr. bin Awang Kachi has extensive knowledge in fire prevention and building safety. In addition, he is an experienced instructor of fire fighting skills. Mr. bin Awang Kachi is also a specialist of Urban Search and Rescue (USAR) practices.

Mr. bin Awang Kachi received a Diploma in Engineering and a Diploma in Automotive Engineering from Jefri Bolkihah College of Engineering in 1997 and 1999 respectively. In addition, he received a Diploma in Fire Science from the Fire and Rescue Academy of Malaysia in 2005. He also received a Diploma in Public and Emergency Services from the University of Glamorgan, Wales, in 2011.

THE HONORABLE DATO DR. MOHD ALI BIN MOHAMAD NOR
DEPUTY SECRETARY GENERAL
MINISTRY OF NATURAL RESOURCES AND ENVIRONMENT, MALAYSIA

Dato Dr. Mohd Ali Bin Mohamad Nor currently serves as Deputy Secretary General within the Ministry of Natural Resources and Environment (MNRE) of Malaysia a position he has held since 2012.

Prior to this role, from 2009 to 2012, he served as Deputy Secretary General of the Information Division within the Ministry of Energy, Water and Communication (MEWC). From 2008 to 2009, Dr. bin Mohamad Nor was the Under Secretary of the Communication Division, also within MEWC. He moved to MEWC after serving in the Development Division within the Ministry of Culture, Arts and Heritage, as Under Secretary from 2007 to 2008 and Principal Assistant Secretary from 2005 to 2007.

From 2000 to 2005, Dr. bin Mohamad Nor served as Y2K Project Coordinator for the Ministry of Energy, Communication and Multimedia. He began his career in public service in 1987.

Dr. bin Mohamad Nor holds both a Bachelor of Science with Honors in Geology as well as a Master in Information Technology (MIT) from the National University of Malaysia (NUM). He also holds a Doctor of Philosophy in Technology Management from the University of New Castle Upon Tyne, United Kingdom.

MR. MOHAMAD SYAZWAN BIN NORDIN
SPECIAL DUTIES OFFICER, GRADE II
NATIONAL DISASTER MANAGEMENT CENTRE (NDMC)
MINISTRY OF HOME AFFAIRS, BRUNEI DARUSSALAM

Mohamad Syazwan bin Nordin currently serves as Special Duties Officer Grade II at the National Disaster Management Centre (NDMC) within the Ministry of Home Affairs, Brunei Darussalam. In this capacity, he handles the administration, public relations and international affairs of the Centre. In addition, he is the NDMC's official spokesperson.

In addition, Mr. bin Nordin served as Trainer for the National Service Program of Brunei Darussalam from 2011 to 2012.

Mr. bin Nordin received a Bachelor of Arts in Public Policy and Administration from the Universiti Brunei Darussalam.

MR. LE HONG QUANG
DISASTER POLICY EXPERT

NATIONAL COMMITTEE FOR SEARCH AND RESCUE OF VIETNAM

Le Hong Quang currently serves as Disaster Policy Expert for the National Committee for Search and Rescue of Vietnam, a position he has held since 2008.

Mr. Quang holds a Bachelor's degree.

MR. CHRIS ROLLER
SALES MANAGER
AMERICAN SIGNAL CORPORATION

Chris Roller currently serves as Sales Manager for American Signal Corporation. He is an emergency multi-hazard system expert, providing tailored solutions that are unique and effective for countries around the world. His portfolio includes design; propagation modeling of coverage; incorporation of early warning equipment; location placements; site surveys; training; radio recording and general emergency notification guidance and implementation.

In addition, Mr. Roller collaborates on ongoing project implementations for Tsunami Warning, Flood Warning, and other Early Warning Systems for natural and manmade disasters. In particular, he is engaged in the development of the current Early Warning System for Thailand, which has been a multi-year, multi-phased system implementation since its inception in 2005. Earlier this year, Mr. Roller designed and sold a fleet of mobile Giant Voice systems for the U.S. Military that are currently being deployed in Afghanistan.

Mr. Roller has designed other country-wide systems that were modeled after Thailand, including in Sri Lanka, American Samoa, Saint Maarten and the U.S. Virgin Islands. He has also implemented several unique and customized solutions for Virac Philippines, as well as a flood warning system in Nigeria and civil defense systems for the United Nations. Mr. Roller has also worked in the nuclear industry implementing early warning systems for Exelon Nuclear, Constellation Energy and Entergy.

In addition, Mr. Roller worked with the U.S. Trade and Development Agency (USTDA) as a consultant on a feasibility study for the Establishment of a Nationwide Emergency Communication System for the country of Sri Lanka. He has also written and submitted several Federal Emergency Management Agency (FEMA) Radiological Emergency Preparedness Plans for Nuclear power plants nationwide. These plans assure that there are adequate protective measures in place to protect the public from a Nuclear accident.

Prior to joining American Signal, Mr. Roller worked in aerospace selling after-market spares and equipment to foreign militaries throughout Asia. He has more than 14 years of experience working internationally with an emphasis on Asia in the Life Safety Systems.

Mr. Roller holds a Masters Degree in International Business.

Ms. DIANA ROSSITER
ACTING DIRECTOR OF THE PROGRAM EVALUATIONS OFFICE
U.S. TRADE AND DEVELOPMENT AGENCY (USTDA)

Diana Rossiter serves as the Acting Director of the Program Evaluations office within the U.S. Trade and Development Agency (USTDA). Ms. Rossiter leads a department responsible for evaluating the results of USTDA's funding commitments. She provides analytic advice to USTDA's senior leadership and staff on all aspects of the Agency's program, in order to inform critical decision-making with the ultimate goal of identifying where the Agency's program is most effective.

Prior to this role, Ms. Rossiter began her career at USTDA in the program office, where she served as Country Manager for Southeast Asia and Pakistan. In this capacity, she managed a multi-million dollar portfolio of infrastructure projects throughout the region. By successfully connecting U.S. companies with foreign project sponsors, Ms. Rossiter helped identify technologies and services to solve development challenges abroad. She has significant experience developing projects in collaboration with multi-lateral development banks, private industry, and foreign stakeholders, as well as coordinating on policy-projects associated with Asia-Pacific Economic Cooperation(APEC), Association of Southeast Asian Nations' (ASEAN), the World Trade Organization (WTO) and Free Trade Agreements.

Prior to serving in the U.S. government, Ms. Rossiter worked at an international private bank in Denver, Colorado where she managed the bank's compliance as well as business development. Ms. Rossiter earned a Master's Degree in Global Finance, Trade, and Economic Integration from the Josef Korbel School of International Studies at the University of Denver, and a Bachelor's degree from Roanoke College.

Ms. PHONEKEO SAKDAVONG
DEPUTY DIRECTOR OF DIVISION
ASEAN DEPARTMENT
MINISTRY OF FOREIGN AFFAIRS, LAO PDR

Phonekeo Sakdavong currently serves as the Deputy Director of Division for the ASEAN Department within the Ministry of Foreign Affairs of Lao PDR, a position she has held since 2010. Prior to this role, from 1999 to 2010, Ms. Sakdavong served as a Desk Official within the Functional Cooperation Division of the ASEAN Department.

From 1996 to 1999, Ms. Sakdavong served the Lao Embassy in Hanoi, Vietnam, after having served as Secretary of Europe and America Department for the Ministry of Foreign Affairs from 1994 to 1996.

Ms. Sakdavong received a Bachelor of Arts in English from the National University of Laos in 2001, as well as a Master of Business Administration from the National Economics University of Vietnam in 2009.

MR. DICK SALVI
SENIOR DIRECTOR, CORPORATE SERVICES
WESTERN DIGITAL CORPORATION

Dick Salvi currently serves as Senior Director of Corporate Services for Western Digital Corporation, a position he has held since 2001. In this capacity, he is responsible for Western Digital's environmental, health and safety, security, real estate strategy and facilities including construction, building services, and maintenance. In addition, he is responsible for managing the strategic and tactical aspects of the companies' extensive real estate portfolio and has significant experience in acquisitions and divestures of real property and the associated operations.

In October 2011, Mr. Salvi took a leadership role in the remediation and restoration of Western Digital's Thailand operations which were severely impacted as a result of the massive flooding across Thailand. As a result of the teams' efforts, Western Digital was able to resume operations within 45 days of the initial event.

In 2004, Mr. Salvi led the companies' efforts in the design, implementation, and maintenance of its global Business Continuity Plan.

Mr. Salvi has over 25 years experience in a wide range of corporate services management positions with several global companies including Disney, Broadcom and Western Digital, where he worked from 1991 to 1999.

Mr. Salvi holds a Bachelor's degree in Business from California State University Fullerton and a Master's degree of Business Administration from University of California, Irvine. He is also a frequent guest speaker for CoreNet and other industry associations.

MR. WIBOON SANGUANPONG
DIRECTOR GENERAL
DEPARTMENT OF DISASTER PREVENTION AND MITIGATION
MINISTRY OF INTERIOR, THAILAND

Wiboon Sanguanpong currently serves as the Director General of the Department of Disaster Prevention and Mitigation within the Ministry of Interior of Thailand.

Mr. Sanguanpong has worked for the Ministry of Interior at central, regional, district, and sub-district levels. He has held various positions of leadership, including District Chief; Deputy Governor of Roi-et province; Deputy Governor of Phranakorn Sri Ayudhdhaya Province; and Deputy Governor of Samutsakorn Province. He has also served as Governor of Lopburi Province; Governor of Ang Tong Province; Governor of Chiang Mai Province; and Deputy Permanent Secretary of Ministry of Interior.

Mr. Sanguanpong received a Bachelor of Arts in Political Science from Chulalongkorn University, Thailand, in 1975. He also received a Master of Science from the National Institute of Development Administration (NIDA) of Bangkok, Thailand, in 1978.

MR. HARVINDER SINGH
MANAGING DIRECTOR
PSI INCONTROL SDN BHD

Harvinder Singh serves as the Managing Director for PSI Incontrol Sdn Bhd (iTEC), a position he has held since 1997. In this capacity, he oversees all operations of the iTEC, a Malaysian-based global high engineering firm and Southeast Asia's largest automation company in the power industry. Under his leadership, the company has seen revenue growth from 5.7 million in 2000 to 104 million in 2010.

Mr. Singh founded iTEC in 1997 as a joint venture with Austria's VATECH SAT GmbH to provide substation automation systems. In 2006, the company was bought out to become a fully Malaysian-owned and operated organization.

Under his lead, PSI Incontrol commissions Supervisory Control and Data Acquisition (SCADA) and Document Management Systems (DMS) throughout Southeast Asia. In addition, the company has integrated 17 different systems in the SMART, the biggest single automation project. PSI Incontrol, in conjunction with Tenaga Nasional Berhad (TNB), has established engineering schemes that have become the de-facto standard for companies in the region, as well as for global multinationals.

In addition, Mr. Singh has led PSI Incontrol to create the Control and Relay Panel in Kapar, Malaysia – the biggest substation engineered, as well as other substations in Thailand and Vietnam. PSI Incontrol has also automated the entire Malaysian peninsula with control centers in Penang and Johor.

Mr. Singh's management also enabled PSI Incontrol to establish the first 61850 Test Lab, comprising of a miniature substation to test interoperability with American, French, British, German, Austrian and Chinese made equipment. The company also refurbished a 1,000 megawatt power plant for the Cirata Dam, the biggest underground power station in the region.

Prior to his current role, from 1990 to 1997, Mr. Singh served as the Regional Manager for ABB Malaysia Sdn Bhd. In this capacity, he was responsible for the company's strategic and business plans, market research and product development in the ASEAN region. During this period, he built the company's business in digital protection and control systems to \$25 million.

Mr. Singh began his career working for a multinational Malaysian company. He was responsible for the development of a complete new low cost Enunciator Alarm System. Upon successful development and testing, the product was commissioned in over 100 substations.

Mr. Singh received a Bachelor of Science in Electrical & Electronic Engineering from the University of Strathclyde, Glasgow, in 1985. He has received numerous awards and accolades, including Ernst and Young's Technology Entrepreneur of the Year in 2008.

MR. ROD SNIDER
SENIOR ADVISOR, DISASTER PREPAREDNESS
INTERNATIONAL SERVICES DIVISION
AMERICAN RED CROSS

Rod Snider currently serves as the Senior Advisor for Disaster Preparedness for the International Services Division within the American Red Cross. In this role, he develops global strategies and designs projects for disaster risk reduction and climate change adaptation.

Mr. Snider has over 19 years of international experience, working primarily in post-conflict and disaster settings. His experience includes 15 years living and working overseas in Kenya/Somalia, Afghanistan/Pakistan, Armenia/Nagorno-Karabakh, Serbia/Kosovo and Indonesia. He has spent much of his career managing programs in complex emergencies and natural disasters settings, including two eight month deployments for both the Asian Tsunami in Banda Aceh and the Pakistan Earthquake, where he led large-scale multi-sector emergency responses from the onset of each disaster through initial recovery periods.

Mr. Snider received a Bachelor of Arts in Business Administration from Washington State University, as well as a Master of Public Administration in Public and Non-Profit Management and Policy from New York University.

MR. ROSS SOVANN
DEPUTY SECRETARY GENERAL
HEAD OF NATIONAL EMERGENCY COORDINATION CENTER
NATIONAL COMMITTEE FOR DISASTER MANAGEMENT (NCDM), CAMBODIA

Ross Sovann currently serves as Deputy Secretary General for the National Committee for Disaster Management (NCDM) of Cambodia, a position he has held since 2002. In this capacity, he is responsible for policy, strategy and programming, institutional development, disaster relief reduction, emergency management research and fundraising. He is also responsible for proposal development, external relations and project management.

In addition to his current role, Mr. Sovann is the Head of the National Emergency Coordination Center (NECC). He is also the focal point for the Association of Southeast Asian Nations' (ASEAN) Committee on Disaster Management (ACDEM) and the ASEAN Technical Working Group on Pandemic Planning (TWGIPP).

Prior to his current role, Mr. Sovann served as a Legal Assistant for DFDL and the Mekong Law Group in 2002. From 1999 to 2001, he served as an Assistant to the Director and Program Manager of the Disaster Management Department within the Cambodian Red Cross. In this capacity, Mr. Sovann managed, planned and led the Community Based Disaster Preparedness Program (CBDP) Training Team to implement the Integrated Community Based Disaster Preparedness Program in Cambodia. In addition, he led program planning, management and administration in the Integrated CBDP Program implementation. Mr. Sovann also designed and facilitated Disaster Management Training of Trainers to Cambodian Red Cross (CRC) staff. In 1999, Mr. Sovann served as a full-time Disaster Management Trainer for the Cambodia Red Cross, where he developed training curriculum and conducted Disaster Management Trainings and Community Organizing to the Red Cross Volunteers (RCVs) at the local level.

From 1995 to 1997, he served as an English Language Instructor for the Pacific Technical Vocational Training School. Prior to this, he served as a Teaching and Administrative Assistant to the Personnel Office of the school, where he was responsible for class interpretation, document translation and test preparation.

From 1991 to 1997, Mr. Sovann worked as a government official within the Ministry of Interior, Cambodia. He was also an Interpreter for the United Nations Transitional Authority in Cambodia from 1992 to 1993. In this capacity, he acted in coordination with local authorities and communities to facilitate electoral processes. Mr. Sovann worked as an Instructor of Khmer spoken language and culture in 1992 for United Nations Volunteers (UNV) and for the staff of United Nations Transitional Authority in Cambodia (UNTAC) staff.

Mr. Sovann has more than 15 years of experience working with Governmental, United Nations Agencies and International Non-Governmental Organizations in Cambodia. He has particular expertise in developing policies and strategies that affect the provision of advisory services; interagency and international coordination and cooperation; negotiation of partnerships; mobilization of resources; and management of programs in development-related areas with national, regional, international entities.

Mr. Sovann received a Bachelor of Laws from the University of Law and Economic Science, Cambodia.

MS. RACHANEEKORN “JIAB” SRISWASDI
DEPUTY REGIONAL MANAGER
U.S. TRADE AND DEVELOPMENT AGENCY (USTDA)

Rachaneekorn Sriswasdi currently serves as the Deputy Regional Manager of the Bangkok Office within the U.S. Trade and Development Agency (USTDA), a position she has held since 2002. In this capacity, she is responsible for business development and supporting grant-funded programs in Thailand and Southeast Asia.

Prior to joining USTDA, from 1994 to 2002, Ms. Sriswasdi served as a Commercial Specialist for ICT and high-tech industry sectors at the U.S. Commercial Service in Thailand. In that capacity, she conducted market research, business counseling and trade promotion. Prior to joining the U.S. Embassy Bangkok, Ms. Sriswasdi served as a marketing and technical support specialist for a computer system integrator. Her background involves prior positions in education and training.

Ms. Sriswasdi received a Bachelor of Arts in International Relations from Chulalongkorn University, Thailand.

Ms. JESSICA STEINBECK
INTERNATIONAL OUTREACH PROGRAM SPECIALIST
FEDERAL EMERGENCY MANAGEMENT AGENCY (FEMA)
U.S. DEPARTMENT OF HOMELAND SECURITY (DHS)

Jessica Steinbeck currently serves as an International Outreach Program Specialist for the Federal Emergency Management Agency (FEMA), within the U.S. Department of Homeland Security (DHS). In this capacity, Ms. Steinbeck serves as FEMA's International Visitor Coordinator, responsible for organizing the 900 visits a year to FEMA facilities by foreign nationals. Ms. Steinbeck also currently serves on the Mayor's Emergency Medical Services (EMS) Advisory Committee for Washington, D.C.

Prior to joining FEMA, Ms. Steinbeck served as a Personal Assistant in the Office of the Secretary of the U.S. Department of Transportation, a Psychiatric Counselor at a top national hospital and co-chair of the first Youth Advisory Committee to the U.S. Department of Labor.

In 2000, Ms. Steinbeck testified before the U.S. Senate and was hired by the American Association of People with Disabilities, where she supervised and directed all administrative office operations, management of new staff and awards programs and was a liaison to major media outlets. She is highly knowledgeable about whole community planning, disability-inclusive emergency management, accessible transportation and meeting access and functional needs in disasters.

In addition, as an Emergency Medical Technician (EMT) and Emergency Medical Dispatcher for a major metropolitan area, she has earned diverse, frontline emergency management experience. Ms. Steinbeck also gained extensive training in emergency preparedness, response and evacuation, hazardous materials, communications, disaster and trauma life support.

Ms. Steinbeck holds a Bachelor of Arts in Psychology from the University of Maryland, as well as an Emergency Medical Technician license from the State of Maryland.

DR. WASSILA THIAW
METEOROLOGIST, CLIMATE PREDICTION CENTER
NATIONAL WEATHER SERVICE (NWS)
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION (NOAA)

Wassila Thiaw currently serves as a Meteorologist at the Climate Prediction Center, part of the National Weather Service (NWS), within the National Oceanic and Atmospheric Administration (NOAA). He is also Team Leader for the International Desks of NOAA's Climate Prediction Center, which includes the African and Monsoon Training Desks, and International Decision Support Services for the U.S. Government.

Dr. Thiaw served as a Scientist for the University Corporation for Atmospheric Research (UCAR), after having worked as a National Research Council Research Associate at NOAA. Dr. Thiaw has worked extensively on capacity building in weather and climate for institutions in developing countries.

From 1988 to 1994, Dr. Thiaw served as a Meteorologist for the Direction de la Météorologie Nationale du Senegal, while simultaneously serving as a National Research Council Associate at NOAA from 1991 to 1993.

Dr. Thiaw has written several articles on climate variability and predictions, particularly relating to Africa. He serves in various professional committees and societies, including the American Meteorological Society, the American Geophysical Union, and the World Meteorological Organization Commission of Climatology.

Dr. Thiaw received a Bachelor of Science in Meteorology in Senegal in 1983. He also received a Doctor of Philosophy in Meteorology from Blaise Pascal University and the Laboratoire de Météorologie Dynamique in Paris France in 1988.

MR. TRAN VINH TIEN
OFFICIAL, SOCIO-CULTURAL DIVISION
ASEAN DEPARTMENT
MINISTRY OF FOREIGN AFFAIRS, VIETNAM

Tran Vinh Tien currently serves as an Official for the Socio-Cultural Division of the ASEAN Department within the Ministry of Foreign Affairs of Vietnam, a position he has held since 2011.

Prior to his current role, Mr. Tien served in the Special Communications Group for Vietnam's ASEAN Chairmanship from 2010 to 2011. He also served with the ASEAN Department of the Ministry of Foreign Affairs from 2009 to 2010.

From 2008 to 2009, Mr. Tien was a Reporter at the World and Vietnam Report in Hanoi.

Mr. Tien graduated from the Academy of Journalism and Communication in Hanoi in 2008.

DR. SUKIT VISESHIN
SPATIAL PRODUCTS DEPARTMENT MANAGER
ESRI THAILAND

Sukit Viseshin currently serves as Spatial Products Department Manager within ESRI Thailand, a position he has held since 2007. In addition, Dr. Viseshin has worked as a Visiting Lecturer for Project and Thesis within the Department of Water Resources Engineering at Kasetsart University since 2001.

In 2011, Dr. Viseshin was also a Project Manager and Leader for the Geo-Informatics and Space Technology Development Agency (GISTDA) on a project titled GIS Enterprise for Homeland. During the same year, he served as Project Manager for the Royal Irrigation Department for a Lidar Mapping project for the Lower Chao Phraya River Basin, as well as the for Yom River Basin in 2010.

Prior to his current role, from 1997 to 2007, Dr. Viseshin worked as Digital Imagery Department Manager for ESRI. He accepted the position after serving as a Response for Raster Geographic Information System (GIS), Image Processing and Raster Database Consultant for ESRI in 1997.

From 1994 to 2004, Dr. Viseshin worked as a Visiting Lecturer for Surveying, Project and Thesis for the Department of Civil Engineering within the Sirindhorn International Institute of Technology. Prior to this role, Dr. Viseshin was a Member of the Committee of GIS for Urban and Town within the Ministry of Science and Technology from 1994 to 1997. He also worked as a Lecturer of Response for Lecture, Research, Project and Thesis within the Department of Survey Engineering of Chulalongkorn University in 1997.

Dr. Viseshin is an expert on raster imagery; raster database; image processing; database management; and GIS enterprise systems. He also has particular expertise in digital photogrammetry and lidar mapping systems. Dr. Viseshin has served as a mapping project manager for more than 20 projects relating to aerial and satellite photogrammetric mapping.

Dr. Viseshin has served as a member of various professional organizations, including the Council of Engineers, Survey and Mapping Association and the Engineering Institute of Thailand.

Dr. Viseshin received a Bachelor of Engineering in Survey Engineering from Chulalongkorn University in 1985. In addition, he received a Master of Engineering and a Doctor of Engineering in Civil Engineering from the University of Tokyo, Japan in 1988 and 1991 respectively.

U.S. Trade and Development Agency



U.S.-ASEAN Connectivity Cooperation Initiative

The U.S. Trade and Development Agency (USTDA) helps companies create U.S. jobs through the export of U.S. goods and services for priority development projects in emerging economies. USTDA links U.S. businesses to export opportunities by funding project planning activities, pilot projects, and reverse trade missions while creating sustainable infrastructure and economic growth in partner countries.

USTDA Programs

USTDA promotes economic growth in emerging economies by facilitating the participation of U.S. businesses in the planning and execution of priority development projects in host countries. The Agency's objectives are to help build the infrastructure for trade, match U.S. technological expertise with overseas development needs, and help create lasting business partnerships between the United States and emerging market economies.

USTDA advances these objectives through its two key programs, the *International Business Partnership Program* and the *Project Development Program*.

USTDA's reverse trade missions (RTM) are the mainstay of its *International Business Partnership Program (IBPP)*. Created in 2010 in response to President Obama's National Export Initiative, the *IBPP* is USTDA's signature program for linking the U.S. companies to foreign project sponsors. These visits are carefully planned to enable foreign decision-makers to meet with U.S. businesses and to observe the manufacture and demonstration of U.S. goods and services that can help them achieve their development goals. These RTMs also include meetings with financial institutions to observe financing options and technical and regulatory bodies that can assist with strengthening the project sponsor's technical capacity.

Through feasibility studies, technical assistance and pilot projects, USTDA's *Project Development Program* helps overseas project sponsors identify technological solutions and various sources of financing for priority infrastructure projects.

U.S.-ASEAN Connectivity Cooperation Initiative

USTDA launched the U.S.-ASEAN Connectivity Cooperation Initiative in conjunction with the ASEAN-U.S. Leaders Meeting held in Indonesia in November 2011. Leveraging U.S. private sector resources and expertise, USTDA will work with U.S. companies and ASEAN partners to support activities such as reverse trade missions, feasibility studies, technical assistance and workshops that foster effective new partnerships between private sector and government entities to increase connectivity and investment in the energy, transportation, and information and communications technology (ICT) sectors. The Connectivity Initiative is designed to support ASEAN's goal of fostering greater connectivity to achieve an economically integrated ASEAN Community by 2015.



President Obama participated in the ASEAN-U.S. Summit in Jakarta.



USTDA supports the NEI's mission as a member of the President's Export Promotion Cabinet

USTDA Activities under the Connectivity Cooperation Initiative



ASEAN Disaster Management, Mitigation, and Response Technologies Workshop

In response to ASEAN's desire for greater regional disaster management cooperation and the transnational quality of natural disasters, USTDA has planned the ASEAN Disaster Management, Mitigation, and Response Technologies Workshop to be the inaugural activity of the U.S.-ASEAN Connectivity Cooperation Initiative. This workshop will promote the best practices and use of U.S. disaster management, response and mitigation technologies in the Southeast Asian countries.

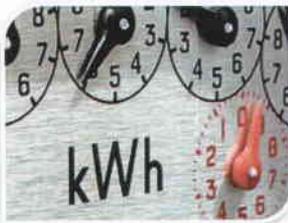


Proposed topics include: professional disaster preparedness, response and mitigation strategies; early warning, flood forecasting, and weather modeling systems; technologies and best practices in data collection and integration systems and emergency management communication; structural engineering solutions; search and rescue operations; and disaster management capacity building.

ASEAN Smart Grid and Power Transmission Workshop and Reverse Trade Mission



Given the burgeoning electricity demand across all ASEAN economies and ASEAN's desire for increased energy connectivity and energy security, USTDA will host a workshop and reverse trade mission (RTM) to promote the interconnectivity of transmission systems and best technologies and practices for transmission and distribution in Southeast Asian countries.



The workshop and RTM will take place in late 2012 and provide a venue for governments and relevant industries to discuss technological tools for promoting energy efficiency and improving power transmission systems in the region. It will also focus on connecting Southeast Asian project sponsors in the power generation and transmission sector with U.S. providers of advanced smart grid and transmission systems and services. Specific topics would include: strategic road-mapping for smart grid; technologies for transmission and distribution systems; smart grid monitoring systems; telecommunication systems in smart grid; grid integration of renewable energy; cross-border sales and transmission of electricity; energy efficiency and control systems; and the necessary standards and regulations needed for successful implementation and operation of these networks.

Contact us for more information!

(703) 875-4357

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Henry Steingass, Regional Director

Mark Dunn, Regional Manager for Asia (Bangkok)

Pinsuda Alexander, Country Manager for Southeast Asia



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U.S. Trade and Development Agency



Disaster Management & Emergency Response in Southeast Asia

The U.S. Trade and Development Agency (USTDA) helps companies create U.S. jobs through the export of U.S. goods and services for priority development projects in emerging economies. USTDA links U.S. businesses to export opportunities by funding project planning activities, pilot projects, and reverse trade missions while creating sustainable infrastructure and economic growth in partner countries.

USTDA Programs

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Through feasibility studies, technical assistance and pilot projects, USTDA's *Project Development Program* helps overseas project sponsors identify technological solutions and various sources of financing for priority infrastructure projects.

Success Story

USTDA provided technical assistance on Disaster Warning Systems Integration and Capacity Development for the National Disaster Warning Center (NDWC) in Thailand. Following the devastating tsunami that occurred in December 2004, the Thai government initiated a national strategy for disaster communications with the NDWC as the coordinating authority. The objective of the technical assistance was to integrate the Center's disparate systems and improve its mechanisms for warning communities about natural and man-made disasters. As a result of the technical assistance, Thailand has implemented new weather forecasting, disaster alert and response, and disaster management technology such as the tsunami warning towers pictured below, which were supplied and installed by American Signal.



Warning towers were supplied and installed in Thailand by American Signal (Milwaukee, WI).



USTDA supports the NEI's mission as a member of the President's Export Promotion Cabinet.



Other Activities

Indonesia National Emergency Communications Strategy

Helping Badan Meteorologi dan Geofisika (BMG), Indonesia's Meteorological and Geophysics Agency, develop an effective national emergency communications strategy was the goal of USTDA-funded technical assistance. USTDA's support helped BMG in its efforts to minimize casualties from future hazardous events and to develop an effective strategy to communicate critical emergency information to communities.



The Philippines Meteorological and Hydrological Telecommunications System Upgrade

Upgrading the meteorological and hydrological telecommunications system (MTS) operated by the Philippine Atmospheric, Geophysical and Astronomical Services Administration (PAGASA) is the goal of a USTDA-funded feasibility study. The study will identify ways to upgrade PAGASA's existing MTS network and enhance the monitoring capability to forecast and react appropriately to impending weather related events and hazards. Burgess & Niple is conducting the study.



Indonesia National Search and Rescue Agency Capacity Expansion

USTDA sponsored a reverse trade mission to the United States to introduce senior officials from the National Search and Rescue Agency (BASARNAS) to U.S. search and rescue experts from the public and private sectors. BASARNAS has national responsibility for leading search and rescue in Indonesia and has a budget allocation of \$170 million for 2009-2011 to procure helicopters, communications and IT systems, and training services to properly respond to incidents throughout the country. The delegation visited New York, Washington, DC, and San Francisco, California to meet with the U.S. Coast Guard, Federal Emergency Management Agency, and private sector entities.



Vietnam Disaster Warning Systems Integration and Capacity Development

From 2001 to 2005 floods in Vietnam claimed close to 6,000 lives, over 320,000 houses, and devastated infrastructure, crops, and livestock. In response, the Government of Vietnam has made the creation of a Decision Support System a top priority. In order to strengthen flood forecasting, early warning and overall disaster management capacity for Vietnam's Ministry of Agricultural and Rural Development (MARD), USTDA provided technical assistance that will allow MARD, which is responsible for flood control programs, to automate national disaster information flow and emergency response.

Contact us for more information!

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Henry Steingass, Regional Director

Mark Dunn, Regional Manager for Asia (Bangkok)

Pinsuda Alexander, Country Manager for Southeast Asia



USTDA supports the NEI's mission as a member of the President's Export Promotion Cabinet.

U.S. Trade and Development Agency



South and Southeast Asia

The U.S. Trade and Development Agency (USTDA) helps companies create U.S. jobs through the export of U.S. goods and services for priority development projects in emerging economies. USTDA links U.S. businesses to export opportunities by funding project planning activities, pilot projects, and reverse trade missions while creating sustainable infrastructure and economic growth in partner countries.

USTDA Programs

USTDA promotes economic growth in emerging economies by facilitating the participation of U.S. businesses in the planning and execution of priority development projects in host countries. The Agency's objectives are to help build the infrastructure for trade, match U.S. technological expertise with overseas development needs, and help create lasting business partnerships between the United States and emerging market economies.

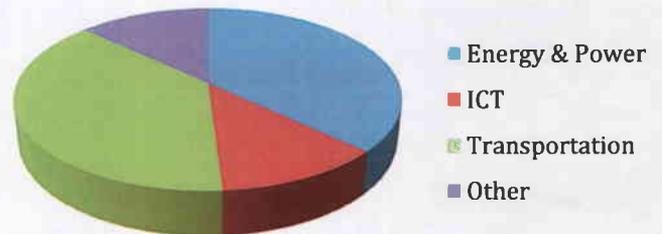
USTDA advances these objectives through its two key programs, the **International Business Partnership Program** and the **Project Development Program**.

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Through feasibility studies, technical assistance and pilot projects, USTDA's **Project Development Program** helps overseas project sponsors identify technological solutions and various sources of financing for priority infrastructure projects.

Through these programs, USTDA focuses its activities in three primary sectors: Information and Communication Technology (ICT), Transportation, and Clean Energy.

SSEA FY2011 Investments by Sector



India Cooperation Programs

The U.S.-India Aviation Cooperation Program (ACP) is a bilateral public-private partnership launched in 2007 to enhance long-term strategic and commercial relationships between the United States and the Indian civil aviation industry. USTDA, the U.S. Federal Aviation Administration (FAA), U.S. aviation companies, and the Government of India jointly support ACP technical cooperation projects to address mutual interests on the modernization requirements of India's rapid aviation sector growth.

The U.S.-India Energy Cooperation Program (ECP) aims to leverage private sector business resources in both the U.S. and India to promote commercial project development in clean energy and energy efficiency, and to support the sustainable development of India's energy sector. The ECP was launched in 2010 as a public-private partnership of U.S. member companies and the governments of the U.S. and India. Under the ECP, exchanges in solar power development and smart grid technologies have already taken place.



USTDA supports NEI's mission as a member of the President's Export Promotion Cabinet.



Clean Energy

Through the U.S.-Indonesia Geothermal Development Initiative, USTDA has provided over \$2.3 million to help develop Indonesia's estimated 24,000MW of geothermal reserves including a study to explore the viability of the private sector 370MW Jailolo Geothermal Power Plant with Star Energy, as well as the development of PT Indonesia Power's 300MW Tangkuban Parahu Geothermal Project. Further, working with Indonesia's National Planning and Development Agency, the Ministry of Mines and Energy Resources, and Indonesian and U.S. industry stakeholders, USTDA delivered a geothermal power development training program and visit for Indonesian officials including Pertamina Geothermal Energy, and PLN, the state utility company.



In order to support the Bangalore Electric Supply Company Limited (BESCOM) Smart Grid project, USTDA funded the development of requirements and specifications for a smart grid implementation roadmap for BESCOM's large service district in India. The project addresses investments including smart meters, automated meter reading and other smart grid applications, as well as greater system integration with distributed generators in BESCOM's distribution system. USTDA also sponsored the Bankura and Belgaum Solar Photovoltaic Power Project, a feasibility grant with Astonfield Renewables Private Limited to prepare the design and deployment of two solar photovoltaic power projects in India—a 5 megawatt (MW) plant in Bankura, West Bengal and a 10 MW plant in Belgaum, Karnataka.



Transportation

Helping Vietnam obtain Category I (CAT I) status under the FAA International Aviation Safety Assessment Program (IASA) was the goal of USTDA's multi-year program on Aviation Safety for the Civil Aviation Administration of Vietnam (CAAV). The technical assistance focused on strengthening CAAV record keeping, licensing, and certification procedures in line with international standards. As a result of the study, Vietnam has begun expanding its long distance fleet with the purchase of Boeing aircraft.



USTDA sponsored a reverse trade mission to introduce senior Thai rail officials to U.S. rail technology and service providers in response to the Thai Ministry of Transport's allocation of \$5.4 billion towards investment in the rail sector during the 2011-2014 period. The visit focused on rail signaling, track and locomotive maintenance, and rail safety and operations.

Information and Communication Technology

The development of a fiber optic cable connecting Pakistan, Oman and the United Arab Emirates is the direct result of a USTDA grant to Transworld Associates, a private Pakistani company. After completion of the USTDA-funded feasibility study, Tyco Telecommunications won the bid to construct the cable, earning more than \$26 million in U.S. exports. In addition, smaller companies including T. Soja and Associates and the David Ross Group have won follow-on services contracts.

Contact us for more information!

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Sarah Shapiro, Country Manager for South & Southeast Asia
Pinsuda Alexander, Country Manager for South & Southeast Asia
Mark Dunn, Regional Manager for Asia (Bangkok)

USTDA: SSEA by the Numbers

\$8.4 million

Amount obligated by USTDA in fiscal year 2011 for activities in South and Southeast Asia.

8

Number of delegations from the region that USTDA hosted in 2011 in support of the National Export Initiative.



USTDA supports NEI's mission as a member of the President's Export Promotion Cabinet.

U.S. Trade and Development Agency



Information and Communication Technology

The U.S. Trade and Development Agency (USTDA) helps companies create U.S. jobs through the export of U.S. goods and services for priority development projects in emerging economies. USTDA links U.S. businesses to export opportunities by funding project planning activities, pilot projects, and reverse trade missions while creating sustainable infrastructure and economic growth in partner countries.

USTDA Programs

USTDA promotes economic growth in emerging economies by facilitating the participation of U.S. businesses in the planning and execution of priority development projects in host countries. The Agency's objectives are to help build the infrastructure for trade, match U.S. technological expertise with overseas development needs, and help create lasting business partnerships between the United States and emerging market economies.

USTDA advances these objectives through its two key programs, the *International Business Partnership Program* and the *Project Development Program*.

USTDA's reverse trade missions (RTM) are the mainstay of its *International Business Partnership Program (IBPP)*. Created in 2010 in response to President Obama's National Export Initiative, the *IBPP* is USTDA's signature program for linking the U.S. private sector to foreign buyers. These visits are carefully planned to enable foreign decision-makers to meet with U.S. businesses and to observe the manufacture and demonstration of U.S. goods and services that can help them achieve their development goals. These RTMs also include meetings with financial institutions to observe financing options and technical and regulatory bodies that can assist with strengthening the project sponsor's technical capacity.

Through feasibility studies, technical assistance and pilot projects, USTDA's *Project Development Program* helps overseas project sponsors identify technological solutions and various sources of financing for priority infrastructure projects.

Through these programs, USTDA funds an array of activities that promote the procurement of U.S. information and communication technologies (ICT) and the development of ICT infrastructure projects in partner countries.

Success Story

Bringing broadband communications to Africa through the sale of more than \$400 million in U.S. exports demonstrates USTDA's success in utilizing U.S. technologies and services to expand ICT infrastructure overseas. The Agency's investment in a regional ICT conference in Ghana and a reverse trade mission to the United States proved successful when a group of African ministers, traveling on the USTDA-funded RTM, convinced potential financiers that undersea fiber-optic cable connecting East Africa to the rest of the world could be commercially attractive. As a result, the SEACOM fiber optic cable network has revolutionized communications in Africa.



The Tyco Resolute laying cable along the eastern coast of Africa



USTDA supports the NEI's mission as a member of the President's Export Promotion Cabinet.

Recent Activities



Egypt Forward: Partnering for Trade and Economic Growth

To demonstrate that Egypt is “open for business” as it transitions to a new governing structure, USTDA hosted Egypt: Forward, a two-day forum in Washington, DC followed by four sector-specific RTMs across the country. Over 50 Egyptian public and private sector delegates connected with hundreds of U.S. government and industry representatives. The Egyptian ICT officials, consisting of entrepreneurs as well as established businesspeople, discussed their country’s needs given the transformative changes and learned about U.S. technological advances in e-government, cloud computing, data centers, and other solutions.

Kazakhstan Digital Broadcasting

U.S. businesses were given the opportunity to present digital TV solutions to a delegation from Kazakhstan during this reverse trade mission. The delegates visited U.S. facilities and met with leading U.S. companies and U.S. government agencies active in digital television broadcasting, including Harris Corporation, Broadcast Electronics, and Axcera. These visits included trips to Washington DC, Melbourne, FL, Quincy, IL, and Pittsburgh, PA.



Kenya Cybersecurity

USTDA hosted a delegation of senior Kenyan ICT decision makers in Washington, DC, and Silicon Valley, CA, to explore best practices and innovative cybersecurity technologies to protect Kenya's growing ICT infrastructure.

Vietnam Financial Information Management Modernization

Introducing a delegation from the State Bank of Vietnam to U.S. central bank operations best practices and the ICT systems used in the management and supervision of the sector was the goal of this USTDA-sponsored mission, which visited Washington D.C., New York, NY and Silicon Valley, CA. The RTM directly supported the Vietnamese government in developing a centralized and integrated ICT platform to include a data warehouse and core banking system, while simultaneously opening up business opportunities for U.S. ICT providers.



India Integrated Emergency Communications System Feasibility Study

This project partially funds a feasibility study for the Indian Ministry of Home Affairs (MHA) to establish an Integrated Emergency Communications System (IECS) and supporting infrastructure in Hyderabad. The MHA requested funding for a study to assess the current IECS communications architecture; analyze the operational, financial, and organizational aspects that would lead to a national IECS; and address the implications of project implementation focused on a pilot project in Hyderabad.



Brazil Data Center Feasibility Study

In order to facilitate communication between the agencies within the state of Rio de Janeiro, as well as improve their services, USTDA awarded a grant to the Rio de Janeiro IT Company (PRODERJ) for a feasibility study to develop an implementation plan for a new data center. The study will review the state's overall IT strategy, providing recommendations and standards to ensure that all future systems coordinate with the new data center.

Contact us for more information!

(703) 875-4357

www.ustda.gov

Paul Marin, Regional Director for Sub-Saharan Africa

Diana Rossiter, Director of Program Evaluation
(Acting)

Michael DeRenzo, Country Manager for Southern
Africa

Joshua Kaplan, Country Manager for the Middle East

USTDA: ICT by the Numbers

1/5

In fiscal year 2011 one-fifth of USTDA's activities focused on ICT sector development.

16

USTDA funded 16 new ICT-oriented activities in fiscal year 2011 that directly support the National Export Initiative.

50%

Half of all USTDA activities in sectors such as clean energy and transportation have significant ICT sub-components.



USTDA supports the NEI's mission as a member of the President's Export Promotion Cabinet.



AN INTRODUCTION TO THE
U.S. TRADE AND
DEVELOPMENT AGENCY



U.S. Trade and Development Agency
1000 Wilson Boulevard, Suite 1600
Arlington, Virginia 22209
Phone: 703.875.4357 • Fax: 703.875.4009
E-mail: info@ustda.gov
Website: www.ustda.gov

Our Mission

The U.S. Trade and Development Agency (USTDA) helps companies create U.S. jobs through the export of U.S. goods and services for priority development projects in emerging economies.



Who We Are

USTDA is an independent federal agency that was created to promote U.S. private sector participation in international development projects.

What We Do

USTDA links U.S. businesses to export opportunities by funding project planning activities, pilot projects, and reverse trade missions while creating sustainable infrastructure and economic growth in partner countries.

The International Business Partnership Program

In support of the **National Export Initiative**, USTDA launched the **International Business Partnership Program** to connect international buyers with U.S. manufacturers and service providers in order to open new export markets and commercial opportunities around the world for American companies. Key activities include:

Reverse Trade Missions:

CONNECTING U.S. FIRMS
WITH FOREIGN BUYERS

USTDA hosts **reverse trade missions** to bring foreign buyers to the United States, pending upcoming procurements, in order to observe the design, manufacture, and operation of U.S. products and services that can help them achieve their development goals. These strategically planned missions also present excellent opportunities for U.S. businesses to establish or enhance relationships with prospective overseas customers.

During FY 2010, USTDA-funded reverse trade missions and conferences connected more than 3,000 foreign buyers from 35+ countries with over 1,000 U.S. company representatives.

Conferences and Workshops:

MAKING CONNECTIONS

USTDA organizes **conferences and workshops worldwide** to connect U.S. firms with foreign project sponsors. These sector or region-specific events are designed to showcase U.S. goods, services and technology to foreign buyers. U.S. firms also have the opportunity to meet one-on-one with overseas project sponsors and other potential customers.

Training:

LEVELING THE PLAYING FIELD FOR U.S. FIRMS

In support of U.S. businesses, USTDA provides **training for foreign decision makers** to support the sale of U.S. equipment and services overseas. Training can take place in either the United States or a host country and typically focuses on technology or regulatory requirements in order to give project sponsors a better understanding of U.S. capabilities and expertise related to a procurement.

Supporting Small U.S. Businesses:

THE ENGINE OF OUR ECONOMY

USTDA draws extensively on the expertise of small consulting and engineering firms to provide a variety of services related to project definition and evaluation.

Many small businesses have expanded their markets through the international contacts made while working with USTDA. To further enhance its outreach to the small business community, USTDA partnered with the Small Business Administration (SBA). This increased engagement is raising the profile

of small businesses with international buyers who may not have been familiar with the unique technologies and services small U.S. companies can provide.

More than 90% of contracts awarded by USTDA are performed by small businesses. Furthermore, over 40% of grants awarded to overseas project sponsors directly lead to contracts with U.S. small businesses.

Project Development Program

USTDA provides grants directly to overseas sponsors who, in turn, select U.S. companies to perform Agency-funded project development activities. An overseas sponsor is a local entity, public or private, with the decision-making authority and ability to implement a project. The Agency targets priority development projects that are most likely to utilize U.S. exports. While USTDA projects span a variety of sectors, many focus on clean energy and energy efficiency, transportation, information and communication technology, and the environment. Key activities include:

Feasibility Studies and Pilot Projects:

GETTING IT RIGHT FROM THE START

USTDA-funded and U.S.-led **feasibility studies** link foreign project sponsors with U.S. businesses at the critical early stage of project development when technology

options and requirements are being defined. These studies evaluate the technical, financial, environmental, legal, and other critical aspects of infrastructure development projects.

In some cases, export opportunities depend on a demonstration of the U.S. seller's goods, services or technologies in the foreign buyer's setting. USTDA-funded **pilot projects** demonstrate the effectiveness of commercially proven U.S. solutions in location.

USTDA evaluates project proposals based upon the following criteria:

- *Significant export opportunities for U.S. manufactured products and services*
- *Developmental priority in the host country*
- *Strong likelihood of success securing implementation financing*

Technical Assistance:

PROVIDING NEEDED KNOW-HOW

USTDA advances economic development in partner countries by funding **technical assistance** that supports legal and regulatory reform related to commercial activities and infrastructure development, the establishment of industry standards, and other market-opening activities. These technical assistance programs facilitate favorable business and trade environments for U.S. goods and services.

Tell Me More About...

- **CONTRACT OPPORTUNITIES WITH USTDA:**
Review procurement opportunities to work directly with the Agency at: www.ustda.gov/businessopps/ustdaopps.asp
- **WORKING WITH GRANT RECIPIENTS:**
Opportunities to work with overseas project sponsors on USTDA-funded activities are listed at: www.ustda.gov/businessopps/index.asp or the Federal Business Opportunities website at: www.fbo.gov
- **OPPORTUNITIES FOR SMALL BUSINESSES:**
Register on-line with the Agency's consultant database to be considered for small business designated solicitations: www.ustda.gov/consultantdb
Small businesses should also sign up with the U.S. Government's Central Contractor Registration website at: www.ccr.gov
- **USTDA'S EVENTS:** Check out our calendar to find an event in your sector or region of interest: www.ustda.gov/news/index.asp

USTDA NEWS & INFORMATION: Sign up to receive USTDA's bi-weekly e-newsletter, which is the best source for information on upcoming procurements and events: www.ustda.gov/pubs/news_information.asp

- **CONTACTING USTDA'S PROGRAM STAFF:**
If you already know where you would like to do business, contact USTDA's regional teams:
 - » East Asia and Eurasia:
East_Asia_Eurasia@ustda.gov
 - » Latin America and the Caribbean:
LAC@ustda.gov
 - » Middle East, North Africa and Europe:
MENA_Europe@ustda.gov
 - » South and Southeast Asia:
South_Southeast_Asia@ustda.gov
 - » Sub-Saharan Africa:
Africa@ustda.gov



U.S. ~ ASEAN EMERGENCY PREPAREDNESS WORKSHOP

Developing Partnerships for Disaster Management and Mitigation

MAY 30-31, 2012 | CONRAD HOTEL | BANGKOK, THAILAND

PLATINUM



GOLD

JACOBS

SILVER



BRONZE



IN COOPERATION WITH THE
ASEAN SECRETARIAT



ORGANIZED BY THE BUSINESS COUNCIL
FOR INTERNATIONAL UNDERSTANDING



USTDA SUPPORTS NEI'S MISSION AS A
MEMBER OF THE PRESIDENT'S EXPORT
PROMOTION CABINET



ASC SYSTEMS PROTECT MILLIONS OF PEOPLE IN EVERY CORNER OF THE WORLD FROM EVERY IMAGINABLE DISASTER

NUCLEAR POWER PLANT EMERGENCY TSUNAMI TERRORISM THUNDERSTORM HEAT VOLCANO WINTER STORM

Electro-Mechanical Tone - Only Sirens

ASC Electro-Mechanical Sirens deliver three distinct warning tones to radii from ¼ mile to three miles. Our professional system designers draw from the balanced selection of Tempest series sirens to create effective warning coverage for any project; they allow for varied terrain and disparate population densities to provide the best emergency notification coverage available.

ASC builds omni-directional mechanical siren models that produce warning tones at 500 Hz. This sound frequency is proven to carry the furthest across any terrain. We offer a concise line of highly developed sirens that deliver distinct, effective warning tones to specific coverage areas. We also build the loudest siren in America; the T-135 can broadcast a warning three miles in every direction.

Sirens are available with a variety of controllers, power supplies, and communication packages to satisfy any requirement.



<p>Tempest T-112 Stationary Omni- Directional Siren</p>	<p>Tempest T-121 Stationary Omni- Directional Siren</p>	<p>Tempest T-128 Rotating Omni-Directional Siren</p>	<p>Tempest T-135 Rotating Omni-Directional Siren</p>
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Electronic Tone and Voice High-Powered Speaker Arrays

Electronic outdoor warning speakers warn and provide information; their tone alerts call the public to attention and voice messages provide details about the emergency and directions to safety. Pre-programmed messages can be broadcast automatically in an emergency; they can be interrupted or supplemented with live public address to providing specific information. Be it "shelter in place", "evacuate by a certain route", or "avoid the incident location", a system of high-powered speaker arrays is the most effective way to communicate with the public during any emergency.

ASC provides directional and omni-directional solutions with high intelligibility, multi-lingual capabilities, and a variety of output levels to broadcast emergency voice communications in any environment to any group of people.



<p>EC-4 (E-Class 1600 Watt) Directional High-Powered Speaker Array</p>	<p>I-Force STI-1600 I-Force STI-3200 Omni-Directional High-Powered Speaker Arrays</p>
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American Signal Corporation
 8600 West Bradley Road, Milwaukee, WI 53224
 Phone: (414) 358-8000 Toll-Free: (800) 243-2911 Fax: (414) 358-8008
www.americansignal.com

CHEMICAL FIRE DAM FAILURE EARTHQUAKE FLOOD HAZARDOUS MATERIAL TORNADO HURRICANE LANDSLIDE

TENS OF MILLIONS OF PEOPLE AROUND THE WORLD DEPEND ON ASC FOR ADVANCED EMERGENCY WARNINGS

HPSA and Siren Control and Power Options

The ASC system designer considers the project's requirements and the community's needs when recommending warning devices, siren activation and monitoring systems, communication devices, and power supplies for remote siren sites.

Tempest series sirens utilize **AC Only** power with 220 – 480 VAC line power and a DC rectifier; **AC/DC** power from 220 – 480 VAC line power with a DC rectifier, transformer, and UPS battery back-up by four to six 12 volt deep-cycle marine batteries and 120 VAC smart battery chargers; **DC Only** power supplies with four to six 12 VDC deep-cycle batteries and chargers supplied by 120 VAC line power or solar panels.

I-Force and E-Class HPSAs utilize **24 VDC** to power the amplifiers. Two 12 VDC deep-cycle marine batteries are maintained by two smart chargers. The 120 VAC chargers can be powered by 120 VAC line power or solar panels.



AC/DC Mechanical Siren Control

All Cabinets are NEMA 4X

AC line power cabinet with DC Rectifier

Controller cabinet with microprocessor, RTU, communication device, and battery chargers

Battery cabinet with four to six 12 Volt deep-cycle marine batteries

DC Electronic Siren Control

All Cabinets are NEMA 4X

HPSAs operate on 24 VDC

- Two 12 volt batteries
- Two smart chargers

Microprocessor controller with non-volatile memory, RTU, activation buttons, P.A. microphone, communication device, and 400 watt amplifiers (3200 W pictured)

Separate vented battery cabinet with two 12 volt deep-cycle marine batteries



System Management - Activation and Monitoring

ASC has a flexible platform from which to manage mass notification systems. TTS, DTMF, and FSK can be utilized to activate, monitor, test, and poll a single siren or a network of high-powered speaker arrays. Radio transceivers, telephone lines, satellite connections, and fiber-optic cables connect control stations to remote notification devices.

CSC-960 Multi-Function Encoder

- Central Station Controller initiates warnings and tests
- Activate sirens and HPSAs with individual and macro commands
- Secured by panel lock and key
- Send live P.A.

CompuLert SCADA Software

- Monitor, Poll, Manage, and Activate 1 to 2000 devices
- Activate single, groups, or all devices
- Reconfigure the system from the central station with this powerful software
- Color-coded icons indicate siren status and health



American Signal Corporation

8600 West Bradley Road, Milwaukee, WI, 53224

Phone: (414) 358-8000 Toll Free: (800) 243-2911 Fax: (414) 358-8008 sales@americansignal.com

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JACOBS®

Jacobs is known worldwide for our ability to deliver innovative solutions, high level of quality, and tangible results. We do this by building strong, trusting relationships and delivering excellent outcomes to meet your needs. Jacobs' staff has extensive experience in developing sustainable strategies to prevent and minimize damages cause by disasters. We are hard at work across the globe reducing disaster risks, responding immediately after disasters strike and rebuilding infrastructure and facilities for the long term.

We understand your need to identify cost-effective, high-quality solutions in reducing damages caused by disasters. The best time to do that is before the next disaster strikes.

We are ready to assist you in evaluating disaster risks and identifying the anticipated impacts of moderate and severe disaster events. We will give you reliable information to make life-saving decisions and recommend cost-effective hazard mitigations to improve resiliency for infrastructure and critical facilities.

Immediately after a disaster hits, we stand ready to assemble experts to respond to the event - providing critical technical advice and resources to rapidly contain and resolve disaster impacts.

When the immediate hazard is over, we are ready to plan and implement recovery at your direction. We have the experience to assist you in solving the complex challenges of long-term recovery, and we value your larger need to balance sustainable and integrated economic, social, and environmental solutions with the judicious use of resources.

Jacobs is one of the world's largest and most diverse providers of professional technical services, including all aspects of engineering, architecture, construction, and operations and maintenance as well as scientific and specialized disaster services. With over 60 years of experience and 60,000 employees, Jacobs is able to deliver reliable, cost-effective results. Jacobs has been named by *Forbes* as one of *America's Most 100 Trustworthy Companies* and as one of the top three *Most Admired Companies in Engineering and Construction* by *Fortune Magazine*. Jacobs is only one of eight companies recognized by the US Occupational Safety & Health Administration for excellent in worker health and safety.

CDM Smith Preparedness and Recovery Services



Providing services worldwide to prepare for and recover from natural and man-made catastrophes promptly and compassionately

CDM Smith is a full service global planning, engineering and construction firm with decades of experience in disaster preparedness, recovery, reconstruction and mitigation. We have demonstrated our services by providing planning and mitigation services as well as immediate and long-term disaster recovery services throughout the world, applying the expertise and commitment of our nearly 6,000 employees located in 120 offices throughout the world - with 15 offices and over 600 staff located in Asia Pacific.



Preparedness

- Planning / modeling/ mapping
- Evacuation route modeling
- Early warning systems
- Urban Systems Planning
- Risk Management

Recovery

- Debris monitoring
- Design/Construction
- Program management
- Housing management

Mitigation

- Flood planning and modeling
- Mapping/GIS
- Shelter design/ construction

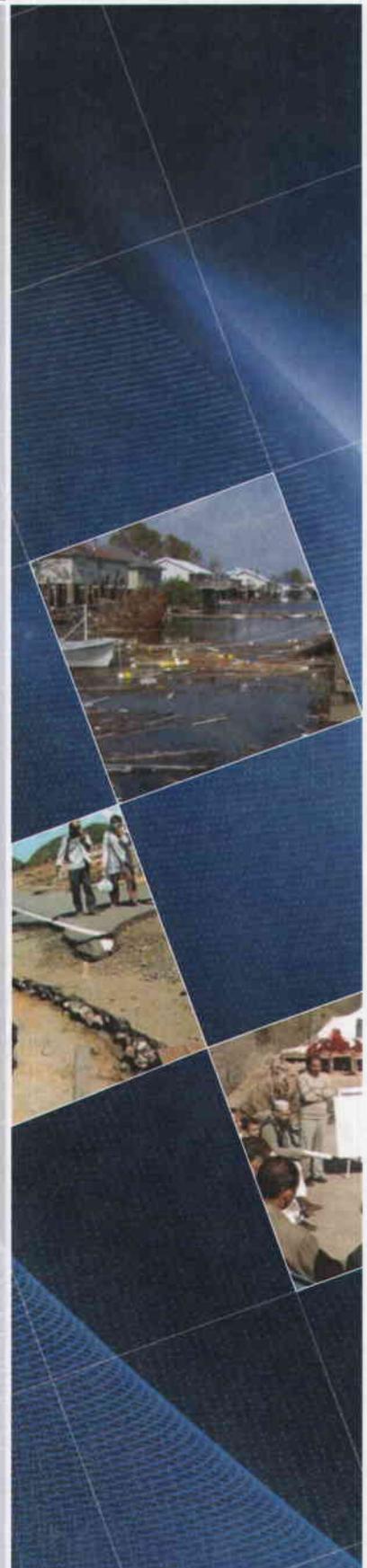
CDM Smith supports governments, private companies and other organizations to:

- develop sustainable, disaster resistant communities,
- strategically anticipate and prepare for the hazards and disruptions of disasters,
- provide immediate response and recovery; and
- return people and communities to their daily lives.

For further information regarding CDM Smith's Disaster Management capabilities, please contact:

Niels van Dijk: vandijkn@cdmsmith.com

Rodney Chapin: chapinrw@cdmsmith.com



Crisis & Emergency Management Systems



WebEOC[®]

ESi pioneered the concept of the “virtual” emergency operations center with WebEOC, the world’s first Internet-enabled crisis information and event management software. With access to the Internet, authorized emergency managers and first responders, regardless of location, can enter and view incident information in WebEOC status boards. WebEOC creates a common operating picture, enabling emergency managers to make sound decisions quickly. Today, ESI offers software products that are used within hundreds of government agencies around the world, hospitals, airlines, public utilities, nuclear power facilities, universities and other major corporations worldwide.

Please visit us at www.ESI911.com or call +1 (800) 596-0911 or +1 706 691-9373 for more information.

The Challenge

Enterprise businesses and government agencies of all sizes are increasingly reliant on a variety of business applications and resources to access, store, and process critical information for their business functions. Business continuity relies on a company's ability to maintain its productivity, services, and partnerships in the event of a disaster or pandemic.

For example, pandemics such as the H1N1 virus can impact a business by requiring a company to limit social interaction between business employees, partners, and customers, to limit further spread of the virus. In that situation, business employees and partners will need real-time applications that can help them function as if they were sitting in their offices. Consider natural disasters such as last year's earthquake in Japan or Thailand's 2004 Tsunami and the devastating impact these had on network infrastructures and data centers, incapacitating companies and governments for days and even months in some cases.

Information-dependent and IT-dependent businesses, which is by in large the majority in today's information economy, are unlikely to survive if they do not implement a disaster recovery plan. It is commonly understood in the networking and business environments that companies that lose significant amounts of business data either fail to resume operations quickly or go out of business within two to three years.

The Solution

Juniper Networks Business Continuity Solutions provide the simplest, quickest—and most secure—disaster recovery plan for business continuity in the face of manmade or natural disasters. Even if your business is forced to shut down key workforce centers due to a disaster or a health threat, the employees can conduct business and work from home or another business office outside of an affected area.

Our business continuity disaster recovery plan provides secure access to the enterprise network and business resources necessary for them to be productive, even if they have to use a home or loaner computer. Furthermore, the business continuity disaster recovery plan ensures that users are able to access only the areas of the network or data that they are authorized for, and no other. Staying connected to your network and your data are the two critical components to disaster recovery.

Network Connectivity

Juniper Networks SA Series SSL VPN Appliances and SRX Series Services Gateways for the field keep enterprises, government agencies and departments functional by connecting people during even the most unpredictable disasters—hurricanes, terrorist attacks, transportation strikes, pandemics, or virus outbreaks. Juniper's Junos Pulse Secure Access Service provides simple, secure, authenticated anytime, anywhere access to business resources for remote or mobile users from any web-enabled device. Juniper's Unified Access Control (UAC) product delivers a comprehensive, extensible and flexible network access control solution with dynamic, session-specific access policy by user. SA Series with the ICE license delivers a timely solution that has the right balance of risk and cost for addressing the sort of dramatic peak in demand for remote access whenever a disaster strikes.

Information Availability

Being able to connect to the network is critical but businesses are unlikely to survive if the location where their data store is destroyed or inaccessible. Businesses are connecting data centers to migrate data for purposes of disaster recovery but as enterprises improve business continuity by enabling resource allocation and reliability across data centers, they need to seek a scalable and reliable transport to interconnect data centers. The infrastructure must be elastic to respond to changing business needs and maintain business continuity even during live server migration.

Juniper Networks standards-based network virtualization solution, powered by the MX Series 3D Universal Edge Routers, is designed to deliver maximum scalability and resiliency, in both hardware and transport, while enabling customers to dynamically provision their network for improved flexibility to interconnect data centers that facilitates disaster recovery.

The Benefits

The main benefits of using Juniper's business continuity disaster recovery solutions include:

Maintain workforce connectivity during a disaster:

- Maintain business productivity by rapidly enabling ubiquitous access to business applications and information for employees from anywhere, at any time, and on any device
- Sustain partnerships with around-the-clock real-time access to applications and services while securing and protecting business resources
- Continue to deliver exceptional service to customers and partners with online collaboration

Achieve secure, scalable and seamless data center operations:

- Massive scalability - Efficient space and energy savings without compromising feature set and performance
- Pay as you grow - Ability to scale easily from 20 Gbps to 80 Gbps within the midrange devices (MX5, MX10, MX40, and MX80)
- Ease of management - Managing one product line that scales from 20 Gbps to 2.6 Tbps for operational efficiency

Department of Human Services Assists More Than 5,500 Bushfire-Affected Families



Department of Human Services
Melbourne, Australia
www.dhs.vic.gov.au

Industry:
Public Sector

Employees:
6,000

Oracle Products & Services:
Oracle CRM On Demand
Oracle Advanced Customer
Services

“Within three days we were able to roll out these systems, using Oracle CRM On Demand, to assign workers to people affected by the bushfires and ensure they received the help they desperately needed.” – Grahame Coles, CIO, Department of Human Services

The Victorian government’s Department of Human Services (DHS) provides rental housing, training, and employment to public housing tenants, child protection and youth services, and support to people with disabilities.

On February 7, 2009, bushfires devastated large areas across regional Victoria; 173 people died and more than 2,000 homes were destroyed. The disaster became known as “Black Saturday.”

DHS was responsible for providing assistance to individuals and families affected by these fires. This catastrophic event, one of Australia’s worst natural disasters, presented DHS with several unique challenges. The department needed to help geographically-dispersed case managers provide valuable assistance to these people. To do this, it needed a Web-based system that was easy to use and required minimal training, so case workers could start using it immediately.

At the same time, DHS, in conjunction with the Australian Federal Government and the Australian Red Cross, established The Victorian Bushfire Appeal Fund to help traumatized individuals and families rebuild their homes and community buildings. A grants management system had to be established to identify those in need and distribute the funds effectively.

To meet these objectives, DHS engaged Oracle Advanced Customer Services to deploy Web-based case- and grants-management systems based on Oracle CRM On Demand.

“The fires had destroyed towns, people had lost their homes and even their lives,” said Grahame Coles, CIO, Department of Human Services.

Key Benefits:

- Enabled more than 800 case workers across Victoria to identify people affected by bushfires and arrange accommodation, clothing, food, and other services
- Trained case workers on the system in 30 minutes
- Completed 4,000 registrations within four weeks so that today more than 10,000 people representing 5,500 cases are being looked after by case workers
- Provided Web-based access to case workers carrying laptops so they could record information about each case while on the road rather than typing up case notes and re-entering the data back at the office
- Determined who needed financial assistance and successfully dispensed funds to these people
- Achieved visibility on where funds were being distributed to ensure they were allocated fairly
- Designed, built and deployed a case management system in three days

“Within three days we were able to roll out these systems, using Oracle CRM On Demand, to assign case workers to people affected by the bushfires and ensure they received the help they desperately needed.”

Thousands of Cases Registered in Four Weeks

The Web-based case management system enabled more than 800 case workers across Victoria to identify individuals and families affected by the bushfires and arrange accommodation, clothing, food, and other services.

“On February 10, 2009, the Prime Minister of Australia Kevin Rudd and the Premier of Victoria John Brumby, announced that they wanted to offer case management to all people affected by the bushfires,” said Colleen Clark, assistant director of the Victorian bushfire case management program, DHS.

“This meant we needed to get a case management system ready three days later. The system also had to scale easily as more and more people registered for assistance. Using Oracle CRM On Demand, we achieved our goal and even trained case workers on how to use the system in 30 minutes.”

Guidelines, policies, consent forms, and other documents case workers needed on a daily basis were posted online. “The system was so intuitive that even case workers who had little to no computer experience could use it,” said Clark.

Within four weeks, case managers had used the system to process 4,000 registrations. Today, more than 10,000 people, representing more than 5,500 cases, are being looked after by case workers.

“Because the system is Web-based, it is accessible to large numbers of case workers across Victoria,” said Clark. “Case managers can gather real-time information about the impact of the tragedy on individuals and enter it into the case management system. This has really helped steer the recovery effort.”

Information Anytime and Anywhere

Case workers carry laptops to record information about each case directly into the case management system. In the rural areas of Victoria where electricity had been cut after the fires, case workers can access the system using wireless devices.

They enter their user name and password to access the system that provides access to client files, temporary addresses, and other information relating to lost property.

“In my previous experience doing investigative work and writing case notes, I would collect data out in the field, go back to the office, and spend two or three hours entering data into a system,” said Cindy Tarczon, case worker, Department of Human Services. “Using this case management system, the data is recorded immediately.

“It is a really practical application; being able to upload data relating to all my cases using a laptop with an internet connection is very useful.”

DHS collates data related to each case in the central repository to assist with assessment and rebuilding. The system’s assignment management capabilities also enable individuals from several organizations involved in the appeal to easily identify workers.

“Information is stored in one place, enabling DHS to determine exactly which people in each community need the most help and which government and welfare agencies really need to be effective during this terrible time,” said Tarczon.

Funds Distributed to Those in Need

The Victorian Bushfire Appeal Fund has raised US\$337.2 million (A\$375 million) for bushfire-affected individuals and families since February 2009. The DHS, which is managing the funds in a trust account, deployed a Web-based grants management system to best determine who needed financial assistance and to dispense funds to those people.

The grants management system was developed using Oracle CRM On Demand. It enables fund administrators to register individuals and household relationships, record key demographic information, confirm identities, establish eligibility for multiple grant types, and approve payments.

Around 50 grants officers at the DHS can determine who is eligible to receive financial assistance based on whether their homes or other buildings were damaged or completely destroyed by fire.

“The solution provides visibility on where the money was being distributed to ensure funds are allocated fairly,” said Coles.

“These grants not only help people re-establish themselves, they also pay for other costs associated with arranging funerals for their loved ones.

“It also offers security around the management of funds and ensures grants officers and administrators are accountable for reporting exactly where funds are distributed, while validating that people aren’t filing claims twice or for the wrong things.”

Why Oracle?

DHS chose Oracle CRM On Demand because it can be configured easily and scales as more data is entered by case workers in the field.

“Because Oracle CRM On Demand is Web-based, case workers across Victoria could start using it very quickly,” said Clark. “It’s a stable platform with one simple screen that allows users to scroll down and capture everything on one page. It also enables the IT department to implement changes very quickly.”

Coles added: “Oracle Advanced Customer Services were fantastic. They provided Oracle CRM On Demand licenses and technical consultants to help configure the solution.”

Implementation Process

Oracle Advanced Customer Services built and deployed the case management system in three days. DHS worked with Oracle Advanced Customer Service technical staff to design the solution on the first day, build it on the second day, and roll out a prototype to a limited number of users on the third day.

“It worked well so we went live to 800 case workers from eight regions throughout Victoria over three weeks,” said Clark. “Oracle technicians were working with us late into the night and over weekends.”

Oracle Advanced Customer Service staff also developed the grants management system over two weeks.

The Victorian Government’s Department of Human Services (DHS) provides rental housing, training and employment to public housing tenants, child protection and youth services, and support to people with disabilities.

U.S.-ASEAN EMERGENCY PREPAREDNESS WORKSHOP SURVEY

The Business Council for International Understanding is committed to the goals and objectives of the U.S. Trade and Development Agency. Therefore, it is important to ensure the quality of our work and of the programs that we offer on behalf of USTDA.

USTDA requires the completion of the following survey to assess the Workshop in terms of the added value it has provided. We appreciate you taking the time to complete the survey and provide feedback. Once completed, please fax the survey to +1-212-697-8526 or email it to n-kundra@bcIU.org.

Additionally, if you have specific concerns or comments that you would like to discuss in greater detail, please contact Nina Kundra at n-kundra@bcIU.org or +1-212-490-0460. In addition, we would be very pleased to hear of any opportunities that may result from participating in the U.S.-ASEAN Emergency Preparedness Workshop. All responses will be kept confidential by BCIU and USTDA.

Participant name
Title
Organization
Email
Phone

WORKSHOP AGENDA, SPEAKERS & PARTICIPATION

Did the Workshop agenda meet your expectations? Please explain.

<YES>

<NO>

What were your goals and expectations for the Workshop?

Were your goals and objectives met for the Workshop? Please explain.

<YES>

<NO>

Did the Workshop provide you an opportunity make new or improve contacts with ASEAN officials? If so, which delegates?

<YES>

<NO>

Do you think your company may benefit in any way by your participation in the Workshop? If so, how?

<YES>

<NO>

Please describe any possible business opportunities unearthed from Workshop participation.

From your participation at the Workshop, can you quantify the expected dollar amount of the opportunity(ies)? What would those opportunities be? (Please note all answers will be kept confidential)

If you cannot quantify the expected dollar amount of the opportunity(ies), are there other financial benefits possible from participating? If so, what are they?

Do you believe that the technologies, equipment and services that you discussed will be of interest to the ASEAN disaster management officials and executives? Please explain.

<YES>

<NO>

While attending this Workshop, did you meet or improve your relationship with any companies that you would like to work with in the future? If so, who with?

How would you rate the quality of the speakers and presentations provided?

<EXCELLENT>

<VERY GOOD>

<AVERAGE>

<POOR>

Did you find that the Workshop speakers were experts and had a great deal of knowledge to impart? If no, please explain.

<YES> <NO>

Please put a check in the boxes below for the sessions you found most useful.

WEDNESDAY, MAY 30, 2012

- Welcome Plenary Session
- ASEAN Cooperation for Emergency Preparedness
- Luncheon Keynote Address
- Early Forecasting: Technology Applications and Disaster Risk Reduction
- Prevention and Mitigation: Building Disaster-Resilient Communities
- Mobilizing Financial Resources for Management and Mitigation

THURSDAY, MAY 31, 2012

- Public Safety and Mass Warning Communications Systems
- Terrestrial and Satellite Telecommunications Applications for Emergency Response
- Luncheon Keynote Address: An ASEAN Vision for Regional Disaster Response
- Disaster Management and Preparedness: A Role for the Private Sector
- Workshop Conclusion and Next Steps

FRIDAY, JUNE 1, 2012

- Site Visit

Was the site visit valuable? Why or why not?

<YES> <NO>

Workshop Handbook clear and supportive of your needs? If no, please explain.

<YES> <NO>

Did you find that there were enough networking breaks and other opportunities to meet with participants informally? If no, please explain.

<YES>

<NO>

FACILITIES & LOGISTICS

Has BCIU staff been helpful, available and responsive to your needs and requests? If no, please explain.

<YES>

<NO>

How would you rate the quality of:

The Workshop facilities

<EXCELLENT>

<VERY GOOD>

<AVERAGE>

<POOR>

Your room accommodations

<EXCELLENT>

<VERY GOOD>

<AVERAGE>

<POOR>

Local transportation to and from Workshop events

<EXCELLENT>

<VERY GOOD>

<AVERAGE>

<POOR>

The Workshop meals

<EXCELLENT>

<VERY GOOD>

<AVERAGE>

<POOR>

Interpreters

Khmer Cambodian

<EXCELLENT>

<VERY GOOD>

<AVERAGE>

<POOR>

Bahasa Indonesian

<EXCELLENT>

<VERY GOOD>

<AVERAGE>

<POOR>

Thai/Laotian

<EXCELLENT>

<VERY GOOD>

<AVERAGE>

<POOR>

Vietnamese

<EXCELLENT>

<VERY GOOD>

<AVERAGE>

<POOR>

Are there any specific suggestions you would like to make for improvements?

OVERVIEW OF ASEAN DISASTER MANAGEMENT, MITIGATION AND CAPACITY DEVELOPMENT

Recurrent seasonal typhoons, floods, and earthquakes, as well as limited government response capacity, present significant challenges to vulnerable populations in the Asia region. Located between the Pacific and the Indian Oceans, the region sits between several tectonic plates, which cause earthquakes, volcanic eruptions and tsunamis. Typhoons are the most prevalent hazard in the region, causing floods and landslides. Cyclone Nargis killed over 133,000 people, affected over 2.4 million and caused an estimated economic loss of over US\$4 billion. In 2009, total damage and losses from tropical Storm Ondoy and Typhoon Pepeng reached US\$4.38 billion, or about 2.7 percent of the Philippine's gross domestic product.

Indonesia, the Philippines and Myanmar face high earthquake hazards. Except for Singapore, flood mortality risk is high in all ASEAN countries. Brunei has the highest percentage of population at landslide risk, followed by Philippines and Indonesia¹. Both Indonesia and the Philippines are at high risk from volcanic eruptions. The Philippines has the largest land area susceptible to cyclones, followed by Vietnam and Myanmar. Multi-hazard mortality risk is higher for Philippines, Vietnam, Myanmar and Indonesia.

DISASTER HAZARD MATRIX BY COUNTRY (1970-2010)
SCALE: DISASTER INCIDENCE RANGES RELATIVE FROM ♦♦♦ 'HIGH' TO ♦ 'LOW'

COUNTRY	EARTHQUAKE	FLOOD	LANDSLIDE	DROUGHT	STORM (TYPHOON OR CYCLONE)	VOLCANO	FOREST FIRE	TSUNAMI
Brunei	♦	♦	♦	♦	♦		♦	
Cambodia	♦	♦♦♦	♦	♦♦	♦		♦	
Indonesia	♦♦♦	♦♦♦	♦♦♦	♦♦	♦♦	♦♦♦	♦♦	♦♦♦
Lao PDR	♦	♦♦♦	♦♦	♦♦	♦♦	♦	♦	
Malaysia	♦	♦♦♦	♦♦	♦	♦		♦♦	♦
Myanmar	♦♦	♦♦♦	♦♦	♦♦	♦♦♦		♦	♦
Philippines	♦♦♦	♦♦♦	♦♦♦	♦♦	♦♦♦	♦♦	♦	♦
Singapore	♦	♦♦			♦			

Seven months after the tsunami disaster of December 2004, the ASEAN Foreign Ministers signed the ASEAN Agreement on Disaster Management and Emergency Response (AADMER) - a multi-hazard legal and policy framework that will provide structures, mechanisms, and strategies for undertaking regional cooperation on disaster management. AADMER, through its Standard Operating Procedure for Regional Standby Arrangements and Coordination of Joint Disaster Relief and Emergency Response Operations, will enable the ASEAN Member States to mobilize and deploy critical resources and capacity for rapid disaster relief and emergency response.

The ASEAN Committee on Disaster Management (ACDM) developed an ASEAN Regional Programme on Disaster Management (ARPDM) to provide a framework for cooperation for the period of 2004-2010. The ARPDM outlines ASEAN's regional strategy on disaster management, as well as priority areas and activities for disaster reduction. One of the priority projects under

¹ DRM I 2010

the ARPDM is the Establishment of an ASEAN Regional Disaster Management Framework, which focused on developing regional cooperation and standard procedures on disaster management and emergency response.

Brunei Darussalam

Brunei Darussalam has an equatorial climate characterized by uniformly high temperature, high humidity and heavy rainfall. The country is vulnerable to low-level hazards from earthquakes, cyclonic storms, floods, landslides, and seasonal smoke/haze resulting from forest fires in Indonesia.

Cambodia

Flood and drought are the main physical hazards in Cambodia. About 80 percent of Cambodia's territory lies within the Mekong River, flowing directly from the north to the Mekong Delta of Vietnam in the south. The Mekong River has large fluctuations of water levels between the dry and wet seasons, causing a cycle of droughts and floods almost every year, damaging agricultural production and constraining Cambodian socio-economic development. The World Bank estimates that floods kill about 100 people annually and cause agricultural losses of US\$100 to US\$170 million each year. The main types of floods are spills from the Mekong River aggravated by local rainfall, tributary flooding, flash floods, and heavy rains from typhoons.

While efforts have been made to improve the management of natural disasters and reduce the country's vulnerability², a number of challenges remain. Currently, most of Cambodia's national strategies, policies, planning and budgetary processes do not consider climate change. Financial and institutional support tends to be *ad hoc* and project-related, although efforts have been made towards a more programmatic approach to include disaster risk prevention rather than just disaster response.

Indonesia

Indonesia faces the highest rate of natural and manmade disasters in the Asia Pacific region, with droughts, tsunamis, earthquakes, volcanic eruptions, landslides and forest fires taking a significant human and economic toll. Indonesia is among the top 35 countries that have high mortality risks from multiple hazards with about 40 percent of the population living in areas at risk.³ In the last 30 years, there were at least 289 disasters per year claiming on average more than 8,000 lives. According to disaster data, between 2001 and 2007 alone there were more than 4,000 occurrences of disasters, including floods (37 percent), droughts (24 percent), landslides (11 percent) and windstorms (9 percent).⁴ These disasters create an enormous burden on public expenditure to restore damaged infrastructure and facilities.

Situated on major tectonic fault lines, Indonesia is prone to frequent seismic activity. Earthquakes regularly occur in Indonesia, often causing widespread damage. In May 2006, an earthquake measuring 6.3 on the Richter scale killed more than 5,000 people in central Java and triggered fears of an eruption of a nearby volcano.⁵ More recently, a major earthquake struck the western Indonesian island of Sumatra in September 2009, killing over 1,100 people. In addition

² GFDRR 2011

³ www.worldbank.org

⁴ http://www.ldeo.columbia.edu/chrr/research/profiles/pdfs/indonesia_profile1.pdf

⁵ <http://www.cnn.com/2009/WORLD/asiapcf/09/30/indonesia.earthquake/index.html>

to immediate damage around the epicenter, earthquakes such as these often generate tsunami waves that travel great distances.

Flooding is also a major threat. Following a week of heavy rains in March 2009, Java suffered from severe flooding, which triggered a dam to give way outside of Jakarta. The flood left 58 people dead and submerged more than 400 homes. Rescuers used rubber rafts to pluck bodies from streets that were transformed into rivers littered with motorcycles, chairs and other debris.⁶ In addition, more than 800 landslides have occurred in Indonesia over the past decade, killing at least 735 people.

Natural disasters throughout Indonesia have resulted in population displacement and the destruction of homes and businesses. While reconstruction activities continue, implementation of a strong emergency response plan is recognized as a priority by the Government of Indonesia. However, local governments must still enhance their capacity to prepare for and respond to disasters. This requires increased inter-agency coordination at the provincial and district levels.

Lao PDR

Floods, droughts, and typhoons are the dominant hazards in Laos PDR. Natural disasters impact development with agriculture, transport, and housing suffering the most. Almost 30 floods have been recorded in the country over the last 40 years. The country is also susceptible to landslides and earthquakes. The World Bank estimates that typhoons cause an economic average annual loss of US\$17.6 million, followed by floods (US\$8.3 million) and droughts (US\$4.7 million). Recently, typhoon Ketsana resulted to an estimated damage and loss worth US\$58 Million, and a 0.4% loss of GDP.

Lao PDR has made significant progress in Disaster Risk Management (DRM) in the recent years, however overall efforts still need to be increased. National institutions are making efforts to expand their roles from disaster response managers to proactive disaster response and recovery planners.

Malaysia

While Malaysia is generally spared from severe natural disasters, it has experienced several extreme weather and climatic events, ranging from thunder-storms to monsoonal floods. Flooding is the most significant natural hazard in Malaysia. The 2010 flood in Kedah and Perlis was among the worst in its history. The total economic loss and the financial burden on the government were heavy.⁷

In addition to flooding, the country also experiences man-made disasters, such as landslides, causing considerable damage to properties and loss of lives. Monsoonal floods are an annual occurrence varying in terms of severity, place and time of occurrences. Malaysia's chances to be inflicted with earthquake-related disasters are increased due to its proximity to nearby countries that sit on active tectonic plates like Indonesia and the Philippines.

Malaysia has an advanced DRM framework in place, including a range of structural measures to decrease risk and strengthen mitigation and preparedness. The National Security Council (NSC) is the principal policy-making and coordinating body for disaster management in Malaysia, coordinating and planning activities related to preparedness, prevention, response/relief

⁶ http://www.usatoday.com/news/world/2009-03-26-indonesia_N.htm

⁷ AIPA Brief Note 2011

operations and recovery/rehabilitation. Malaysia has invested heavily in preventative networks with a number of flood mitigation projects, including the Stormwater Management and Road Tunnel (SMART) constructed in the Kuala Lumpur city center. The SMART system diverts flood water via a holding pond, a bypass tunnel, and a storage reservoir, preventing spillover into the city during heavy downpours.

Myanmar

Myanmar is exposed to a number of hazards, including floods, drought, and earthquakes. In the last 30 years, Myanmar has suffered from 27 disaster events (seismic activity, epidemics, floods, landslides and storms) that have consequently killed 162,643 people and affected more than 4.5 million. In addition, these disasters have resulted in over US\$5.9 million in damages. Disaster Risk Management (DRM) is in the early stages. To date, a comprehensive DRM Law in Myanmar is still pending. The Myanmar Plan of Action on Disaster Risk Reduction is the country's main road map for disaster response in the country. At the national level, capacity to respond is being improved with roles and responsibilities being allocated to specific government departments.

The Philippines

The Philippines is among the top global disaster hotspots. Over the past two decades, damages incurred have reached PHP19.7 billion, or about US\$500 million, which is equivalent to 0.5% of GDP. Damage to the agricultural sector alone averaged PHP12.4 billion per annum. Following the 2009 Tropical Storm Ondoy and Typhoon Pepeng, it is reported that 9.3 million people were severely affected by these events. There is also a potential for enormous losses from low frequency, high impact hazards such as earthquakes, which are a real threat to many major urban areas, including Metro Manila. The Philippines' average annual disaster profile includes storms, floods, landslide, and volcano eruptions as the riskiest hazards⁸. Of these, typhoons are the most frequent and the most damaging.

The Government of the Philippines is taking a proactive approach to Disaster Risk Management as opposed to focusing on post-disaster response. The government has demonstrated their commitment by approving the Disaster Risk Reduction and Management (DRRM) Act in May 2010, which focuses on mitigation and preparedness measures. To complement the DRRM Act, the Philippine Government has also formalized its Strategic National Action Plan for Disaster Risk Reduction (SNAP), which translates the country's commitments to the Hyogo Framework for Action.

Singapore

Because of its size and increasing population, major land reclamation has been undertaken in many parts of the country. Approximately 80 percent of the country's population live in high-rise public housing apartments, making the majority of the population exposed to human-induced and technological hazards such as fire, epidemics and accidents. The primary policy-making and directing authority on disaster management and preparedness is the Ministry of Home Affairs. The Singapore Civil Defence Force and the Singapore Police Force are under its command and supervision. The two agencies are mandated to plan, coordinate, and implement programs and activities on disaster and emergency response.

⁸ World Bank 2011

Thailand

Thailand is susceptible to destructive natural disasters and calamities. Thailand has experienced disasters from floods, typhoons, windstorms, landslides, droughts and tsunamis, including the devastating Indian Ocean tsunami in 2004. The tsunami claimed 8,000 thousand lives, demolished enormous properties and harming the country's economy. Thailand is exposed to multiple disaster risks, above all: flood, drought, storms and landslides, with heavy impact on the economy.

Following the Indian Ocean tsunami, Thailand's perspective towards Disaster Risk Management has been significantly altered. Since 2004, a number of reforms and mechanisms have been implemented to shift from disaster response, relief assistance and recovery, to preparedness and prevention.

During the 2011 monsoon season, Thailand suffered severe flooding. Beginning at the end of July, flooding soon spread through the provinces of Northern, Northeastern and Central Thailand along the Mekong and Chao Phraya river basins. In October floodwaters reached the mouth of the Chao Phraya and inundated parts of the capital city of Bangkok. Flooding persisted in some areas until mid-January 2012, and resulted in a total of 815 deaths and 13.6 million displaced people. Sixty-five of Thailand's 77 provinces were declared flood disaster zones, and over 20,000 square kilometers of farmland was damaged. The disaster has been described as "the worst flooding yet in terms of the amount of water and people affected"⁹. The World Bank has estimated US\$ 45.7 billion in economic damages and losses due to flooding, as of December 1, 2011.

Vietnam

Vietnam is a one of the most disaster-prone countries in the Asia-Pacific and is highly exposed to multiple natural disasters, including tropical cyclones, tornadoes, landslides, and droughts. With two of its most important economic sectors (industry and agriculture) located in coastal lowlands and deltas, Vietnam has been listed by the World Bank as one of the five countries that will be worst-affected by climate change. An average of six to eight typhoons or tropical storms of varying intensity strike Vietnam each year, with more frequent occurrences in the northern and central coastal regions earlier in the season. In 1997, Typhoon Linda killed over 3,000 people along the southern coast.

Strengthening disaster risk management is a priority for the Government of Vietnam. In November 2007, the Government approved a National Strategy for Disaster Prevention, Response, and Mitigation to 2020. This strategy lays out Vietnam's primary disaster risk management objectives, focusing largely on water related disasters. The Ministry of Agriculture and Rural Development estimated they will require a budget of US\$18 billion: US\$13 billion for structural measures, building reservoirs, dams and dykes; and US\$5 billion for non-structural measures. This figure does not include funds needed by other ministries and provinces to implement disaster risk reduction action plans.

⁹ World Bank 2011

**ASEAN AGREEMENT ON
DISASTER MANAGEMENT AND
EMERGENCY RESPONSE**

Work Programme for 2010 - 2015

Building disaster-resilient nations and safer communities

ASEAN AGREEMENT ON DISASTER MANAGEMENT AND EMERGENCY RESPONSE (AADMER)

Work Programme for 2010 - 2015

EXECUTIVE SUMMARY	4
I. INTRODUCTION	5
Vision and Goals	7
Guiding Principles	8
II. STRATEGIC COMPONENTS	9
1. Risk Assessment, Early Warning and Monitoring (RAEWM)	10
1.1 Risk Assessment	10
1.2 Early Warning	11
1.3 Monitoring	12
2. Prevention and Mitigation (P&M)	19
2.1 Implementing National Action Plans on Disaster Risk Reduction and Strengthening Legal and Institutional Frameworks	19
2.2 Mainstreaming Disaster Risk Reduction in National Development Plans	23
2.3 Mainstreaming Disaster Risk Reduction in Education and Health Sectors	26
2.3.1 Integrating DRR in School Curriculum	26
2.3.2 Disaster Safety of Educational Facilities	29
2.3.3 Disaster Safety of Health Facilities	32
2.4 Public Education, Awareness, and Advocacy	35
2.5 Urban Disaster Risk Reduction	38
2.6 Community-Based Disaster Risk Reduction	40
2.7 Building Partnerships between DRR and Climate Change Adaptation Institutions and Programmes	43
2.8 Disaster Risk Financing including Microfinance	45
3. Preparedness and Response (P&R)	48
4. Recovery	63
III. BUILDING BLOCKS OF AADMER WORK PROGRAMME	73
1. Institutionalisation of AADMER	74
2. Partnership Strategies	75
3. Resource Mobilisation	80
4. Outreach and Mainstreaming	82
5. Training and Knowledge Management	84
5.1 Training	84
5.2 Knowledge Management Systems	87
6. Information Management and Communication Technology	90
6.1 ICT Policy Framework	90
6.2 ICT Guiding Principles	91
6.3 ICT Prioritisation and Strategic Implementation	93

IV. IMPLEMENTATION, MONITORING AND EVALUATION OF AADMER WORK PROGRAMME	94
1. Implementation Arrangements	
1.1 Conference of the Parties (COP)	94
1.2 ASEAN Committee on Disaster Management (ACDM)	95
1.3 ACDM Working Groups	96
1.4 ASEAN Coordinating Centre for Humanitarian Assistance on Disaster Management (AHA Centre)	97
1.5 ASEAN Humanitarian Assistance Coordinator	99
1.6 ASEAN Secretariat	102
2. Monitoring and Evaluation	
2.1 Monitoring the Implementation of the AADMER Work Programme	103
2.2 Reporting	103
	104

ANNEXES

- Annex 1 - Type of Disaster by Frequency and Type of Impact Listed By EMDAT-CRED, 2001-2009
- Annex 2 - List of Basic and Specialised Training Courses
- Annex 3 - Terms of Reference, ASEAN Committee on Disaster Management (ACDM)
- Annex 4 - Terms of Reference, Chair, ASEAN Committee on Disaster Management (ACDM)
- Annex 5 - Terms of Reference, ACDM Working Groups
- Annex 6 - Template for Monitoring and Evaluation of AADMER Work Programme Implementation
- Annex 7 - List of Flagship Projects

EXECUTIVE SUMMARY

The ASEAN Agreement on Disaster Management and Emergency Response or AADMER has been ratified by all ten Member States and entered into force on 24 December 2009. The AADMER is a proactive regional framework for cooperation, coordination, technical assistance, and resource mobilisation in all aspects of disaster management. It also affirms ASEAN's commitment to the Hyogo Framework of Action (HFA) and is the first legally-binding HFA-related instrument in the world.

The Work Programme seeks to translate AADMER's spirit and intent into concrete actions and initiatives to be implemented from 2010 to 2015 in order to attain the ASEAN vision of disaster resilient nations and safe communities by 2015. Adopted by the 15th Meeting of the ASEAN Committee on Disaster Management (ACDM) as a rolling plan, many strategic priorities will kick start in Phase 1 (2010-2012). However, Phase 1 also includes ongoing activities initiated in the previous cycle (2004-2010) as well as those that are already in the pipeline. Phase 2 (2013-2015) activities will sustain the momentum and further strengthen disaster management capacities, mechanisms, and systems that have been developed and/or established. This First Reprint of the Work Programme includes the List of Flagship Projects for AADMER Work Programme Phase 1 (2010-2012) as Annex 7, which was adopted by the 16th ACDM Meeting¹.

Being comprehensive, the AADMER Work Programme 2010-2015 covers all aspects of disaster management and thus outlines a detailed road map for four strategic components: (1) Risk Assessment, Early Warning and Monitoring; (2) Prevention and Mitigation; (3) Preparedness and Response; and (4) Recovery. Further, as a holistic Work Programme, six building blocks and drivers of the implementation process have also been determined to provide a firm foundation for the four components and to create synergy among the various parts of the Work Programme. These building blocks are: (1) Institutionalisation of AADMER; (2) Partnership Strategies; (3) Resource Mobilisation; (4) Outreach and Mainstreaming; (5) Training and Knowledge Management System; and (6) Information Management and Communication Technology.

Several ASEAN bodies will be involved in the implementation and monitoring of the Work Programme. The AHA Centre has been identified as the main operational engine in executing the activities in the Work Programme. The ACDM will provide policy oversight and supervision in the implementation process, and its Working Groups and Lead Shepherds will proffer technical guidance. The ASEAN Secretariat will continue to provide policy coordination support to ACDM and the Working Groups and perform functions as Secretariat to the AADMER. In line with the ASEAN Charter, the ASEAN Secretariat will also assist in monitoring the implementation of the AADMER Work Programme.

¹ The 15th ACDM Meeting was held on 11-12 March 2010 in Singapore.

² The 16th ACDM Meeting was held on 18-19 May 2010 in the Philippines.

I. INTRODUCTION

The ASEAN region is peopled by a diverse population of about 584 million, representing nine percent of the total world population. The region's population is highly exposed to natural hazards such as storm, flood, drought, earthquake, landslide, volcanic eruption, wildfire, and epidemic. These disasters exact a tremendous toll on the physical, social, economic, cultural, and environmental capital of Member States.

Floods, storms, earthquakes and landslides were the most frequent hazards that devastated many cities and communities in different parts of the region from 2001 to 2009 (see Figure 1). All disaster events in the region arising from these hazards account for 14 percent of the world total number of disasters during the same period. While flood was the most frequent hazard, earthquakes caused the most adverse impacts in terms of loss of life, number of injured and number of people made homeless (Figure 2).

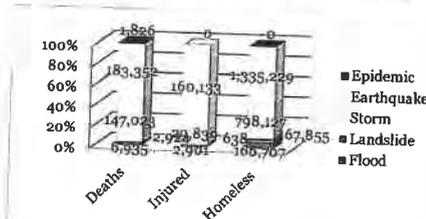
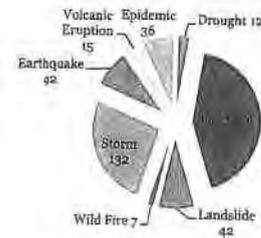


Figure 2. Number of Affected by Type of Impact by Disaster, 2001-2009

Though Member States have varying levels of

exposure and vulnerability to different hazards, disasters adversely affect the ASEAN Community as a whole. The direct and indirect economic disaster losses suffered by affected Member States, for instance, influence the region's economic competitiveness, prosperity, food security, political stability, and quality of life of its peoples. Globally, estimated damage due to all types of disasters mentioned above has reached almost USD 861 billion in the same period. About eight percent are accounted for by the region (See Annex 1 for raw data). Disasters is thus a development concern.

Figure 1. Number of Occurrences by Hazard Type, 2001-2009



Recognising that the ASEAN region was at high risk to natural and human-induced disasters, ASEAN reached mutual agreements at the highest level to express its deep concern for the escalating impacts of disasters starting in 1976 with the **Declaration of ASEAN Concord I and ASEAN Declaration on Mutual Assistance on Natural Disasters**. This was followed by the **ASEAN Agreement on Transboundary Haze Pollution (2002)**, **Declaration of ASEAN Concord II (2003)**, and the **Declaration on Action to Strengthen Emergency Relief, Rehabilitation, Reconstruction**

5

and **Prevention in the Aftermath of the Earthquake and Tsunami Disaster of 26 December 2004**. These accords laid down the policy framework which mandates ASEAN to pursue programmatic disaster management initiatives at both the regional and national levels. In addition, the **ASEAN Charter**, signed in 2007 and entered into force in 2008, supports the **promotion of regional resilience and sustainable development through greater cooperation among Member States**.

Actions plans such as the **Regional Haze Action Plan (1998)**, **Vientiane Action Programme 2004-2010** on pursuing a comprehensive integration towards a more dynamic and resilient ASEAN Community by 2020, **Section B7 of the ASEAN Socio-Cultural Community Blueprint and Sections B5 to B6 of the ASEAN Political-Security Community Blueprint (2009)**, and the predecessor of this Work Programme, the **ASEAN Regional Programme on Disaster Management for 2004-2010**, have been formulated to follow through the implementation of such agreements and declarations.

More recently, the **ASEAN Agreement on Disaster Management and Emergency Response (AADMER)**, signed in July 2005, entered into force on **24 December 2009**. This Agreement further fortifies the regional policy backbone on disaster management by giving priority to disaster risk reduction, thus enabling a more **proactive regional framework for cooperation, coordination, technical assistance, and resource mobilisation in all aspects of disaster management**. This paradigm shift of viewing disasters as a **development concern** from a purely humanitarian response and relief perspective underpins AADMER.

Further, in line with the **ASEAN Charter's purpose to promote an open, inclusive and transparent people-oriented ASEAN**, AADMER enshrines the active participation of all stakeholders such as non-governmental organisations, private sector, and local communities as a key to effective disaster management, even as the primary responsibility to respond to disasters and implement measures to reduce disaster risk falls on individual Member States.

The AADMER firmly affirms ASEAN's commitment to the **Hyogo Framework for Action (HFA)**. To concretise this commitment and operationalise AADMER, the **AADMER Work Programme for the period 2010 to 2015** is likewise designed to support the national agenda and complement capacities of Member States in the different aspects of disaster management to attain the **vision of disaster-resilient nations and safer communities within the region by 2015**.

Vision and Goals

The Work Programme translates the intent and spirit of AADMER into a comprehensive and holistic action plan for the period 2010 to 2015. It encompasses major aspects of disaster management, from risk assessment, disaster risk reduction, early warning, to preparedness and response and recovery. With the **vision of disaster-resilient nations and safer communities in the ASEAN region**, the overall goal of the Work Programme is to **substantially reduce loss of life and damage to economic, social, physical and environmental assets of ASEAN Member States caused by natural and human-induced disasters.**

The Work Programme specifically aims to:

1. Improve the capacities of ASEAN for regional risk assessment, effective and efficient regional early warning activities and continued monitoring that require inter-country collaboration to support disaster mitigation efforts of Member States as well as effect well-targeted response and recovery activities;
2. Assist Member States in mainstreaming disaster risk reduction into national development policies, plans, and sectoral programmes and in formulating and implementing risk reduction measures that link climate change adaptation and key sectors to ensure sustainable development;
3. Enhance disaster preparedness of Member States and improve ASEAN's responsiveness to major disasters in a manner that is collective, fast, reliable and in line with humanitarian standards through common operational procedures and mechanisms and rapid mobilisation of resources;
4. Develop technical and organisational capacities of Member States to lead, coordinate, and manage post-disaster recovery process through proactive recovery planning for early and long-term recovery, competency building in damage and loss assessment, strengthen mobilising resources, and fostering partnerships;
5. Technical and institutional capacities of Member States through the provision of capacity development and training programmes on disaster management and emergency response through active exchange of knowledge, experience, and expertise using various sharing and learning modes and through the facilitation of risk and disaster information/data sharing for more effective disaster management and emergency response;
6. Foster closer partnerships and more collaborative initiatives with partner organisations, international organisations, civil society, academia, and the military, among others, to promote disaster resilience in ASEAN from regional to local levels; and
7. Enhance disaster consciousness of the peoples in ASEAN to instill a culture of safety and resilience.

Guiding Principles

Consistent with the principles of the ASEAN Charter, the ASEAN Community Blueprints towards an ASEAN Community by 2015, and landmark agreements that legally bind all Member States, the AADMER Work Programme primarily adheres to a strategic regional approach to all aspects of disaster management and outlines activities that will add more value to and leverage the expected benefits of ongoing and planned national initiatives of Member States.

Specifically, the AADMER Work Programme:

1. Prioritises activities that are regionally focused due to geographic proximity, shared borders, and shared ecosystems;
2. Emphasises initiatives that address cross-boundary disaster impacts and concerns and that require collaboration among and between Member States, thus acting as a force multiplier at the regional level;
3. Supports activities that build on current national priorities and agenda and regional mechanisms in order to leverage expected benefits and outcomes at regional, national, and sub-national levels;
4. Espouses efforts that synergise existing networks and potential partnerships with all stakeholders for the benefits to cascade down to communities and redound to the greater majority for a more people-centred ASEAN;
5. Recognises the unique needs and potential contributions of various groups of stakeholders, particularly children, women, older people, and people with disabilities, in the processes of disaster risk reduction, response, and recovery and the necessity to include gender perspectives, human security and social equity issues, and transparency and accountability in the Work Programme implementation and monitoring;
6. Considers the linkages between the Work Programme components and related thematic programmes of ASEAN and aims to complement other ASEAN agreements and policies under such thematic programmes as climate change adaptation, environment, science and technology, health, pandemic preparedness and response, and education, among others; and
7. Operationalises the strategic objectives and actions outlined in the ASEAN Socio-Cultural Community Blueprint (in particular Section B.7) and the ASEAN Political-Security Community Blueprint (in particular Sections B.5 and B.6) as part of the Road Map for an ASEAN Community for the period 2009-2015.

II. STRATEGIC COMPONENTS

The Strategic Components, the core strategies and pillars that translate the spirit of AADMER and the principles of ASEAN in disaster management into concrete actions, consist of the following:

1. Risk Assessment, Early Warning and Monitoring;
2. Prevention and Mitigation;
3. Preparedness and Response; and
4. Recovery.

1. Risk Assessment, Early Warning and Monitoring (RAEWM)

This strategic component of the Work Programme aims to reduce loss of life and damage to property from natural and human-induced disasters through the identification of hazards and risks prior to impacts and by increasing warning time. The activities outlined in the three sub-components will allow for improved regional risk assessment and early warning activities with a focus on cross-boundary issues that require inter-country collaboration, thereby providing regional benefits, more inclusive disaster planning and mitigation efforts as well as targeted response and recovery activities.

1.1 Risk Assessment

With constant development and environmental change, risk is evolving and manifesting in new areas and among new populations. Identifying high risk populations and geographic areas and understanding underlying hazards, vulnerabilities, and disaster management capacities are critical to effectively plan for, respond to, and recover from disasters. Risk assessment activities are being undertaken in the region. However, they are not consistent in methodology, data content, or scale and resolution, and do not fully address requirements outlined in Article 5 of AADMER.

Objectives:

- Develop and implement a Regional Risk Assessment Programme that establishes protocols and best practices to complement already existing Member State initiatives;
- Develop and implement the necessary policy and procedural mechanisms to ensure that AHA Centre is able to receive and consolidate data from National Focal Points (NFPs) and disseminate to each Party the analysed data and risk level associated with identified hazards;
- Implement the necessary mechanisms and systems to ensure AHA Centre is able to conduct analysis on possible regional-level implications; and
- Develop and implement the necessary protocols to allow risk assessment outputs relating to regional hazards be made available to all ASEAN working groups.

Expected Outcomes:

- Establishment of a benchmark for risk-based people-centric Disaster Risk Reduction decision making, consistent with HFA;
- Increased capacity to perform and apply risk assessments at the national and regional level, to inform disaster prevention and mitigation initiatives;
- Consistent implementation of risk terminology and assessment methodology across the region;
- Consistent flow of usable risk related information within Member States and between Member States and the AHA Centre; and
- Increased awareness of transboundary issues that affect regional and national risks.

Lead Shepherd: Indonesia

Linked Activities:

- Global Earthquake Model-South East Asia
- UNISDR Regional Risk Assessments of Asia (ASEAN, SAARC, Central Asia)

1.2 Early Warning

Disaster losses can be reduced through early detection of hazards prior to impact and coordinated early warning. The continued development and enhancement of multi-hazard early warning systems in the ASEAN region will allow for more accurate and integrated observations, better impact assessments, as well as timely and coordinated dissemination of warning information through improved decision support systems.

Objectives:

- Ensure that Member States are able to establish, maintain, and periodically review national disaster early warning arrangements including early warning information systems, communication network, and public awareness and preparedness; and
- Build upon already existing ASEAN systems and capabilities such as DISCNet, OSADI, OSA-Map, and other national and regional systems and data providers to continue efforts to strengthen early warning capacity for the region.

Expected Outcomes:

- Enhanced national and regional capacity for early warning, including the establishment of a functioning multi-hazard regional platform and related protocols to enhance decision support capabilities;
- Consistent flow of usable, timely, reliable, and accurate hazard information between Member States and AHA Centre;
- Increased awareness of regional threats and hazards; and
- Better lead time for coordinated regional response.

Lead Shepherd: Viet Nam

Linked Activities:

- ASEAN Committee on Science and Technology (COST)

1.3 Monitoring

Continued monitoring of hazards, vulnerabilities, and disaster management capacities within a jurisdiction can allow for implementation of effective preparedness and response activities and is necessary for effective early warning actions. AADMER (Articles 5 and 7) requires that monitoring be conducted continuously in support of risk identification and early warning activities.

Objectives:

- Formulate policies and procedures to support monitoring of hazards, vulnerabilities, and disaster management capacities as well as risk, and
- Put in place regional mechanisms and support systems to facilitate Member States' cooperation, monitoring of hazards which have transboundary effects, and exchange of information including early warning information through appropriate arrangements.

Expected Outcomes:

- Institutionalisation of monitoring activities to help better coordinate risk assessment and early warning information, and
- Increased capacity and capability of Member States to monitor risk, current hazards, vulnerability, and disaster management capacity.

Lead Shepherd: Philippines

Linked Activities: ASEAN Committee on Science and Technology (COST)

Output-Activity Matrix of Risk Assessment, Early Warning and Monitoring (RAEWM):

Expected Output	Activity	Responsible Parties	Timeline						Milestones
			Phase 1			Phase 2			
			2010	2011	2012	2013	2014	2015	
Output 1: Regional Risk Assessment Programme scope including types of analysis, outputs and constraints developed.	1.1: Agreement on the definitions of critical terminology for risk assessments.	AHA Centre, ASEC, RAEWM Working Group	X						Agreement on terminology, general data requirements, types of analyses and outputs Identification of necessary institutional and technical mechanisms to support risk assessment initiatives.
	1.2: Agreement on the type and scale of data to be collected.	AHA Centre, ASEC, RAEWM Working Group	X						
	1.3: Agreement on the type of analysis that will be conducted at national and sub-national levels.	AHA Centre, ASEC, RAEWM Working Group, ACDM	X						
	1.4: Agreement on the type of analysis that will be conducted at the regional level.	AHA Centre, ASEC, RAEWM Working Group, ACDM	X						
	1.5: Agreement on risk assessment outputs at national and regional levels.	AHA Centre, ASEC, RAEWM Working Group, ACDM	X						
	1.6: Discussion on how often and in what format data will be verified and updated.	AHA Centre, ASEC, RAEWM Working Group	X						
	1.7: Discussion to determine: What institutional and technical mechanisms are necessary for accurately sharing data & outputs?	AHA Centre, ASEC, RAEWM Working Group, ACDM	X						
	1.8: Discussion to determine: What constraints, if any, should be placed on the sharing of national and regional risk assessment data and outputs?	AHA Centre, ASEC, RAEWM Working Group	X						
	1.9: Discussion to determine: How ASEAN can best support Member States accomplishing the agreed upon programme activities?	AHA Centre, ASEC, RAEWM Working Group	X						

Expected Output	Activity	Responsible Parties	Timeline						Milestones
			Phase 1			Phase 2			
			2010	2011	2012	2013	2014	2015	
Output 2: Regional Early Warning Programme scope established.	2.1: Agreement on the definitions of critical terminology for Early Warning.	AHA Centre, ASEC, RAEWM Working Group	X						Key terminology defined. Regional early warning programme scope.
	2.2: Agreement on and clarification of the roles of Member States, ASEAN, and AHA Centre in Early Warning.	AHA Centre, ASEC, RAEWM Working Group, ACDM	X						
	2.3: Agreement on the sharing of monitoring data with AHA Centre.	AHA Centre, RAEWM Working Group, ACDM	X						
	2.4: Identification of necessary institutional and technical mechanisms to support Early Warning efforts.	AHA Centre, ASEC, RAEWM Working Group, ACDM	X						
Output 3: Regional Monitoring Programme scope established.	3.1: Identification of necessary institutional and technical mechanisms to support monitoring efforts throughout the region.	AHA Centre, ASEC, RAEWM Working Group, ACDM	X						Regional monitoring programme scope.
	3.2: Determine how best to integrate monitoring into multiple disaster management areas given the complex cross-cutting nature of activities.	AHA Centre, ASEC, RAEWM Working Group	X						
Output 4: Risk Assessment Institutional and technical mechanisms developed and implemented.	4.1: Develop policy to support regional risk assessment.	AHA Centre, ASEC, RAEWM Working Group, ACDM	X						Policy, data collection and storage protocol. General regional analysis, guidelines and protocols. Dissemination of outputs
	4.2: Develop the necessary systems to allow AHA Centre to collect, store, analyse, and disseminate data.	AHA Centre, ASEC, RAEWM Working Group	X						
	4.3: Develop protocols and guidelines for conducting a regional analysis of risk.	AHA Centre, ASEC, RAEWM Working Group, ACDM	X						
	4.4: Develop protocols and guidelines for the dissemination of regional risk assessment outputs.	AHA Centre, ASEC, RAEWM Working Group, ACDM	X						

Expected Output	Activity	Responsible Parties	Timeline						Milestones
			Phase 1			Phase 2			
			2010	2011	2012	2013	2014	2015	
Output 5: Risk Assessment Study conducted.	5.1: Identify datasets that are currently available within Member States	AHA Centre	X						Completion of the Risk Assessment Study and inventory of risk assessment activities and systems
	5.2: Identify data, format, frequency and source.	AHA Centre	X						
	5.3: Inventory current risk assessment activities.	AHA Centre	X						
	5.4: Identify systems currently in use that facilitate data sharing including those used by existing regional facilities such as ASEAN Specialised Meteorological Centre (ASMC) and ASEAN Earthquake Information Centre (AEIC).	AHA Centre	X						
Output 6: Early Warning Report completed.	6.1: Authority and Liability.	AHA Centre, RAEWM Working Group	X						Early Warning Report. Early Warning Concept of Operations (CONOPS).
	6.2: System Availability and Interoperability.		X						
	6.3: Communicating risk using an Early Warning system.		X						
	6.4: Stocktaking of systems currently in use that facilitate data sharing.		X						
	6.5: Identify warning data providers/sources for each hazard.		X						
	6.6: AHA Centre initial EW CONOPS.		X						
Output 7: Monitoring Report completed.	7.1: Examine how Member States currently conduct monitoring activities for risk assessment and early warning initiatives.	AHA Centre, RAEWM Working Group							Completion of the Monitoring Report.
Output 8: National risk assessment guidelines on collection, storage analysis and dissemination formulated.	8.1: Presentation of Risk Assessment Study findings.	AHA Centre, RAEWM Working Group		X					Guidelines for Member States on data collection, storage, analysis, and dissemination.

Expected Output	Activity	Responsible Parties	Timeline						Milestones
			Phase 1			Phase 2			
			2010	2011	2012	2013	2014	2015	
	8.2: Agreement on ASEAN guidelines for the collection, storage, analysis, and dissemination of national risk assessment data.	RAEWM Working Group, ACDM		X					
Output 9: Guidelines on and best practices in regional early warning developed and disseminated to Member States.	9.1: Presentation of findings and recommendations of the EW Report.	AHA Centre, RAEWM Working Group		X					Formal Presentation of the Early Warning Report.
	9.2: Agreement related to questions of: Authority & Liability, System Availability & Interoperability, Communicating Risk, Notification procedures.	RAEWM Working Group, ACDM		X					Development of guidelines and best practices for regional Early Warning activities.
Output 10: Guidelines on and best practices in regional monitoring.	10.1: Presentation of findings and recommendations of the Monitoring Report.	AHA Centre, RAEWM Working Group		X					Formal presentation of the monitoring report. Development of guidelines and best practices for regional monitoring efforts.
Output 11: Early Warning architecture deployed.	11.1: Provisioning Systems; links & integration with existing platforms.	AHA Centre		X					Initial EW systems and CONOPS.
	11.2: Agreements with EW hazard Data Providers.	AHA Centre		X					
Output 12: Member State Risk Assessment data collection.	12.1: Data Collection.	Relevant agencies in Member States			X				Initial EW systems and CONOPS
	12.2: Analysis of collected data by Member States and submission of outputs to AHA Centre.	Relevant agencies in Member States, AHA Centre		X					

Expected Output	Activity	Responsible Parties	Timeline						Milestones
			Phase 1			Phase 2			
			2010	2011	2012	2013	2014	2015	
Output 13: Early Warning necessary Institutional and technical mechanisms tested. Multi-hazard decision support platform developed.	13.1: Continue development of CONOPS for institutional and technical mechanisms for a coordinated Early Warning programme.	AHA Centre			X				Full implementation of all institutional and technical mechanisms in support of Early Warning efforts. Development of the multi-hazard early warning and decision support platform.
	13.2: Continue Implementation of institutional and technical mechanisms.	AHA Centre, relevant agencies in Member States			X				
	13.3: Development of a multi-hazard Early Warning and decision support platform.	AHA Centre, relevant agencies in Member States			X				
Output 14: Early Warning and Monitoring System implemented fully.	14.1: Develop institutional and technical mechanisms in AHA Centre, and Member States to establish an effective and coordinated Monitoring System.	AHA Centre, relevant agencies in Member States			X				Institutional and technical mechanisms in support of risk assessment and early warning monitoring efforts finalised.
	14.2: Implementation of institutional and technical mechanisms for early warning.	AHA Centre, relevant agencies in Member States			X				
Output 15: Regional Risk Assessment conducted.	15.1: Conduct of Regional Risk Assessment.	AHA Centre, RAEWM Working Group				X			Completion of the Regional Risk Assessment by AHA Centre.
Output 16: Early Warning System tested fully.	16.1: Testing of Early Warning System (multiple hazards over a 12-month period).	AHA Centre, relevant agencies in Member States				X			Fully functional Regional Early Warning System.
Output 17: Monitoring System tested.	17.1: Testing of Monitoring System and upgrading of the system where necessary and feasible.	AHA Centre, relevant agencies in Member States				X			Fully functional Regional Early Warning System.

17

Expected Output	Activity	Responsible Parties	Timeline						Milestones
			Phase 1			Phase 2			
			2010	2011	2012	2013	2014	2015	
Output 18: Regional Risk Assessment results presented.	18.1: Presentation and dissemination of the Regional Risk Assessment.	AHA Centre, RAEWM Working Group				X			Presentation of findings: ASEAN Regional Risk Assessment.
Output 19: Early Warning System study findings.	19.1: Presentation and dissemination of the Regional Early Warning System.	AHA Centre, RAEWM Working Group				X			Presentation of findings: ASEAN Regional Early Warning System.
Output 20: Monitoring system study findings.	20.1: Presentation and dissemination of Regional Monitoring System.	AHA Centre, RAEWM Working Group				X			Presentation of findings: ASEAN Regional Monitoring System.
Output 21: Regional Risk Assessment Programme evaluated.	21.1: Review of the policies and procedures to identify strengths and potential changes. Where appropriate and feasible, improvements will be made.	AHA Centre, RAEWM Working Group					X		Completion of evaluation, and presentation of recommendations.
Output 22: Early Warning Training Programme conducted.	22.1: Development of an Early Warning Training Programme for emergency management personnel.	AHA Centre					X		Hands-on Training on Early Warning.
	22.2: Implementation of training to teach how to quickly obtain and apply the Early Warning information to critical response decisions.	AHA Centre					X		

2. Prevention and Mitigation (P&M)

Natural disasters have caused tremendous losses and damage in terms of economic, social, physical, and environmental assets in ASEAN Member States. The predominant crisis-oriented approach to managing disasters took a turn in the early 1990s towards a disaster risk reduction (DRR) paradigm that underscore prevention and mitigation. The increasing recognition of the link between disaster and development contributed to this paradigm shift. Hence, a stronger strategy for disaster prevention and mitigation is necessary to safeguard lives and property, reduce disaster losses as well as ensure sustainable development.

This strategic component on Prevention and Mitigation builds on previous initiatives and accomplishments under the ASEAN Regional Programme on Disaster Management (ARPDM) 2004-2010 and broadens the scope of prevention and mitigation activities to assist Member States to improve their knowledge and capacities for effective DRR. This thrust will be achieved through eight sub-components outlined below.

2.1 Implementing National Action Plans on Disaster Risk Reduction and Strengthening Legal and Institutional Frameworks

Member States have developed legal frameworks and institutional arrangements to enable them to manage and reduce the risk of disasters (refer to table below). For DRR to take root and sustain DRR measures, it is necessary for Member States to establish a multi-stakeholder and multi-sectoral National Platform, develop and implement a DRR National Action Plan (NAP) and strengthen national legal and institutional frameworks.

Member State	DRR National Action Plan	Timeframe
Cambodia	Strategic National Action Plan for DRR	2008-2013
Indonesia	National Action Plan for Disaster Reduction	2006-2009
Lao PDR	Strategic National Action Plan for DRM	2003-2020
Myanmar	Myanmar Action Plan on DRR	2009-2015
Philippines	Strengthening DRR in the Philippines: Strategic National Action Plan	2009-2019
Thailand	Strategic National Action Plan for DRR	2010-2019
Viet Nam	National Action Plan for the Implementation of the National Strategy for Natural Disaster Prevention, Response and Mitigation to 2020	2009-2020

19

Objectives:

- Facilitate knowledge sharing on existing legal and institutional arrangements pertaining to DRR and lessons learned from legal and institutional reforms;
- Provide a periodic venue for sharing among Member States and for systematic monitoring of progress on the implementation of their respective DRR National Action Plan;
- Generate support among ASEAN ministers in enhancing an enabling environment for the implementation of DRR within Member States;
- Establish a regular reporting mechanism for ASEAN status on the implementation of AADMER and HFA; and
- Generate the highest commitment among the ASEAN Leaders in prioritising DRR as part of the Member States' development agenda.

Expected Outcomes:

- Increased number of Member States undertaking legal and institutional reforms on disaster management;
- Enhanced partnerships among government ministries, non-government organisations, and other stakeholders in the implementation of DRR National Action Plan;
- Inclusion of DRR in the national development agenda of Member States; and
- Strengthened commitment of ASEAN Member States to establish effective legal and institutional arrangements and operational DRR plans.

Lead Shepherd: Thailand

Linked Activities:

- UNISDR Establishment of National Platforms for DRR and Development of Strategic National Action Plan (SNAP)
- UNDP Global Mainstreaming Initiative for DRR

Output-Activity Matrix:

Expected Output	Activity	Responsible Parties	Timeline						Milestones	
			Phase 1			Phase 2				
			2010	2011	2012	2013	2014	2015		
Output 1: Compendium of good practices in institutional strengthening and legal reforms on DRM in Member States.	1.1: Organisation of a regional workshop on current legal and institutional arrangements for disaster risk management (DRM) in Member States focusing on challenges and lessons learned to promote country specific legal and institutional reforms in disaster management.	ASEC, AHA Centre, ACDM		X	X					Content outline for documentation of experiences, lessons learned and challenges in undertaking institutional and legal reforms on disaster management disseminated by ASEC to the Member States. Experiences, lessons learned and challenges in undertaking institutional and legal reforms on disaster management documented by Member States. Documentation finalised and submitted by Member States to ASEC.
Output 2: Effective legal and institutional reforms on DRR in Member States.	2.1: Establishment of effective legal and institutional arrangements on disaster management by Member States.	Member States: NDMOs	X	X	X	X	X	X		Legal and institutional reforms needed in disaster management identified and developed by Member States. Legal and institutional reforms on disaster management approved and implemented by Member States.
	2.2: Establishment of national platform on DRM by Member States.	Member States: NDMOs	X	X	X	X	X	X		National platform on DRM developed, approved, and implemented by Member States
Output 3: Establishment and implementation of effective National Action Plan on DRR by Member States.	3.1: Development of DRR Action Plan by Member States.	Member States: NDMOs	X	X	X	X	X	X		Process for the development of DRR National Action Plan established and carried out by Member States.

21

Expected Output	Activity	Responsible Parties	Timeline						Milestones	
			Phase 1			Phase 2				
			2010	2011	2012	2013	2014	2015		
	3.2: Conduct of a periodic forum by Member States to assess the implementation of their National Platform and DRR National Action Plans.									Contents identified by and broad consensus achieved among stakeholders on the National Action Plan on DRR. National Action Plan on DRR approved and implemented by Member States. Assessment tools and procedures on the implementation of National Platform and DRR National Action Plan identified and regularly carried out by Member States.
Output 4: National and regional report reflecting Member States' experiences in mobilising multi-stakeholder contributions in the implementation of their DRR National Action Plan.	4.1: Holding of a periodic forum among Member States to exchange experiences on the status of their National Platforms and DRR National Action Plans, including challenges encountered and innovative approaches.	ASEC, AHA Centre, ACDM	X		X		X			Content outline for reporting disseminated by ASEC to the Member States. Experiences on national implementation of DRR Action Plan documented by Member States. Documentation finalised and submitted by Member States to ASEC annually.
Output 5: Documentation and analysis of ASEAN implementation of AADMER and HFA.	5.1: Conduct of a regular ASEAN reporting on the implementation of the AADMER and the HFA through a regional forum and development of a template to ensure standardised reporting on the AADMER and the HFA.	ASEC, ACDM	X	X	X	X	X	X		Template for standardised reporting on AADMER and HFA disseminated to Member States by ASEC. Template filled-up annually and submitted to ASEC by Member States.

22

Expected Output	Activity	Responsible Parties	Timeline						Milestones
			Phase 1			Phase 2			
			2010	2011	2012	2013	2014	2015	
Output 6: Key DRR issues and action points for inclusion in the ASEAN Summit Agenda.	6.1: ACDM reporting on the progress of HFA and AADMER implementation in ASEAN and identification of agenda item for the COP and ASEAN Summit.	ASEC, ACDM	X	X	X	X	X	X	ACDM report on the progress of HFA and AADMER implementation in ASEAN completed. Agenda item for the COP and ASEAN Summit identified.

2.2 Mainstreaming Disaster Risk Reduction in National Development Plans

There has been some progress in integrating DRR in development planning in various countries in ASEAN. Cambodia, Indonesia, Lao PDR, Philippines, Thailand, and Viet Nam have initiated efforts to incorporate DRR measures in their respective national and local development plans. Mainstreaming of DRR in identified priority development sectors is also ongoing in Cambodia, Lao PDR, and the Philippines. This progress should be fortified and broadened to include all Member States.

Objectives:

- Promote the benefits of mainstreaming DRR in national and sectoral development plans;
- Understand mainstreaming DRR in national development planning from the perspective of planning and finance ministries and generate innovative ways of dealing with challenges in these areas of concern;
- Enhance operational skills in mainstreaming DRR in national development plans; and
- Facilitate inter-country support on the implementation of DRR mainstreaming in national development plans.

Expected Outcomes:

- Continuing support from the planning and investment/finance ministries for the integration of DRR in national development plans and programmes;
- Budget allocated/increased for DRR as part of national development plans; and
- Increased capacity of Member States in mainstreaming DRR in national development plans.

Lead Shepherd: Philippines

Linked Activities:

- RCC-ADPC Programme on Mainstreaming DRR in National Development
- UNDP Global Mainstreaming Initiative for DRR

Output-Activity Matrix:

Expected Output	Activity	Responsible Parties	Timeline						Milestones	
			Phase 1			Phase 2				
			2010	2011	2012	2013	2014	2015		
Output 1: Regional guidelines on mainstreaming DRR in national and sectoral development plans.	1.1: Development of a process guideline on integrating DRR in national development planning process and in priority development sectors based on the experiences of relevant Member States that outline the stages in formulating national development plans, the stakeholders involved, and possible entry points for DRR and DRR measures to be integrated.	ASEC, AHA Centre, P&M Working Group, ACDM Member States : National Planning and Investment/ Finance Agencies; Sectoral Agencies		X	X					Content outline for documentation on how Member States have undertaken mainstreaming DRR in their national development planning process and in priority development sectors disseminated by ASEC to the Member States. Documentation by Member States completed and submitted to ASEC.
Output 2: DRR component in national development plan of Member States.	2.1: Incorporation of DRR in national development planning process of Member States.	Member States : National Planning and Investment/ Finance Agencies	X	X	X	X	X	X		DRR component for incorporation in national development planning process identified and incorporated by Member States.

Expected Output	Activity	Responsible Parties	Timeline						Milestones
			Phase 1			Phase 2			
			2010	2011	2012	2013	2014	2015	
Output 3: Implementation and/or strengthened implementation of national development plans and programmes integrating DRR.	3.1: Organisation of a forum for ACDM and ASEAN senior officials of ministries for planning and investment/finance to promote commitment to disaster resilient development and generate partnerships to align development and DRR objectives.	ASEC, AHA Centre, ACDM Member States : National Planning and Investment/ Finance Agencies	X	X	X	X	X	X	National development plans and programmes of Members States incorporating DRR established and/or enhanced.
	3.2: Development and conduct of a regional training course for various government ministries to build or enhance understanding and skills on the how-to of mainstreaming DRR in national development planning.	AHA Centre, P&M Working Group Member States : National Planning and Investment/ Finance Agencies; Sectoral Agencies	X	X	X	X	X	X	Training needs assessment of various government ministries of the Member States submitted to AHA Centre.
Output 4: Implementation of exchange programmes of DRR practitioners and peer learning system among Member States.	4.1: Facilitate knowledge exchange through hands-on peer learning among Member States to capacitate practitioners in mainstreaming DRR in national and sectoral development planning.	AHA Centre, P&M Working Group National Planning and Investment/ Finance Agencies; Sectoral Agencies	X	X	X	X	X	X	Agreement governing exchange programme between and among Member States (including exchange programme needs, staff deployment, and time table, etc) established.

25

2.3 Mainstreaming Disaster Risk Reduction in Education and Health Sectors

2.3.1. Integrating DRR in School Curriculum

Vulnerability of children to disasters highlights the imperative to integrate DRR in the educational system. As DRR is primarily a process of knowledge acquisition and innovation, its integration in the school curriculum becomes key in ensuring safety of children and increasing resilience of communities.

Objectives:

- Facilitate the institutionalisation of DRR in the education sector of Member States;
- Promote sharing of experiences, sound practices, and innovative approaches on DRR integration in the curriculum among and between the education sector, national disaster management agencies, and the broader education sector working group/stakeholders; and
- Deepen the collaboration among key stakeholders in each Member State to initiate or upscale DRR integration in the curriculum and teacher training system of school teachers.

Expected Outcomes:

- Integration of DRR in the education sector development agenda of Member States;
- Upscaling of initiatives on DRR mainstreaming in the school curriculum in Member States, i.e. increased budget, coverage, and partnerships for implementation;
- Institutionalisation of DRR curriculum in the education programme of universities; and
- Integration of DRR and school safety in the teacher training system, i.e. annual in-service and pre-service teacher trainings.

Lead Shepherds: Cambodia and Lao PDR

Linked Activities:

- ASEAN-UNISDR Technical Cooperation on the Implementation of HFA in ASEAN
- UNISDR, WHO and UNICEF's "One Million Safe Schools and Hospitals Campaign"
- ADRC Promotion of Disaster Education in Schools
- RCC-ADPC-UNDP Mainstreaming DRR in the Education Sector
- UNICEF Child-Friendly Schools Programme

Output-Activity Matrix:

Expected Output	Activity	Responsible Parties	Timeline						Milestones
			Phase 1			Phase 2			
			2010	2011	2012	2013	2014	2015	
Output 1: Agreement on joint activities to be undertaken by the ACDM and the ASEAN Senior Officials Meeting on Education (SOM-ED), whose members are Education Ministers, and the Southeast Asian Ministers of Education Organisation (SEAMEO).	1.1: Organisation of a regional forum to be participated in by SOMED, SEAMEO, and ACDM for sharing ongoing initiatives and identifying future collaborative efforts to initially establish linkages with ASCOE and SEAMEO to further institutionalise DRR integration in education.	ASEC, AHA Centre, ACDM Member States: Ministry of Education	X	X					Ongoing initiatives and possible collaboration points among the SOM-ED, SEAMEO, and ACDM in institutionalising DRR integration in the curriculum identified.
Output 2: Programmes/projects on integration of DRR in the curriculum and in the education sector as a whole agreed for implementation among education ministry, education sector stakeholders, and national disaster management agencies in Member States.	2.1: Conduct of a periodic regional sharing forum among the education ministry (including higher education), education sector working groups/stakeholders, and national disaster management agencies to enhance in-country coordination and collaboration for a more effective integration of DRR in the curriculum and in the education sector as a whole.	AHA Centre, ASEC, ACDM Member States: Ministry of Education	X		X		X		Collaboration points for enhancing DRR integration in the curriculum and in the education sector as a whole identified by Education Ministry, Education Sector Working Group, NDMO, NGOs, and other stakeholders in each Member State.

27

Expected Output	Activity	Responsible Parties	Timeline						Milestones
			Phase 1			Phase 2			
			2010	2011	2012	2013	2014	2015	
	2.2: In-country coordination (through meetings, fora, workshops) among the Ministry of Education, Education Sector Working Group, NDMO, NGOs, and other stakeholders towards greater collaboration on integration of DRR in the curriculum and in the education sector as a whole.	ACDM Member States: Ministry of Education	X		X		X		
Output 3 An integrated publication on sound practices, guideline and manual on mainstreaming DRR in the school curriculum	3.1: Documentation of sound practices on mainstreaming DRR in the school curriculum and in the teacher training system and dissemination to relevant national authorities, particularly during national and regional education events.	AHA Centre Member States: Ministry of Education	X	X					Experiences by Member States on mainstreaming DRR in the curriculum and in the teacher training system documented. (content outline to be disseminated by AHA Centre to Member States; Member States to document)
Output 4: Agreements on plans/programmes/projects for initiating DRR mainstreaming in the teacher education programmes and in the teacher training system.	4.1: Initialisation of the process of mainstreaming DRR in the teacher education programmes in universities and in the teacher training system.	AHA Centre, ASEC, ACDM Member States: Ministry of Education		X	X	X			Stakeholders, areas of cooperation, and strategies for mainstreaming identified and discussed.

28

2.3.2. Disaster Safety of Educational Facilities

Strengthening school buildings and facilities before a disaster strikes will protect children from death and injury, mitigate long-term costs, and ensure functional continuity after a disaster event. Schools often also serve as emergency shelters during disasters. Ensuring the safety of and designing school facilities with such considerations is a worthwhile investment.

Objectives:

- Promote the integration of safe school construction in the education sector agenda of Member States;
- Share disaster-resilient school construction practices and safe school models that use locally sourced materials and scientific knowledge;
- Enable Member States to undertake vulnerability assessment of existing schools;
- Provide guidance to Member States on ensuring safe school construction; and
- Assist Member States in developing a national action plan for safe schools.

Expected Outcomes:

- Integration of safe school construction in the education agenda of Member States;
- Integration of DRR in national school construction guidelines of Member States;
- Undertaking of vulnerability assessment and strengthening of existing schools by Member States; and
- Development of a national action plan for safe schools by Member States.

Lead Shepherd: Viet Nam

Linked Activities:

- ASEAN-UNISDR Technical Cooperation on the Implementation of HFA in ASEAN
- UNISDR "One Million Safe Schools and Hospitals Campaign"
- ASEAN-UNISDR ASEAN Day for Disaster Management (ADDM)
- RCC-ADPC-UNDP Mainstreaming DRR in the Education Sector
- UNCRD School Earthquake Safety Initiative (SESI)
- ADRC Promotion of Disaster Education in Schools

29

Output-Activity Matrix:

Expected Output	Activity	Responsible Parties	Timeline						Milestones
			Phase 1			Phase 2			
			2010	2011	2012	2013	2014	2015	
Output 1: Programmes/projects on Integration of DRR in school construction and in the education sector as a whole agreed for implementation among Ministry of Education, education sector stakeholders, Ministry of Public Works, and national disaster management agencies in Member States.	1.1: Holding of a periodic regional forum among the school construction offices in the Ministry of Education and Ministry of Public Works/Construction, education sector working groups, and the national disaster management agencies to promote better coordination and integration of safe schools in the broader education agenda and encourage the usage of guidelines on safe school construction.	AHA Centre, ASEC, ACDM Member States: Ministry of Education	X		X			X	Collaboration points on enhancing DRR integration in school construction and in the education sector as a whole identified by Education Ministry, Education Sector Working Group, Ministry of Public Works, NDMOs, and other stakeholders in each Member State.
Output 2: Documentation of current school construction practices, including practices that ensure safe school construction, and safe school models in Member States.	2.1: Stocktaking of current practices on school construction followed in Member States including the use of indigenous knowledge and technologies that could facilitate new approaches in building safe schools. Safe school models documented as part of the stock taking will be showcased.	AHA Centre Member States: Ministry of Education	X	X					Content outline for documentation of experiences on safe school construction disseminated by AHA Centre to the Member States. Documentation completed and submitted by Member States to the AHA Centre.

Expected Output	Activity	Responsible Parties	Timeline						Milestones
			Phase 1			Phase 2			
			2010	2011	2012	2013	2014	2015	
Output 3: Guideline on the conduct of vulnerability assessment of existing schools.	3.1: Development of a guideline on the procedure of vulnerability assessment and strengthening of existing schools.	AHA Centre, P&M Working Group Member States: Ministry of Education			X	X			Existing country guidelines and experiences on vulnerability assessment submitted by Member States to AHA Centre Existing guidelines and experiences on vulnerability assessment in the region and in other countries compiled and synthesised by the AHA Centre.
Output 4: Compendium of existing guidelines on safe school construction and school safety.	4.1: Compilation and dissemination of regional guidelines on planning, design, and structural standards relating to hazards specific to ASEAN to promote safety in new school construction based on existing guidelines developed by various organisations such as ProVention Consortium, UNDP, UNISDR, National Society for Earthquake Technology in Nepal, and Inter-Agency Network for Education in Emergencies (INEE), among others.	AHA Centre, P&M Working Group Member States: Ministry of Education	X	X					Existing country guidelines on planning, design, and structural standards submitted by Member States to AHA Centre. Regional guidelines on planning, design and structural standards in the region compiled and synthesised by AHA Centre. Compendium of guidelines disseminated by AHA Centre and provided orientation to Ministry of Education, Ministry of

31

Expected Output	Activity	Responsible Parties	Timeline						Milestones
			Phase 1			Phase 2			
			2010	2011	2012	2013	2014	2015	
									Public Works/ Construction, and Education Sector Working Group members.
Output 5: National action plan on safe schools developed by Member States.	5.1: Development of national action plan on safe schools by Member States.	Member States: Ministry of Education ACDM	X	X					National action plan finalised and approved by pertinent authority.

2.3.3. Disaster Safety of Health Facilities

Aside from school buildings, hospitals are among the critical facilities that may be damaged or destroyed when disasters strike. Studies have shown that disaster damage to hospitals reach millions of dollars and may range from 15 to 60 percent of annual government spending. It has also been shown that retrofitting hospitals is cost-effective and can protect 90 percent of the value of the hospital, ensuring the protection of medical facilities and capability to save human lives.

Hospitals thus should be able to deliver medical care and life saving services during and in the aftermath of a disaster by making them safe through structural and non-structural disaster mitigation measures.

Objectives:

- Facilitate the institutionalisation of disaster-safe hospitals in the health sector agenda of Member States;
- Share current practices in making hospitals safe from disasters covering construction, functional continuity, and preparedness;
- Enable Member States to undertake vulnerability assessment of existing hospitals; and
- Support Member States in the development of a national action plan for safe hospitals.

Expected Outcomes:

- Integration of disaster-safe hospitals in the national health agenda of Member States;
- Conduct of vulnerability assessment of hospitals by Member States; and
- National action plan on safe hospitals developed by Member States.

Lead Shepherd: tbd

Linked Activities:

- ASEAN-UNISDR Technical Cooperation on the Implementation of HFA in ASEAN
- UNISDR "One Million Safe Schools and Hospitals Campaign"
- ASEAN-UNISDR ASEAN Day for Disaster Management

Output-Activity Matrix:

Expected Output	Activity	Responsible Parties	Timeline						Milestones
			Phase 1			Phase 2			
			2010	2011	2012	2013	2014	2015	
Output 1: Agreement to collaborate on a number of common initiatives relating to safe hospital construction and management among ACDM, ASEAN Senior Officials Meeting on Health Development (SOMHD), WHO, and other stakeholders.	1.1: Organisation of a periodic forum among ACDM, ASEAN Senior Officials Meeting on Health Development (SOMHD), World Health Organisation (WHO) and other key stakeholders related to hospital construction and management to establish programmatic partnerships as well as identify sound and scale-up structural and non-structural measures to ensure operational resilience and continuity of health services during and after a disaster.	AHA Centre, ASEC, ACDM Member States: Ministries of Health	X		X		X		Common initiatives on enhancing DRR integration in hospital construction and management among ACDM, SOMHD, WHO, and other key stakeholders identified.

33

Expected Output	Activity	Responsible Parties	Timeline						Milestones
			Phase 1			Phase 2			
			2010	2011	2012	2013	2014	2015	
Output 2: Documentation of current safe hospital initiatives covering structural and non-structural disaster mitigation measures.	2.1: Stocktaking of current practices in making hospitals safe from disasters from construction to functional continuity and preparedness.	AHA Centre Member States: Ministries of Health	X	X					Existing documents on national initiatives on safe hospital construction submitted by Member States to AHA Centre. Initiatives of regional organisations and Member States on safe hospital construction compiled and synthesised.
Output 3: Regional guideline on vulnerability assessment of hospitals.	3.1: Development of a guideline on the conduct of vulnerability assessment and strengthening of hospitals using existing materials on safe hospitals to assist Member States in programmatically strengthening hospitals and implementing non-structural mitigation measures.	AHA Centre, P&M Working Group Member States: Ministry of Health		X	X				Existing national guidelines and experiences on vulnerability assessment submitted by Member States to AHA Centre. Existing guidelines and experiences on vulnerability assessment in the region and in other countries compiled and synthesised.
Output 4: Compendium of existing guidelines on safe hospitals.	4.1: Compilation and promotion on the active use of existing materials on safe hospitals to support Member States in formulating a national action plan for safe hospitals.	AHA Centre	X						Existing national guidelines on safe hospitals submitted by Member States to AHA Centre.

34

Expected Output	Activity	Responsible Parties	Timeline						Milestones
			Phase 1			Phase 2			
			2010	2011	2012	2013	2014	2015	
									Compendium of guidelines disseminated by AHA Centre. Orientation on the use of the guidelines provided by AHA Centre to Ministry of Health and other stakeholders in each Member State.
Output 5 National action plan on safe hospitals developed by Member States	5.1: Development of national action plan on safe hospitals by Member States.	Member States: Ministry of Health, ACDM	X	X	X	X			National action plan finalised and approved by pertinent authority.

2.4. Public Education, Awareness and Advocacy

Communication of disaster risk to stakeholders is critical in building disaster awareness and resilience of communities. Advocating for DRR through the use of effective and innovative information, education and communication (IEC) approaches needs to be implemented region-wide. These in turn will lead to enhanced public awareness and education on DRR, which is a vital pillar in building disaster resilient communities in the ASEAN region.

Objectives:

- Increase the level of disaster consciousness of peoples in the ASEAN region;
- Promote the AADMER as a way to raise disaster awareness and advocate for DRR; and
- Enhance the capacities of Member States to undertake more effective awareness and education campaigns on DRR.

35

Expected Outcomes:

- Improved capacity of Member States in undertaking effective and focused IEC campaigns on DRR;
- Higher visibility of AADMER and DRR in the ASEAN region;
- Higher level of public awareness on the importance of disaster prevention and mitigation; and
- More active engagement of Member States in the observance of ADDM in both regional and national activities.

Lead Shepherds: Lao PDR and Thailand

Linked Activities:

- UNISDR's International Day for Disaster Risk Reduction every 2nd Wednesday of October (same day as ADDM)
- ASEAN-UNISDR Technical Cooperation for the Implementation of HFA in ASEAN

Output-Activity Matrix:

Expected Output	Activity	Responsible Parties	Timeline						Milestones
			Phase 1			Phase 2			
			2010	2011	2012	2013	2014	2015	
Output 1: Compendium of effective information, education and communication (IEC) campaigns on DRR undertaken by Member States disseminated online, e.g. ACDM website.	1.1: Preparation of a compendium of effective IEC campaigns on DRR implemented in various countries.	AHA Centre, P&M Working Group	X	X					Effective national DRR PEA campaigns submitted documented and submitted by Member States to AHA Centre. Compendium of effective DRR PEA campaigns carried out in the ASEAN region compiled, and finalised for dissemination online by the AHA Centre.

36

Expected Output	Activity	Responsible Parties	Timeline						Milestones	
			Phase 1			Phase 2				
			2010	2011	2012	2013	2014	2015		
Output 2: Public education and awareness materials on AADMER and DRR activities of ACDM; Strategies for wide use of materials identified and implemented by NDMOs.	2.1: Development and dissemination of innovative PEA materials on AADMER and related DRR activities of ACDM and ASEAN.	AHA Centre, P&M Working Group	X	X						PEA materials on AADMER and related DRR activities of ACDM and ASEAN identified and completed by AHA Centre (messages, graphic design, layout, etc.). Materials disseminated by AHA Centre to NDMOs.
Output 3: Advocacy materials on identified priority prevention and mitigation measures.	3.1: Development of advocacy materials with key messages focusing on prevention and mitigation, e.g. safe housing incorporating indigenous knowledge and practice.	AHA Centre, P&M Working Group	X	X	X					Advocacy materials on prevention and mitigation identified and completed by AHA Centre (messages, graphic design, layout, etc.).
Output 4: DRR campaign materials and strategies developed and implemented by Member States.	4.1: Organisation of a regional training on design and conduct of IEC campaigns on DRR involving media professionals aside from DRM practitioners to create more effective and focused PEA strategies and materials that cover specific hazards, message, audience, and intended outcomes.	AHA Centre, P&M Working Group Media professionals involved in DRR	X	X	X					DRR campaign materials identified and finalised by each Member State (specific hazards, content/Messages, graphic design, layout, etc.). Strategies for implementation of DRR campaigns identified.
Output 5: Annual observance of the ASEAN Day for Disaster Management (ADDM) at both	5.1: Organisation of the annual observance of the ADDM at the national and regional levels to generate more public interest in	AHA Centre, ASEC, ACDM	X	X	X	X	X	X		Programmes of activities for the observance of ADDM in each country and at the regional level

37

Expected Output	Activity	Responsible Parties	Timeline						Milestones	
			Phase 1			Phase 2				
			2010	2011	2012	2013	2014	2015		
the national and regional levels.	DRR and increase disaster awareness in the region by using more innovative activities and strategies.									developed and disseminated well in advance by ACDM.

2.5. Urban Disaster Risk Reduction

The unprecedented growth of cities and continuing urbanisation in the 21st century pose a huge development challenge to national and local governments, urban development ministries, and DRR practitioners. Urban agglomerations with its concentration of population and assets in confined areas represent high exposure to hazards and vulnerability and thereby to high degree of disaster risks. Most if not all capital cities in ASEAN are the driving force of their national economies. At the same time, this is where the poor are forced to live in hazardous areas, rendering them more vulnerable to disasters.

The convergence of urbanisation and disaster risk in major cities pushes to the fore the necessity for national and city governments to assist one another and prioritise urban disaster risk reduction to promote an innovative strategies for DRR within the broader sustainable development agenda.

Objectives:

- Facilitate partnership among stakeholders in urban development planning and DRR;
- Capacitate Member States in undertaking urban disaster risk reduction; and
- Promote active participation of Member States in the Global Campaign on urban risk reduction.

Expected Outcomes:

- Risk assessment carried out in identified priority cities of Member States, and
- Integration of DRR measures in land use plans and building codes in Member States

38

Lead Shepherd: Malaysia

Linked Activities:

- UNISDR Global Campaign on Urban Risk Reduction and Safer Cities Campaign 2010-2011
- ADPC Urban Disaster Risk Management Programme, Asian Cities Climate Change Resilience Network (ACCCRN)
- CityNet Disaster Cluster
- Local Government Alliance for DRR (LGADRR)
- Partnership for Urban Risk Reduction (PURR)
- Regional Urban Task Force (RUTF)

Output-Activity Matrix:

Expected Output	Activity	Responsible Parties	Timeline						Milestones
			Phase 1			Phase 2			
			2010	2011	2012	2013	2014	2015	
Output 1: Agreements on collaboration mechanisms among stakeholders in urban development planning and DRR.	1.1: Organisation of a regional forum among the national association/leagues of cities, housing and urban development ministries of Member States, local government organisations in the ASEAN region and the ACDM as a venue for collaboration on effective planning of cities with consideration to disaster risks and to promote risk assessment as a basis for land use planning and enforcement of building codes.	ASEC, AHA Centre, ACDM Member States: Ministry of Urban/Physical Planning	X	X	X	X			National and regional collaborative mechanisms and programmes in city planning and urban disaster risk assessment identified.
Output 2: Guidance notes for Member States to assist them in undertaking initiatives during the Global Campaign on Urban Risk Reduction.	2.1: Development of guidance notes on the following to assist Member States in undertaking initiatives during the Global Campaign on Urban Risk Reduction: <ul style="list-style-type: none"> • Risk assessment of priority cities; • Enforcement of building and land use regulations; • Development of action plans for increasing 	P&M Working Group, AHA Centre	X	X					Documentation of sound practices on disaster resilient urban development in the region compiled and synthesised into a set of guidance notes.

39

Expected Output	Activity	Responsible Parties	Timeline						Milestones
			Phase 1			Phase 2			
			2010	2011	2012	2013	2014	2015	
	disaster resilience of cities; and <ul style="list-style-type: none"> • Stocktaking of good practices on disaster resilient urban development. 								
Output 3: National action plans of Member States on urban disaster resilience.	3.1: Development of national action plans by Member States on urban disaster resilience.	Member States: Ministry of Urban Development/Planning/Interior	X	X	X	X			National action plan on urban disaster resilience finalised and approved by pertinent authority.

2.6. Community-Based Disaster Risk Reduction

ASEAN Member States recognise the importance of community-based disaster risk reduction (CBDRR) as a way of dealing with local risk patterns and trends. Most national strategic and action plans for DRR highlight the importance of involving communities and the necessity to build their capacities in managing disaster risk. CBDRR has therefore been prioritised in national policies and frameworks on DRR. Likewise, networks of CBDRR practitioners and organisations have been organised in different Member States.

Objectives:

- Exchange knowledge and promote good practices to provide guidance in undertaking effective and socially inclusive CBDRR programmes;
- Facilitate the exchange of innovative training methodologies and approaches among DRR training institutions;
- Further support, strengthen and scale up CBDRR implementation of Member States; and
- Promote effective partnerships among national and local governments, NGOs and civil society organisations at the sub-national and national levels to implement CBDRR.

Expected Outcomes:

- Scaled up initiatives, socially inclusive CBDRR programmes in Member States;
- Increased partnerships among stakeholders at sub-national and national levels in implementing CBDRR;
- A regional centre for knowledge generation, management and dissemination on CBDRR; and
- Increased and improved CBDRR trainings in Member States.

Lead Shepherds: Cambodia and Lao PDR

Linked Activities:

- ASEAN Secretariat - ASEAN Partnership Group (APG) MOC for Collaboration in Supporting the Implementation of AADMER
- ADPC CBDRM programmes
- IFRC programme

Output-Activity Matrix:

Expected Output	Activity	Responsible Parties	Timeline						Milestones
			Phase 1			Phase 2			
			2010	2011	2012	2013	2014	2015	
Output 1.1: Compendium of case studies featuring good practices on CBDRR. Output 1.2: Manual on socially inclusive CBDRR.	1.1: Compilation and dissemination of sound practices highlighting socially inclusive approaches e.g. empowered participation of vulnerable groups, use of Indigenous knowledge and practices to assist Member States in enhancing and upscaling their CBDRR programmes.	AHA Centre	X	X					Case studies from Member States highlighting good and socially-inclusive CBDRR practices submitted to the AHA Centre Compendium of case studies disseminated by AHA Centre to Member States.

41

Expected Output	Activity	Responsible Parties	Timeline						Milestones
			Phase 1			Phase 2			
			2010	2011	2012	2013	2014	2015	
Output 2: Agreements on providing specific support to CBDRR programmes in Member States.	2.1: Support national programmes on CBDRR undertaken with local authorities and communities through the provision of local hazard map, sharing of methodologies on risk assessment and local risk reduction measures, among others	AHA Centre, ACDM	X	X	X	X	X	X	CBDRR support needs identified by Member States. Support provision from AHA Centre discussed and defined with Member States.
Output 3: Handbook on principles for effective partnership to implement CBDRR.	3.1: Development of principles for effective partnerships in CBDRR among key stakeholders at both the sub-national and national levels based on lessons learned in order to guide similar efforts or enhance existing ones.	AHA Centre, P&M Working Group, ACDM		X	X				Existing case studies featuring effective partnership, e.g. lessons, and modalities on CBDRR and other sectors collected and submitted by Member States to the AHA Centre. Handbook on principles for effective partnership disseminated by the AHA Centre to the Member States.
Output 4.1: Regional network of CBDRR training institutions acting as focal point for knowledge generation, management, and dissemination. Output 4.2: Compendium of CBDRR training materials and effective training	Activity 4.1: Establishment of a regional network of CBDRR training institutions to enhance the efficient use of resources and improve knowledge management practices.	AHA Centre, P&M Working Group			X	X			Regional institutions working on CBDRR identified and invited and agreed to form part of the network. CBDRR training materials, methodologies and approaches of members of the network submitted to AHA Centre.

42

Expected Output	Activity	Responsible Parties	Timeline						Milestones
			Phase 1			Phase 2			
			2010	2011	2012	2013	2014	2015	
methodologies and approaches.									Materials compiled, packaged, and disseminated by AHA Centre to the Member States.

2.7. Building Partnerships between DRR and Climate Change Adaptation Institutions and Programmes

Coping and adaptive capacities of individuals, communities and institutions in reducing disaster risks have impacts on the long term capacity for climate change adaptation (CCA). While the reciprocal relationship between DRR and climate change adaptation is recognised, the integration of the two still needs to be fully achieved as well as their linkages with development planning and practice.

Further, experiences of Member States demonstrate the benefits of building partnerships between DRR and CCA institutions and programmes to amplify the synergies between DRR and CCA.

Objectives:

- Enhance coordination and cooperation between DRR and CCA agencies at national and sub-national levels of planning and implementation;
- Improve the coherence and quality of programmes, plans and standards between DRR and CCA agencies at the national and sub-national levels;
- Advance institutional resource and funding mechanisms towards greater integration of the work of DRR and CCA agencies and groups; and
- Improve the level of understanding of the scientific and practical issues involved in linking DRR to CCA.

Expected Outcomes:

- Improved coherence and coordination in the planning and implementation of DRR and CCA programmes at the regional, national and sub-national levels;
- Active participation of both DRR and CCA agencies in common and relevant regional and national activities and initiatives;
- Establishment of new regional and national partnerships and mechanisms between DRR and CCA bodies; and
- Increased visibility and understanding of the scientific and practical links between DRR and CCA goals and initiatives in the region and Member States.

Lead Shepherd: Viet Nam

Linked Activities:

- ASEAN Climate Change Initiative (ACCI)

Output-Activity Matrix:

Expected Output	Activity	Responsible Parties	Timeline						Milestones	
			Phase 1			Phase 2				
			2010	2011	2012	2013	2014	2015		
Output 1: Cooperation Agreements between ACDM and other relevant ASEAN bodies and among DRR and CCA agencies in Member States to strengthen DRR and CCA linkages.	1.1: Organisation of a regional workshop between ACDM and other relevant ASEAN bodies (such as environment, science and technology, agriculture, energy) to forge stronger linkages between DRR and CCA initiatives in Member States to enhance their internal capacities, resources, efficiency and effectiveness towards achieving shared goals.	AHA Centre, ASEC, ACDM Other relevant ASEAN bodies	X	X	X					Areas of cooperation and integration relevant to DRR and CCA programming, planning and implementation at the regional, national and sub-national levels identified.
Output 2: Publication of scientific and research studies.	2.1: Development of scientific studies and research on technical and practical impacts due to climate change for sectors vulnerable to disaster risk.	AHA Centre, P&M Working Group	X	X	X	X				Joint scientific and research studies undertaken by ASEC, ACDM (through the P&M Working Group), other

Expected Output	Activity	Responsible Parties	Timeline						Milestones
			Phase 1			Phase 2			
			2010	2011	2012	2013	2014	2015	
									relevant ASEAN bodies and regional scientific organisations working on DRR and CCA identified and conducted.
Output 3: Agreements on and implementation of integrated planning and action plans among DRR and CCA agencies in Member States.	3.1: Organisation of workshops to establish partnerships between national agencies responsible for DRR and CCA, including their scientific counterparts towards greater cooperation and coherence in DRR and CCA planning and implementation.	AHA Centre, ACDM National agencies working on CCA	X	X	X	X	X	X	Areas for integration of CCA in DRR national action plans (NAPs) and DRR in Climate Change National Adaptation Plans of Action (NAPAS) or national strategies among Member States identified.

2.8. Disaster Risk Financing including Microfinance

Disasters undermine development gains and contribute to increased vulnerability. The high opportunity cost involved in disasters and the absence of economic safety nets for vulnerable populations have contributed to the emerging importance of disaster risk financing.

Disaster risk financing, including microfinance, is a major step towards dealing with the challenge of DRR and CCA. Country-specific disaster risk financing is the favoured approach as it tries to incorporate and respond to specific market needs and contexts. Public and private partnerships in this area are needed to ensure comprehensive and holistic response and utilise risk financing as a tool to increase impact and sustainability within the DRR-CCA framework.

Objectives:

- Improve awareness and understanding of disaster risk financing and microfinance in the ASEAN region, and
- Understand existing disaster risk financing and microfinance schemes towards developing responsive pro-poor schemes.

45

Expected Outcomes:

- Increased knowledge and understanding of various risk financing models and experiences in ASEAN Member States, and
- A number of recommendations and options for risk financing for consideration by Member States.

Lead Shepherd: Indonesia

Linked Activities

- ASEAN-UNISDR Technical Cooperation for the Implementation of the HFA in ASEAN

Output-Activity Matrix:

Expected Output	Activity	Responsible Parties	Timeline						Milestones
			Phase 1			Phase 2			
			2010	2011	2012	2013	2014	2015	
Output 1: Compendium of existing risk financing and microfinance schemes and activities in the region.	1.1: Stock taking of current status of risk insurance and microfinance for DRR and CCA in Member States as a basis for improving disaster risk financing programmes.	AHA Centre,	X	X					Documentations and case studies on existing risk insurance and microfinance schemes and activities in Member States compiled submitted to AHA Centre by the Member States. Compendium of risk financing and microfinance scheme activities in the region disseminated by AHA Centre to the Member States.
Output 2: Assessment on the status and prospects of disaster risk financing and microfinance in the region within the ASEAN framework and goals of DRR and CCA.	2.1: Organisation of a regional workshop on risk financing jointly by ACDM and the ASEAN Insurance Council to pool knowledge and experience on disaster risk insurance in the ASEAN countries and in other	AHA Centre, ASEC, ACDM		X	X	X			Existing risk insurance and microfinance schemes contained in the compendium analysed by AHA Centre.

Expected Output	Activity	Responsible Parties	Timeline						Milestones
			Phase 1			Phase 2			
			2010	2011	2012	2013	2014	2015	
	regions and develop responsive and pro-poor disaster risk financing options for vulnerable people.								Assessment document disseminated by AHA Centre to the Member States.

3. Preparedness and Response

The objective of AADMER as stated in Article 2 is to jointly respond to disaster emergencies through concerted national efforts and intensified regional and international cooperation. AADMER stipulates a number of actions to be taken by Member States in terms of preparedness and response. These are included in Article 8 up to Article 16 of Parts IV and V of the Agreement.

In line with the above Articles, ASEAN is developing disaster preparedness and emergency response mechanisms and tools, including the Standard Operating Procedure for Regional Standby Arrangements and Coordination of Joint Disaster Relief and Emergency Response Operations (SASOP), ASEAN Regional Disaster Emergency Response Simulation Exercise (ARDEX), Inventory of Earmarked Assets and Capacities, ASEAN Emergency Rapid Assessment Team (ERAT), and the ASEAN Coordinating Centre for Humanitarian Assistance on disaster management (AHA Centre).

The rationale for the Preparedness and Response strategic component is to provide specific actions to further strengthen ASEAN's preparedness and its responsiveness to disasters, and ensure rapid and collective deployment of ASEAN's assistance following a major disaster in one or more Member States within the ASEAN region.

Objectives:

- To strengthen disaster preparedness and improve ASEAN's responsiveness to disasters in a manner that is collective, fast, reliable and in line with humanitarian standards, and
- To align ASEAN's disaster response mechanisms with the global humanitarian response systems to ensure complementary ways of working between ASEAN and other humanitarian actors.

Expected Outcomes:

- Collective, fast and reliable ASEAN's disaster response that is in line with humanitarian standards and complements the global humanitarian response systems.

Lead Shepherds: Malaysia and Singapore

Linked Activities:

- ASEAN-UNHCR Project on Strengthening the Capacity of the ASEAN Committee on Disaster Management (ACDM)
- Disaster response mechanisms and systems under the United Nations (such as OCHA, UNDAC, WFP, etc)
- Disaster response mechanisms and systems under the International Red Cross and Red Crescent Movement;
- Partnership mechanism with the ASEAN Partnership Group (APG) and other humanitarian actors (civil society, etc.)
- Assessment Capacities Project (ACAPS) under the IASC Needs Assessment Task Force and a consortium of NGOs (HelpAge International, Merlin and Norwegian Refugee Council)

Output-Activity Matrix:

Expected Output	Activity	Responsible Parties	Timeline						Milestones
			Phase 1			Phase 2			
			2010	2011	2012	2013	2014	2015	
Output 1: A fully operational AHA Centre that is able to facilitate a rapid and well-targeted response to disasters in the region within 24 hours.	1.1: Develop the structure of the AHA Centre for approval by the ACDM and COP.	AHA Centre Task Force, ACDM, COP	X						The structure of AHA Centre approved by ACDM and COP by end of 2010.
	1.2: Fill the AHA Centre's structure through recruitments and secondments.	AHA Centre Task Force, ACDM	X	X					The key personnel under P&R Division recruited by end of 2010.
	1.3: Develop action plans, budget, procedures, etc to enable AHA Centre facilitate joint and rapid assessments and response within 24 hours.	AHA Centre	X						AHA Centre's action plans, budget developed presented to the AADMER Partners' Conference to be held by end of 2010.
	1.4: Conduct capacity building for the AHA Centre's staff to enable them to facilitate joint and rapid assessments and response within 24 hours.	AHA Centre		X	X	X	X	X	Capacity building strategy developed by end of 2010. First training conducted by 1 st quarter of 2011 and ongoing.
Output 2: SASOP is fully developed, institutionalised, and disseminated.	2.1: Conduct regular exercises (such as table-top, ARDEX, etc) to continuously enhance and upgrade SASOP and identify	AHA Centre, P&R Working Group	X	X	X	X	X	X	Improvements/ refinements identified through ARDEX 2010. Ongoing, to be done yearly as part of the annual ARDEX

49

Expected Output	Activity	Responsible Parties	Timeline						Milestones
			Phase 1			Phase 2			
			2010	2011	2012	2013	2014	2015	
	improvements/ additional chapters to be made/ included.								
	2.2: Conduct training and other relevant activities to familiarise the SASOP in Member States (including with other sectors such as custom and immigration) and with disaster responders	AHA Centre, P&R Working Group	X	X	X	X	X	X	Quarterly or half-yearly online exercise to familiarise the National Operations Centres on SASOP. The online exercise in 2010 should be conducted prior to ARDEX 2010.
	2.3: Develop other appropriate SOPs to respond to specific disasters, such as pandemics, and link them to SASOP, if appropriate.	AHA Centre, P&R Working Group, other relevant ASEAN bodies	X	X	X				TWG on Pandemic Preparedness and Response to discuss the development of specific SOP for pandemics by end of 2010.
	2.4: Develop systems and mechanisms needed to ensure the continuity of essential services when required in a disaster, such as severe pandemics, and link them to SASOP, if appropriate – linked with Output 13.	AHA Centre, P&R Working Group, other relevant ASEAN bodies	X	X	X				Assessments by TWG on Pandemic Preparedness and Response already start in 2010. This will lead to the development of systems/mechanisms for ensuring continuity of essential services. This can be used as a reference in developing similar systems for other types of disasters.
Output 3: Civil-military relations with respect to improving ASEAN disaster response enhanced.	3.1: Finalise the procedure for the utilisation of military assets and capacities (Chapter VI) for incorporation into SASOP.	AHA Centre, ASEC, P&R Working Group, ACDM, ADSOM	X						Chapter VI adopted by the First Meeting of the COP in 2010.

Expected Output	Activity	Responsible Parties	Timeline						Milestones
			Phase 1			Phase 2			
			2010	2011	2012	2013	2014	2015	
	3.2: Validate the procedure through the conduct of ARDEX and other exercises with the participation of ADSOM and military/defense units from ASEAN Member States.	AHA Centre, ASEC, P&R Working Group, ACDM, ADSOM	X	X	X	X	X	X	ARDEX conducted as a joint venture with ADSOM (with ACDM leading), starting in 2010.
	3.3: Develop a mechanism to sustain dialogues between ACDM and ADSOM (and other defense/military counterparts), and promote the "whole government" approach.	AHA Centre, ASEC, P&R Working Group, ACDM, ADSOM	X	X	X	X	X	X	A mechanism for sustained dialogue between ACDM and ADSOM identified by mid 2010. Joint meeting of ACDM and ADSOM organised by mid 2010.
	3.4: Conduct capacity and institutional development activities to promote Chapter VI and enhance civil military coordination.	AHA Centre		X	X	X	X	X	Starting in 2011
Output 4: A regularly updated list of authorities for AADMER and SASOP implementation.	4.1: Provide the list of National Focal Points (NFPs) and Competent Authorities of AADMER, and the 24/7 Operations Centre as specified in SASOP Template 1.	Member States: NDMOs AHA Centre	X						The list is completed and submitted to AHA Centre by mid 2010.
	4.2: Designate in-country AHA Operational Coordinator to liaise between the respective NDMOs and the AHA Centre.	Member States: NDMOs AHA Centre	X						The list is completed and submitted to AHA Centre by mid 2010.

Expected Output	Activity	Responsible Parties	Timeline						Milestones
			Phase 1			Phase 2			
			2010	2011	2012	2013	2014	2015	
	Activity 4.3: Regularly update the list as per agreed-upon schedule.	Member States: NDMOs AHA Centre	X	X	X	X	X	X	Ongoing, to be done every January and July of the year, or whenever there are significant changes, as required under SASOP. The updates are submitted to AHA Centre.
	4.4: Conduct regular test connectivity between AHA Centre and the National Operations Centres as well as their readiness as per agreed-upon schedule.	AHA Centre National Ops Centres in Member States	X	X	X	X	X	X	Ongoing.
Output 5: ASEAN Standby Arrangements developed and regularly updated.	5.1: Identify earmarked assets and capacities by Member States for the ASEAN Standby Arrangements, as specified in Templates 2 to 5 of SASOP.	Member States: NDMOs AHA Centre	X	X					Database populated within the next two years. List of assets submitted to AHA Centre.
	5.2: Develop a system in AHA Centre to facilitate information sharing among Member States and resource tracking.	AHA Centre	X	X					Online database transferred from ASEC to AHA Centre by end of 2010. An IT system for resource requests, mobilisation and tracking developed by end of 2011.
	5.3: Update information on earmarked assets and capacities regularly as specified in SASOP.	Member States: NDMOs AHA Centre	X	X	X	X	X	X	Ongoing, to be done every January and July of the year, or whenever there are significant changes, as required under SASOP. Regular updates submitted to AHA Centre.

Expected Output	Activity	Responsible Parties	Timeline						Milestones
			Phase 1			Phase 2			
			2010	2011	2012	2013	2014	2015	
Output 6: A regularly updated network of entry points and staging areas in Member States developed to facilitate and expedite the entry of supplies, equipment and expertise from assisting parties.	5.4: Conduct exercises (such as table-top) with National Operations Centres to test the system efficiency and applicability.	AHA Centre National Ops Centres in Member States			X	X	X	X	Pilot testing of the system and regular exercises to test usability and effectiveness of application conducted.
	6.1: Designate a network of entry points and staging areas in each Member State as entry points for supplies and expertise, as specified in Template 6 of SASOP.	Member States: NDMOs	X	X					Member States started designating the entry points and staging areas in 2010. A regional workshop to assist Member States to develop a strategy for identification of entry points and staging areas is organised by mid 2011.
	6.2: Conduct training and other required activities to equip the personnel and system to provide logistical support in entry points and staging areas.	AHA Centre, P&R Working Group		X	X	X	X	X	Training initiated by end of 2011.
	6.3: Conduct exercises on a regular basis to test the readiness of these pre-designated areas and identify procedures that have to be refined to facilitate the entry of assistance	AHA Centre, P&R Working Group		X	X	X	X	X	Exercises conducted and readiness evaluated.
	6.4: Develop a system, such as a GIS interface, in AHA Centre to show the network of entry points and staging areas.	AHA Centre		X					System developed and operational at AHA Centre.

53

Expected Output	Activity	Responsible Parties	Timeline						Milestones
			Phase 1			Phase 2			
			2010	2011	2012	2013	2014	2015	
	6.5: Update information in the system on a regular basis.	Member States: NDMOs AHA Centre		X	X	X	X	X	Information updated regularly by AHA centre.
Output 7: Procedures for entry of international assistance reviewed, and gaps identified.	7.1: Review existing domestic policies, procedures and regulations being used to facilitate the entry of international assistance.	Member States: NDMOs, relevant sectoral agencies AHA Centre	X	X					Documentation/database of existing domestic legislations/procedures completed by AHA Centre by end of 2010 Member States started reviewing their respective domestic legislations and procedures in 2010. "Guidelines for the Domestic Facilitation and Regulation of International Disaster Relief and Initial Recovery Assistance" developed by Red Cross and Crescent Movement can be used as a reference.
	7.2: Identify gaps and suggest amendments or refinements, if appropriate, to make it easier for other Member States and assisting entities to provide assistance, if needed.	Member States: NDMOs, relevant sectoral agencies AHA Centre, P&R Working Group, ACDM		X					Workshop organised by mid 2011 and refinement and other requirements identified Involvement of relevant ministries is necessary.

54

Expected Output	Activity	Responsible Parties	Timeline						Milestones
			Phase 1			Phase 2			
			2010	2011	2012	2013	2014	2015	
	7.3: Develop tools (such as guidance, training etc) to enhance the efficiency of the entry of assistance process as required by Member States.	AHA Centre			X	X	X	X	Tools for expediting entry of assistance developed.
	7.4: Present the guidance and other relevant documents to the ACDM and COP for approval as appropriate.	P&R Working Group, ACDM, COP			X				Guidance notes and other documents prepared and ready for approval by ACDM and COP.
	7.5: Disseminate the guidance and other tools to Member States through training and other relevant activities.	AHA Centre			X				Tools and guidance notes disseminated to Member States through various modes.
	7.6: Conduct exercises (such as table-top etc) or other assessments to review the efficiency of procedures of Member States (possibly as part of ARDEX).	AHA Centre			X	X	X		Exercises to review procedures conducted.
Output 8: Minimum quality and validity requirements for relief goods and materials developed.	8.1: Conduct of research/scanning of the range of requirements by each Member State.	AHA Centre		X					Study on the quality and validity requirements of Member States completed and result disseminated.
	8.2: Holding of a workshop to draft minimum quality and validity requirements for relief goods and materials.	AHA Centre, ASEC, P&R Working Group		X					Proposed minimum requirements developed before the workshop.
	8.3: Presentation to the ACDM of the proposed minimum quality and validity requirements for relief goods and materials.	AHA Centre, ASEC, P&R Working Group		X					Draft proposal on the minimum quality and validity requirement for relief goods and materials prepared for consideration.

Expected Output	Activity	Responsible Parties	Timeline						Milestones
			Phase 1			Phase 2			
			2010	2011	2012	2013	2014	2015	
	8.4: Adoption of the minimum quality and validity requirements for relief goods and materials.	ACDM, COP		X					Final quality and validity requirements for relief goods and materials adopted.
	8.5: Dissemination of the minimum quality and validity requirements for relief goods and materials to Member States and partners through training and other activities.	AHA Centre, P&R Working Groups			X	X	X	X	Minimum quality and validity requirements disseminated to all parties concerned.
Output 9: A pool of trained and rapidly deployable (within 24 hours) ERAT established.	9.1: Develop the deployment procedure for ERAT, including the scope of work and guideline to conduct the assessments.	AHA Centre, P&R Working Group (Singapore as lead)	X						Second draft of ERAT deployment procedure developed by mid 2010.
	9.2: Identify and address the legal status and funding for ERAT members.	AHA Centre, P&R Working Group	X	X					An interim funding mechanism for the deployment of ERAT while the ADMER Fund is being put in place identified by end of 2010.
	9.3: Develop procedure to clarify roles and responsibilities between ERAT and UNDAC and other relevant systems.	AHA Centre, P&R Working Group	X	X					Developed as part of 9.1 and further clarified under the ASEAN-UNOCHA SOP.
	9.4: Develop training strategy, determine competences and certification requirements for ERAT members.	AHA Centre	X	X					Training strategy and certification requirements for ERAT established.
	9.5: Secure commitments from Member States and ASEAN partners to provide specialists to the pool and ensure their availability.	P&R Working Group, ACDM	X	X					A core group of ERAT established and trained by end of 2010.

Expected Output	Activity	Responsible Parties	Timeline						Milestones
			Phase 1			Phase 2			
			2010	2011	2012	2013	2014	2015	
	9.6: Establish a pool of ERAT that includes both personnel from government and non-government organisations.	P&R Working Group, ACDM	X	X	X				Trained ERAT personnel ready for deployment.
	9.7: Conduct training, exercises and other induction courses for the ERAT members on a regular basis (including in cooperation with UNDAC).	AHA Centre	X	X	X	X	X	X	First training for ERAT conducted by end of 2010.
	9.8: Develop and provide for ERAT personnel manuals, tools and support kits including national and ASEAN flag/logo to promote ASEAN visibility during missions.	AHA Centre	X	X	X				Support tools, manuals and branding of ERAT developed
	9.9: Develop database of ERAT personnel and maintain it on a regular basis.	AHA Centre		X	X	X	X	X	ERAT roster and database regularly updated.
Output 10: ASEAN Disaster Management and Emergency Relief (ADMER) Fund with allocations for preparedness and response activities set up and operationalised.	10.1: Develop guidelines for the utilisation of AADMER fund for preparedness and response activities.	ASEC, AHA Centre	X						Guidelines drafted, ready for presentation to COP-1.
	10.2: Secure approval from Member States to provide contributions to the ADMER Fund, and operationalise the guidelines.	ASEC, AHA Centre, P&R Working Group, ACDM, COP	X	X	X				Guidelines approved by COP by end of 2010. Contributions collected starting in 2010.

57

Expected Output	Activity	Responsible Parties	Timeline						Milestones
			Phase 1			Phase 2			
			2010	2011	2012	2013	2014	2015	
Output 11: ASEAN Response Options to help define possible ASEAN's response options and triggers for response developed and agreed.	11.1: Develop an ASEAN Response Options as a briefing document to facilitate and clearly define ASEAN's response options and triggers for ASEAN's response	AHA Centre, ASEC, P&R Working Group	X						First draft of ASEAN Response Options ready for discussion by end of 2010.
	11.2: Establish clear decision-making processes with respect to joint ASEAN's responses	AHA Centre, ASEC, P&R Working Group, ACDM		X					Recommended decision making processes reviewed and adopted by ACDM by end of 2011.
	11.3: Conduct training and familiarisation workshops to disseminate the agreed ASEAN Response Options	AHA Centre, P&R Working Group			X	X	X	X	Ongoing. ASEAN response options disseminated and understood by Member States.
Output 12: Adaptation and incorporation of Incident Command System (ICS) into relevant national and regional disaster management systems.	12.1: Adapt relevant components of the ICS into regional management systems, such as SASOP and AHA Centre.	AHA Centre, ICS Task Force (ARDEX referees), P&R Working Group	X	X					Adaptation plans to incorporate ICS into SASOP and other regional disaster management systems developed.
	12.2: Adapt relevant components of the ICS into national disaster management systems, as appropriate, through pilot and training activities, among others	AHA Centre, ICS pilot countries, Relevant Member States: NDMOs	X	X	X	X			Pilot activities in Brunei Darussalam and Philippines, and regional adaptation activities conducted.
Output 13: Increased preparedness and response capacity of ASEAN Member States.	13.1: Establish a baseline on the overall ASEAN's level of preparedness and response.	AHA Centre		X					Benchmarks of ASEAN level of preparedness and response of ASEAN determined.

58

Expected Output	Activity	Responsible Parties	Timeline						Milestones
			Phase 1			Phase 2			
			2010	2011	2012	2013	2014	2015	
	13.2: Propose and agree on preparedness and response benchmarks.	AHA Centre, P&R Working Group		X					Consensus agreement on benchmarks reached.
	13.3: Develop and conduct capacity development strategy, including support for contingency planning, to achieve the benchmarks.	AHA Centre			X	X	X	X	Strategies for capacity development and contingency planning developed and conducted.
	13.4: Conduct periodic evaluations of preparedness levels and response capacities of Member States through After Action Reviews of actual emergency responses to gather feedback from disaster-affected community, government, other ASEAN Member States who responded and other humanitarian actors.	Relevant Member States: NDMOs, AHA Centre		X	X	X	X	X	ASEAN' preparedness levels and response capacities regularly evaluated and utilised as inputs to improve response capacities
Output 14: An efficient ASEAN's disaster emergency logistics system (i.e. supply chains and logistic mechanisms within Member States and at regional level) developed.	14.1: Conduct a study to determine the feasibility of setting up a stockpiling system or other appropriate arrangements (such as prepositioning of stocks and preferred suppliers).	AHA Centre, ASEC, P&R Working Group	X						The study should evaluate all options, costs and benefits, including the types of commodities stored, the distribution system, the storage issues, etc. The study should also take note pre-positioned stocks that already exist, and focus on the added values that the ASEAN system can bring.

Expected Output	Activity	Responsible Parties	Timeline						Milestones
			Phase 1			Phase 2			
			2010	2011	2012	2013	2014	2015	
	14.2: Develop and consider recommendations for the establishment of the ASEAN's emergency logistics system, and the requirements to set up such a system.	AHA Centre, ASEC, P&R Working Group, ACDM	X	X					System for ASEAN emergency logistics arrangements proposed for consideration by ACDM.
	14.3: Set up the logistic system based on the outcome of the study and decisions.	AHA Centre, P&R Working Group, ACDM		X	X				ASEAN emergency logistics system, established and operational.
Output 15: ASEAN needs assessment strategy (including tool box, training package and partnership mechanism) that incorporates the principles of inclusiveness and downward accountability to vulnerable groups and supports quality improvements in emergency response, developed.	15.1: Conduct regional discussion forums to obtain information from each Member State to understand needs, expectations, capacity and gaps in conducting needs assessment, as well as share best practices and experiences	AHA Centre, P&R Working Group	X						First discussion forum conducted by third quarter of 2010.
	15.2: Compile best practices from Member States, ASEAN post-Nargis experience, and other sources in conducting needs assessment.	AHA Centre, P&R Working Group	X	X					ASEAN post-Nargis experiences compiled by July 2010; and region-wide by first quarter of 2011.
	15.3: Formulate and develop a tool box (such as operation manual, guidelines, methodology, community-based approaches, database, etc) for needs assessment.	AHA Centre	X	X	X				Tool box completed by 2012. Participation of vulnerable groups in needs assessment ensured.

Expected Output	Activity	Responsible Parties	Timeline						Milestones
			Phase 1			Phase 2			
			2010	2011	2012	2013	2014	2015	
	15.4: Develop training modules and certification system, organise training courses, develop network and database of capacity building partners, trainers, trainees.	AHA Centre		X	X	X	X	X	First training conducted by end of 2011 and continued.
	15.5: Study and identify collaboration points, role and mechanism among Member States, AHA Centre, donors, civil society and relevant international agencies	AHA Centre, ASEC, P&R Working Group	X	X					Study started by third quarter of 2010 and completed by 2011.
	15.6: Formulate and develop an agreed partnership mechanism for needs assessment.	AHA Centre, ASEC, P&R Working Group, ACDM	X	X					Developed and ready for circulation by end of 2011.
	15.7: Disseminate and conduct awareness building on the agreed mechanism to Member States, the civil society and relevant international agencies and donors.	AHA Centre, P&R Working Group			X	X	X	X	Annual workshop started by first half of 2012 and continued until 2015.
Output 16: SOPs and/or mechanisms for coordination with other humanitarian actors developed.	16.1: Assess the strengths, capabilities and added values of the various humanitarian actors to identify areas of complementation.	AHA Centre, ASEC	X						First mapping of humanitarian actors and their strengths, capabilities and added values developed by end of 2010.

Expected Output	Activity	Responsible Parties	Timeline						Milestones
			Phase 1			Phase 2			
			2010	2011	2012	2013	2014	2015	
	16.2: Clarify the role and relationship of ASEAN disaster management mechanisms and systems, i.e. ASEAN Humanitarian Assistance Coordinator, AHA Centre, ERAT, SASOP, ADMER Fund, etc vis-a-vis other humanitarian systems.	AHA Centre, ASEC	X	X					TOR of ASEAN Humanitarian Assistance Coordinator finalised and adopted by end of 2010. Analysis on the role and relationship of ASEAN's systems and other humanitarian systems developed by end of 2010. Consultations with partners started by 2011.
	16.3: Develop and recommend instruments or mechanisms for joint or complementary ways of working with other humanitarian actors.	AHA Centre, ASEC, Working Group on P&R, ACDM	X	X					ASEAN-OCHA SOP developed by third quarter of 2010. Other instruments or mechanisms with other key partners are identified by mid 2011.
	16.4: Disseminate the agreed mechanisms through awareness or training activities.	AHA Centre		X	X	X	X	X	Joint mechanisms and instruments agreed on and disseminated.

4. Recovery

This particular component of the Work Programme elaborates Article 17 of AADMER, i.e. Rehabilitation. The Work Programme uses the word "Recovery" as it covers the whole spectrum of the recovery process that includes rehabilitation and reconstruction. It is also to ensure consistency with the terms used internationally.

Article 17 of AADMER summarises that Member States shall, jointly or individually, develop strategies, implement programmes, and promote cooperation (bilateral, regional and international) for rehabilitation as a result of a disaster. During recovery, Member States will lead, manage, and coordinate the overall recovery process, while ASEAN through AADMER mechanisms will provide full support, based on need and upon request of the affected Member State/s.

This component of the Work Programme was drafted based on individual experiences of Member States in managing their recovery process in the past five years, in particular the experience of the ASEAN Humanitarian Task Force (AHTF) for Cyclone Nargis in Myanmar.

Objectives:

The Recovery component aims to strengthen the capacity of Member States to:

- Conduct damage and loss assessment within one month after a disaster occurs;
- Develop an effective recovery action plan for rehabilitation and reconstruction within three months after a disaster occurs;
- Mobilise resources from local, regional and international community to support implementation of the recovery process;
- Coordinate and implement activities within targeted time frame as stated in the recovery plan; and
- Develop a transition plan and link post-disaster recovery process into sustainable development one year before the end of the recovery period.

The underlying principle of the Recovery component is the promotion of pro-active planning process for early to long-term recovery even before a disaster occurs. Many of the activities outlined below focus on capacity development and are meant to be done by Member States prior to a disaster event at all levels of government for a more effective recovery process. Pre-disaster recovery planning not only promotes greater participation of various stakeholders in a non-disaster environment, but will also help them respond more effectively to and recover faster from the impacts of a disaster. Thus, the Recovery component contributes to the achievement of the overall goal of disaster resilience and sustainable development of Member States.

63

Expected Outcomes:

- Members States are self-sufficient in terms of effectively leading, managing, and coordinating their respective recovery processes, and
- More effective transition from post-disaster recovery process into sustainable development.

Lead Shepherds: Indonesia and Myanmar

Linked Activities:

- ASEAN Humanitarian Task Force for the Victims of Cyclone Nargis (AHTF)
- Post-Disaster Needs Assessment and Recovery Framework of the World Bank, UN and EC
- International Recovery Platform (IRP)
- ASEAN Secretariat-UNISDR-World Bank Memorandum of Cooperation (MOC) on Disaster Risk Reduction
- ASEAN-UNISDR Technical Cooperation on the Implementation of HFA in ASEAN

Output-Activity Matrix:

Expected Output	Activity	Responsible Parties	Timeline						Milestones
			Phase 1			Phase 2			
			2010	2011	2012	2013	2014	2015	
Output 1.1: A tool box (such as operation manual, guidelines, methodology, community-based approaches, database, etc) to facilitate the conduct of an effective damage and loss assessment and assist Member States to produce damage and loss assessment within one month after a disaster occurs.	1.1.1: Conduct of regional discussion forums to obtain information from each Member State to understand needs, expectations, capacity and gaps in developing damage and loss assessment, as well as share best practices and experiences	AHA Centre, ASEC, Recovery Working Group	X						Best practices on damage and loss assessment shared and inputs gathered in discussion forums.

Expected Output	Activity	Responsible Parties	Timeline						Milestones
			Phase 1			Phase 2			
			2010	2011	2012	2013	2014	2015	
	1.1.2: Compilation of best practices from Member States, ASEAN post-Nargis experience, and other sources in conducting an effective damage and loss assessment.	AHA Centre, Recovery Working Group	X	X					ASEAN post-Nargis experiences in damage and loss assessment compiled by July 2010; and region-wide by first quarter of 2011.
	1.1.3: Formulation and development of a tool box for effective damage and loss assessment.	AHA Centre	X	X					Tool box on damage and loss assessment completed by third quarter of 2011.
Output 1.2: A series of capacity building tools and activities for conducting effective damage and loss assessment developed and organised to assist Member States to produce damage and loss assessment within one month after disaster occurs.	1.2.1: Development of training modules and certification system, organisation of training courses, development of network and database of capacity building partners, trainers, and trainees.	AHA Centre		X	X	X	X	X	Certification and training programme on damage and loss assessment established and regular trainings conducted beginning of 2011
Output 1.3: A partnership mechanism for conducting joint damage and loss assessment agreed and established to assist Member States to produce damage and loss assessment within one month after disaster occurs.	1.3.1: Study and identification of collaboration points, roles, and mechanism among Member States, AHA Centre, donors, civil society and relevant international agencies.	AHA Centre, ASEC, Recovery Working Group	X	X					Partnership mechanisms for damage and loss assessment identified and evaluated by third quarter of 2010

65

Expected Output	Activity	Responsible Parties	Timeline						Milestones
			Phase 1			Phase 2			
			2010	2011	2012	2013	2014	2015	
	1.3.2: Formulation and development of partnership mechanism for conducting joint damage and loss assessment.	AHA Centre, ASEC, Recovery Working Group, ACDM	X	X					Agreed partnership mechanism on joint damage and loss assessment fully developed by end of 2011 and ready for circulation.
	1.3.3: Dissemination of and awareness raising for partnership mechanism to respective ministries, organisations of Member States, civil society, relevant international agencies, and donors.	AHA Centre, Recovery Working Group			X	X	X	X	Agreed partnership mechanism disseminated starting 2012 through various means.
Output 2.1: A guideline on effective recovery action plan developed to strengthen the capacity of Member States to develop an effective recovery action plan for rehabilitation and reconstruction within three months after disaster occurs.	2.1.1: Conduct of regional discussion forums to obtain information from each Member State to understand needs, expectations, capacity and gaps in developing a recovery action plan as well as sharing of best practices and experiences.	AHA Centre, ASEC, Recovery Working Group	X						Best practices in recovery action planning shared and information inputs for developing a recovery action plan generated in discussion forums.
	2.1.2: Compilation of best practices from experiences of Member States, ASEAN post-Nargis experiences, and other sources for developing an effective recovery action plan.	AHA Centre, Recovery Working Group	X	X					ASEAN post-Nargis experiences on effective recovery action planning compiled by July 2010; and region-wide by first quarter of 2011.
	2.1.3: Formulation and development of a guideline for an effective recovery action plan.	AHA Centre	X	X					Guidelines on recovery action planning fully developed by third quarter of 2011 and ready for circulation.

66

Expected Output	Activity	Responsible Parties	Timeline						Milestones
			Phase 1			Phase 2			
			2010	2011	2012	2013	2014	2015	
Output 2.2: A series of capacity building tools and activities for developing an effective recovery action plan developed and organised to strengthen the capacity of Member States to develop an effective recovery action plan for rehabilitation and reconstruction within three months after disaster occurs.	2.2.1: Development of training modules, organisation of training courses, development of network and database of capacity building partners, trainers, and trainees.	AHA Centre		X	X	X	X	X	Training modules on recovery action planning developed and first training conducted by end of 2011 and continued until 2015.
Output 2.3: A partnership mechanism for joint development of a recovery action plan agreed and established to strengthen the capacity of Member States to develop an effective recovery action plan for rehabilitation and reconstruction within three months after disaster occurs.	2.3.1: Study and identification of collaboration points, roles and mechanisms among Member States, AHA Centre, donors, civil society and relevant international agencies.	AHA Centre, ASEC, Recovery Working Group	X						Partnership mechanism options identified and evaluated by third quarter of 2010.
	Activity 2.3.2: Formulation and development of an agreed partnership mechanism for joint development of action plan.	AHA Centre, ASEC, Recovery Working Group, ACDM	X	X					Agreed partnership mechanism for joint recovery action planning fully developed by end of 2011 and ready for circulation.
	2.3.3 Dissemination and awareness building for the agreed mechanism to respective ministries, organisations of each Member State, civil society and relevant international agencies and donors.	AHA Centre, Recovery Working Group			X	X	X	X	Agreed partnership mechanism on joint recovery action planning disseminated in the first half of 2012 and continued until 2015.

67

Expected Output	Activity	Responsible Parties	Timeline						Milestones
			Phase 1			Phase 2			
			2010	2011	2012	2013	2014	2015	
Output 3.1: A series of possible mechanisms for effective resource mobilisation identified and develop to assist Member States to mobilise resources from local, regional and international community to support implementation of the recovery process.	3.1.1: Conduct of regional discussion forums to better understand the needs and expectations of Member States in resource mobilisation.	AHA Centre, ASEC, Recovery Working Group		X					Best practices in resource mobilisation for recovery shared and first discussion forum conducted by first half 2011.
	3.1.2: Compilation of best practices from Member States, ASEAN post-Nargis experience, and other sources for developing an effective mechanism for resources mobilisation.	AHA Centre, Recovery Working Group	X	X					ASEAN post-Nargis experiences on resource mobilisation for recovery compiled by July 2010; and region-wide by first half of 2011.
	3.1.3: Formulation and development of possible mechanisms for resource mobilisation.	AHA Centre, ASEC, Recovery Working Group, ACDM	X	X					Resource mobilisation modalities and mechanisms developed by end of 2011 and printed materials ready for circulation.
	3.1.4: Dissemination of possible mechanisms for resources mobilisation to relevant parties.	AHA Centre, Recovery Working Group			X	X	X	X	Possible resource mobilisation mechanisms disseminated starting in first half of 2012.

68

Expected Output	Activity	Responsible Parties	Timeline						Milestones
			Phase 1			Phase 2			
			2010	2011	2012	2013	2014	2015	
Output 3.2: A series of capacity building tools and activities developed to assist Member States to mobilise resources from local, regional and international community to support implementation of the recovery process.	3.2.1: Development of training modules, organise training courses, develop network and data base of capacity building partners, trainers, and trainees.	AHA Centre			X	X	X	X	Tools and training courses on resource mobilisation for recovery conducted beginning of 2012
Output 3.3: Cooperation among national governments, ASEAN, civil society, private sector and international community in mobilising resources enhanced to support implementation of the recovery process.	3.3.1: Development of database containing partner activities and profiles including private sector and civil society which will provide support to ASEAN and Member States for post-disaster recovery process.	AHA Centre		X					Recovery database on partner profiles completed by first half of 2011
	3.3.2: Establishment of ASEAN-Partners Forum to enhance cooperation in resources mobilisation and conduct of a series of meetings.	AHA Centre, ASEC, Recovery Working Group		X	X	X	X	X	First ASEAN Partners Forum conducted by end of 2011 and regularly held until 2015.
Output 4.1: A series of possible mechanisms for coordination identified and developed to support Member States in the implementation of the recovery process.	4.1.1: Conduct of regional discussion forums to obtain information from each Member State to understand needs, expectations, capacity and gaps in developing a coordination mechanism.	AHA Centre, ASEC, Recovery Working Group		X					First discussion forum on recovery coordination mechanisms conducted by first half 2011.

Expected Output	Activity	Responsible Parties	Timeline						Milestones
			Phase 1			Phase 2			
			2010	2011	2012	2013	2014	2015	
	4.1.2: Compilation of best practices from Member States, ASEAN post-Nargis experience, and other sources for developing an effective coordination mechanism	AHA Centre, Recovery Working Group	X	X					ASEAN post-Nargis experiences on recovery coordination compiled by July 2010; and region-wide by first half of 2011.
	4.1.3: Formulation and development of possible mechanisms for coordination.	AHA Centre, Recovery Working Group, ACDM		X					Coordination mechanisms for recovery developed by end of 2011 and printed materials ready for circulation.
	4.1.4: Dissemination of possible mechanisms for coordination to relevant parties	AHA Centre, Recovery Working Group			X	X	X	X	Recovery coordination mechanisms disseminated starting first half of 2012.
Output 4.2: System for coordination and monitoring developed	4.2.1: Conduct of regional discussion forums for improved understanding of needs, expectations, capacity and gaps in developing coordination and monitoring system of Member States.	AHA Centre, ASEC, Recovery Working Group		X					First discussion forum on recovery monitoring and coordination conducted by first half of 2011.
	4.2.2: Compilation of best practices from Member States, ASEAN post-Nargis experience, and other sources for developing an effective coordination and monitoring system.	AHA Centre, Recovery Working Group	X	X					ASEAN post-Nargis experiences on recovery monitoring and coordination compiled by July 2010; and region-wide by first half of 2011.

Expected Output	Activity	Responsible Parties	Timeline						Milestones
			Phase 1			Phase 2			
			2010	2011	2012	2013	2014	2015	
	4.2.3: Development and institutionalisation of the coordination and monitoring system in collaboration with AHA Centre and government agencies responsible for disaster recovery of Member States.	AHA Centre, Recovery Working Group, ACDM			X	X	X	X	Coordination and monitoring system functional starting 2012 and continuously updated and improved.
Output 4.3: A series of capacity building tools and activities for an effective recovery coordination and monitoring developed and organised.	4.3.1: Development of training modules, organisation of training courses, development of network and database of capacity building partners, trainers, and trainees.	AHA Centre			X	X	X	X	Training modules on effective recovery coordination developed and first training course conducted starting 2012. Recovery network and database developed.
Output 5.1: A guideline on effective transition plan developed.	5.1.1: Conduct of regional discussion forums to understand needs, expectations, capacity and gaps in developing an effective transition plan of Member States.	AHA Centre, ASEC, Recovery Working Group	X						First discussion forum on post-recovery transition plan conducted by third quarter of 2010
	5.1.2: Compilation of best practices of Member States, ASEAN post-Nargis experience, and other sources for developing an effective transition plan.	AHA Centre	X	X					ASEAN post-Nargis experiences in post-recovery transition planning compiled by July 2010; and region-wide by first quarter of 2011.
	5.1.3: Formulation and development of a guideline for an effective transition plan.	AHA Centre	X	X					Guideline on post-recovery transition planning fully developed by third quarter of 2011 and ready for circulation.

71

Expected Output	Activity	Responsible Parties	Timeline						Milestones
			Phase 1			Phase 2			
			2010	2011	2012	2013	2014	2015	
Output 5.2: A series of capacity building tools and activities for an effective transition plan developed.	5.2.1: Development of training modules, organisation of training courses, development of network and database of capacity building partners, trainers, and trainees	AHA Centre			X	X	X	X	Training programme on post-recovery transition planning developed and first training conducted by end of 2011.
Output 5.3: A series of possible mechanisms to link post-disaster recovery to sustainable development with related ASEAN initiatives identified and developed.	5.3.1: Conduct of discussions forums, workshops to identify mechanisms to link post-disaster recovery with related development initiatives of ASEAN.	AHA Centre, ASEC, Recovery Working Group		X					First discussion forum conducted by first half 2011.
	5.3.2: Compilation of best practices of Member States, post-Nargis experience, and other sources in linking post-recovery with ASEAN development initiatives.	AHA Centre, Recovery Working Group	X	X					ASEAN post-Nargis experiences in post-recovery compiled by July 2010; and region-wide by first half of 2011.
	5.3.3: Identification and development of possible mechanisms to link post-disaster recovery to sustainable development with related ASEAN initiatives.	AHA Centre, ASEC, Recovery Working Group, ACDM		X					Mechanisms for linking recovery and sustainable development determined by end of 2011 and printed materials ready for circulation.

72

III. BUILDING BLOCKS OF AADMER WORK PROGRAMME

In addition to the strategic components detailed above, the AADMER Work Programme for 2010-2015 includes six building blocks. These building blocks form the foundation for an effective implementation of the Work Programme from regional to sub-national as well as the nuts and bolts that are expected to link the whole Work Programme together and to continue to drive the implementation process. The building blocks are:

1. Institutionalisation of AADMER;
2. Partnership Strategies;
3. Resource Mobilisation;
4. Outreach and Mainstreaming;
5. Training and Knowledge Management System; and
6. Information Management and Communication Technology.

1. Institutionalisation of AADMER

The AADMER is a regional agreement that legally binds all Member States to enforce its provisions in their respective territories. As a framework for regional cooperation on disaster management and emergency response, it is necessary to institutionalise AADMER at the national level, where many of its provisions will actually take place. **While programmes are developed at the regional level (particularly with the operationalisation of the AHA Centre), the primary responsibility for the implementation of the AADMER Work Programme shall be with the Member States.** The Member States shall then re-examine their national action plans or develop action plans as required to ensure timely implementation of their commitments under the AADMER. In view of this, strengthening of national government organisations within Member States is thus necessary in order to institutionalise AADMER and ensure not only mere compliance to its provisions but also active engagement of Member States in the implementation of AADMER as well as the execution of the Work Programme on the ground.

One cog that is required to institutionalise AADMER at the level of Member States is the establishment of certain national structures and mechanisms that will ensure actual enforcement of the Agreement. For an effective national implementation of AADMER, Article 22 provides for the designation of a National Focal Point (NFP) for the purpose of implementing the Agreement by Member States and facilitating the process at the regional level. The designation of the AADMER NFP shall be initiated by the ACDM Focal Point of each Member State through a consultative process. **It is highly preferable for the ACDM Focal Point to be likewise designated as the AADMER NFP.** In addition, Member States are also expected to designate and authorise one or more Competent Authorities for the purpose of implementing the AADMER. The AADMER NFP is authorised to "receive and transmit information pursuant to the provision the Agreement". Thus, the AADMER NFP plays an important role in facilitating communication among Member States. The AADMER NFP also serves as the single point of contact for the country and coordinates with the identified Competent Authorities to effectively implement the AADMER as clarified in Chapter III, Section A of SASOP.

Another vital cog in the institutionalisation of AADMER in Member States is the creation of an enabling environment, such as supportive policy and legal frameworks that will promote and expedite the implementation of AADMER related activities at the national level and facilitate collaboration of Member States for region-wide or joint undertakings. It is incumbent upon Member States to provide such an enabling policy and legal environment and establish the necessary organisation structures and mechanisms. In line with Article 10 of AADMER, one of the first steps would be for each Member State to analyse challenges or gaps in implementation of AADMER and SASOP through, among others, reviewing existing domestic disaster management policies, procedures and regulations with the intention of suggesting amendments or refinements as appropriate to make it easier for other Member States and other assisting entities to provide disaster relief assistance, if needed and requested.

Member States are also encouraged to integrate relevant activities of the Work Programme into their national disaster management and emergency response programmes and action plans as well as in their sectoral plans. By incorporating AADMER related activities into their regular plans and programmes, the sustainability and continuity of AADMER related activities will be enhanced and ensure that the advantages and benefits of AADMER will cascade down from the regional to national and sub-national levels.

2. Partnership Strategies

AADMER reaffirms the need to promote regional cooperation in Southeast Asia in the spirit of equality and partnership, as set forth in the Bangkok Declaration of 8 August 1967. The Declaration of ASEAN Concord II of 7 October 2003 also stipulates that the ASEAN shall, through the ASEAN Socio-Cultural Community, intensify cooperation in addressing problems associated with, *inter alia*, disaster management.

Moreover, the United Nations General Assembly Resolution 57/578 of 10 December 2002 encourages the strengthening of co-operation among States at the regional and sub-regional levels in the field of disaster preparedness and response with particular respect to capacity-building at all levels.

Finally, the general considerations of the Hyogo Framework for Action (HFA) set out by the World Conference on Disaster Reduction in January 2005 stresses a multi-sectoral approach and the implementation of the priority areas of action by different stakeholders, including civil society (i.e., NGOs, CBOs, volunteers), the scientific community, and the private sector. Multi-stakeholder partnerships are the mechanisms to facilitate and institutionalise such a multi-sectoral approach.

The implementation of a truly people-oriented AADMER that is effective at raising the resiliency of vulnerable communities and increasing national and regional capacity requires the cooperation and collaboration of various sectors and the participation of vulnerable groups in the different aspect of disaster management and risk reduction through mechanisms that promote and sustain partnership.

Objectives:

- Establish or enhance existing platforms for multi-stakeholder partnerships at the sub-national, national and regional levels;
- Support the institutionalisation of coordination mechanisms between the ASEAN and other regional and international disaster management and humanitarian actors; and
- Facilitate the sharing of information on partners and partnership projects;
- Facilitate regional sharing and promotion of good practice among Member States and partners in implementing AADMER Work Programme in particular and practices in disaster management and mainstreaming DRR in general; and
- Establish mechanisms for stakeholders, especially vulnerable groups, to provide feedback on the progress and impact of AADMER in reducing disaster losses and building resiliency.

Expected Outcomes:

- Broad support and cooperation for AADMER's implementation from various sectors;
- Improved capacity of Member States and the AHA Centre to coordinate with various actors;
- Easy access to information on actors and stakeholders towards encouraging linkages and partnerships;
- A regional learning environment for all Member States and stakeholders involved in the implementation of AADMER; and
- Involvement of multiple stakeholders, most especially vulnerable groups, in the monitoring and evaluation of AADMER.

Lead Shepherd: Chair of the ACDM

Linked Activities

- ASEAN Secretariat-UNISDR-World Bank Memorandum of Cooperation (MOC) on Disaster Risk Reduction
- ASEAN-UNISDR Technical Cooperation for the Implementation of the HFA in ASEAN
- ASEAN Secretariat - ASEAN Partnership Group (APG) MOC for Collaboration in Supporting the Implementation of AADMER
- ASEAN-UNHCR Project on Strengthening the Capacity of the ASEAN Committee on Disaster Management (ACDM)
- ASEAN Volunteers Programme (AVP) under the ASEAN Humanitarian Task Force for the Victims of Cyclone Nargis (AHTF)
- ASEAN-OCHA Joint SOP for Humanitarian Aspects of Cooperation in Disaster Preparedness and Response (being drafted)

Output-Activity Matrix:

Expected Output	Activity	Responsible Parties	Timeline						Milestones
			Phase 1			Phase 2			
			2010	2011	2012	2013	2014	2015	
Output 1: Multi-Stakeholder (MS) partnerships at different levels identified and developed.	1.1: Mapping of existing established and emerging mechanisms that support and encourage multi-stakeholder partnerships at sub-national, national and national levels; identification and analysis of strengths, gaps and needs.	AHA Centre, ASEC	X						Study on Multi-Stakeholder involvement in AADMER conducted in 2010.
	1.2: Conduct of regional workshop on multi-stakeholder involvement in AADMER.	AHA Centre, ASEC		X					Plans to establish or strengthen MS platforms for partnerships formulated by 2011.
	1.3: Holding of sub-national platform for MS partnership meetings.	Member States: NDMOs		X	X	X	X	X	Sub-national MS platforms established, especially in high-risk areas.
	1.4: Conduct of National Platform for MS partnership meeting: 1.4.1 In-country AADMER Coordinator* of the National Platform designated to liaise with stakeholders (* could be the same as the AHA Operational Coordinator who liaises between the NDMO and the AHA Centre, see Preparedness and Response)	Member States: NDMOs		X	X	X	X	X	National Platforms for MS Partnerships established or strengthened.
	1.5: Conduct of a Regional MS Partnership meeting.	ACDM Chair, AHA Centre, ASEC		X	X	X	X	X	ASEAN Platform for MS Partnership established.

77

Expected Output	Activity	Responsible Parties	Timeline						Milestones
			Phase 1			Phase 2			
			2010	2011	2012	2013	2014	2015	
Output 2: Coordination mechanisms and agreements identified and developed.	2.1: Organisation of meetings with strategic counterparts in the international community (i.e. OCHA, IFRC) and with other ASEAN-initiated forums, such as the ASEAN Regional Forum (ARF), ASEAN Plus Three, and East Asia Summit (EAS) towards effective interface on disaster management.	ASEC, AHA Centre, ACDM Chair	X	X	X	X	X	X	Areas for coordination/ collaboration. mapped out.
	2.2: Establishment of an ASEAN Volunteer Programme for disaster response, risk reduction and recovery.	AHA Centre, ASEC	X	X					Lessons learnt from AVP after Cyclone Nargis in Myanmar compiled end of July 2010. ASEAN-wide disaster volunteer programme for disaster management set up by end of 2011.
	2.3: Drafting of agreements on joint operations, coordination and collaboration.	ASEC, AHA Centre	X	X					Draft SOPs, MOUs/MOAs.
	2.4: Formalising coordination instruments through joint SOPs, MOUs/MOCs.	ASEC, AHA Centre, ACDM, COP		X	X				Agreed joint SOPs/MOUs/MOCs.
	2.5: Rolling out of coordination instruments through communication, popularisation and field application	AHA Centre, ASEC		X	X				Adoption of coordination arrangements.
Output 3: Partnership Database and Information System established.	3.1: Collection of data on partners and partnership projects.	AHA Centre		X	X				
	3.2: Establishment and maintenance of an online database.	AHA Centre		X	X	X	X	X	Online database running.

78

Expected Output	Activity	Responsible Parties	Timeline						Milestones
			Phase 1			Phase 2			
			2010	2011	2012	2013	2014	2015	
Output 4: Showcase of good partnership practices developed and disseminated.	4.1: Organisation of a workshop on developing the criteria and indicators of good partnership practice.	AHA Centre, ASEC		X					
	4.2: Holding an annual call for case studies on good partnership practices.	AHA Centre		X	X	X	X	X	Cases selected according to the criteria and indicators.
	4.3: Compilation and publication of good partnership practice.	AHA Centre		X	X	X	X	X	
	4.4: Showcasing of good partnership practice.	AHA Centre		X	X	X	X	X	
Output 5: Feedback mechanisms developed and implemented	5.1: Conduct of a workshop on AADMER indicators and measurements and feedback mechanisms for stakeholders.	ASEC, AHA Centre		X					AADMER indicators and feedback mechanisms developed by end of 2011.
	5.2: Annual assessments of the implementation of the AADMER WP.	ASEC, ACDM		X	X	X	X	X	Progress report with feedback from stakeholders presented to the COP.
	5.3: Mid-term evaluation of outcomes.	ASEC, ACDM				X			Mid-term report with feedback from stakeholders presented to the COP.
	5.4: End-term impact assessment of the AADMER Work Programme.	ASEC, ACDM						X	Impact assessment with feedback from stakeholders presented to the COP.

3. Resource Mobilisation

Various articles in the AADMER lay out the rationale for the mobilisation of personnel, materials, expertise and financial resources required to effectively implement AADMER:

Article 24 (Financial Arrangements) sets out the establishment of the ASEAN Disaster Management and Emergency Relief (ADMER) Fund, to be administered by the ASEAN Secretariat under the guidance of the Conference of the Parties (COP). Article 24 further states that the Parties shall, in accordance with the decisions of the COP, make voluntary contributions to the Fund and that the Fund shall also be open to contributions from other sources such as international organisations, regional financial institutions and the international donor community. In addition, Article 28 (Rules of Procedure and Financial Rules) states that the first COP shall by consensus adopt rules of procedure for itself and financial rules for the ADMER Fund to determine, in particular, the financial participation of the Parties to AADMER.

Article 18 (Technical Cooperation) also stipulates that Parties shall facilitate mobilisation of appropriate resources both within and outside the Parties.

Objectives:

- Develop proposed Rules of Procedure and Financial Rules for approval by the COP;
- Develop rules and minimum requirements to implement the various Articles that refer to resources and resource mobilisation;
- Develop mechanisms and arrangements for mobilising personnel, expertise, materials and funds; and
- Develop resource management systems and processes.

Expected Outcomes:

- Adequate resources that support regional preparedness and response and supplement national resource mobilisation;
- Financially-sustainable operation of AHA Centre;
- Resources are available and accessible, and equitably distributed to disaster-affected populations;
- Optimal and effective utilisation of resources; and
- Sustainability in resources is promoted.

Lead Shepherd: Chair of the ACDM

Linked Activities:

- ASEAN Secretariat-UNISDR-World Bank Memorandum of Cooperation (MOC) on Disaster Risk Reduction
- ASEAN-UNISDR Technical Cooperation for the Implementation of the HFA in ASEAN
- ASEAN Secretariat - ASEAN Partnership Group (APG) MOC for Collaboration in Supporting the Implementation of AADMER

Output-Activity Matrix:

Expected Output	Activity	Responsible Parties	Timeline						Milestones
			Phase 1			Phase 2			
			2010	2011	2012	2013	2014	2015	
Output 1: Proposed Rules of Procedure and Financial Rules for ADMER Fund	Activity 1.1: Organisation of a workshop or meeting to discuss the draft ADMER Fund Financial Rules, including procedures on annual and voluntary contributions.	ASEC, ACDM	X						Draft Financial Rules ready for presentation to COP-1 in 2010.
	Activity 1.2: Organisation of the COP to consider ADMER Fund Financial Rules.	ASEC, ACDM, COP	X						Adoption of the Financial Rules by COP.
	Activity 1.3: Dissemination of the ADMER Fund Financial Rules to Member States and relevant partners.	ASEC	X						
Output 2: Procedures on involving members from civil society in ERAT and AHA Centre.	Activity 3.6: Drafting and finalising certification and accreditation rules and requirements for ERAT associate members from the civil society.	AHA Centre	X						Formalised certification & accreditation rules and requirements for ERAT associate members communicated to civil society partners.
	Activity 3.7: Certification and accreditation of ERAT associate members from the civil society.	AHA Centre, ACDM	X	X	X	X	X	X	
	Activity 3.8: Drafting and finalising procedures and requirements for seconding staff from civil society to the AHA Centre.	AHA Centre, ACDM	X						Procedures and requirements for seconding staff to the AHA Centre.
	Activity 3.9: Recruitment and placement of seconded staff from civil society to AHA Centre.	AHA Centre	X	X	X	X	X	X	

81

Expected Output	Activity	Responsible Parties	Timeline						Milestones
			Phase 1			Phase 2			
			2010	2011	2012	2013	2014	2015	
Output 3: Rules and procedures on fundraising and donor contract management	Activity 5.1: Donor mapping exercise to match AADMER Work Programme priorities with donor interests.	ASEC, AHA Centre	X						Donor database produced and updated through subsequent ASEAN-Partners Conferences.
	Activity 5.2: Draft procedures and systems for project proposal development and donor contract management.	ASEC, AHA Centre	X						
	Activity 5.3: Fundraising and donor contract management.	ASEC, AHA Centre	X	X	X	X	X	X	
	Activity 5.4: ASEAN-Partners Forum to provide a platform for consultations with donors and review the match between the AADMER Work Programme priorities and the priorities of donors.	ASEC, AHA Centre, ACDM	X	X	X	X	X	X	First ASEAN-Partners Conference will be part of the launching of the AADMER Work Programme.

4. Outreach and Mainstreaming

The effective implementation of AADMER requires that it is understood and its strategic components are supported not just by the disaster management authorities and stakeholders but by other sectors of government and society in general. Among the key activities of the HFA is the appropriate integration of risk reduction into development policies and planning at all levels of government, including in poverty reduction strategies and sectors and multi sector policies and plans.

However, awareness and familiarity with AADMER can further be improved. There is a need to make AADMER known to government authorities as well as local government units and the general public. This will help create a positive environment for AADMER's implementation and broaden the constituency that supports disaster management and risk reduction.

Objectives

- Make AADMER more visible and popular among a broad range of publics;
- Increase awareness for AADMER among government authorities other than the disaster management office and facilitate the understanding by other government agencies at the national and local levels of their roles in AADMER's implementation; and
- Encourage the development of national and local policies and programmes that are complementary to AADMER.

Expected Outcome:

- Improved awareness and knowledge of AADMER and support for its implementation.

Lead Shepherd: Thailand

Linked Activities:

- ASEAN Secretariat-UNISDR-World Bank Memorandum of Cooperation (MOC) on Disaster Risk Reduction
- ASEAN-UNISDR Technical Cooperation for the Implementation of the HFA in ASEAN
- ASEAN Secretariat - ASEAN Partnership Group (APG) MOC for Collaboration in Supporting the Implementation of AADMER

Output-Activity Matrix:

Expected Output	Activity	Responsible Parties	Timeline						Milestones
			Phase 1			Phase 2			
			2010	2011	2012	2013	2014	2015	
Output 1: Communication strategy on AADMER and its mechanisms.	1.1: Production of Information, Education and Communication (IEC) materials on AADMER	AHA Centre	X						AADMER IEC materials produced.
	1.2: Dissemination of IEC materials.	AHA Centre	X	X					Initial batch of AADMER IEC materials widely distributed.
	1.3: Formal launching of AADMER and AADMER Work Programme.	ASEC, ACDM	X						Launching event for the AADMER and AADMER Work Programme.

Expected Output	Activity	Responsible Parties	Timeline						Milestones
			Phase 1			Phase 2			
			2010	2011	2012	2013	2014	2015	
	1.4: AADMER orientation and forums at national and regional levels: 1.4.1 With ministries of health, education, finance, civil defense, etc. 1.4.2 With local governments; 1.4.3 With the broad civil society.	AHA Centre, ASEC, ACDM: NDMOs, Partners	X	X					Periodic forums on AADMER.
	1.5: Development, launching and maintenance of an AADMER webpage.	AHA Centre, ASEC	X	X	X	X	X	X	Webpage on AADMER functionally online.

5. Training and Knowledge Management System

"What kinds of knowledge and information should the ASEAN propagate, what skills need to be developed, and what form should these take in order to implement AADMER?" These are the key questions that the Training and Knowledge Management System component will address.

The overall thrust of this cross-cutting element is to strengthen disaster preparedness for effective response at all levels, enhance the technical capacity of Member States in disaster risk reduction, identify gaps in the capacities of each Member State to implement AADMER, and fill these gaps through the support of Member States and partners. The AHA Centre shall facilitate activities for technical co-operation as identified herein.

5.1 Training

Natural phenomena such as typhoons and earthquakes need not translate to disaster, or if at all their human impact can be minimised, if people are equipped to deal with them. The main challenge of a capacity-building strategy is to be able to judiciously deploy power and resources from above and optimise lateral partnerships, while harnessing community strengths from below.

Training programme design needs to be strategic; sustainability and replication should be built-in. Thus there is a need for certification and institutionalisation and having these operationalised to the community level through the engagement of local governments and people's organisations.

Objectives

- Capacitate all heads and personnel (down to the middle manager levels) of national disaster management agencies in all ASEAN Member States in basic disaster management and emergency response;
- Further enhance knowledge and skills of experts and personnel in specific fields by providing relevant specialised trainings related to disaster risk reduction and response;
- Professionalise the field of disaster management through a certification system for disaster training; and
- Institutionalise mechanisms for replication and sustainability of training programmes down to the community level.

Expected Outputs

- Basic and advanced training modules for disaster management and emergency response delivered through face-to-face and/or eLearning modes;
- Regional trainings for national disaster management agencies and civil society;
- An ASEAN network of disaster management and emergency response training institutions;
- Certification programme for disaster management and emergency response;
- National disaster management and emergency response training plans in all Member States;
- Pool of regional disaster management and emergency response trainers.

Lead Shepherd: Singapore

Linked Activities

- ASEAN Secretariat-UNISDR-World Bank Memorandum of Cooperation (MOC) on Disaster Risk Reduction
- ASEAN-UNISDR Technical Cooperation for the Implementation of the HFA in ASEAN
- ASEAN Secretariat - ASEAN Partnership Group (APG) MOC for Collaboration in Supporting the Implementation of AADMER
- WBI Natural Disaster Risk Management Global Distance Learning Programme
- WB Global Distance Learning (GDLN) Activities

Output-Activity Matrix:

Expected Output	Activity	Responsible Parties	Timeline						Milestones	
			Phase 1			Phase 2				
			2010	2011	2012	2013	2014	2015		
Output 1: Training Needs Assessment accomplished.	1.1: Conduct of TNA workshop.	AHA Centre, ASEC, Member States: NDMOs	X		X					Training needs assessed by mid-2010 and mid-2012.
	2.1: Organisation of Basic Training Courses targeting various stakeholders from government, civil society, vulnerable groups, private sector, among others.	AHA Centre, Member States: NDMOs			X					Completed training modules and courses by fourth quarter by 2012.
Output 2: Regional Training Courses held (see Annex 2)	2.2: Organisation of Advanced Training Courses targeting various stakeholders from government, civil society, vulnerable groups, private sector, among others.	AHA Centre, Member States: NDMOs					X			Completed training modules and courses by fourth quarter of 2013
	3.1: Identification & Mapping of Training Institutions in ASEAN.	AHA Centre	X							Training institutions identified and mapped by the third quarter of 2010
	3.2: Holding of Network Core Group Meeting.			X						Core group meeting held in 2011.
	3.3: Network Launching Conference			X						ASEAN Disaster Training Network established by third quarter of 2011.
Output 3: ASEAN Network of Disaster Training Institutions established.	3.4: Conduct of Regular Meetings.			X	X	X	X	X		Meeting held every fourth quarter of each year.
	4.1: Technical Study of Certification System for DMER Training.	AHA Centre		X						Study results on the certification system by second quarter of 2011.
	4.2: Organisation of Conference on DMER Training Certification			X						Conference conducted by fourth quarter of 2011.

Expected Output	Activity	Responsible Parties	Timeline						Milestones
			Phase 1			Phase 2			
			2010	2011	2012	2013	2014	2015	
Output 5: DMER trainers pool created.	5.1: Building of Roster of trainers.	AHA Centre		X					Roster of DMER Trainers created by first quarter of 2011.
	5.2: Formalisation of Trainers Pool.			X					Trainers' pool created by second quarter of 2011.

5.2 Knowledge Management Systems

The following questions need to be considered in crafting a Knowledge Management System:

- What kinds of knowledge and information are needed?
- How can these be generated? What are the sources?
- What is the best modality for enabling sharing and exchange?

How can we ensure that these would reach the end-users, and in a timely manner?

On the matter of disasters, there are two main sets of relevant knowledge and information. One is on disaster response. This involves the accurate forecasting and rapid dissemination of information at the onset of disaster – especially for those to be affected as well as the early responders.

The other set is on the more strategic disaster risk reduction. This comprises lessons from past disasters, disaster patterns in the region, available material, human, and institutional resources, new technologies, community-based knowledge and ways of coping, and other related themes such as climate change, poverty, and human conflict.

There are numerous resource and data centres within and outside the region. The aim for creating the online knowledge centre is *not* to be the dominant site that would supersede or supplant the others, but simply to build ASEAN's own disaster data hub: containing relevant knowledge and reliable and up-to-date information and at the same time interconnecting other sites and facilitating continuous exchanges.

87

Two KMS projects are envisaged. One is the setting up the AHA Centre as the main resource centre for ASEAN disaster management and emergency response. Another is the creation of an on-line ASEAN knowledge and information centre. The website will be housed and managed in the AHA Centre, with full-time IT personnel constantly updating and maintaining it.

Objectives

- Determine the knowledge and information needs of the ASEAN region's related to disaster management and emergency response;
- Establish a resource centre as well as an online knowledge and information portal for disaster management and emergency response (DMER) in Southeast Asia; and
- Build mechanisms that ensure the active use and application of knowledge and information down to the community level.

Expected Outputs

- Handbooks based on Knowledge Needs Assessment results;
- ASEAN DMER Resource Centre;
- On-line knowledge and information centre (website/portal); and
- Knowledge and information centres in each Member State, operated by the national disaster management office.

Lead Shepherd: Singapore

Linked Activities:

- Knowledge Management of the ASEAN Humanitarian Task Force for the Victims of Cyclone Nargis (AHTF)
- ASEAN Secretariat-UNISDR-World Bank Memorandum of Cooperation (MOC) on Disaster Risk Reduction
- ASEAN-UNISDR Technical Cooperation for the Implementation of the HFA in ASEAN
- ASEAN Secretariat - ASEAN Partnership Group (APG) MOC for Collaboration in Supporting the Implementation of AADMER

Output-Activity Matrix:

Expected Output	Activity	Responsible Parties	Timeline						Milestones
			Phase 1			Phase 2			
			2010	2011	2012	2013	2014	2015	
Output 1: Knowledge Needs Assessment (KNA) accomplished.	1.1: Conduct of KNA Research.	AHA Centre	X						KNA research completed by fourth quarter of 2010.
	1.2: Holding of a KNA Workshop.			X					
Output 2: Accomplished research on ASEAN disaster risk reduction, response & Coordination, 2000-2009.	2.1: Conduct of region-wide research.	AHA Centre			X				Research completed by fourth quarter of 2012.
Output 3: ASEAN Resource Centre set up.	3.1: Compilation of DMER-related materials.	AHA Centre		X					Relevant references and materials collected.
	3.2: Setting-up of ASEAN Resource Centre/Library.			X					ASEAN Resource Centre established by second quarter of 2011.
	3.3: Launching of ASEAN Resource Centre.			X					ASEAN Resource Center fully operational.
Output 4: AADMER Website created.	4.1: Technical work on website.	AHA Centre	X						Website interface and functionalities done by fourth quarter of 2010.
	4.2: Website launch.			X					Website running and launched by first quarter of 2011.
Output 5: After Action process.	5.1: Evaluation Workshop (After-Action Review) after each disaster – linked with Activity 13.4 under Preparedness and Response.	AHA Centre	X	X	X	X	X	X	Outcome of After-Action Review to be compiled and fed into the ASEAN Resource Centre.

6. Information Management and Communication Technology

Information sharing, coordinated/facilitated communications and effective hazard monitoring and warning are explicitly mentioned in at least 16 separate AADMER Articles and/or Sub-articles¹. Successful execution of these responsibilities depends on more than selecting common technologies that are suitable for and available to all Member States. Consideration must also be given to interoperability, common information exchange protocols, data compatibility, reliability and redundancy, scalability, and security of the networks. Given the responsibilities and goals outlined in the AADMER, an effective Information and Communication Technology (ICT) strategy must be a corner stone of AADMER implementation strategies. ICT challenges impact all other strategic components and building blocks/drivers of the AADMER Work Programme.

Instituting ICT policies and processes that address these challenges early on will greatly reduce the cost and complexity of the initial deployment as well as long-term integration costs. Perhaps most importantly, these policies will offer direction to all ASEAN Member States for information sharing and interoperability, and will reduce the cost of human resources and training required to ensure the operational success of AADMER in the long term.

As an operational coordinating body, the AHA Centre is the communication hub in all humanitarian assistance missions and amongst the Member States and international players. Establishing the AHA Centre as a premier provider of information and communication services supporting humanitarian assistance missions and disaster risk reduction principles will help ensure the success of AADMER and support the well-being of the people, communities, and economies of Southeast Asia. It is therefore critical that the AHA Centre is charged with developing ASEAN-wide ICT policies and implementation practices to support AADMER implementation. This should be done along with the ACDM Working Group on Risk Assessment, Early Warning and Monitoring and other relevant ASEAN bodies/centres.

Lead Shepherd: Singapore

6.1 ICT Policy Framework

In order to meet the ICT challenges outlined above, the following policy elements – applicable to AHA Centre, AADMER components, and ASEAN Member States – will need to be agreed upon and established:

- Processes for evaluating existing ICT assets and assessing and prioritising immediate ICT needs;
- Minimum standards and milestones for information management and communication infrastructure;

¹ Articles and Sub-Articles 4 a, 4 b, 5.3, 5.4, 7 1.b, 7 1 c, 7.2, 9.2, 9.3, 10.2, 11.3, 11.4, 11.5, 11.6, 18.1.b, 18.1 c

- Guidelines for technology adoption to ensure: availability, accessibility, interoperability, compatibility, reliability, and security; and
- Processes for periodic review and evaluation of new ICT options.

6.2 ICT Guiding Principles

Effective establishment and implementation of ICT policies requires particular attention to the "sound practices" and guiding principles listed below.

Engaged and Participatory Leadership

An ICT governance model that provides a clear framework for ongoing dialogue, collaboration, and agile and coordinated decision-making within ASEAN Member States. Key considerations include:

- Enacting ICT governance processes that are participatory and accommodate input from other AADMER strategic components and building blocks;
- Establishing engaging processes that would promote integrated ICT solution (vs. silo) development for various AADMER components and/or within ASEAN Member States;
- Promoting realistic strategic planning based on available funds and consistent with available human resources and expertise. Plan for incremental improvements;
- Positioning AHA Centre as a leader in the innovative use of technology for providing disaster information for overall operational effectiveness; and
- Encouraging exemplary practices that can be replicated and deployed consistently through policies, standards, guidelines and plans.

Empowered Community

A community both traditional and virtual that will allow all Member States to benefit from and contribute to the continuing evolution of disaster risk reduction services. Key considerations include:

- Provisioning adequate resources for training, support, tools and information needed to foster innovative and effective uses of information, communications and technology;
- Expanding self-service and support offerings to accommodate personnel, communities, commerce and trade; and
- Promoting awareness and access to information and services.

Collaborative Environment

An ASEAN-wide infrastructure that is user-centric and cooperative, featuring open working communities, shared knowledge and information, coordinated communication and decision-making channels, and interoperable and consultative processes. Key considerations include:

- Placing focus on ASEAN's fundamental mission while working within limited and disparate resources and systems;
- Providing for and maintaining communication channels and ample opportunities for distributed and communitywide discussion, debate and advisement; and
- Developing broadly based partnerships throughout the community and beyond.

Interoperability through Standardised, Open and Common Protocols

An interoperable ICT framework used and operated reciprocally by all ASEAN Member States. This principle is advanced by adhering to the standard and open ICT systems and data protocols that are developed, approved, shared and maintained by a collaborative and consensus driven process. Key considerations include:

- Adopting open standards and common data exchange protocols;
- Balancing timely decision-making, quality assurance, and the complexity of the information technology environments;
- Designing scalable architecture and normalising data to avoid duplication and ensure data integrity.

Seamless and Secure Access

An adaptable information technology infrastructure that provides ASEAN with secure, simple, personalised, and timely access to information, services and support anytime, anywhere. Key considerations include:

- Planning for a highly-available and adaptable ASEAN-wide infrastructure that allows seamless, secure, responsive, ubiquitous, and inclusive access to local and global services; and
- Protection of ASEAN's intellectual assets and rights, as well as the privacy of internal and external users;

Enabling Infrastructure

An ASEAN-wide ICT infrastructure comprised of people, processes, policies and technologies, which is dependable, flexible and scalable. Key considerations include:

- Integrating information technologies into business operations, security, data, analysis, training and knowledge management practices;

- Fostering economies of scope and scale while advancing technology that is aligned with ASEAN, AADMER and the Member States' priorities; and
- Continual exploration and assessment of new and emerging technologies.

6.3 ICT Prioritisation and Strategic Implementation

Based on the ICT Gaps Analysis conducted by the Pacific Disaster Center in collaboration with ASEAN Secretariat and the ACDM Sub-Committee on ASEAN DiscNet (the former ACDM Working Group on Risk Assessment, Early Warning and Monitoring), the following are recommendations for prioritisation and strategic implementation of activities that could be considered:

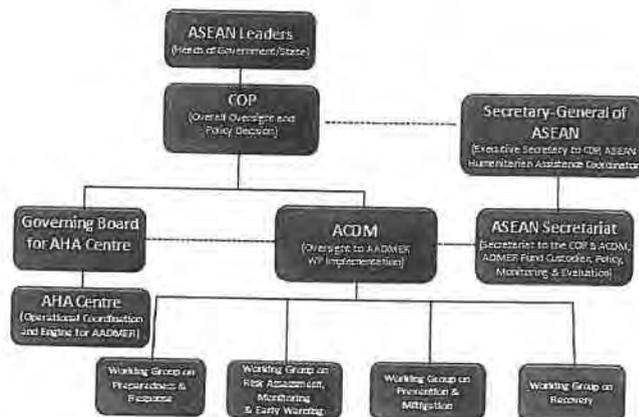
1. Develop governance policies consistent with the ICT administrative regulations/directives/sound practices;
2. Establish processes for accommodating input and requirements from AADMER Work Programme, AHA Centre, and the Member States;
3. Prioritise current specifications based on commonality within IT work plans;
4. Secure DISCNet and AHA Centre operational funding;
5. Establish minimum ICT capabilities and capacities for Internet, Email, fax, and GIS for all ASEAN Member States and across AADMER components;
6. Establish performance measuring benchmarks based on AADMER requirements;
7. Design ICT architecture and agree on standards and implementation mechanisms that would allow incremental "value-added" development and scaling;
8. Leverage and build-upon existing ICT assets and human resources;
9. Identify strategies for human resources training and development for all Member States;
10. Develop and implement security infrastructure and promote remote access policies;
11. Enhance real-time notification processes and foster Common Operating Procedure;
12. Identify processes (and information processing) areas ready for automation;
13. Enhance/Enact network monitoring, notification and escalation tools;
14. Augment personnel resources to expand critical ICT operations to 24 x 7; and
15. Ensure operational continuity of ICT resources, including disaster recovery strategies.

IV. IMPLEMENTATION, MONITORING AND EVALUATION OF AADMER WORK PROGRAMME

1. Implementation Arrangements

Even the most well-thought out work plan is just a document if it is not coupled with sound implementation arrangements. A sound implementation structure and mechanisms are key elements to ensuring the well-coordinated execution of activities and successful delivery of outputs and outcomes of the AADMER Work Programme. In line with Articles 20-23 of AADMER, the following shall be the implementation structure for the AADMER Work Programme (see Chart 1):

Chart 1. Implementation Arrangements for the AADMER Work Programme.



1.1 Conference of the Parties

Article 21.3 of AADMER states: "The Conference of the Parties shall keep under continuous review and evaluation the implementation of this Agreement". The Conference of the Parties (COP) shall:

1. Take such action as is necessary to ensure the effective implementation of this Agreement;
2. Consider report and other information which may be submitted by a Party directly or through the Secretariat;
3. Consider and adopt protocols in accordance with Article 25 of this Agreement;
4. Consider and adopt any amendment to this Agreement;
5. Adopt, review and amend as required any Annexes to this Agreement;
6. Establish subsidiary bodies as may be required for the implementation of this Agreement; and
7. Consider and undertake any additional action that may be required for the achievement of the objective of this Agreement.

The ordinary meetings of the COP shall be convened at least once every year and extraordinary meetings upon the request of one Party provided that such request is supported by at least one Party. The extraordinary or special meetings of the COP may be called in the event of crisis or emergency situations affecting ASEAN to develop arrangements to address such situations in a timely manner.

As practiced by other ASEAN bodies, it is strongly recommended that the COP will be ministerial-level and attended by ASEAN Ministers in charge of disaster management. It is also preferable that the Minister attending the COP will have a direct link to the AADMER National Focal Point.

In line with the above, the COP shall delegate and task the ACDM to take charge in the implementation of AADMER Work Programme.

1.2 ASEAN Committee on Disaster Management (ACDM)

The ASEAN Committee on Disaster Management (ACDM) shall perform the following functions, among others listed in the ACDM Terms of Reference (see Annex 1):

1. Provide leadership and guidance towards fulfilling the goals and objectives of AADMER in pursuant of the vision of disaster-resilient nations and safer communities within ASEAN by 2015;
2. Initiate, direct and oversee the development, monitoring and implementation of the AADMER Work Programme and other related decisions and initiatives implemented by the respective Working Groups;
3. Strengthen coordination with relevant ASEAN bodies to complement the implementation of disaster management activities and promote effective integration of relevant and related programmes and activities;
4. Collaborate with ASEAN's Dialogue Partners, international and multilateral agencies, NGOs and the private sector to advance the objectives of AADMER;
5. Enhance sharing of resources and information on disaster management and promote collaborative disaster research activities;
6. Plan and coordinate all activities required for convening of meetings, in coordination with the host Member State and ASEAN Secretariat; and
7. Present reports and provide recommendations related to AADMER to the COP for their consideration.

The ACDM is headed by a Chair, who is supported by a Vice-Chair. In relation to the implementation of the AADMER Work Programme, the ACDM Chair is primarily tasked to initiate and direct the execution of the Work Programme activities through the Working Groups. The Chair should provide overall supervision of the Working Groups to achieve efficiency in the use of resources, create greater synergies for a more holistic implementation of the AADMER Work Programme, and successfully attain the expected outcomes (Refer to Annex 2 for the Terms of Reference of the ACDM Chair.)

In the event that the Chair of ACDM is not able to direct and manage the tasks and responsibilities of ACDM or is unable to chair the meeting(s), the Chair shall direct the Vice-Chair to assume such duties. The Chair and Vice-Chair are appointed on the basis of rotational and alphabetical order of Member States.

The ACDM shall meet at least once a year. Participation of ASEAN Member States, ASEAN Secretariat and AHA Centre at the ACDM meetings is on a self-financing basis, particularly for the full-fledged meetings, which are normally held in the first quarter of the year. However, some meetings may be held back to back with relevant project meetings and exercises to synergise on funding support and travel. The Chair may invite

relevant Dialogue Partners and key partner organisations to the open sessions of the ACDM meetings to promote collaboration and partnerships.

1.3 ACDM Working Groups

Under the ACDM, subsidiary thematic Working Groups have been organised to lead the implementation of the AADMER Work Programme activities. In view of this, the Working Groups shall initiate the setting of indicators for monitoring and evaluating the progress of the implementation process, make recommendations on specific technical areas of the AADMER Work Programme based on the monitoring and evaluation reports, periodically report to the ACDM, and provide technical guidance to AHA Centre. Currently, there are four working groups set up to support the implementation of the AADMER Work Programme, to wit:

1. Working Group on Risk Assessment, Early Warning and Monitoring (comprising Cambodia, Indonesia, Philippines, Viet Nam)
2. Working Group on Prevention & Mitigation (comprising Brunei Darussalam, Cambodia, Lao PDR, Malaysia, Thailand, Viet Nam)
3. Working Group on Preparedness and Response (comprising Brunei Darussalam, Lao PDR, Malaysia, Philippines, Singapore, Thailand)
4. Working Group on Recovery (comprising Brunei Darussalam, Indonesia, Myanmar, Philippines)

For the purpose of implementing the AADMER Work Programme, a Member State is identified as Lead Shepherd to coordinate the tasks and responsibilities of the members of the concerned Working Group for a particular activity. In some cases, there are two Lead Shepherds, and in some cases, the Chair of ACDM or ASEAN Secretariat will take the lead. The Working Groups shall consist of no fewer than three, but no more than six Member States. All Member States are welcome to attend Working Group meetings, but the official membership shall be from three to six Member States only to ensure maximum efficiency. See Table below for the summary of Working Group Chairs and Lead Shepherds:

Strategic Component/Building Block	WG Chair/ Lead Shepherd	WG Members
Working Group on Risk Assessment, Early Warning and Monitoring (expanded from the Sub-Committee on DISCNet) i) Risk Assessment ii) Early Warning iii) Monitoring	Cambodia and Philippines Indonesia Viet Nam Philippines	Cambodia, Indonesia, Philippines and Viet Nam (four countries)
Working Group on Prevention and Mitigation (expanded from the Sub-Committee on Public Education and Awareness or PEA)	Lao PDR and Thailand	Brunei Darussalam, Cambodia, Lao PDR, Malaysia,

97

Strategic Component/Building Block	WG Chair/ Lead Shepherd	WG Members
i) Implementing National Action Plans on Disaster Risk Reduction and Strengthening Legal and Institutional Frameworks ii) Mainstreaming Disaster Risk Reduction in National Development Planning iii) Mainstreaming DRR in the Education and Health Sectors o Integrating DRR in the Curriculum o Disaster Safety of Education Facilities o Disaster Safety of Health Facilities iv) Public Education, Awareness and Advocacy v) Urban DRR vi) Community-Based DRR vii) Building Partnerships between DRR and Climate Change Adaptation Institutions and Programmes viii) Disaster Risk Financing Including Microfinance	Thailand Philippines Cambodia, Lao PDR Viet Nam tdb Lao PDR and Thailand Malaysia Cambodia and Lao PDR Viet Nam Indonesia	Thailand and Viet Nam (six countries)
Working Group on Preparedness and Response (expanded from the SASQP Sub-Committee)	Malaysia and Singapore	Brunei Darussalam, Lao PDR, Malaysia, Philippines, Singapore, Thailand (six countries)
Working Group on Recovery (new Working Group)	Indonesia and Myanmar	Brunei Darussalam, Indonesia, Myanmar, Philippines (four countries)
Partnership	Chair of ACDM	
Resource Mobilisation	Chair of ACDM	
Outreach and Mainstreaming	Thailand	
Training	Singapore	
Knowledge Management System	Singapore	
Information Management and Communication Technologies (ICT)	Singapore	
Monitoring and Evaluation	ASEAN Secretariat	

(Note: Those with "to be determined (tdb)" will be finalised by respective Working Groups.)

The Working Groups will also meet on "as-the-need-arises" basis (See Annex 3 for the Terms of Reference of Working Groups). Participation of ASEAN Member States, ASEAN Secretariat and AHA Centre at the ACDM Working Groups meetings is on a self-financing basis. However, some meetings may be held back to back with relevant project meetings to synergise on funding support and travel. The Chair of the Working Group may invite relevant Dialogue Partners and key partner organisations to the open sessions of the Working Group meetings to promote collaboration and partnerships.

1.4 ASEAN Coordinating Centre for Humanitarian Assistance on disaster management (AHA Centre)

The AADMER has an Annex that details the TOR of AHA Centre, to wit: "The AHA Centre shall be established for the purpose of facilitating cooperation and coordination among the Parties, and with relevant United Nations and international organisations, in promoting regional collaboration." To this end, it shall perform the following functions:

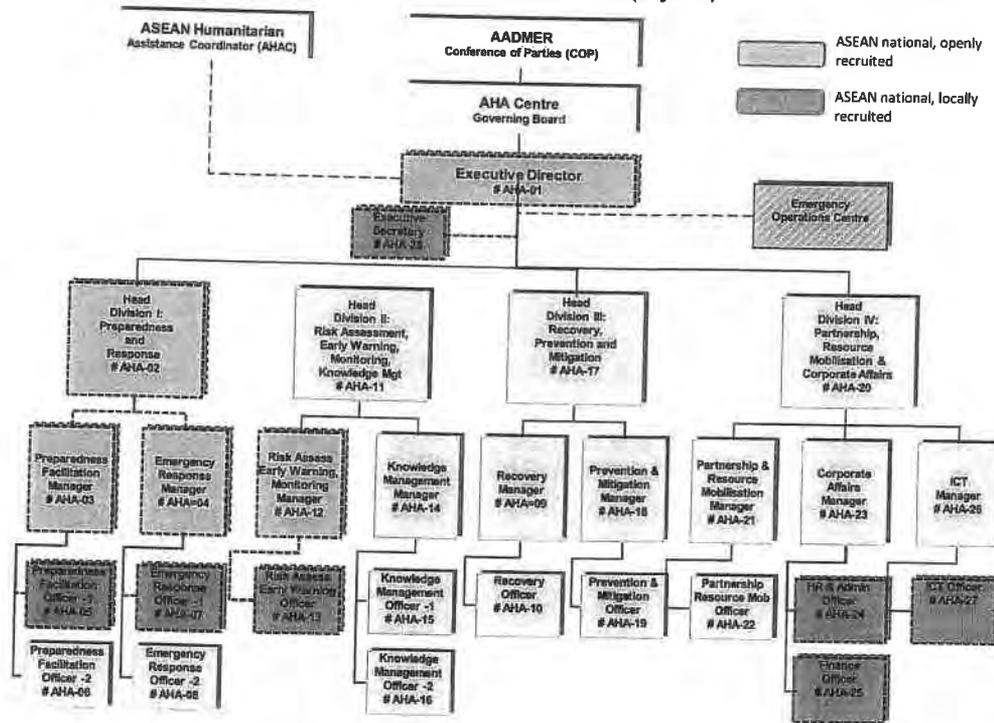
1. Receive and consolidate data as analysed by and recommendations on risk level from the National Focal Points (Article 5.4);
2. On the basis of such information, disseminate to each Party, through its National Focal Point, the analysed data and risk level arising from the identified hazards (Article 5.4);
3. Where appropriate, conduct analysis on possible regional-level implications (Article 5.4);
4. Receive information regarding available resources for the regional standby arrangements for disaster relief and emergency response (Article 8.4);
5. Facilitate the establishment, maintenance and periodical review of regional standby arrangements for disaster relief and emergency response (Article 8.5);
6. Facilitate periodic review of regional standard operating procedures (Article 8.6);
7. Receive data on earmarked assets and capacities, which may be available for the regional standby arrangements for disaster relief and emergency response, as communicated by each Party, and their updates (Article 9.1);
8. Consolidate, update and disseminate the data on such earmarked assets and capacities, and communicate with the Parties for their utilisation (Article 9.2);
9. Receive information on measures taken by the Parties to mobilise equipment, facilities, materials, human and financial resources required to respond to disasters (Article 10.2);
10. Facilitate joint emergency response (Article 11);
11. Where appropriate, facilitate the processing of exemptions and facilities in respect of the provision of assistance (Article 14.c);
12. Where possible and appropriate, facilitate the processing of transit of personnel, equipment, facilities and materials in respect of the provisions of assistance (Article 16.2);

13. Facilitate activities for technical co-operation (Article 18.2);
14. Facilitate activities for scientific and technical research (Article 19.2);
15. Receive from each Party information on designated National Focal Point and Competent Authorities and any subsequent changes in their designations (Article 22.2); and
16. Regularly and expeditiously provide to the Parties and, as necessary, to relevant international organisations, information referred to in paragraph (xv) above (Article 22.3).

The organisational structure of the AHA Centre (as of May 2010) is shown in Chart 2. The Governing Board will provide oversight and guidance to the Executive Director in the performance of his/her duties. The Board will be composed of the National Focal Points of the Parties to the AADMER and a representative of the ASEAN Secretariat as an ex-officio member. The Board will meet at least once a year.

As a matter of strategy, the start-up structure for the AHA Centre should be as lean as possible. In this regard, out of the four Divisions, the AHA Centre will start with the Division for Preparedness and Emergency Response. The boxes with dotted lines are the agreed positions for the start-up structure for the AHA Centre. The "Emergency Operations Centre" or EOC, is an operational function that will be manned by the 13 staff members. The Executive Director can also engage technical experts to carry out specific tasks for the AHA Centre.

Chart 2. Organisational Structure of the AHA Centre (May 2010)



101

1.5 ASEAN Humanitarian Assistance Coordinator

A full-blown disaster or emergency affecting one or more Member States in the ASEAN region may require large-scale humanitarian assistance that could involve numerous humanitarian actors and emergency response organisations and that could be beyond a single national authority. During a major disaster or emergency in the ASEAN region, there may also be a need for an intensive coordination and facilitation process to ensure a quick and well-coordinated humanitarian assistance to affected Member State/s

Hence, in the 14th ASEAN Summit on 28 February -1 March 2009 in Cha-am Hua Hin, Thailand, the Heads of State/Government of ASEAN Member States "agreed to entrust the ASEAN Secretary-General to serve as ASEAN's humanitarian assistance coordinator which can be activated any time at the request of the affected ASEAN Member State in the event of a major disaster, whether it be a natural disaster or a pandemic."

The ASEAN Secretary-General, in his capacity as ASEAN Humanitarian Assistance Coordinator, aims to subscribe to the following general tenets during a major crisis:

1. Promote a well-coordinated and effective ASEAN's response to disasters and mobilise regional resources and mechanisms;
2. Promote humanitarian principles into ASEAN's priorities (ensuring that assistance is suitable to the local context, meets the needs of the affected population, and enhances the well-being and livelihood of the affected population, in particular the most vulnerable groups);
3. Influence the mindset of ASEAN peoples in order to invest more on disaster risk reduction (DRR); and
4. Maintain a sense of crisis and the spirit of building back better.

The role of ASEAN Humanitarian Assistance Coordinator will be situational, based on the disaster situations and the need or request of the affected Member State. While AHAC's role will be ad hoc for the response and early recovery stage (Tasks no. 1 and 5), promoting DRR and the humanitarian principles and standards (Tasks no. 3 and 4) should be done on a continuous basis.

The 16th Meeting of ACDM (18-19 May 2011, Makati City, Philippines) agreed in principle to recommend that following a major disaster within the region, the Secretary-General of ASEAN should establish communication with the ASEAN Chair and seek his/her advice on the need to mobilise the ASEAN Humanitarian Assistance Coordinator to respond to the disaster.

1.6 The ASEAN Secretariat

Article 23 of the Agreement states that "the ASEAN Secretariat shall serve as the Secretariat to this Agreement". The article also states the functions of the ASEAN Secretariat pertaining to the implementation of AADMER as the following:

1. Arrange for and service meetings of the Conference of the Parties and of other bodies established by this Agreement;
2. Transmit to the Parties notifications, reports and other information received in accordance with this Agreement;
3. Consider inquiries by and information from the Parties, and consult with them on questions relating to the Agreement;
4. Ensure the necessary coordination with other relevant international bodies and, in particular, to enter into administrative arrangements as may be required for the effective discharge of the Secretariat functions; and
5. In line with Article 24 of the Agreement, the ASEAN Secretariat will also administer the ASEAN Disaster Management and Emergency Relief Fund to be established under the Agreement.
6. Perform such other functions as may be assigned to it by the Parties.

Other equally important agreements and documents of ASEAN mandate the ASEAN Secretariat to perform related duties and responsibilities, to wit:

In line with Article 11. 2. b of the ASEAN Charter i.e. on the role of the Secretary-General of ASEAN and the ASEAN Secretariat, the ASEAN Secretariat will also be responsible in facilitating and monitoring progress in the implementation of AADMER and relevant decisions.

While the AHA Centre performs the operational coordination and technical functions under the AADMER and operates on a 24/7 basis, the ASEAN Secretariat will provide policy coordination support, conduct monitoring and evaluation of the AADMER, and serve as the custodian of ADMER Fund as well as Secretariat to both COP and ACDM. ASEAN Secretariat will also sit in the Governing Board of AHA Centre, and provide direct support to the Secretary-General of ASEAN in performing his/her duties as the ASEAN Humanitarian Assistance Coordinator.

2. Monitoring and Evaluation

2.1 Monitoring the Implementation of the AADMER Work Programme

The ASEAN Secretariat, as Secretariat to the COP, shall be assigned with identifying benchmarks and designing a system and methodology for the regular monitoring and evaluation of the AADMER Work Programme. The Secretariat shall propose a set of indicators to the Working Groups and a proposed schedule to the ACDM for endorsement within six (6) months of adoption of the Work Programme. This monitoring and

103

evaluation framework shall take into account the pre-existing reporting requirements of Member States under the HFA and shall seek to limit duplication, specifically for Work Programme elements that relate to disaster risk reduction.

It is proposed that the Monitoring and Evaluation framework for charting the progress of AADMER Work Programme implementation from 2010 to 2015 follow the monitoring framework of the ASEAN Socio-Cultural Community Blueprint (See Annex 4 for the monitoring template.) The ASEAN Secretariat will likewise propose a monitoring system and methodology (i.e. who and how to collect data, means of verification, and scoring system) for consideration of the Working Groups concerned and for endorsement by the ACDM. The ASEAN Secretariat is thus responsible for monitoring and evaluation at the programme level, while the Working Groups are concerned with the monitoring and evaluation of their respective strategic components and related building blocks and drivers.

Once adopted and endorsed by the ACDM, the monitoring and evaluation system shall become an appendix to the AADMER Work Programme and shall be reviewed regularly and included in the semi-annual report to the COP.

Aside from the internal self-assessment of concerned parties (i.e. ACDM, the Working Groups, etc), the ASEAN Secretariat may engage an external party to assist in the evaluation of the implementation of the Work Programme to ensure a transparent and participatory process.

2.2 Reporting

ASEAN Secretariat, as Secretariat to the COP, shall prepare a semi-annual report on the progress of implementation of the AADMER, including progress benchmarking against its monitoring and evaluation framework outlined above. The ACDM will then review the report and present it to the Conference of the Parties.

As signatories to the HFA, reporting on the progress of HFA implementation by Member States is mandatory. This will overlap with the reporting on the AADMER Work Programme implementation at the programme level, particularly on the disaster risk reduction related activities in the Work Programme. The reporting system will thus be closely aligned to the HFA reporting, particularly for the elements in the Work Programme that pertain to disaster risk reduction, to avoid duplication of efforts of Member States.

ANNEXES

ANNEX 1

TYPE OF DISASTER BY FREQUENCY AND TYPE OF IMPACT LISTED BY EMDAT-CRED, 2001-2009

(www.emdat.be)

Type of Disaster		Frequency	Deaths	Injured	Homeless	Estimated Damage ('000, in USD)
Drought	ASEAN	12 (7%)	0 (0%)	0 (0%)	0 (0%)	703,873 (3%)
	Rest of the World	157	1,520	0	0	23,236,135
	Total	169	1,520	0	0	23,940,008
Extreme Temperature	ASEAN	0	0	0	0	0
	Rest of the World	207	88,817	1,850,090	0	36,430,269
	Total	207	88,817	1,850,090	0	36,430,269
Flood	ASEAN	213 (13%)	6,935 (13%)	2,901 (1%)	166,707 (1%)	5,440,735 (3%)
	Rest of the World	1441	45,522	223,313	12,184,352	154,004,897
	Total	1654	52,457	226,214	12,351,059	159,445,632
Landslide	ASEAN	42 (24%)	2,924 (41%)	638 (47%)	67,855 (21%)	124,207 (14%)
	Rest of the World	133	4,164	720	253,958	751,500
	Total	175	7,088	1,358	321,813	875,707

105

Type of Disaster		Frequency	Deaths	Injured	Homeless	Estimated Damage ('000, in USD)
Wildfire	ASEAN	7 (5%)	0 (0%)	0 (0%)	0 (0%)	14,000 (0%)
	Rest of the World	132	631	1,957	23,213	22,223,467
	Total	139	631	1,957	23,213	22,237,467
Wind Storm	ASEAN	132 (13%)	147,023 (85%)	29,839 (59%)	798,127(20%)	8,348,542 (2%)
	Rest of the World	886	25,206	21,027	3,212,651	437,673,850
	Total	1018	172,229	50,866	4,010,778	446,022,392
Earthquake	ASEAN	42 (15%)	183,352 (40%)	160,133 (17%)	1,335,229 (12%)	10,682,314 (6%)
	Rest of the World	241	270,109	792,700	9,924,403	161,583,175
	Total	283	453,461	952,833	11,259,632	172,265,489
Volcanic Eruptions	ASEAN	15 (26%)	2 (1%)	105 (20%)	0 (0%)	4,794 (3%)
	Rest of the World	43	228	428	110,000	173,075
	Total	58	230	533	110,000	177,869
Epidemic	ASEAN	36 (6%)	1,826 (3%)	0 (0%)	0 (0%)	0 (0%)
	Rest of the World	533	54,900	414	0	0
	Total	569	56,726	414	0	0

Type of Disaster		Frequency	Deaths	Injured	Homeless	Estimated Damage ('000, in USD)
Insect Infestations	ASEAN	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)
	Rest of the World	17	0	0	0	120,000
	Total	17	0	0	0	120,000
TOTAL	ASEAN	499 (12%)	342,062 (41%)	193,616 (6%)	2,367,918 (8%)	25,318,465 (8%)
	Rest of the World	3,790	491,097	2,890,649	25,708,577	836,196,368
	Total	4,289	833,159	3,084,265	28,076,495	861,514,833

ANNEX 2

LIST OF BASIC AND SPECIALISED TRAINING COURSES

(Based on questionnaires, training needs analysis and discussions conducted in 2009)

Basic Training Courses:

1. Basic Course on Disaster Risk Reduction. Includes climate change, environmental issues, partnership and resource mobilisation, and gender mainstreaming.
2. Basic AADMER Course. What is AADMER? History and Evolution. Components. Relevance. Coordination mechanisms.
3. Basic SASOP Course. What is SASOP? History and Evolution. Components. Relevance and Member State responsibilities. Coordination mechanisms.
4. Governance. Includes, *inter alia*, legal and policy analysis, accountability and transparency, and DRM planning at the national and local levels.
5. Training of Trainers.
6. Knowledge Management Training. Includes e-Learning.
7. Community-Based Disaster Risk Management. Includes recognition and study of indigenous knowledge and practices.
8. Armed Conflicts and Peace-building. (For discussion.)

Specialised Training Courses:

- 1. Risk Assessment, Monitoring and Early Warning**
 - a. Hazard Mapping
 - b. Community-Based Disaster Monitoring
 - c. Orientation and Training on the Online Southeast Asia Disaster Map (OSA-Map) and the Online Southeast Asia Disaster Inventory (OSADI). Includes familiarisation with the ASEAN Disaster Information Sharing and Communication Network (ASEAN DISCNet) project.

- 2. Prevention and Mitigation**
 - a. Mainstreaming DRR and DRM. Includes advocacy, raising public awareness, ways to include DRR and DRM into the formal educational curriculum
 - b. Community-based DRR
 - c. Pandemics
 - d. Hospital Safety
 - e. Urban Disaster Risk Reduction
 - f. Disaster Risk Financing. Includes microfinance.

- 3. Preparedness and Response**
 - a. Incident Command System (ICS) (see attached for proposed course list and delivery method)
 - b. SASOP and ERAT
 - c. ARDEX. Includes exercise management programmes ("how to conduct exercises").
 - d. Disaster-Specific Trainings: Collapsed Structure, Firefighting, Flood, Landslide, Volcanic Eruptions, Hazardous Chemicals. (Some may be incorporated into the ARDEX.)
 - e. Civil-Military Operations
 - f. Camp Management
 - g. Waste Management
 - h. Search and Rescue. Includes "Hyper-Rescue" Skills (e.g. from high-rise buildings, etc.)

- 4. Recovery, Rehabilitation, and Reconstruction**
 - a. DANA/DALA. Note: DANA probably fits better under 3c.
 - b. Early Recovery. "Building Back Better." Includes discussions on Resettlement and/or On-Site Reconstruction
 - c. Workshop on Good Practices
 - d. Post-Disaster Lessons
 - e. Livelihood and Microfinance

ANNEX 3

**TERMS OF REFERENCE
ASEAN COMMITTEE ON DISASTER MANAGEMENT (ACDM)**

(In line with the version adopted by the 2nd Meeting of ACDM, 28-29 October 2004, Kuala Lumpur, Malaysia, with some modifications to accommodate new developments and current practices)

VISION

A region of disaster-resilient nations, mutually assisting and complementing one another, sharing a common bond in minimising adverse effects of disasters in pursuit of safer communities and sustainable development.

MISSION

To enhance cooperation in all aspects of disaster management prevention, mitigation, preparedness, response and recovery through mutual assistance activities in order to minimise the adverse consequences of disasters on the economic and social development of Member States.

OBJECTIVES

To formulate and implement programmes, projects and activities to enhance regional cooperation in all aspects of disaster management, including prevention, mitigation, preparedness, response and recovery through mutual assistance activities in order to minimise the adverse consequences of disasters on the economic and social development of member countries.

SCOPE

The ACDM's activities will focus on the following categories of disasters:

Natural Disasters: "Sudden natural" disasters; earthquake, aftershock, flood, flash flood, dam collapse, heat wave, typhoons, storm, hail, storm surges, thunderstorm, tropical storm, insect/animal infestation, landslide, tidal wave (tsunami), volcanic eruption and glowing avalanches, among others.

111

Man-made disasters: "Sudden man-made" disasters; structural collapse, building collapse, mine collapse or cave-in, air disasters, sea disasters, industrial technology accident, explosions, chemical explosions, nuclear explosions, mine explosions, pollution, acid rain, chemical pollution, atmosphere pollution, oil pollution, fires, forest/grassland fires, among others.

FUNCTIONS AND ACTIVITIES

- To serve as a forum for exchange of views on strategic and emerging issues involving disaster management and relief activities in the ASEAN region;
- To enhance the sharing of resources and information on disaster management;
- To utilise cost-sharing arrangements in funding collaborative activities in disaster management as a strategy for enhancing self reliance in the implementation of regional activities;
- To strengthen coordination with other relevant ASEAN bodies to complement the implementation of disaster management activities;
- To collaborate with ASEAN's Dialogue Partners; international and multilateral agencies; NGOs and the private sector in advancing the objectives of ASEAN cooperation in disaster management;
- To promote human resource development in disaster management in accordance with the needs of Member States;
- To promote effective integration of programmes and activities with other relevant ASEAN bodies;
- To promote public education and awareness programmes;
- To promote collaborative disaster research activities; and
- To formulate and implement the AADMER Work Programme that outlines regional strategies, priority areas, and activities on disaster management.

PROCEDURES/MECHANISMS

- The ASEAN Committee on Disaster Management (ACDM) is a two-day meeting which will meet at least once a year;
- Chairmanship of the ACDM is for one year and will be rotated alphabetically; and
- The ACDM will provide its reports to the Conference of the Parties (COP) for notation and approval.

112

ANNEX 4

TERMS OF REFERENCE

CHAIR, ASEAN COMMITTEE ON DISASTER MANAGEMENT (ACDM)

1. Provide leadership and guidance to the ASEAN Committee on Disaster Management (ACDM) towards fulfilling the vision of disaster-resilient nations and safer communities in ASEAN;
2. Oversee the development, implementation, and monitoring of AADMER Work Programme as well as the activities implemented by the Working Groups under the AADMER Work Programme;
3. Present reports and provide recommendations on the implementation of AADMER Work Programme to the Conference of the Parties (COP) for consideration;
4. Plan and coordinate all activities required for convening of meetings, in coordination with the host country and ASEAN Secretariat. These include the following:
 - a. Preparation of tentative agenda and its annotation, concept papers, policy issues as well as other relevant documents that would be used for discussion during the meeting;
 - b. Issuance of meeting announcement and invitation letters; and
 - c. Preparations of draft report of the meeting for adoption and its subsequent reproduction.
5. Chair and/or Co-Chair represent ACDM in meetings and other forums. To be able to do this, he or she should have the following:
 - a. Understanding and full appreciation of the issues under the purview of ACDM and related ASEAN policies;
 - b. Understanding of ASEAN processes and procedures particularly as they relate to conduct of meetings, including with Dialogue and other partners;
 - c. Making sure that the ACDM's activities are in line with the attainment of agreed ASEAN goals and objectives, as prescribed in the ASEAN Charter, the Cha-am Hua Hin Declaration on the Roadmap for the ASEAN Community (2009-2015), ASEAN Summit decisions and declarations, as well as decisions of relevant ministerial bodies;
 - d. Ensuring that decisions made by the ACDM are followed through and implemented by the respective Member States and/or subsidiary bodies, such as Working Groups.
 - e. Maintaining an archive of Meeting's minutes, notes and relevant documents in close cooperation with ASEAN Secretariat; and

- f. On cross-sectoral issues, communicating and exchanging information, and coordinating the work of ACDM with other relevant ASEAN sectoral bodies in consultation with and with support of the ASEAN Secretariat.
6. Establish regular communications and links with the Chairs of all Working Groups as well as the ASEAN Secretariat and AHA Centre.
7. Prepare Handover Notes at the end of Chair's term to ensure continuity and proper succession.

ANNEX 5

TERMS OF REFERENCE
ACDM WORKING GROUPS

PROGRAMME/ACTIONS

1. Key responsibilities of the ACDM Working Groups pertaining to the implementation of the AADMER Work Programme (2010-2015) include initiating, leading, and implementing the activities that fall under their respective strategic components as well as the related building blocks or drivers that support such activities;
2. The ACDM Working Groups shall provide likewise provide strategic directions in the implementation of AADMER Work Programme activities and be aware of related initiatives in their respective territories, within the region as well as globally in order to start possible opportunities for collaboration; and
3. The ACDM Working Groups shall also conduct regular monitoring, review and evaluation of the implementation of their respective strategic components and related building blocks and drivers. At the outset of the implementation, they will agree on a set of indicators, design a methodology and system (i.e. who will do what, what are the sources of verification) for monitoring and evaluation with the assistance of ASEAN Secretariat as well as other technical experts.

MEMBERSHIP

1. The ACDM Working Group shall be composed of national focal points from relevant ministries/agencies of ASEAN Member States and the ASEAN Secretariat;
2. Relevant Dialogue Partners, regional and international agencies, community-based organisations, NGOs, private sectors and individuals may be invited to attend open sessions of the ACDM Working Group meetings to promote collaboration and partnerships.

CHAIRMANSHIP

1. The Chairmanship of the ACDM Working Group shall be determined by the expression of interest by ASEAN Member States and the tenure of chairmanship shall be for three years. The following are the roles and responsibilities of the Chair of ACDM Working Group:
 - To provide leadership and guidance to the Working Group towards fulfilling the AADMER (objective, mission, strategies), in pursuant to achieve the larger goals, aims, objectives and mission of ACDM and ASEAN;
 - To initiate, direct and oversee the development, monitoring and implementation of the Working Group programmes and activities in support of the AADMER Work Programme;
 - In coordination with the host country and ASEAN Secretariat, to plan, execute and coordinate all activities required for convening meetings under the purview of the Working Group. These include the following:

115

- Preparations of tentative agenda and its annotation, concept papers, information papers, project reports, project briefs/concept paper/proposals and other documents for discussion in the meeting;
- Issuance of meeting announcement and invitation letters;
- Preparations of draft report of the meeting for adoption and its subsequent reproduction; and
- Preparations of report and documents for presentations at ACDM meetings.
- To preside over regular meetings, project meetings, discussion forums under the purview of the Working Group so as to achieve consensus over the issues discussed and decisions made;
- To present the outcomes of the Working Group Meetings and relevant issues (recommendations, policies, comments, new initiatives) to ACDM for consideration;
- Upon invitation by ACDM, to represent the Working Group in the relevant meetings, consultations and other forums;
- To facilitate and coordinate the execution and follow-up of the decisions of the Working Group;
- To maintain an archive of Working Group Meeting's minutes, notes and relevant documents in close cooperation with ASEAN Secretariat;
- To establish regular communications and links among the members of the Working Group, the Chairs of other Working Groups, ACDM Chair, ACDM members, ASEAN Secretariat, AHA Centre, as well as proponents of projects, project consultants/experts engaged under the Working Groups and designated focal points in Member States;
- To prepare Handover Notes at the end of Chair's term to ensure continuity and proper succession;

The Working Group Vice-Chair shall be ready to assume the tasks of the Working Group (WG) Chair, in the event, that the WG Chair is unable to perform the mandated tasks due to reasons beyond his/her control or when assigned specific duties by the WG Chair.

FREQUENCY OF MEETINGS

ACDM Working Groups shall meet at least once a year, or more frequently as the need arises.

FINANCIAL ARRANGEMENTS

Participation of ASEAN Member States, ASEAN Secretariat and AHA Centre at the ACDM Working Groups meetings is on a self-financing basis. However the meetings may be held back to back with relevant project meetings to synergise on funding support and travel.

REPORTING

The ACDM Working Groups shall report to the ACDM at least once a year, or more frequently as the need arises.

ANNEX 6

TEMPLATE FOR MONITORING AND EVALUATION OF AADMER WORK PROGRAMME IMPLEMENTATION

Goal: to contribute to realising an ASEAN Community that is people-centred and socially responsible with a view to achieving enduring solidarity and unity among the nations and peoples of ASEAN by forging a common identity and building a caring and sharing society which is inclusive and harmonious where the well-being, livelihood, and welfare of the peoples are enhanced.

Strategic Objective	Activity	Expected Output	Activity	Input	Responsible Body/ies	Indicator	Means of Verification	Timeline							Obstacles and Assumptions (O&A)	Score
								2009	2010	2011	2012	2013	2014	2015		
A. Human Development A1. Advancing and prioritising education Strategic Objective: To ensure the integration of education priorities into ASEAN's development agenda and creating a knowledge based society; achieving universal access to primary education; promoting early child care and development; and enhancing awareness of ASEAN to youths through education and activities to build an ASEAN Identity based on friendship and cooperation.	i. Achieve universal access to primary education across ASEAN by 2015 with priorities to eradicate illiteracy and to ensure compulsory primary education for all and gender equality in education, through advocating for equal opportunity in education regardless of social class, geography ethnicity, background or physical disabilities, with 70 percent target benchmark achieved by the end of 2011;	Output 1	Activity 1	Input 1		Indicator 1	MOV 1								O&A 1	Score 1
			Activity 2	Input 2		Indicator 2	MOV 2								O&A 2	Score 2
			Activity 3	Input 3		Indicator 3	MOV 3									O&A 3

117

ii. Improve the quality and adaptability of education, including technical/vocational/ skills training education in the ASEAN region by developing a technical assistance programme including training for teaching staff and staff exchange programme at higher education level for this purpose by 2009, in particular CLMV;	Output 2	Activity 1	Input 1		Indicator 1	MOV 1									O&A 1	Score 1
		Activity 2	Input 2		Indicator 2	MOV 2									O&A 2	Score 2
		Activity 3	Input 3		Indicator 3	MOV 3									O&A 3	Score 3
		Activity 4	Input 4		Indicator 4	MOV 4									O&A 4	Score 4

ANNEX 7

LIST OF FLAGSHIP PROJECTS FOR AADMER WORK PROGRAMME PHASE 1 (2010-2012)

(Announced at the Partnership Conference on the ASEAN Agreement on Disaster Management and Emergency Response (AADMER), 20 May 2010, Makati City, Philippines)

- I. **Preparedness and Response**
 - a. **Establishment of a Disaster & Emergency Response Logistics System for the ASEAN Region**
 - Building of stockpile system and establishment of supply chain
 - Formalisation of logistics deployment system
 - b. **Establishment of a fully-functional Emergency Rapid Assessment Team (ERAT)**
 - Finalisation of ERAT deployment procedures
 - Formulation of guidelines in relation to UNDAC
 - Capacity-building of ERAT personnel
 - c. **SASOP Finalisation & Institutionalisation**
 - Finalisation of procedures for the deployment of military assets
 - Institutionalisation & dissemination
 - Capacity building of Member States (through ARDEX and tabletop exercises) and the AHA Centre.
 - Alignment with national plans, policies and procedures
- II. **Risk Assessment, Early Warning and Monitoring**
 - a. **ASEAN-Wide Disaster Risk Assessment**
 - Multi-hazard mapping and vulnerability assessment based on national & sub-national data inputs
 - Basis for regional response planning and assisting Member States in developing mitigation measures
 - Utilise Geographic Information System (GIS) as a multi-decision support platform

119

Activities:

- Regional Risk Assessment Workshop for agreements, guidelines and mechanics
 - Data collection at the national and sub-national levels
 - Data consolidation and development of regional-level analysis
 - Regional Risk Analysis Conference
- b. **Satellite-Based Disaster Monitoring System**
 - Hazard-specific (earthquake, tsunami, typhoon, etc.)
 - Includes multi-point communication system and public information dissemination system
 - c. **GIS-Based Disaster Information-Sharing Platform for Early Warning**
 - An efficient, timely, and technology-assisted information-sharing platform for early warning on different hazards (i.e. typhoon, flood, tsunami and earthquake) for effective response
 - Relies on efficient disaster monitoring system
- III. **Prevention and Mitigation**
 - a. **Building Disaster-Resilient ASEAN Cities**
 - Risk assessment of priority and/or pilot cities in ASEAN
 - Technical support in the enforcement of building and land use regulations in pilot cities
 - Development of DRR action plans, including climate change adaptation
 - Stocktaking of good practices on disaster resilient urban development
 - b. **Capacity-building for Community-Based DRR**
 - Participatory community hazard and vulnerability mapping
 - Integrating DRR into livelihood strategies
 - Assistance to communities in developing systems to address needs of vulnerable groups, such as children, disabled, elderly, women, indigenous peoples, people with HIV/AIDs, and others
 - c. **Set up Mechanisms for Risk Financing**
 - Stock-taking of current status of risk financing schemes and microfinance for DRR and Climate Change Adaptation (CCA) in Member States.
 - Regional workshop on risk financing jointly by ACDM and the ASEAN Insurance Council to identify possible risk financing options for ASEAN Member States.

120

IV. Recovery

a. Production of a Disaster Recovery Toolkit

Activities:

- Regional Recovery Forum to identify gaps and needs
- Guidelines for recovery planning and transition planning
- Compilation of best practices in the region
- Comparative analysis of different existing damage and loss assessment methodologies and adoption of the most applicable for the region
- Capacity-building on damage and loss assessment

V. Outreach and Mainstreaming

a. Building a culture of disaster-resilience in ASEAN

- Promotion of AADMER in ASEAN
- Support for the continuation of the ASEAN Day for Disaster Management (ADDM) as one of the promotional activities of AADMER
- Production of IEC materials to increase awareness of AADMER, for the use of Member States

VI. Training and Knowledge Management Systems

a. Identifying priority training needs

- Regional Training Needs Assessment covering the training needs of NDMOs, local governments and civil society within the region

b. Training of ASEAN Trainers (all ASEAN nationalities) and Subject Matter Experts (e.g. gender and humanitarian programming; experts may be non-ASEAN) for AADMER

- Formation of the AADMER Trainers Pool
- Development of customised training manuals
- Conduct of Basic Courses (AADMER & SASOP Orientation, Disaster Risk Reduction, Climate Change Adaptation) and Advanced Courses (ERAT, hazard mapping, recovery planning, and damage and loss assessment, among others)

121

c. Setting up of the ASEAN Resource Centre

- Collection of disaster-related books, documents, and other informational and educational materials
- Online library
- Housed within the AHA Centre

Partnership Modalities

- ACDM intends to intensify co-operation, encourage the strengthening of co-operation among ASEAN Member States and our partners at the regional and national levels
- Multi-sectoral approach to partnership: participation of vulnerable groups themselves in the different aspect of disaster management and risk reduction

a. Partnership Levels

- Support for regional flagship projects
- Support for an AADMER flagship project at the national-level

b. Partnership Areas

- Project inception
- Project implementation
- Development of a framework and mechanism for monitoring and evaluating flagship projects:
- Learning

c. Partnership Types (amongst others that may later be defined)

- Technical cooperation: form of support that needed in the implementation of the flagship projects. A management or steering committee made up of the ASEAN Secretariat, the ACDM Working Group and the partner could oversee the progress of the partnership, i.e. delivery of its outputs.
- Loaning or seconding of experts to ASEAN
- Funding support

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ASSOCIATION OF SOUTHEAST ASIAN NATIONS

ASEAN Cooperation for Emergency Preparedness



one vision
one identity
one community

Outline

- ASEAN's Disaster Management and Emergency Response Policy and Operational Framework and Key Instruments
- AADMER and emergency preparedness
- Challenges and Opportunities

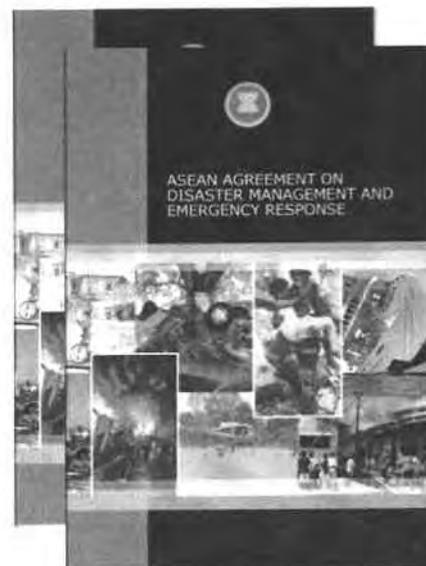
AADMER: Framework of ASEAN Cooperation in Emergency Preparedness



- Signed in July 2005, entered into force on 24 December 2009
- Objectives: Reduce disaster losses in ASEAN region and jointly respond to disaster emergencies
- A legal framework and a common platform for an ASEAN response to disasters within the ASEAN region

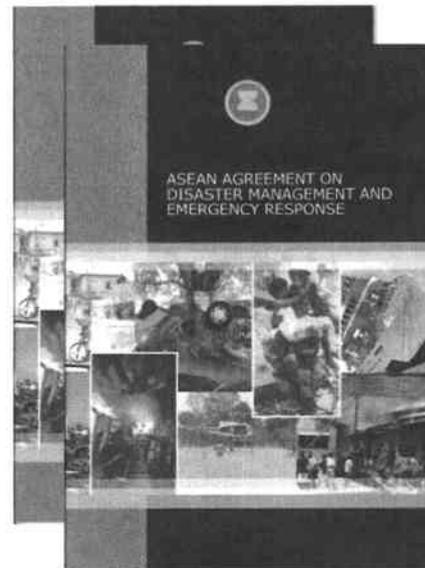
AADMER: General Obligations

-
- Cooperate in developing and implementing measures to reduce disaster losses
 - Immediately respond to a disaster occurring within the territory
 - If causing possible impacts on another country, respond promptly to a request for information
 - Promptly respond to a request for assistance
 - Take legislative, administrative and other necessary measures
-

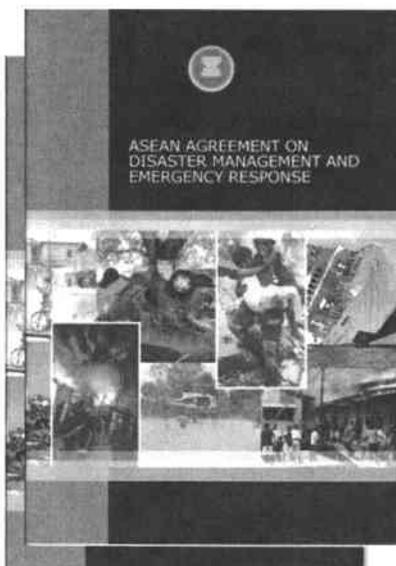


AADMER: The Content

- Disaster Risk Identification, Assessment & Monitoring
- Disaster Prevention and Mitigation
- Disaster Preparedness
- Emergency Response
- Rehabilitation
- Technical Cooperation & Scientific Research
- AHA Centre - TOR



AADMER Provisions on Emergency Response



Article 9: ASEAN standby arrangements for disaster relief and emergency response

Article 10: National emergency response

Article 11: Joint emergency response through the provision of assistance

Article 12: Direction and control of assistance

Article 20: ASEAN Co-ordinating Centre for Humanitarian Assistance

SASOP

- Provide the guides and templates to Initiate ASEAN Standby Arrangements
- Facilitate sharing of information
- Facilitate the request for / offer of assistance
- Facilitate joint assessments of required assistance (ERAT)
- Periodically tested through the ASEAN Regional Disaster Emergency Response Simulation Exercises (ARDEX)

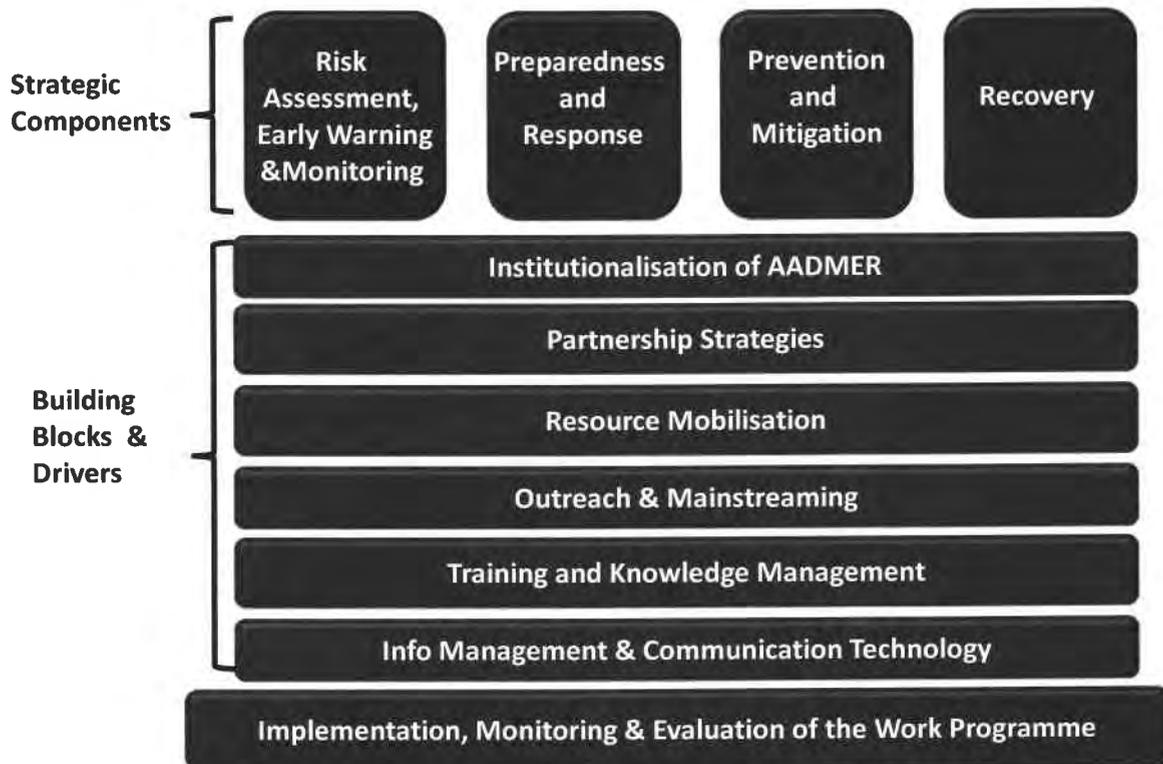


SASOP Procedures

- Joint disaster relief and emergency response operations
- Mobilisation of assets and capacities and or on-site deployment of assets and capacities
- Direction and control of assistance on the ground
- Disaster situation updates, demobilisation, reporting, lessons learning and exercises

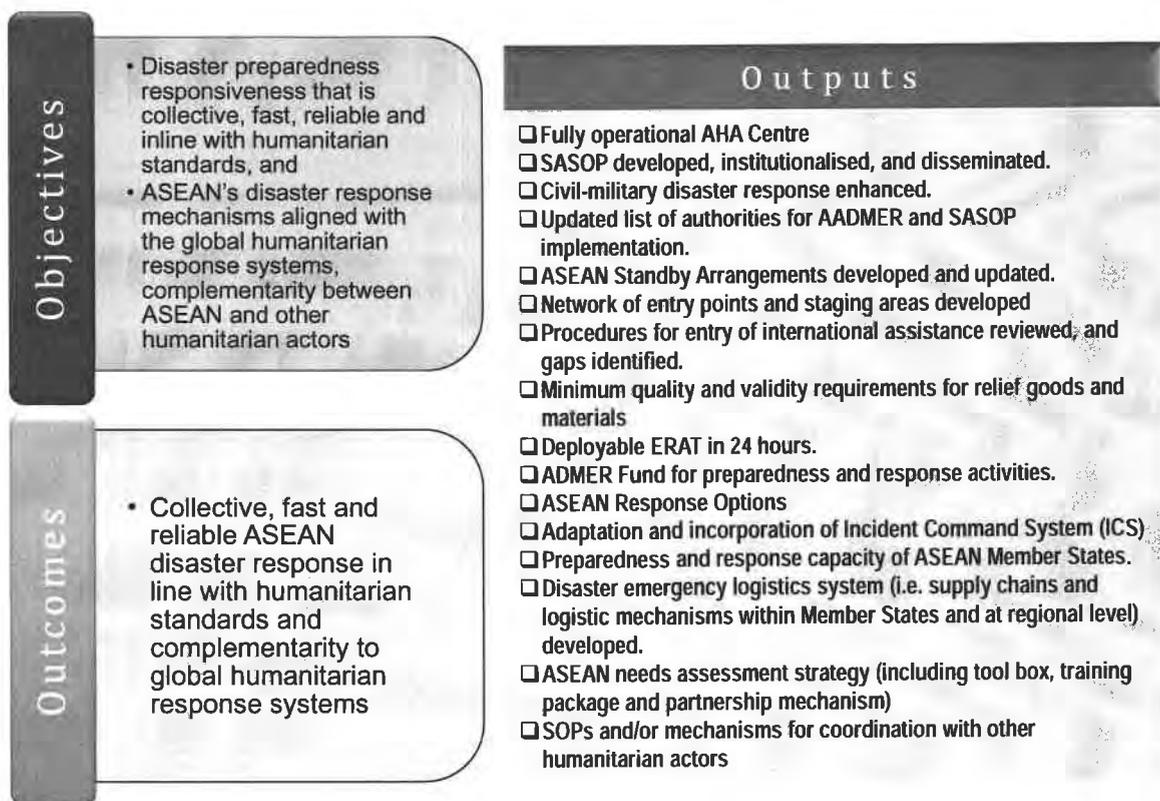


AADMER Work Programme: Overview



AADMER Work Plan

Preparedness and Response



AADMER Emergency Response Flagship Projects

1. Disaster & Emergency Response Logistics System for the ASEAN Region
2. Fully functional Emergency Rapid Assessment Team (ERAT)
3. SASOP finalization & institutionalization: capacity building of Member States (through ARDEX and tabletop exercises), alignment with national plans, policies and procedures

Challenges

- ASEAN's emergency response mechanisms have been tested in actual disasters but they are still in the early stages
- Member States are in varying stages in the process of institutionalising AADMER
- Realizing ASEAN Secretary-General's role as ASEAN Regional Humanitarian Assistance Coordinator

Opportunities

- Capacity-building in setting up the stockpile system, supply chain and formalising a logistics deployment system
 - Emergency logistics is a bedrock of regional standby arrangement and emergency response
 - ASEAN may leverage upon the UN Humanitarian Response Depot Network in Subang, Malaysia

Opportunities

- Building the capacity of a fully-functional Emergency Rapid Assessment Team (ERAT)
 - Through simulations and table-top exercises
- Institutionalization & dissemination
 - Building the capacity of Member States to institutionalise AADMER emergency response platforms and mechanisms at the country-level
 - Promotion and Outreach

Federal Emergency Management Agency

U.S.-ASEAN Emergency Preparedness Workshop

William L. Carwile, III
Associate Administrator
Office of Response and Recovery

May 30, 2012



FEMA Overview

- FEMA
 - Who is FEMA and what does FEMA do?
- Disaster Authorities
- Operational and Catastrophic planning
 - Engagement of the whole community
- 2011 and 2012 Disaster Activity Recap
- 1927 Flood vs. 2011 Flood



Mission Statement

To support our citizens and first responders to ensure that as a Nation we work together to build, sustain, and improve our capability to prepare for, protect against, respond to, recover from, and mitigate all hazards.



FEMA Historical Facts

- Congressional Act of 1803 – 1st disaster legislation (New Hampshire fire)
- National Flood Insurance Act in 1968
- Disaster Relief Act 1974
- FEMA created in 1979
- FEMA became part of the Department of Homeland Security (DHS) in 2003
- Post Katrina Emergency Management Reform Act



Who is FEMA?



- The FEMA Administrator is appointed by the President, confirmed by Congress, reporting to DHS Secretary
- Approximately 5,200 full-time permanent employees
- Approximately 13,000 on-call disaster assistance employees



What does FEMA do?

- Disaster response and recovery, including grants to individual survivors and communities for infrastructure restoration
- Reducing risk from disasters through mitigation
- Preparedness training and exercises



FEMA's Key Organizational Elements



- Response
- Recovery
- Logistics Management
- Mitigation
- National Preparedness
- Grant Programs
- U.S. Fire Administration/National Fire Academy
- National Continuity Programs



FEMA Regions



Coordinating Centers

National Response Coordination Center (NRCC):

- Multi-agency center that provides overall Federal support coordination for major disasters and emergencies
- Regions have Coordination Centers (RRCC)

National Watch Center (NWC):

- Maintains comprehensive 24/7 situational awareness of all-hazard events
- Links Regional Response Coordination Centers, regional DHS components, National and Regional Department and Agency leads for Emergency Support Functions, National Joint Terrorism Task Forces, Department of Defense Operations Centers, and other key Federal, state, and local operational centers
- Activates/deploys national level teams such as Incident Management Assistance Teams and Urban Search and Rescue Task Forces



Essential Authorities

Robert T. Stafford Disaster Relief and Emergency Assistance Act

- Authorizes the programs and processes by which the Federal Government provides disaster and emergency assistance to State, Tribal, and local governments, eligible private nonprofit organizations, and individuals affected by a declared major disaster or emergency. Covers all hazards, including natural disasters and terrorist events
- Encourages hazard mitigation measures to reduce losses from disasters establishing programs for State, Tribal, and local hazard mitigation planning, as well as grant programs that provide funding mechanisms to reduce losses in pre- and post-disaster environments.

Post Katrina Emergency Management Reform Act

Greatly strengthened authorities of FEMA Administrator and provided guidance to facilitate proactive response operations.



10

National Incident Management System and the National Response Framework



National Incident Management System (NIMS)

- Aligns command & control, organization structure, terminology, communication protocols, resources and resource typing to enable synchronization of efforts in response to an incident at all echelons of government

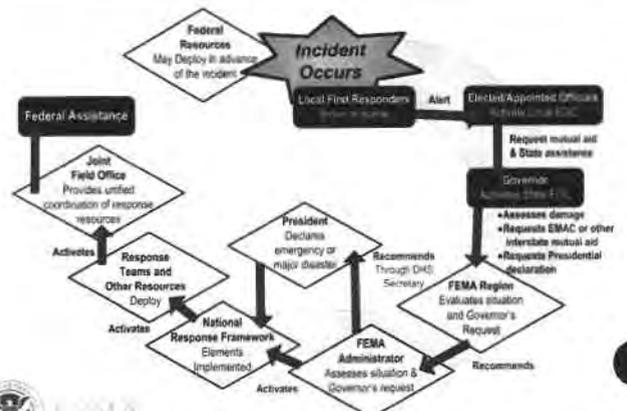


National Response Framework (NRF)

- Activation and proactive application of integrated Federal resources-activated for significant National incidents

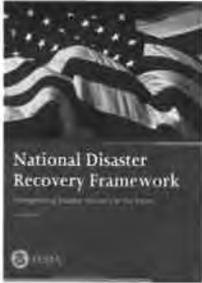


Disaster Response



The National Response Framework is always in effect, and elements can be implemented at any level at any time

National Disaster Recovery Framework (NDRF)



- A guide that enables effective recovery support to disaster impacted states, tribes, territories, and local jurisdictions
- Focuses on how best to restore, redevelop, and revitalize the health, social, economic, natural, and environmental fabric of the community to build a more resilient Nation
- Provides a shared understanding and common, integrated perspective across all mission areas—Prevention, Protection, Mitigation, Response, and Recovery—in order to achieve unity of effort and make the most effective use of the Nation’s limited resources



Major Natural Hazard Threats to U.S.

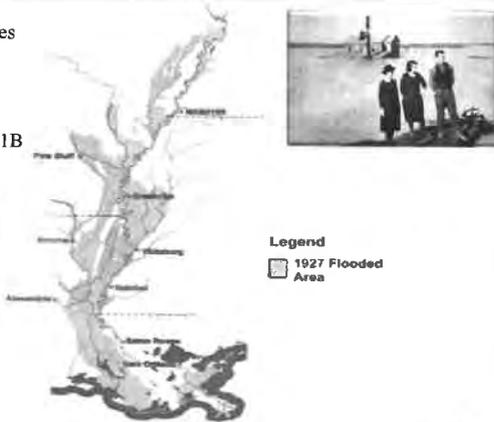
- Fires – Large scale, caused by drought conditions
- Tropical storm/hurricanes
- Earthquakes
- Floods – River flooding and local event flooding are most costly, frequent events



14

U.S. 1927 Flood

- Flooded 26,000 sq. miles
- 600,000 homeless
- Over 250 people killed
- Economic Damages ~\$1B



15

U.S. 1927 Flood vs. 2011 Flood



U.S. 1927 Flood vs. 2011 Flood: Mitigation Pays Off

- 35,000 square mile flood plain established
- \$13.9 billion invested in levees, flood walls, and other projects
- \$478.3 billion in flood damages prevented because of above investment
- 34 to 1 return on investment
- 4.1+ million people protected
- Mississippi River & Tributary Project currently 89% complete



Operational and Catastrophic Planning

- Operational planning is a core FEMA competency
- Enhances ability to plan for real events and building local and State capabilities
- Coordinates interagency and intergovernmental planning efforts
 - Focus on catastrophic disasters that may overwhelm existing capabilities
 - Collaborative planning approach with Federal, State, Tribal & local governments, private sector & voluntary organizations



18

Whole Community Approach

- Looks beyond the traditional, federal government-centric approach to large scale disaster operations and embraces a philosophy and approach that leverages the entire nation and serves the whole community
- Engages the entire community (volunteer agency, faith based, and private sector) to facilitate the delivery of goods and services more efficiently and cost effectively
- Relies on the engagement of mutual aid partners (intra and interstate), institutions, groups, and individuals within and nearby the impacted communities



Catastrophic Preparedness

Whole of Community Preparedness and Response Planning

- Improving the Nation's preparedness for catastrophic events
 - In continuous collaboration with ALL members of the Community
- Consistent with and expands upon existing emergency preparedness and response systems and doctrine
 - NRF, NIMS, etc.
- The focus of the effort will be on stabilizing catastrophic effects in the "golden hours," with emphasis on the first 72 hours after an incident
 - Plan for the real, not the manageable
 - This will require a new planning framework and a targeted preparedness campaign.



The Meta-Scenario

In order to anticipate catastrophic requirements and to avoid narrow focus on a limited number of specific scenarios, the Whole of Community methodology is built upon a foundation of a meta-scenario consisting of the maximum of maximum challenges across a range of scenarios.

- No-notice event
- Impact Area:
 - ~ 7 million population
 - 25,000 square miles
 - Several states and FEMA regions
- 190,000 fatalities in initial hours
- 265,000 citizens require emergency medical attention
- Severe damage to critical infrastructure and key resources
- Severe damage to essential transportation infrastructure
 - Ingress/egress options limited



Core Capabilities

The Core Capabilities represent the highest priority essential functions necessary for both saving and sustaining lives, and stabilizing the site and the situation within 72 hours. The first six "enable" a rapid and effective response, while the remainder explicitly address the needs and priorities of the people and communities impacted by the catastrophic event.

Enables Response

- Situational Assessment
- Public Messaging
- Command, Control, and Coordination
- Critical Communications
- Environmental Health and Safety
- Critical Transportation

Survivor Needs

- On-Scene Security and Protection
- Mass Search and Rescue Operations
- Health and Medical Treatment
- Mass Care Services
- Public and Private Services and Resources
- Stabilize and Repair Essential Infrastructure
- Fatality Management Services



Federal Emergency Management Agency

U.S. Major Disaster Activity in 2011

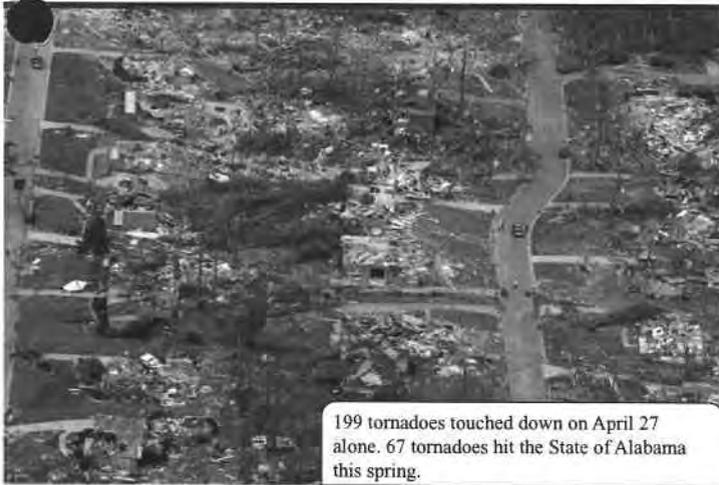


U.S. Major Disaster Activity in 2011



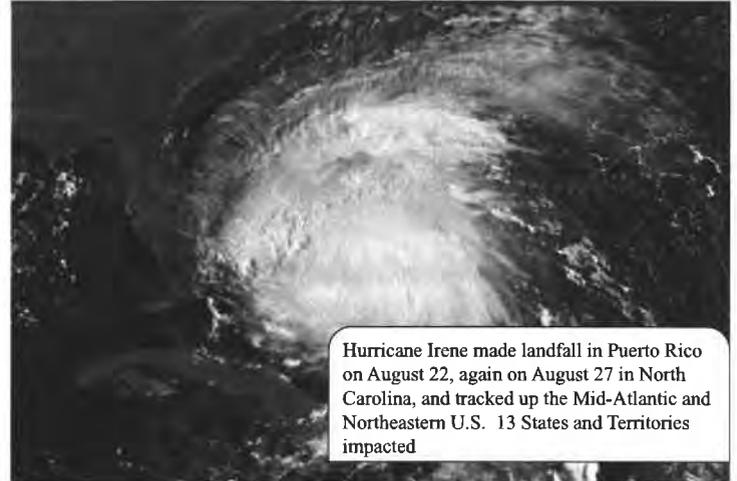
The National Weather Service reported that states from New Mexico to New Hampshire received at least 5 inches (13 centimeters) of snow from January 31-February 2.

U.S. Major Disaster Activity in 2011



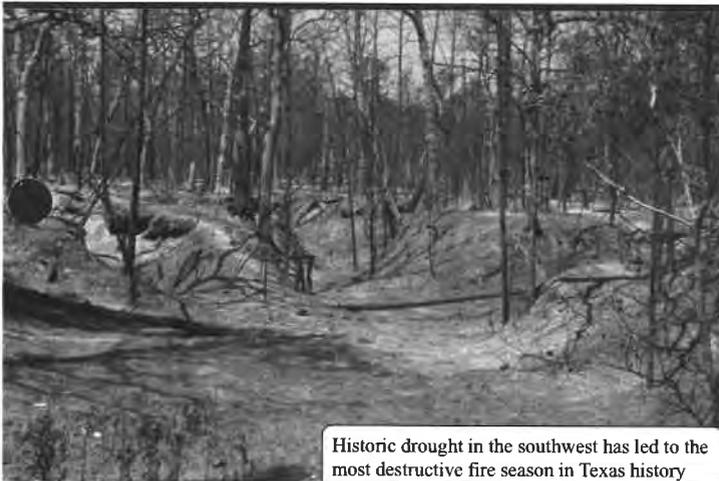
199 tornadoes touched down on April 27 alone. 67 tornadoes hit the State of Alabama this spring.

U.S. Major Disaster Activity in 2011



Hurricane Irene made landfall in Puerto Rico on August 22, again on August 27 in North Carolina, and tracked up the Mid-Atlantic and Northeastern U.S. 13 States and Territories impacted

U.S. Major Disaster Activity in 2011



Historic drought in the southwest has led to the most destructive fire season in Texas history

U.S. Major Disaster Activity in 2011



Historic flooding in Ohio, Mississippi, and Missouri River Valleys. Greatest amount of water ever recorded. Very heavy snow pack and rainfall were factors

Lower Midwest Rivers



Federal Support to Response Activities 2011



RESOURCE SUPPORT

- 24 million liters of water
- 12 million meals
- 1000 generators
- 473,000 tarps
- 55 infant/toddler kits were transferred to affected States in support of disaster survivors

Federal Support to Recovery Activities 2011

- Support to Individuals and Households



- Over 545,000 individuals or households have applied for disaster assistance.
- FEMA has awarded over \$900 million in grants to disaster survivors.



Federal Response and Recovery Activities 2011

- Support to repair/rebuild public infrastructure



- Over \$468 billion has been obligated to repair or rebuild eligible public infrastructure



U.S. Major Disaster Activity in 2012



Disaster Activity 2012

- Tornadoes – very early (February and March in Midwest)
- Floods – much less activity than 2011 because of warm winter and little snowpack
- Severe storms – mudslides, landslides, etc.
- Preparations for hurricane season – 1 June



34

Summary

- FEMA's Mission
- Preparing for catastrophic events requires:
 - Engagement of the whole community
 - Increased use of social media to disseminate information
 - Continually engaged the private sector, volunteer agencies, and faith based organizations



Federal Emergency Management Agency

Questions?



36



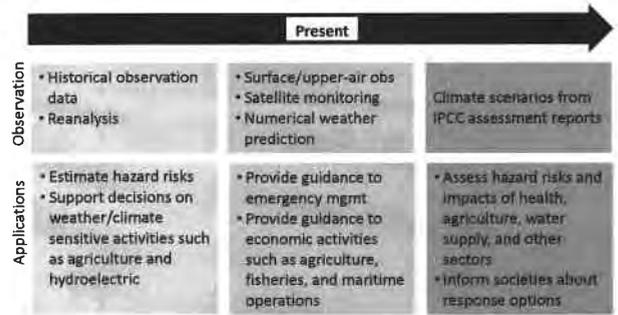
Use of weather and climate information for hazard preparedness

Paul Chan, Ph.D.
I. M. Systems Group, Inc. (IMSG)

MAY 30, 2012

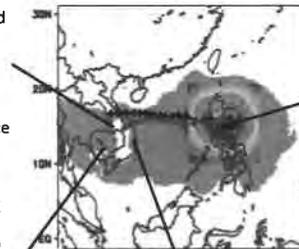


Sources of environmental information for hazard preparedness



Typical cyclone prediction for Typhoon Ketsana, 2009

Much of Laos experienced heavy rain. At least 26 people died. The floods devastated rice fields and homes. Attapeu was the worst hit province, with nearly 90% of the province affected.



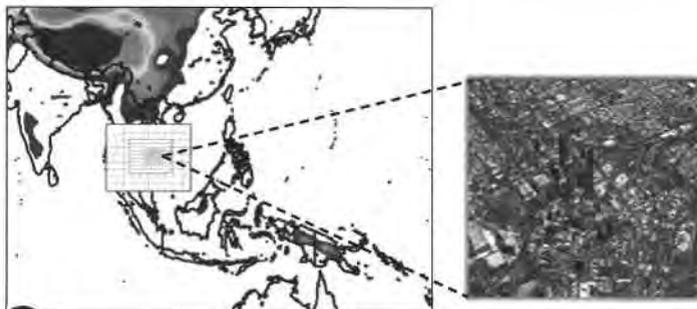
Caused widespread flooding in many cities. Marikina itself recorded 78 deaths. Total damages were estimated at \$100 million.

Typhoon Ketsana struck NE Cambodia as one of the most severe storms ever to lash the country. Death tolls reached 43. More than 66,000 families were evacuated due to floodwaters.

Heavy rains and strong winds lashed a 400 km stretch of coastline. Some 170,000 people were evacuated. The typhoon killed at least 163. Total damage was estimate at \$785 million.

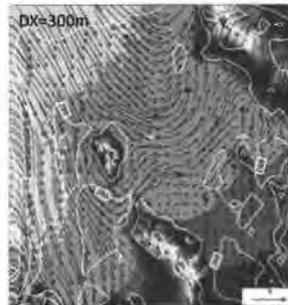


Prediction of urban weather



Prediction of urban weather

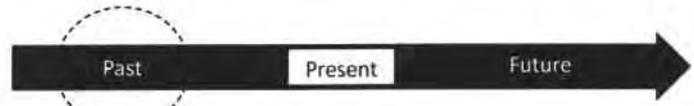
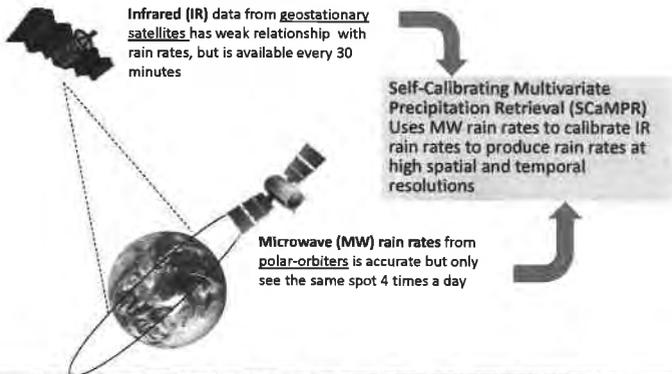
High resolution model produces microscale complex terrain flows



Hydrologic modeling



Satellite monitoring of rainfall



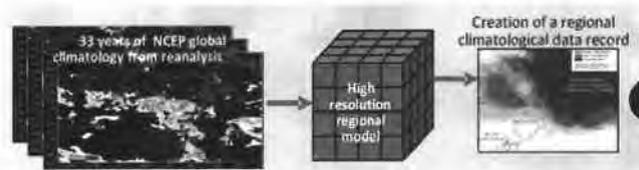
Use climatological database to assess current climate: Typhoon probability and historical typhoon



The Zone with a 10% probability of a storm of this intensity striking in the next 10 years.

Consolidated history of tropical storm paths over the past 50 years

Creation of a regional climatological database

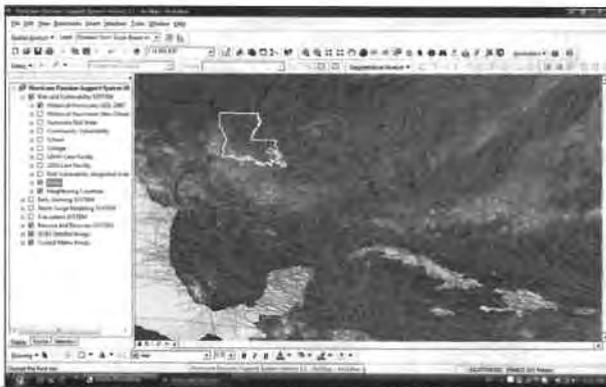


Decision support for disaster management by combining past and present hazard information

Decision support for disaster management

- A single system to integrate information for
- Hazard risk assessment (probability and severity)
 - Hazard monitoring and forecast
 - Emergency management resources
 - Socioeconomic and infrastructure conditions
 - Emergency notification, response, and recovery
 - Damage assessment

Long-term climatology help assess hazard risks



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Population threatened by the storm



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Instantaneous access to infrastructure and population information in high risk areas



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Real-time forecast



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Storm surge forecast and flooding due to storm surge



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Transportation network for evacuation planning



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Key IMSG members

Dr. Paul Chan	Climate change adaptation, climatology, vulnerability assessment	Former director of NASA climate data center and CIO for NWS; faculty, Chapman University
Dr. Sharon LeDuc	Climate statistics, climatological database	Former deputy director of the National Climatic Data Center
Mr. John Jones	Weather forecasting; tsunami warning	Former deputy director of the National Weather Service
Dr. Dalin Zhang	Regional and urban scale forecasting	Professor of Meteorology, University of Maryland
Dr. Chanh Kieu	Regional and typhoon forecasting	Faculty, VN Nat'l Univ., consultant to Nat'l Centers for Environ. Pred.
Dr. Xue Lui	Disaster mgmt. decision support system; geospatial analysis	Former research scientist, George Mason University
RADM Sam De Bow	Hydrographic survey, port and maritime operations safety	Former director of the NOAA Marine and Aviation Operations
Mr. Leo Bosner	Emergency management, management of public health emergencies	Former emergency manager for the Fed. Emergency Mgmt. Agency

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WEBEOC

Shane Booker
International Solutions Architect

30 MAY 2012



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FOR INTERNATIONAL EDUCATION



ACTING SUPPORT UNIT'S MEMBERS & MEMBERS OF
THE PRESIDENT'S SELECT COMMITTEE



GIS for multi-hazard mapping

- Multiple datasets in different formats
 - GIS layers
 - GeoRSS
 - KML/KMZ
 - WMS
 - Map Service
- Multiple websites / maps
- Other sources
 - Warnings, cameras, etc.
 - Remote sensing

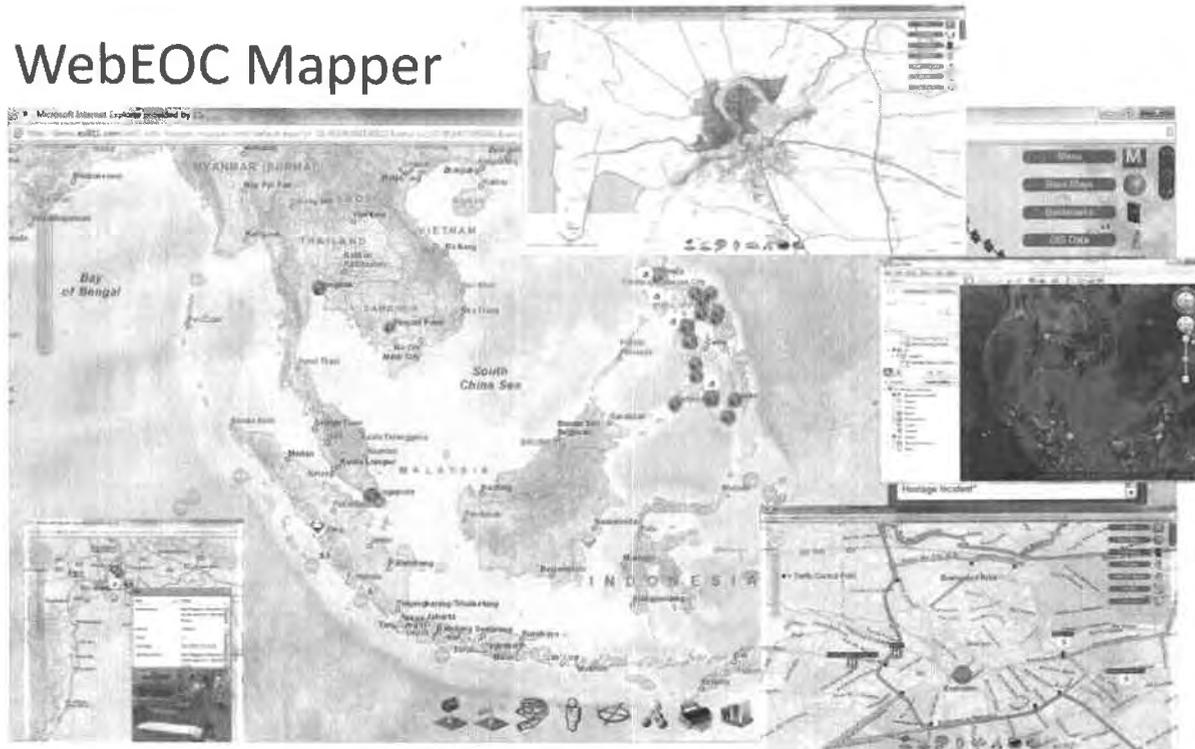


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WebEOC Mapper



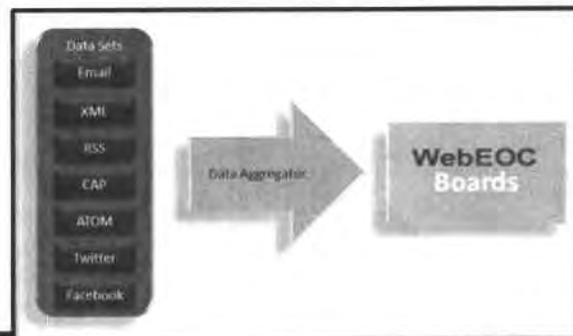
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Monitoring risk, hazards, and capacity

- Monitoring information
 - Finding the information for you
 - Processing information
 - Interoperable and can publish information



Wind Advisory Counties: LaPorte (1)

11/09/2011 03:42:00

Issued by: Isaac

W

A strong low pressure system will move northeast from central Illinois this morning to northern lower Michigan by this evening. Winds will increase during the day as the low moves through the region with some gusts to 45 mph this afternoon and this evening.

Wind advisory in effect from 1 pm est (noon cst) This afternoon to 10 pm est /9 pm cst/ This evening. The national weather service has issued a wind advisory, which is in effect from 1 pm est (noon cst) This afternoon to 10 pm est /9 pm cst/ This evening.

Hazardous weather:

* Southwest winds of 30 mph with gusts to 45 mph are expected this afternoon. The strong winds will become west this eve overnight.

Impacts:

* The strong winds will cause difficult driving conditions and possibly some power outages.

A wind advisory means that winds of 35 mph are expected. Winds this strong can make driving difficult, especially for high caution.

Submitted by user for NVE Northwestern (Northern Indiana and Northeastern Ohio)

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Monitoring risk, hazards, and capacity

- Information management – Incident Management Board
 - Based upon tested operational management processes
 - Easy to find information – internal customer driven
 - Includes maps, hazards, incident sites, communication networks, and more



Battle Rhythm



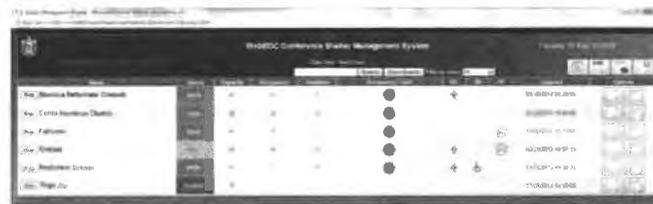
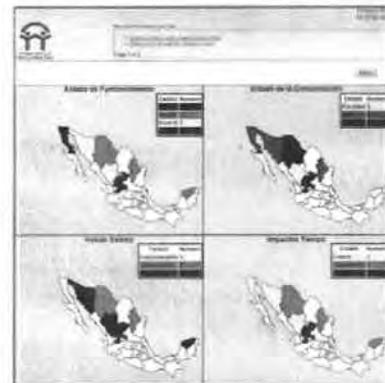
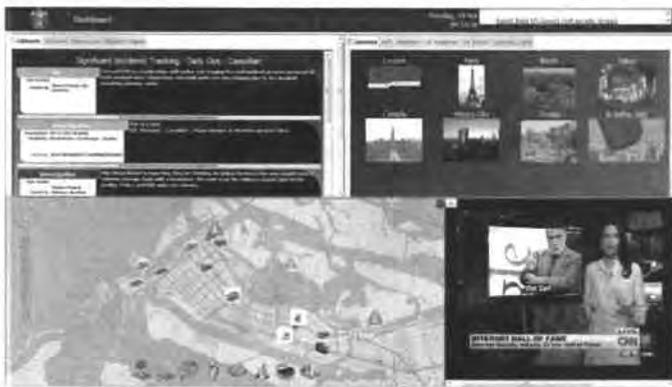
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Monitoring risk, hazards, and capacity

- The right information, in the right format, at the right time



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Operational Success

- Utilize resources available to you
 - Commercial or govt. GIS data
- Create/refine your operational processes
 - Ensure you provide the right information to the right people
 - Establish an operational schedule
- Find the information you need
- Leverage tools to help process the information
- Train and evolve your processes



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Thank you!

Shane Booker

International Solutions Architect

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Applications of Climate Models for Improved International Decision Support Services

Wassila Mamadou Thiaw

Team Leader

International Desks

Climate Prediction Center

National Oceanic and Atmospheric Administration

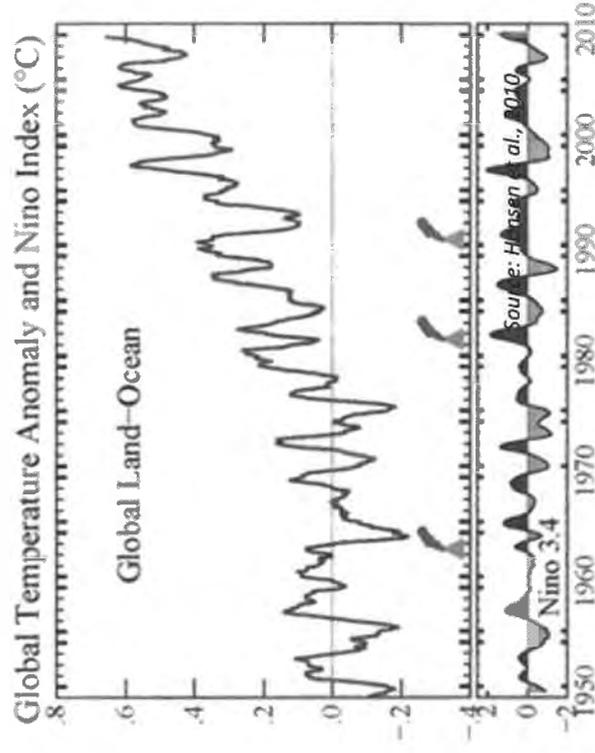
Observations and Forecasting at NOAA's National Centers for Environmental Predictions International Desks

- Vision
Understanding the present and Prediction the Future
- Rationale
 - Recurrent droughts and floods in the 1970s and 1980s led to the establishment of the International Desks in the mid-1980s
- Objective
 - To assist US and foreign agencies make informed decisions for humanitarian response strategies
- Partner Agencies: USAID, NASA, USDA, USGS, WMO, FAO, WFP
- Global Coverage: Africa, Caribbean, Central America, South and Southeast Asia

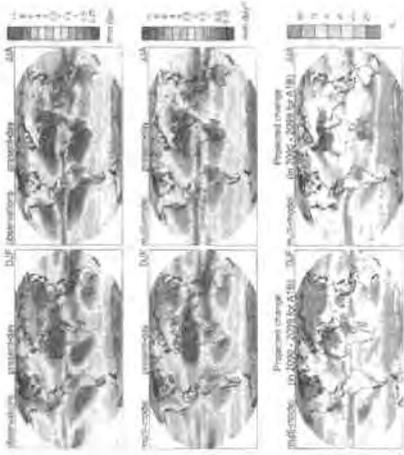
Scope

- Lead weekly regional hazard outlooks
- Provide access to NCEP, GFS, GEFS, and CFS forecasts
- Provide access to satellite rainfall estimates
- Provide routine updates on global Tropical Cyclone predicted paths and potential impacts
- Provide expert guidance on state of the global climate and impacts

Global Temperature Anomaly



Climate Model Capabilities



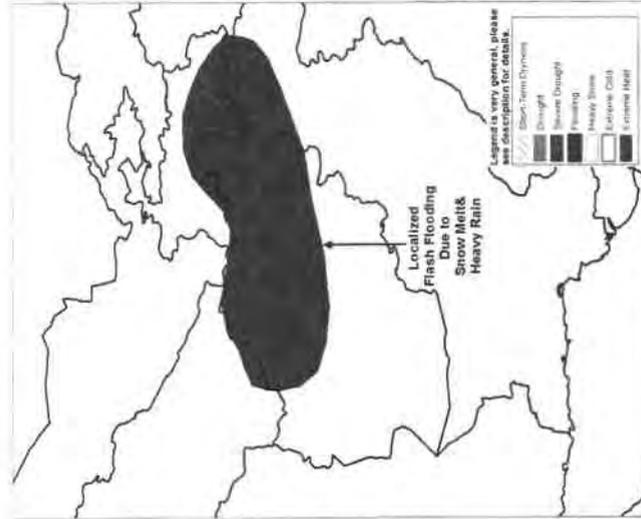
Credible modeling of the basic state does not mean that precipitation mechanisms are properly modeled, so projections are questionable.

Figure 18.10. Seasonal mean precipitation rates for observations and projections under three different scenarios (A1, B1, and A2) for the years 2025, 2050, and 2075. The maps show the seasonal mean precipitation rates for observations and projections under three different scenarios (A1, B1, and A2) for the years 2025, 2050, and 2075. The maps show the seasonal mean precipitation rates for observations and projections under three different scenarios (A1, B1, and A2) for the years 2025, 2050, and 2075.

IPCC, 2008

Weekly Regional Hazard Outlook for Afghanistan 23-29 May 2012

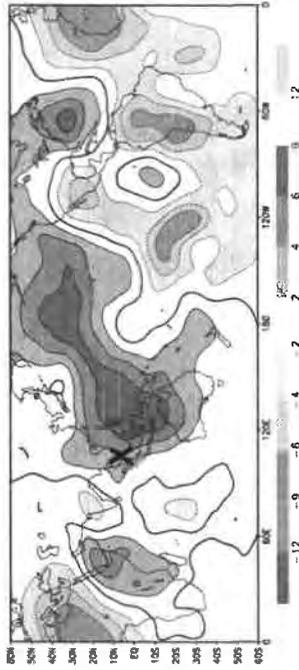
Shaded area: Locally heavy rain and snow melt is expected to prolong the threat of flash flooding across northern Afghanistan. USAID uses information Together with other Food security indices to Plan for humanitarian Assistance



The Madden Julian Oscillation

Spring 2005 MJO Event

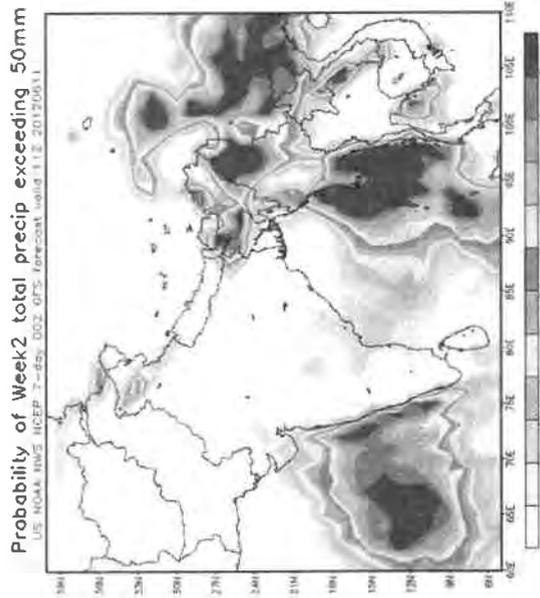
22 FEB 2005



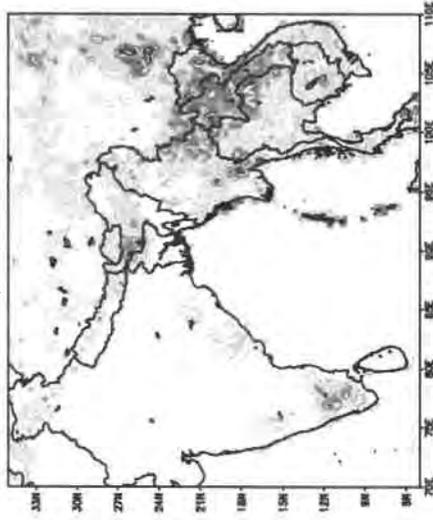
- The MJO is a global scale wave that occurs in the tropics and results in changes in important atmospheric and oceanic features: rainfall and Sea surface temperature (SST)
- Enhances predictability in parts of the tropics

Model Output Products Deterministic & Probabilistic forecasts

Example: Week-2 Probability of rainfall exceeding 50mm



Monitoring Products
NOAA CPC FEWS-NET / AFN Rainfall Estimate (mm):
based on Satellite and Rain Gauge Data
05/22/2012

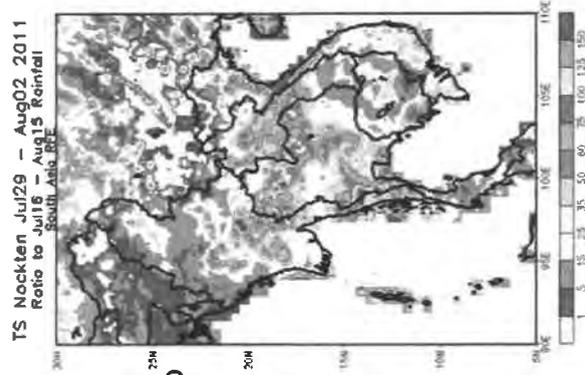


High resolution
daily satellite rainfall
estimates

Also available on
weekly, ten-day,
monthly, and seasonal
time scales.

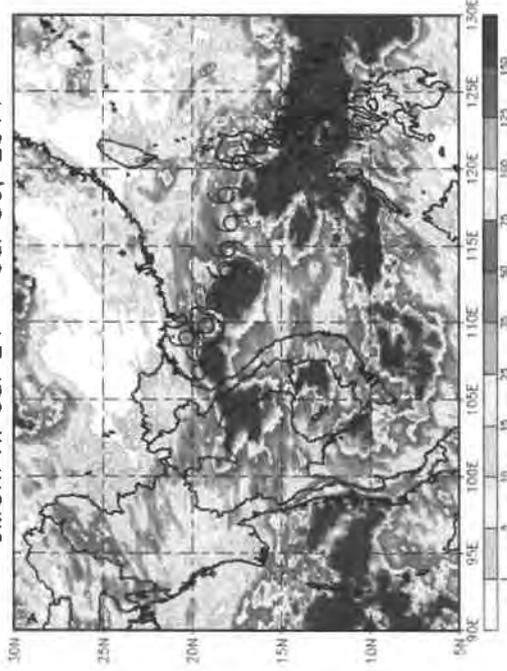
Hourly IR loops also
available

Contribution of TS Nockten to
Jul-Aug rainfall



Monitoring Tropical Storm Nockten

TS Nockten Total Storm Accumulation
CMORPH: Jul 24 - Jul 30, 2011



International Training Desks

- Vision
 - *Understanding the present and Prediction the Future*
 - African Desk
 - Monsoon Desk
 - South American Desk:
 - Tropical Desk
- Trained more than 300 visiting scientists in the Residency Program since 1989
- Global off site training opportunities on climate variability and change

International Training Desks



International Training Desks Staff and visiting scientists

CPC International Desks Web Site



- Provide access to NCEP data and products to the international community
- Probabilistic forecasts
 - Day-1 to Day 6
 - Week1 & week2 forecasts
- Model analyses
- Monitoring suite products

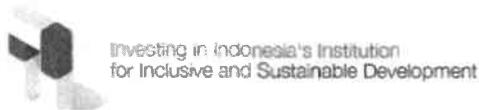
http://www.cpc.ncep.noaa.gov/products/african_desk/cpc_intl/index.shtml

Contact: wassila.thiaw@noaa.gov

Strengthening Ex Post and Ex-Ante Disaster Risk Financing :

Indonesia's On-going Effort and the Prospect in ASEAN

Iwan Gunawan, Ph.D.
Sr. Disaster Management Adviser
The World Bank - Indonesia



THE WORLD BANK | BANK DUNIA

Outline

- Why disaster risk financing (in ASEAN)?
- Ex-Post vs Ex-Ante
- Elements of Ex-Post and Ex-Ante disaster risk financing
- Lessons from Indonesia's on-going effort in DRFI
- Prospect for ASEAN

Why disaster risk financing?

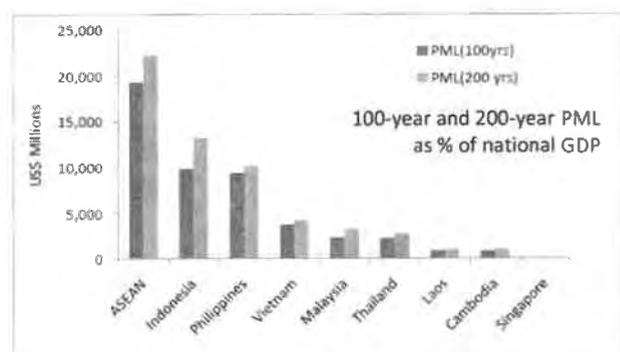
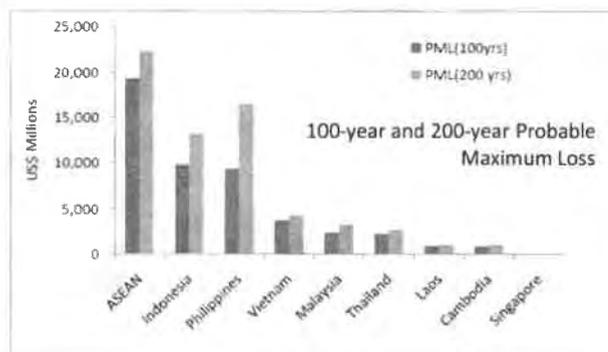
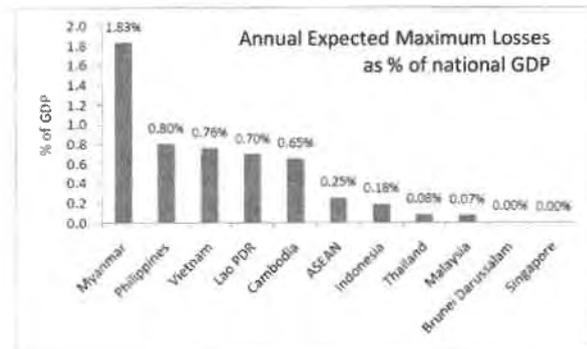
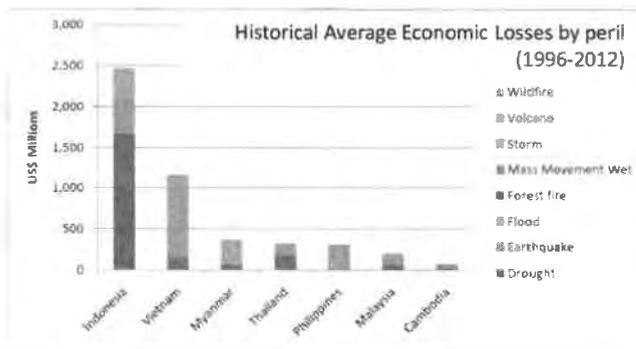
ASEAN's risk profile: Multi Hazard Mortality Risk Index



Source: ASEAN DRM 2010

Why disaster risk financing?

ASEAN's risk profile: Financial Risk Exposure



Ex-Post vs Ex-Ante DRF

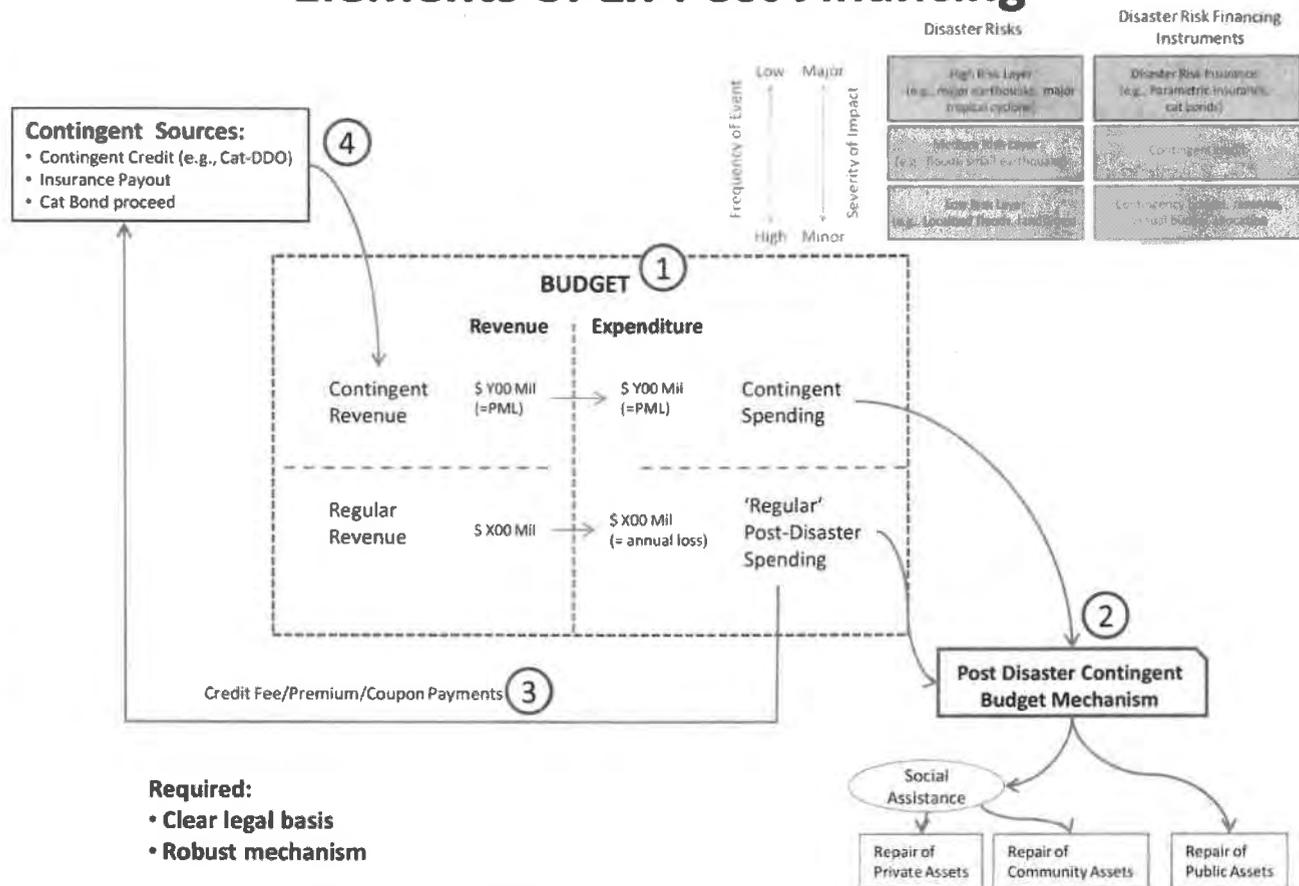
Ex-Post

- Financing of disaster after impact has occurred
- Typically drawn from fiscal reserve
- Some risks can be transferred to risk market with premium payment (e.g., through insurance)
- Managed by Disaster Management Agency as contingent resources
- Rely on fiscal policy (i.e., fund flow)

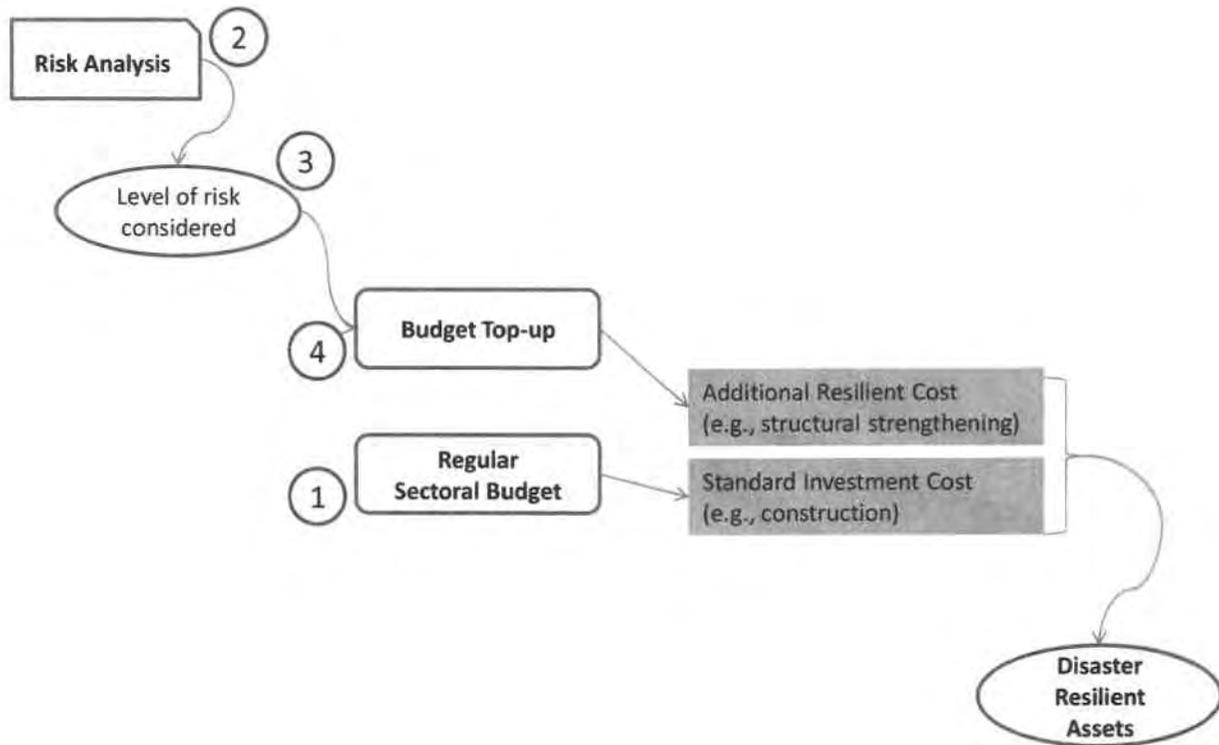
Ex-Ante

- Investing in mitigation to minimize disaster potential impact
- Typically included in regular development budget
- Risk cost is calculated to determine avoidance benefit
- Managed by the respective sectors as budget top-up
- Rely on planning policy (i.e., program design)

Elements of Ex-Post Financing



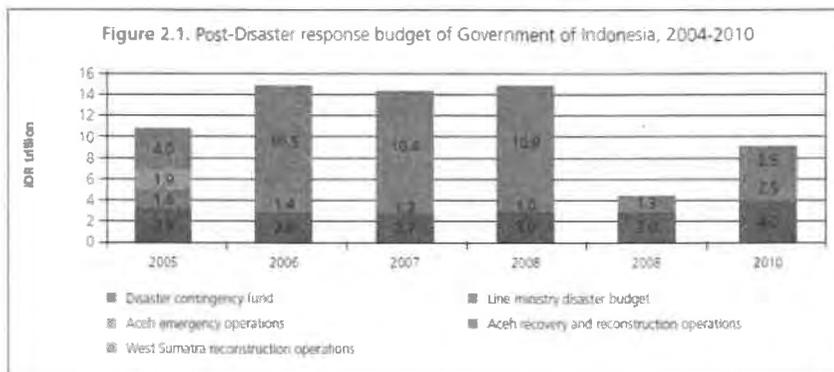
Elements of Ex-Ante Financing



Lessons from Indonesia's on-going efforts

Current Ex-Post Financing Framework

All disaster risk financing needs are retained within the annual budget



	2005	2006	2007	2008	2009	2010
Post disaster response budget (% of total government budget)	2.3%	2.1%	1.9%	1.5%	0.4%	0.8%

Source: Ministry of Finance

Disaster Phase

Emergency response/Relief

Recovery

Reconstruction

Budgetary vehicle

On call fund/contingency budget

Rehabilitation and reconstruction fund

Capital expenditures of next fiscal year budget

Financing sources

Central/local budget

Central/local budget

Central/local budget

Lessons from Indonesia's on-going efforts

Improvement being made on Ex-Post Financing

Modeling of Probable Maximum Loss and Options for Financing

Indicative risk metrics	Actuarial Method 1	Actuarial Method 2
	US\$ million	US\$ million
Annual Expected Loss	423	554
Probable Maximum Loss:		
10 year return period	796	945
50 year return period	1,320	1,290
100 year return period	1,570	1,448
150 year return period	1,725	1,550
250 year return period	1,947	1,647

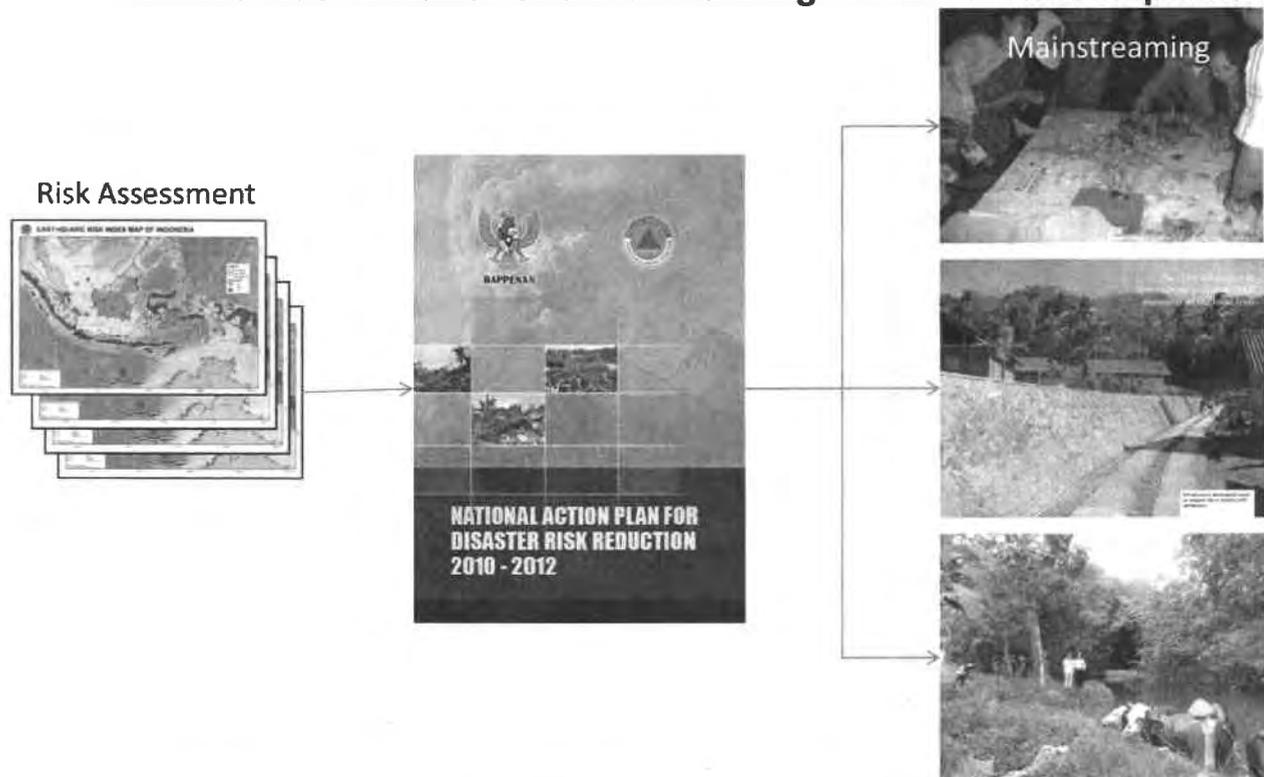
Exhaustion point (US\$ million)	Coverage (US\$ million)	AEL (US\$ million)	Loss on Line	Return Period (years)	Prob. of first loss
1,800	Catastrophe risk insurance 800	16	2%	19	5%
1,000	Contingent Credit 500	66	13%	4	28%
500	National Disaster Fund 500	338	68%	-	100%

Timeframe	Options for disaster risk financing
Short Term	Develop financial disaster risk assessment tools
Short Term	Develop a national disaster risk financing strategy relying on risk retention and risk transfer
Short Term	Establish a National Disaster Reserve Fund as fast-disbursement mechanism for the financing of post-disaster operations
Medium Term	Establish a disaster risk insurance program for public assets
Medium Term	Promote property catastrophe risk insurance of private dwellings
Longer Term	Establish a Joint Disaster Reserve Fund for Indonesia's Local Governments

Lessons from Indonesia's on-going efforts

Improvement being made on Ex-Ante Financing

From Risk Identification and DRR Planning to Resilient Development

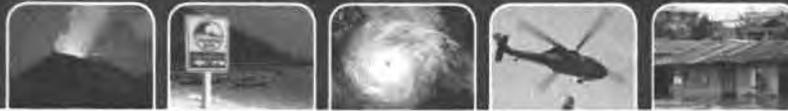


Prospect for ASEAN

- ASEAN is a region with diverse disaster risk profiles → ideal for diversification of risk financing sources (e.g., regional risk transfer and pooling)
- ASEAN as a community of nations could start from looking at the region's disaster spending
- Through regional risk assessment (consolidated from country level), key areas requiring DRR investment could be identified
- ASEAN could collectively address its ex-post and ex-ante risk financing needs

Take Away Messages

- Disaster Risk Financing should cover both Ex-Post and Ex-Ante
- Improvement in DRF usually starts from Ex-Post
- There is no one-size-fits-all model in DRF
- Countries could start from assessing its existing disaster spending and identify areas for improvement (i.e., toward more ex-ante financing)



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TERRESTRIAL COMMUNICATIONS FOR EMERGENCY & DISASTER MANAGEMENT

David Lum, Motorola Solutions Inc

31 MAY 2012

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ASEAN SECRETARIAT



FINANCED BY THE BUSINESS COUNCIL
FOR INTERNATIONAL ECONOMIC COOPERATION



BCIU SUPPORTS THE U.S. TRADE AND DEVELOPMENT AGENCY AS A MEMBER OF
THE PRESIDENT'S EXTERNAL FINANCIAL GROUP



When Disaster Strikes

- Pure chaos for those affected and for first responders
- Public health care systems are stretched to limits
- Water and shelter become the most critical need to prevent further loss of life
- Speed of emergency response is key to saving lives
- Lack of communications for the general public
 - Any and all public systems become congested
- Communications is the primary means for government to get up-to-the-minute assessments so that priorities can be determined, decisions made, and instructions issued

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Disaster Response

- In the aftermath of a disaster, **privately-owned or dedicated communications is the key** to rapid response & recovery
- Business and government continuity is critical for a society to recover back to normal as soon as possible
 - Government continuity and presence is most critical since citizens depend on government for assistance
 - Businesses have (or should have) their own disaster mgmt & continuity plans, and will execute to insure continued business
- The determination of success (or failure) of a disaster response is dependent on the quality of communications
 - Good information yields good decisions, resulting in good results

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Key Success Factors / Best Practice

- Dedicated two-way voice radio systems for fastest response
 - Any other forms of dedicated wireless communications acceptable
 - Dedicated frequencies for public safety, SAR
- Fixed and deployable communications systems in-place today
- Redundant designs for everything
- Training, training, training; education, education, education
- Share what went right & wrong after each event, feed learning into processes & policy for next event
- Government policy and action supporting disaster mgmt

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SOCIAL NETWORKING & CLOUD COMPUTING IN DISASTER MANAGEMENT

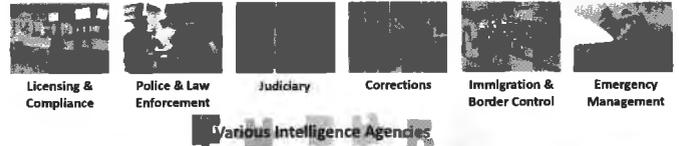
Hong-Eng Koh
Global Lead, Justice & Public Safety, Oracle Corporation

31 May 2012



One Crime, One Civil Disorder, One Terrorist Act,
One Border, One Emergency

Many Agencies, Many Silos



Top Issues

- One disaster many agencies
- Lacking in prevention and preparation
- Not investing in seldom use systems (e.g. victims identification & registration, victims assistance)
- Evolving behavior and unconventional reporting channels (e.g. Twitter, Facebook)



Trends

- Integrated emergency operations center with common disaster picture
- Disaster simulations and contingency planning with respect to demography
- Cloud computing for seldom use systems such as casualty identification & registration, and victims assistance
- Study of post-disaster disease and pandemic
- Social networking as sensors of disasters and for dissemination of information



Common Disaster Picture



situation mapping

- Common operational picture platform for location sharing and decision making
- Interactive release and update as new layer users
- Layer selection individual needs independent

Fusion Middleware
Spatial Database
Mapviewer
Hardware Systems



Disaster Simulation



HURRICANE DREW FORECAST ADVISORY NUMBER 18
NATIONAL WEATHER SERVICE MIAMI FL, ERMAE
ISSUE 0600Z 29 0612

HURRICANE CENTER LOCATED NEAR 13.7N 86.0W AT 2000Z
POSITION ACCURATE WITHIN 30 NM

PRESIDENT ADVISORY BOARD: THE BEST NORTHWEST DRAG DEGREE AT 11 KT
MAX SUSTAINED WINDS: 120 KT WITH GUSTS 135 KT
MINOR WINDS: 150 KT WITH GUSTS 175 KT
WINDS ARE THE LARGEST WINDS EXPECTED ANYWHERE IN THAT QUADRANT

REPEAT: CENTER LOCATED NEAR 13.7N 86.0W AT 2000Z
KT BRISK CENTER WAS LOCATED NEAR 13.7N 87.0W

FORECAST VALID 291200Z 14.0N 80.0W
MAX WIND 135 KT GUSTS 150 KT
50 KT 1000 1000 1000 1000
40 KT 1000 1000 1000 1000
30 KT 1000 1000 1000 1000

FORECAST VALID 291400Z 13.2N 81.0W
MAX WIND 125 KT GUSTS 140 KT
50 KT 1000 1000 1000 1000
40 KT 1000 1000 1000 1000
30 KT 1000 1000 1000 1000

REQUEST FOR 3 HOURLY SAMP REPORTS WITHIN 200 MILES OF 13.2N 81.0W
EXTENDED OUTLOOK - USE FOR GUIDANCE ONLY. ERRORS MAY BE LARGE

OUTLOOK VALID 291000Z 13.0N 82.0W
MAX WIND 115 KT GUSTS 130 KT
50 KT 1000 1000 1000 1000
40 KT 1000 1000 1000 1000
30 KT 1000 1000 1000 1000

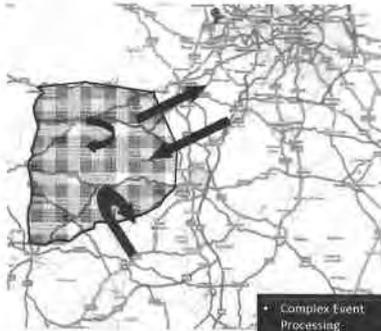


- Rely on physical sensors (e.g. seismic, buoy, remote sensing) for data to simulate and predict disasters
- Through social networking (i.e. status update and chatter), humans can become sensors too



Real-Time Exclusion Zone Alerts

- Exclusion zone in major emergency
- Zone is dynamic and moving
- Real-time personnel and resources tracking
- Automatic alerts for being near/in the zone

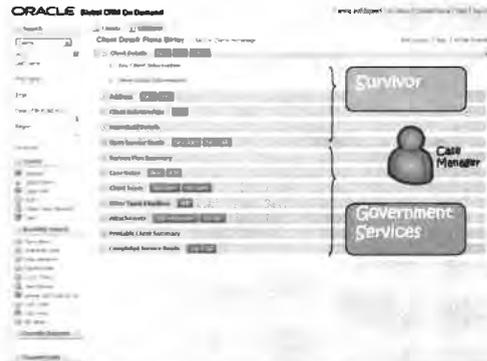


Complex Event Processing

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Cloud Computing: Victim Assistance



Australia Victoria Bushfires, Feb 2009



Oracle Siebel On Demand

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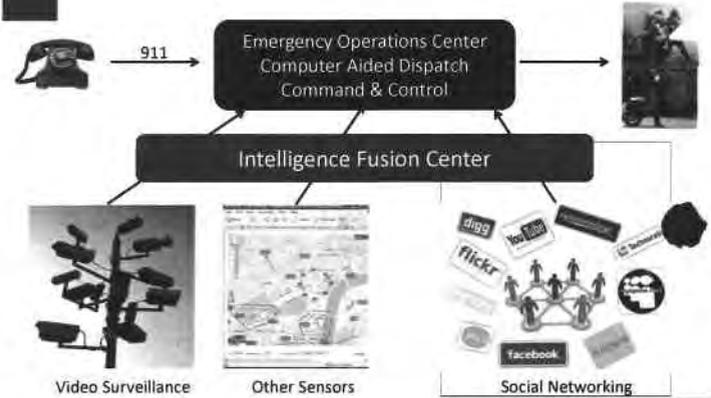
Victim Assistance with Transparency



Oracle Siebel
Oracle Policy Automation

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Video Surveillance

Other Sensors

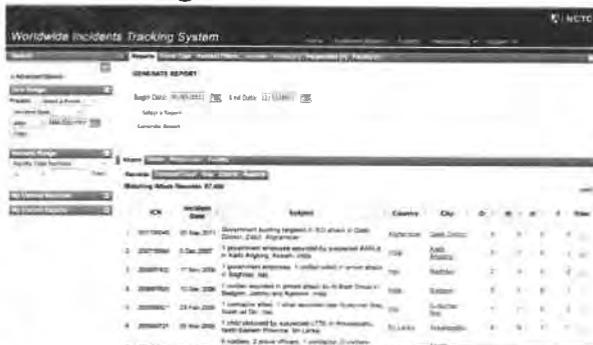
Social Networking

Oracle Intelligence Hub & Alerts Solution

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Intelligence Fusion Center



Oracle Endeca Information Discovery

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THANK YOU!

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