



# United States of America

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## National progress report on the implementation of the Hyogo Framework for Action (2011-2013) - Interim

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# Section 1: Outcomes 2011-2013

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## Strategic Outcome For Goal 1

### Outcome Statement:

(Effective integration of disaster risk considerations into sustainable development policies, planning and programming at all levels, with a special emphasis on disaster prevention, mitigation, preparedness and vulnerability reduction.)

The U.S. Geological Survey (USGS) has established the Science Application for Risk Reduction (SAFRR) team. SAFRR works across societal sectors within communities and with government agency partners to develop and work through disaster scenarios. Scenario development provides broad education and lessons in disaster preparedness, response, and resilience. This approach has empowered local communities to understand their vulnerabilities and take action to reduce them.

Another effort that successfully integrates disaster risk concerns at all levels is the USGS's network of 8400 streamgages by which real-time streamflow information is monitored. The network is used by federal and state agencies and local communities to monitor and respond to flood emergencies. A multiple agency Flood Inundation Mapping Initiative will aid in reducing vulnerability in the future.

The Subcommittee on Disaster Reduction (SDR) is reestablished by action of the National Science and Technology Council (NSTC) Committee on Environment, Natural Resources, and Sustainability (CENRS ) in 2011.

## Strategic Outcome For Goal 2

### Outcome Statement:

(Strengthening of institutions, mechanisms, and capacities at all levels)

The USGS has been reorganized from a scientific discipline-based structure to a mission-based structure, forming a Natural Hazards Mission Area (NHMA) that with allied mission areas such as Water unifies and elevates multi-hazard science and response within USGS. A new memorandum of understanding (MOU) with the Federal Emergency Management Agency (FEMA) helps to ensure proper transfer of hazard information to application in crisis preparation and management to the community level. A recent MOU among USGS, the National Weather Service (NWS) and the U.S. Army Corp of Engineers (USACE) promotes a collaborative approach to water-resource issues, including those related to disasters, and has a goal of providing better tools to water-resource managers and the public to allow informed decisions and risk evaluations.

The National Weather Service (NWS) has a cadre of around 85 certified meteorologists that are specially trained to provide forecast support to wildfires and other on-site incidents, known as Incident Meteorologists (IMETs). IMETs deliver front-line support from NOAA to

our land management and other emergency-response partners at wildfires and other significant events/incidents. This consists of live consultation and briefings on expected high impact weather to Incident Management Teams, elected officials, the media and the public. IMETs are deployed to an average of 140 Incidents each year, translating to 1,300 IMET days (or 18,350 IMET hours) per year. NOAA's IMET Program is a model for direct Decision Support Services and has always exceeded the partner-requested metric of 24 hour response time to fires. As of August 29, 2012, NWS IMETs have responded to 111 national incidents with a projected year end response of 151 during 2012. IMET performance is key to mitigating the risk of wildfire in terms of both strategic and tactical operational planning. In 2006, the NWS fire weather program received a request to provide assistance to the Australia Bureau of Meteorology (BoM). Since then, over 30 NWS forecasters have provided forecast assistance to the BoM during the southern hemisphere fire season. The program has resulted in several valuable exchanges of personnel and high impact support of the 2009 Black Saturday fires. Forecaster exchanges have been reciprocated by the BoM, with an average of two forecasters per year assisting the U.S. fire weather forecasting efforts. In 2011 and 2012, additional improvements to the IMET capacity to forecast incident-specific winds and atmospheric instability was accomplished through the introduction of new mobile upper air observation technology. The technology allows IMETs to launch, track and analyze weather balloon data directly at the incident.

The National Weather Service's Climate Services program developed and continuously improves in-depth climate science training, in cooperation with the National Center for Atmospheric Research. The options include on-line training for professional development and specialized training that focuses on climate effects in particular areas, such as transportation. The objective of all new climate training is to help gauge the risks and impacts of climate change on people and property.

NWS (in cooperation with FEMA, USGS, and others) has been responsible for many years for mapping of the nation's rivers. The great innovation in this service over the past two years has been to develop a connection between real-time stream gage data and NWS river forecasts to predict the level of flooding that is likely to occur in flood-prone areas. The information is presented on Flood Inundation Maps, accessible over the internet, which show the extent of flooding expected spatially over a given area. These maps indicate where roadways, streets, buildings, airports, etc., are likely to be impacted by floodwaters. Easily accessible map graphics give users more awareness of the flood hazards in their local community and provide decision-makers with additional information needed to better mitigate the impacts of flooding and build more resilient communities. A library, or collection of inundation map graphics, is created for each river forecast location. The Advanced Hydrologic Prediction Systems webpage also includes a text version of the actual river forecast as well as a graphical forecast hydrograph. Impact and historical information is also included with the inundation maps. User-selectable displays will provide maps for various inundation levels or flood categories. The interface will also include an interactive mouse locator water depth feature. The interface will provide the ability to view inundation levels at stages in the minor, moderate, and major flood categories. The 100-year flood, 500-year flood, and the floodway zones may also be displayed. From this interface, the user can also view maps of observed or forecast inundation levels based on current NWS river forecasts.

# Strategic Outcome For Goal 3

## Outcome Statement:

(The systematic incorporation of risk reduction approaches into the design and implementation of emergency preparedness, response and recovery programs in the reconstruction of affected communities.)

The National Oceanic and Atmospheric Administration (NOAA) and the National Weather Service (NWS) have implemented the following programs focused on disaster risk reduction and increasing community resilience:

### “Weather Ready Nation” and “Roadmap”

The NWS initiated a broad plan to increase the readiness of the U.S. to predict and mitigate future weather-related disasters (the U.S. had nine weather-related disasters last year each of which accounted for more than a billion dollars in property loss). Key components of “Weather Ready Nation” are: improved observational and technical abilities that will improve the precision of hurricane, tsunami, and other potential disasters; closer planning and working relationships with Core Partners—state and local agencies, emergency response agencies—including a more mobile-ready emergency response capability; sponsorships of pilot projects such as improved ecological forecasting; and a broad public education initiative. The “Roadmap” is a very detailed set of steps leading toward full implementation of the Weather Ready Nation. The Roadmap contains a business plan, a services plan, a science and technology plan, and a workforce evolution plan. The services and science and technology plans, in particular, detail a wide range of new or significantly upgraded initiatives, from tsunami and hurricane warning systems (see below) to a much more active public communications program to improvement to dual-polarization of all existing radars.

### “RAPIDCast”

The Pacific region is noteworthy for its remote populations separated by vast distances. Communication systems and linkages are often quite weak, and there is a profound need to ensure basic meteorological alerts and routine weather information products are reliably and timely disseminated to major cities and remote communities alike. To respond to this need, RANET, with support from USAID and NOAA, is piloting RAPIDCast. RAPIDCast is a satellite broadcast service for the Pacific region, and it is designed to deliver alerts and notifications, as well as routine forecast and related information to rural and remote islands. The RAPIDCast system is modeled, in part, off of the GEONETCast system.

### “Chatty Beetle”

The Chatty Beetle is a two-way short-messaging and paging system developed by RANET with support from USAID and NOAA. The system and terminals provide weather and other hazard alerts and notifications to remote locations where communication options are limited. Aside from delivering a short message, the terminal has a localized alarm and flashing light, thereby providing visual and audible cues when an alert is received. The Chatty Beetle systems are designed to be easy to use, durable, and can run off batteries for more than two days. While initially focused on the Pacific, the system is being piloted and developed in different parts of the globe.

### “Local Climate Analysis Tool”

The National Weather Service has developed a comprehensive, online interactive tool for regional and local studies of climate impacts, specifically drought analysis and impacts, climate change impacts, climate variability impacts, water resources applications, and

attribution of extreme weather events. Packed with current and historical data and algorithms, the tool allows anyone from an informed amateur to a highly trained meteorologist to select a specific geographic area and set of variables, then see likely weather effects will occur. For instance, a composite climate change impact for a segment of North Florida shows, with a 90% confidence level, that a) during La Nina events, there is a statistically significant (60%) chance that summer rainfall will be above normal, while b) during El Nino events, there is only a 28.6% chance rainfall will be below normal. The tool has a huge variety of potential uses, such as validation of climate model outputs, analysis of regional trends in climate models, and spatial correlations to climate phenomena.

#### “Hurricane Forecast Improvement Program (HFIP)”

The goals of this ten-year effort at the National Weather Service are to improve the accuracy and reliability of hurricane track and intensity forecasts, to extend lead times for hurricane forecasts with increased certainty, and to increase confidence in hurricane forecasts. Specific metrics include reducing hurricane tracking and intensity error by 50%, decrease the false alarm error rate to 10%, and extend the hurricane forecast lead time to seven days. The NWS Hurricane Center, in cooperation with other agencies and research institutions, is accomplishing these objectives by optimizing observing systems for research and operations; institutionalizing and fully funding the transition from research to operations; increasing high performance computing and related IT capability; and broadening the training and expertise of meteorologists and other experts in this field.

## Section 2: Strategic goals

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### Strategic Goal Area 1

*The more effective integration of disaster risk considerations into sustainable development policies, planning and programming at all levels, with a special emphasis on disaster prevention, mitigation, preparedness and vulnerability reduction.*

#### Strategic Goal Statement:

Disaster risk considerations are being integrated into sustainable development policies, planning, and programming. For example, FEMA supports the U.S. Department of Housing and Urban Development's (HUD) Sustainable Housing and Communities initiative's goals for strategic local approaches to sustainable development by combining hazard mitigation objectives with community development objectives to incorporate livability, sustainability, and social equity values into land use plans, zoning and infrastructure investments. At the national level, the U.S. Environmental Protection Agency and Federal Emergency Management Agency collaborate to help communities rebuild from disasters in ways that protect the environment, create long-term economic prosperity, and enhance neighborhoods. Collaborative projects in North Dakota and Iowa have helped communities direct development away from vulnerable areas and incorporate climate change adaptation into planning efforts.

USGS is continuing to work with partners in developing scientifically based disaster scenarios that help communities understand hazards, recognize their vulnerabilities, and plan for resilience. The National Cohesive Wildland Fire Management Strategy, which USGS supports, utilizes a collaborative, "from-the-ground-up" approach with active involvement of all levels of government and non-governmental organizations in the United States, as well as the public, to seek local solutions to national wildland fire management issues. The three-part strategy is to: 1) make landscapes across all jurisdictions are resilient to disturbances in accordance with management objectives; 2) help communities can assess their level of wildfire risk and share responsibility for mitigating both the threat and the consequences; and 3) ensure inclusion of all jurisdictions in planning and implementing actions for disaster risk reduction.

### Strategic Goal Area 2

*The development and strengthening of institutions, mechanisms and capacities at all levels, in particular at the community level, that can systematically contribute to building resilience to hazards.*

#### Strategic Goal Statement:

The U.S. recognizes that the disaster resilience of its communities depends on actions at state and local levels of government, on actions of non-governmental organizations and the private sector, and on actions of local businesses, families and individuals. The federal government remains committed to programs that support and encourage such actions.

The 2011 Presidential Policy Directive 8: National Preparedness is aimed at strengthening

the security and resilience of the United States through systematic preparation for the threats that pose the greatest risk to the security of the nation, including acts of terrorism, cyber attacks, pandemics, and catastrophic natural disasters. In the United States, national preparedness is the shared responsibility of all levels of government, the private and nonprofit sectors, and individual citizens. PPD-8 is aimed at facilitating an integrated, all-of-nation, capabilities-based approach to preparedness.

A Whole Community approach, which engages the private and nonprofit sectors, including businesses, faith-based and disability organizations, and the general public, in conjunction with the participation of local, tribal, state, territorial, and federal government partners, is being leveraged in the development, and incorporated into all Presidential Policy Directive 8 deliverables, including the National Preparedness Goal, National Preparedness System description, National Planning Frameworks, and the campaign to build and sustain preparedness nationwide.

## Strategic Goal Area 3

*The systematic incorporation of risk reduction approaches into the design and implementation of emergency preparedness, response and recovery programmes in the reconstruction of affected communities.*

### Strategic Goal Statement:

Risk reduction is incorporated into the design and implementation of emergency preparedness, response and recovery programs in the reconstruction of affected communities. The September 2011 National Disaster Recovery Framework, the first framework published under Presidential Policy Directive 8: National Preparedness is a guide that enables effective recovery support to disaster-impacted states, tribes, territorial and local jurisdictions. It provides a flexible structure that enables disaster recovery managers to operate in a unified and collaborative manner. It also focuses on how best to restore, redevelop and revitalize the health, social, economic, natural and environmental fabric of the community and build a more resilient Nation.

A key principle is resilience and sustainability, recognizing that a successful recovery process promotes practices that minimize the community's risk to all hazards and strengthens its ability to withstand and recover from future disasters, which constitutes a community's resiliency.

The USGS is working actively to use its real time monitoring capabilities for natural hazards to create information products that can support communities in the response and recovery phases. These products include earthquake catalogs, distribution of earthquake shaking (ShakeMap), rapid estimates of losses from earthquakes (Prompt Assessment of Global Earthquake for Response or "PAGER"). Other products include national maps of seismic risk and local maps of volcano hazards. The USGS assists with the development of flood risk reduction approaches by collecting and statistically analyzing streamflow data to define flood recurrence intervals and producing flood inundation maps to portray the consequences of flooding (WaterWatch).

## Section 3: Priority for action 1

*Ensure that disaster risk reduction is a national and a local priority with a strong institutional basis for implementation.*

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### Priority for action 1: Core indicator 1

*National policy and legal framework for disaster risk reduction exists with decentralised responsibilities and capacities at all levels.*

Level of Progress achieved: 4

Substantial achievement attained but with recognized limitations in key aspects, such as financial resources and/ or operational capacities

#### Key Questions and Means of Verification

Is disaster risk taken into account in public investment and planning decisions?  
Yes

<b>National development plan</b>	No
<b>Sector strategies and plans</b>	Yes
<b>Climate change policy and strategy</b>	Yes
<b>Poverty reduction strategy papers</b>	Yes
<b>CCA/ UNDAF (Common Country Assessment/ UN Development Assistance Framework)</b>	No
<b>Civil defence policy, strategy and contingency planning</b>	Yes

Have legislative and/or regulatory provisions been made for managing disaster risk? Yes

Description:

While a significant degree of the responsibility for disaster risk reduction in the U.S. rests at the state and local levels, the federal government reinforced the importance of disaster risk reduction by signing into law the Disaster Mitigation Act of 2000, which builds upon the Robert T. Stafford Disaster Relief and Emergency Assistance Act and provides the legal

basis for state, local, and tribal governments to undertake a risk-based approach to reducing risks from natural hazards through mitigation planning. Funding is available through the Federal Emergency Management Agency, to state, local, and tribal governments to develop plans and projects to reduce risks and reliance on funding from actual disaster declarations. Through Presidential Policy Directive 8: National Preparedness, a National Mitigation Framework is also being developed to address stakeholder roles and responsibilities, coordinating structures, and the integration of hazard mitigation with other mission areas and across the whole community.

**Context & Constraints:**

See above.

**Priority for action 1: Core indicator 2**

*Dedicated and adequate resources are available to implement disaster risk reduction plans and activities at all administrative levels*

Level of Progress achieved: 4

Substantial achievement attained but with recognized limitations in key aspects, such as financial resources and/ or operational capacities

**Key Questions and Means of Verification**

What is the ratio of the budget allocation to risk reduction versus disaster relief and reconstruction?

	Risk reduction / prevention (%)	Relief and reconstruction (%)
National budget		

Decentralised / sub-national budget

USD allocated to hazard proofing sectoral development investments (e.g transport, agriculture, infrastructure)	
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**Description:**

The U.S. has made significant investments in disaster risk reduction, from warning systems to pre-disaster mitigation grants, to disaster-resilient design of critical infrastructure. Funds are allocated by Congress to various federal agencies for use in carrying out their missions, many of which inherently include disaster risk reduction. FEMA provides Hazard Mitigation Assistance grants to communities in the pre- and post-disaster environments to reduce risk

to undamaged facilities vulnerable to hazards. All FEMA public assistance and hazard mitigation grant projects must meet certain eligibility requirements, such as a positive benefit/cost ratio, and be assessed for potential impacts that the proposed project will have on the human and natural environment under the United States' 1969 National Environmental Policy Act.

**Context & Constraints:**

Achieving the funding levels required to realize a truly disaster resilient society remains an ongoing challenge.

**Priority for action 1: Core indicator 3**

*Community Participation and decentralisation is ensured through the delegation of authority and resources to local levels*

**Level of Progress achieved: 4**

Substantial achievement attained but with recognized limitations in key aspects, such as financial resources and/ or operational capacities

**Key Questions and Means of Verification**

Do local governments have legal responsibility and regular / systematic budget allocations for DRR? -- not complete --

<b>Legislation (Is there a specific legislation for local governments with a mandate for DRR?)</b>	No
<b>Regular budget allocations for DRR to local government</b>	No
<b>Estimated % of local budget allocation assigned to DRR</b>	0

**Description:**

A significant degree of the responsibility for disaster risk reduction in the U.S. rests at the state and local levels. For example, model building codes, with a primary objective for life-safety, are developed through a consensus process by non-governmental organizations, such as the American Society of Civil Engineers and the International Code Council. These codes incorporate current scientific and engineering understanding about seismic shaking intensity, wind loads, fire characteristics, flooding and coastal inundation hazards, and other destructive forces produced by the Earth's dynamic natural processes. Complementing these efforts, the federal government supports extensive research in science and engineering to advance knowledge for the development of promising new risk-reducing technologies. Federal funds also support physical and social research on land use practices

that promote environmental sustainability and disaster risk reduction. As with building codes, adoption and implementation of land use policies is predominantly the responsibility of state and local governments.

Under the Robert T. Stafford Disaster Relief and Emergency Assistance Act, as amended, and Related Authorities, upon application by a state, the President is authorized to make grants for the development of plans, programs, and capabilities for disaster preparedness and prevention.

**Context & Constraints:**

Implementation of both hazard-conscious building codes and land use planning is uneven at the local level across the U.S. as limited resources and lack of local hazard awareness often act as obstacles to amassing the means, understanding, and collective will to mitigate the hazards that communities face.

**Priority for action 1: Core indicator 4**

*A national multi sectoral platform for disaster risk reduction is functioning.*

Level of Progress achieved: 3

Institutional commitment attained, but achievements are neither comprehensive nor substantial

**Key Questions and Means of Verification**

Are civil society organizations, national finance and planning institutions, key economic and development sector organizations represented in the national platform? No

<b>Civil society members (specify absolute number)</b>	0
<b>National finance and planning institutions (specify absolute number)</b>	0
<b>Sectoral organisations (specify absolute number)</b>	0
<b>Private sector (specify absolute number)</b>	0
<b>Science and academic institutions (specify absolute number)</b>	0
<b>Women's organisations participating in national platform (specify absolute number)</b>	0

**Other (please specify)**

Where is the coordinating lead institution for disaster risk reduction located?

**In the Prime Minister's/President's Office**

No

**In a central planning and/or coordinating unit**

No

**In a civil protection department**

No

**In an environmental planning ministry**

No

**In the Ministry of Finance**

No

**Other (Please specify)**

### Description:

The U.S. National Science and Technology Council's interagency Subcommittee on Disaster Reduction (SDR) serves as the national platform for the International Strategy for Disaster Reduction. The subcommittee represents the expertise of more than twenty federal agencies with disaster reduction missions and facilitates national strategies for effective use of science and technology to reduce disasters. The SDR provides coordination for science and technology activities in support of disaster risk reduction and provides advice to the White House Office of Science and Technology Policy. The SDR also coordinates with non-governmental entities such as the National Research Council's Disasters Roundtable, and interacts with many other organizations at national, state and local levels, as well as international partners. While civil society and sectoral members are not officially part of the U.S. National Platform as of this writing, the U.S. Government recognizes that these organizations play important roles in reducing disaster risk and has established several multi-sectoral partnerships through individual federal agencies directly and is actively looking to ensure that these organizations are represented in our National Platform structure.

For example, the National Advisory Council advises the Administrator of FEMA on all aspects of emergency management. The National Advisory Council incorporates state, local, and tribal governments, private sector, and nongovernmental partners' input in the development and revision of FEMA policies and strategies. Through the Regional Emergency Transportation Coordination Program, the U.S. Department of Transportation interacts with a large number of NGOs and other civil society stakeholders in the development of emergency preparedness plans and policies. Through participation in the Coalition of Organizations for Disaster Education, multiple federal agencies work with the American Red Cross and other governmental and non-governmental organizations to increase disaster preparedness, awareness and education.

## Context & Constraints:

See above.

## Section 4: Priority for action 2

*Identify, assess and monitor disaster risks and enhance early warning*

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### Priority for action 2: Core indicator 1

*National and local risk assessments based on hazard data and vulnerability information are available and include risk assessments for key sectors.*

Level of Progress achieved: 4

Substantial achievement attained but with recognized limitations in key aspects, such as financial resources and/ or operational capacities

#### Key Questions and Means of Verification

Is there a national multi-hazard risk assessment with a common methodology available to inform planning and development decisions? Yes

<b>Multi-hazard risk assessment</b>	Yes
<b>% of schools and hospitals assessed</b>	0
<b>Schools not safe from disasters (specify absolute number)</b>	0
<b>Gender disaggregated vulnerability and capacity assessments</b>	No
<b>Agreed national standards for multi hazard risk assessments</b>	Yes
<b>Risk assessment held by a central repository (lead institution)</b>	No
<b>Common format for risk assessment</b>	No
<b>Risk assessment format customised by user</b>	Yes
<b>Is future/probable risk assessed?</b>	Yes
<b>Please list the sectors that have already used disaster risk assessment as a precondition for sectoral development planning and programming.</b>	Emergency Management, Critical Infrastructure and Key Resources

## Description:

A key finding of the March 30, 2012 National Preparedness Report is that decision-makers in the public and private sectors increasingly are using risk analysis to shape and prioritize preparedness activities across mission areas. For example: States are required to conduct threat and hazard identification and risk assessments as a condition for receiving most preparedness grant funding; State and local public health departments are required to use jurisdictional risk assessments to prioritize capability enhancements; and Risk analysis informs eligibility criteria for preparedness assistance.

A Strategic National Risk Assessment was developed in 2011 in support of Presidential Policy Directive 8. The assessment helps identify the types of incidents that pose the greatest threat to the United States.

Also as part of Presidential Policy Directive 8, the Federal Emergency Management Agency's Comprehensive Preparedness Guidance 201: Threat and Hazard Identification and Risk Assessment, published in 2012, provides a common, consistent approach for identifying and assessing risks and their associated impacts. It expands on existing state, local, tribal and territorial hazard identification and risk assessment processes. Also, the Disaster Mitigation Act of 2000 established mitigation planning requirements, including hazard identification and risk assessments, for state, local and tribal governments as a condition of FEMA mitigation grant assistance.

Furthermore, the cornerstone of the 2009 National Infrastructure Protection Plan and its 18 supporting Sector-Specific Plans is its risk analysis and management framework that establishes the processes for combining consequence, vulnerability, and threat information to produce assessments of national or sector risk. The National Infrastructure Protection Plan describes an integrated, risk-informed approach used to: establish priorities, determine requirements, and guide resource support for the national critical infrastructure and key resources protection program; focus Federal grant assistance to state, local, tribal, and territorial entities; and complement relevant private sector activities.

USGS is making steady progress in mapping geologic hazards and evaluating vulnerabilities and risks for earthquakes and tsunamis. Damage estimates are now publicly available within minutes for large earthquakes globally. Combinations of in situ and satellite sensors provide near real-time assessment of the risk of volcanic eruptions, fires, droughts, and floods. Flood inundation maps are being prepared at selected NWS flood forecast locations. Damage estimates from the FEMA Hazus database are available at some of these mapped locations. This work is closely coordinated with partner agencies. Research is being directed at the most effective ways to compare the risk among hazards. Hazards differ in the relative risk to life and property so that approaches that compare dollar losses only fail to reflect issues of life safety.

## Context & Constraints:

See above.

## Priority for action 2: Core indicator 2

*Systems are in place to monitor, archive and disseminate data on key hazards and vulnerabilities*

Level of Progress achieved: 4

Substantial achievement attained but with recognized limitations in key aspects, such as financial resources and/ or operational capacities

### Key Questions and Means of Verification

Are disaster losses and hazards systematically reported, monitored and analyzed? Yes

<b>Disaster loss databases exist and are regularly updated</b>	Yes
<b>Reports generated and used in planning by finance, planning and sectoral line ministries (from the disaster databases/ information systems)</b>	Yes
<b>Hazards are consistently monitored across localities and territorial boundaries</b>	Yes

### Description:

Under the Stafford Act and other legislative mandates, responsibility for monitoring and issuing alerts for individual hazards is delegated to specific federal agencies. Significant capabilities exist for monitoring networks, data archiving and rapid dissemination to provide situational awareness for emergency responders and the public at large.

The U.S. Federal government has made substantial investments in assessments for multiple hazards, including the development of loss-estimation capabilities such as the Hazards US – Multi-Hazard (HAZUS-MH) software package. Developed by FEMA, this software incorporates current understanding of flood, wind, and earthquake hazards with inventories of structures and other data to estimate losses.

USGS has programs in place for improved monitoring, archiving, and disseminating warnings of earthquakes and volcanic eruptions. These are the Advanced National Seismic System (ANSS) and National Volcano Early Warning System (NVEWS). They are modernizing, unifying, and moving to more complete 24/7 capability in event forecasting, detection, and response. Previously mentioned is the extensive real-time streamgauge network. The USGS operates redundant satellite communications for real-time flood stage information collected at 48 USGS Water Science Centers in the United States. Real-time data from all these networks are freely and readily accessible to the public. Environmental monitoring data collected from water bodies, useful for water-related disaster monitoring and trend analysis, are also available 24/7.

Covering the sun to the seas, the National Weather Service provides local and regional forecasts, and emergency alerts for severe storms, tornadoes, hurricanes, floods, extreme heat, winter storms, fire threats, tsunamis and solar flares. From its national centers to its 122 Weather Forecast Offices and 13 River Forecast Centers, the National Weather Service is watching over the nation and neighborhoods. In addition, NOAA has a responsibility to support the growth of an environmental information enterprise, a partnership between government, academia and the private sector.

These services are supported by organizations throughout NOAA, including NOAA's Satellite and Information Service, which maintains the satellites and data used in weather forecasting as well as historical climate records, and research and products provided by NOAA's Office of Oceanic and Atmospheric Research and the National Ocean Service to improve forecasting ability. NOAA has provided essential information about our climate that anticipates future risks, saves lives, protects property and safeguards the economy. Climate information is essential for business, community, and natural resource planning.

NOAA is the lead federal agency for implementing a national Integrated Ocean Observing System that will be part of the greater Global Earth Observation System of Systems – or GEOSS. The aim is to make 21st century technology as interrelated as the planet it observes, predicts and protects, providing the science on which sound policy and decision-making must be built.

**Context & Constraints:**

Current economic conditions have slowed progress in expanding volcano monitoring. There has been some deterioration of networks, in cases where access cost is high. Streamflow monitoring is at risk in cases where participation by local economically stressed communities is required.

**Priority for action 2: Core indicator 3**

*Early warning systems are in place for all major hazards, with outreach to communities.*

Level of Progress achieved: 4

Substantial achievement attained but with recognized limitations in key aspects, such as financial resources and/ or operational capacities

**Key Questions and Means of Verification**

Do risk prone communities receive timely and understandable warnings of impending hazard events? Yes

<b>Early warnings acted on effectively</b>	No
<b>Local level preparedness</b>	Yes
<b>Communication systems and protocols used and applied</b>	Yes

## **Active involvement of media in early warning dissemination**

Yes

### **Description:**

The U.S. has deployed early warning systems for a number of hazards, including extreme weather events, floods, and tsunamis. A prototype debris-flow warning system has been deployed for wildfire impacted areas of southern California. Early-warning capabilities exist for some well-monitored volcanoes, and plans have been made to implement a National Volcano Early Warning System. The U.S. does not currently have an early warning system for earthquakes; such a capability has been identified as an outcome of full implementation of the partially deployed Advanced National Seismic System and an earthquake early warning prototype is being developed for California. In days prior to hurricane landfall, vulnerability forecasts are provided to coastal managers based on modeled storm surge and associated erosion (Coastal Vulnerability Index), which has helped emergency managers to better target evacuation and emergency equipment.

FEMA has undertaken efforts to improve and modernize the country's ability to alert the public of an impending disaster through the Integrated Public Alert and Warning System (IPAWS). Federal, state, territorial, tribal, and local alerting authorities may choose to use IPAWS and may also integrate local systems that use Common Alerting Protocol standards with the IPAWS infrastructure.

NOAA's Weather Radio All Hazards is a nationwide network of radio stations broadcasting continuous weather information directly from the nearest National Weather Service office, including warnings, watches, forecasts and other hazard information 24 hours a day, 7 days a week. Working with the Federal Communication Commission's Emergency Alert System, it is an "All Hazards" radio network, making it a single source for comprehensive weather and emergency information. In conjunction with federal, state, and local emergency managers and other public officials, it also broadcasts warning and post-event information for all types of hazards.

USGS continues to develop faster, more understandable standardized warnings in collaboration with other agency partners. More and more background information, including real-time monitoring data, is made available on websites. Community awareness and reporting are encouraged through mechanisms like "Did you feel it?" for earthquakes. A similar citizen-engagement process is under development for volcanic ash falls. Water data are available from "WaterAlert", where messages are sent when user-established thresholds are exceeded. The application is geared towards use by mobile devices. The USGS has formed partnerships with risk communication professionals to improve the public statements and warnings.

### **Context & Constraints:**

See above.

## Priority for action 2: Core indicator 4

*National and local risk assessments take account of regional / trans boundary risks, with a view to regional cooperation on risk reduction.*

Level of Progress achieved: 4

Substantial achievement attained but with recognized limitations in key aspects, such as financial resources and/ or operational capacities

### Key Questions and Means of Verification

Does your country participate in regional or sub-regional actions to reduce disaster risk? Yes

<b>Establishing and maintaining regional hazard monitoring</b>	No
<b>Regional or sub-regional risk assessment</b>	Yes
<b>Regional or sub-regional early warning</b>	Yes
<b>Establishing and implementing protocols for transboundary information sharing</b>	Yes
<b>Establishing and resourcing regional and sub-regional strategies and frameworks</b>	Yes

### Description:

A number of emergency preparedness agreements exist between the U.S. and Canada and the U.S. and Mexico on a bilateral basis. In 2008, the U.S. and Canadian Governments renewed and updated an Agreement on Emergency Management Cooperation. That same year, Mexico and the U.S. also renewed and updated their Agreement on Emergency Management Cooperation in cases of Natural Disasters and Accidents.

The U.S also provides tsunami warnings for many nations bordering the Pacific, Atlantic and Caribbean Basins through NOAA's Pacific Tsunami Warning Center and shares hazard data with other countries and global partners through the Global Earth Observation System of Systems and the International Charter for Space and Major Disasters, among other mechanisms.

In order to improve trans-boundary coordination, the U.S. and Russian Federation, through their Office and Science Technology Policy and Ministry of Education and Science respectively, are establishing a Natural Hazards Subworking Group under the Science and Technology Working Group of the Bilateral Presidential Commission (BPC). This group complements the Emergency Situations Working Group, already active under the BPC. Trans-boundary coordination on geohazards with Russia was strengthened with a multi-agency bilateral workshop in Moscow in 2012. This will be followed by meetings on

fires and floods. A flood-monitoring meeting with Russia is tentatively scheduled for October 2012. An all-stakeholders bilateral geohazards meeting is being planned for Alaska in 2013.

The USGS cooperates with the International Boundary Commission and the International Boundary and Water Commission to share real-time hydrologic monitoring data with Canada and Mexico, respectively.

The USGS also responds to natural disaster crises in other countries upon the request of the affected country. USGS works as a partner within the country in disaster forecasting and response, and also works before extreme events to help build capacities for disaster risk reduction. An important example is the Volcano Disaster Assistance Project, supported jointly by USGS and USAID.

On the global scale, the USGS is a participating agency in the International Charter for Space and Major Disasters. Membership provides access to the community pool of satellite data and disaster response methodologies, improving the disaster response capabilities of all.

In order to enable more widespread use of the International Charter domestically and internationally, and to support the Charter mandate of universal access, the USGS provides Project Manager training classes. These classes educate participants on how to interact with the Charter agencies during disaster activations. The Project Managers are then able to provide support to local, State, Federal, and international agencies during disaster response activities by coordinating access to Charter satellites and imagery. Some of this training is conducted in other countries, so that countries that are not Charter members can benefit from the combined satellite remote sensing assets of the international community during a crisis.

Another global effort in which USGS participates is the Global Seismographic Network (GSN). The USGS' National Earthquake Information Center (NEIC) uses real-time data from this network to provide analysis, now used worldwide, on the location and severity of major earthquakes within minutes of the events.

## Context & Constraints:

See above.

# Section 5: Priority for action 3

*Use knowledge, innovation and education to build a culture of safety and resilience at all levels*

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## Priority for action 3: Core indicator 1

*Relevant information on disasters is available and accessible at all levels, to all stakeholders (through networks, development of information sharing systems etc)*

Level of Progress achieved: 3

Institutional commitment attained, but achievements are neither comprehensive nor substantial

### Key Questions and Means of Verification

Is there a national disaster information system publicly available? Yes

<b>Information is proactively disseminated</b>	Yes
<b>Established mechanisms for access / dissemination (internet, public information broadcasts - radio, TV, )</b>	Yes
<b>Information is provided with proactive guidance to manage disaster risk</b>	Yes

### Description:

The U.S. has made significant investments in improving public awareness of relevant hazards before disaster strikes as well as providing information on disasters where and when it is needed. Efforts exist at all levels of government. Launched in February 2003, Ready is a national public service advertising campaign designed to educate and empower Americans to prepare for and respond to emergencies including natural disasters. The goal of the campaign is to get the public involved and ultimately to increase the level of basic preparedness across the nation.

Despite achievements made to date, however, findings from the report Personal Preparedness In America: Findings From the 2009 Citizen Corps National Survey (Revised December 2009), highlight the continued need for strengthened public knowledge of household emergency preparedness, community emergency procedures, and available resources for improving emergency awareness and remaining informed. Two of the Grand Challenges for Disaster Reduction identified by the NSTC Subcommittee on Disaster Reduction (SDR) specifically address the need for making relevant information available and accessible at all levels, one being to provide hazard and disaster information where and when it is needed, and the other being to promote risk-wise behavior.

## Context & Constraints:

See above.

## Priority for action 3: Core indicator 2

*School curricula , education material and relevant trainings include disaster risk reduction and recovery concepts and practices.*

### Level of Progress achieved: 4

Substantial achievement attained but with recognized limitations in key aspects, such as financial resources and/ or operational capacities

## Key Questions and Means of Verification

Is DRR included in the national educational curriculum? No

<b>Primary school curriculum</b>	No
<b>Secondary school curriculum</b>	No
<b>University curriculum</b>	No
<b>Professional DRR education programmes</b>	No

### Description:

In the U.S., Federal law prohibits federal department and agencies from directing, supervising or controlling elementary and secondary school curriculum, programs of instruction, and instructional materials.

As previously noted, Ready is a national public service advertising campaign designed to educate and empower Americans to prepare for and respond to emergencies including natural disasters. The goal of the campaign is to get the public involved and ultimately to increase the level of basic preparedness across the nation. The Ad Council has declared Ready one of the most successful campaigns in its more than 60-year history. Ready information is available in thirteen languages, and includes Ready Business and Ready Kids Campaigns.

Recent focus on educating youth and families about emergency preparedness has also led to the expansion of FEMA's Student Tools for Emergency Planning (STEP) Program, which educates and energizes students in school to go home and act as leaders in implementing key preparedness strategies with their families.

Through participation in the Coalition of Organizations for Disaster Education (CODE), multiple federal agencies work with the American Red Cross and other governmental and non-governmental organizations to increase disaster preparedness, awareness and

education.

Professional training in disaster risk reduction is available to state, local, tribal, and federal government officials, volunteer organizations, and the public and private sectors through the Federal Emergency Management Agency. The Agency's Emergency Management Institute manages the Higher Education Program which, since 1994, has promoted college-based emergency management education, and the dissemination of hazard, disaster, and emergency management-related information in colleges and universities across the U.S.

### Context & Constraints:

Materials have been developed for use in school curricula, but the devolved nature of public education in the United States, which is implemented at the local government level, makes it difficult to measure progress on this core indicator.

## Priority for action 3: Core indicator 3

*Research methods and tools for multi-risk assessments and cost benefit analysis are developed and strengthened.*

Level of Progress achieved: 4

Substantial achievement attained but with recognized limitations in key aspects, such as financial resources and/ or operational capacities

### Key Questions and Means of Verification

Is DRR included in the national scientific applied-research agenda/budget? -- not complete --

<b>Research programmes and projects</b>	No
<b>Research outputs, products or studies are applied / used by public and private institutions</b>	No
<b>Studies on the economic costs and benefits of DRR</b>	No

### Description:

The National Science Foundation (NSF) and other Federal agencies support research and development in a number of physical and social science fields to improve understanding and assessment of disaster risk reduction. For example, through its Turner Fairbank Highway Research Center, the Federal Highway Administration (FHWA) continues research and development of hazard mitigation methodologies and technologies to improve the national transportation system's resilience against flooding and hydraulic events, hurricanes and extreme wind events, and earthquakes. Methodologies and guidelines have been produced

under the FHWA's Cooperative Research Programs to assist transportation owners in assessing risk, planning for disaster response, evacuation and recovery, and designing for extreme events. A guide to the research literature on facility vulnerability, risk assessment, loss estimation, and disaster resilience has been produced by the National Institute of Standards and Technology to inform planning at the local and regional levels.

A tool for multi-hazard risk assessment available to government planners, GIS specialists, emergency managers, and others in the U.S. is the Hazards US – Multi-Hazard (HAZUS-MH) software package. HAZUS-MH is a nationally applicable, standardized methodology that contains models for estimating potential losses from earthquakes, floods, and wind hazards, such as hurricanes. HAZUS-MH uses Geographic Information Systems (GIS) technology to estimate physical, economic, and social impacts of disasters. All Federal Emergency Management Agency public assistance and hazard mitigation grant projects must meet certain eligibility requirements, such as a positive benefit/cost ratio, and be assessed for potential impacts the proposed project will have on the human and natural environment under the U.S. National Environmental Policy Act. Furthermore, the U.S. Environmental Protection Agency continues to research and develop science-based tools for communicating before, during, and after a crisis. Much of this research is directly applicable to strengthening community, local and state government capacity and resilience with respect to both natural and human-caused disasters.

One technique for improving disaster risk reduction is sharing experiences and developing best practices. USGS partnered with its peer Italian agency to hold a Volcano Observatory Best Practices (VOBP) workshop on near-term eruption forecasting. Staff from volcano observatories in 27 countries participated. VOBP2 on hazard communications is being planned for 2013. These meetings are conducted under the aegis of the International Union of Geodesy and Geophysics (IUGG) and endorsed by UNESCO.

### Context & Constraints:

See above.

## Priority for action 3: Core indicator 4

*Countrywide public awareness strategy exists to stimulate a culture of disaster resilience, with outreach to urban and rural communities.*

### Level of Progress achieved: 4

Substantial achievement attained but with recognized limitations in key aspects, such as financial resources and/ or operational capacities

## Key Questions and Means of Verification

Do public education campaigns for risk-prone communities and local authorities include disaster risk? Yes

<b>Public education campaigns for enhanced awareness of risk.</b>	Yes
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<b>Training of local government</b>	Yes
<b>Disaster management (preparedness and emergency response)</b>	Yes
<b>Preventative risk management (risk and vulnerability)</b>	Yes
<b>Guidance for risk reduction</b>	Yes
<b>Availability of information on DRR practices at the community level</b>	Yes

### Description:

The U.S. has made substantial investments in national public awareness campaigns to stimulate a culture of disaster resilience, with outreach to both urban and rural communities.

As a key part of its whole community approach, FEMA conducts outreach around the country to encourage sustained community participation and involvement in preparedness and resilience activities, engaging with a wide range of people and organizations from various geographic, ethnic and professional backgrounds.

Launched in February 2003, Ready is a national public service advertising campaign designed to educate and empower Americans to prepare for and respond to emergencies including natural and man-made disasters. The goal of the campaign is to get the public involved and ultimately to increase the level of basic preparedness across the nation. Ready and its Spanish language version Listo ask individuals to do three key things: (1) build an emergency supply kit, (2) make a family emergency plan and (3) be informed about the different types of emergencies that could occur and their appropriate responses. Ready Business is an extension of the Ready campaign that focuses on business preparedness. Ready Kids is a tool to help parents and teachers educate children ages 8 - 12 about emergencies and how they can help get their family prepared.

Citizen Corps Councils build on community strengths to implement Citizen Corps preparedness programs and carry out a local strategy to involve government, community leaders, and citizens in all-hazards preparedness and resilience. Citizen Corps asks citizens to embrace the personal responsibility to be prepared; to get training in first aid and emergency skills; and to volunteer to support local emergency responders, disaster relief, and community safety.

Annual multiagency National Level Exercises, in which USGS participates, target different possible disasters in different areas of the country are used to educate, raise public awareness, expose vulnerabilities, and test response capabilities.

## Context & Constraints:

See above.

## Section 6: Priority for action 4

*Reduce the underlying risk factors*

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### Priority for action 4: Core indicator 1

*Disaster risk reduction is an integral objective of environment related policies and plans, including for land use natural resource management and adaptation to climate change.*

Level of Progress achieved: 3

Institutional commitment attained, but achievements are neither comprehensive nor substantial

### Key Questions and Means of Verification

Is there a mechanism in place to protect and restore regulatory ecosystem services? (associated with wet lands, mangroves, forests etc) Yes

<b>Protected areas legislation</b>	Yes
<b>Payment for ecosystem services (PES)</b>	No
<b>Integrated planning (for example coastal zone management)</b>	Yes
<b>Environmental impacts assessments (EIAs)</b>	Yes
<b>Climate change adaptation projects and programmes</b>	Yes

Description:

Under the National Environmental Policy Act, all Federal agencies are required to prepare detailed statements assessing the environmental impact of and alternatives to major federal actions significantly affecting the environment. These statements are commonly referred to as environmental impact statements (EISs).

The federal government protects wetlands through regulations (like Section 404 of the Clean Water Act), economic incentives and disincentives (for example, tax deductions for selling or donating wetlands to a qualified organization and the "Swampbuster" provisions of the Food Security Act), cooperative programs, and acquisition (for example, establishing national wildlife refuges). A number of states have enacted laws to regulate activities in wetlands, and some counties and towns have adopted local wetlands protection ordinances or have changed the way development is permitted.

In another example, the Coastal Zone Management Act (CZMA) provides for management of

the nation's coastal resources, including the Great Lakes, and balances economic development with environmental conservation.

Furthermore, in 2010 the Climate Change Adaptation Task Force released a report outlining recommendations for how federal agency policies and programs can better prepare the United States to respond to the impacts of climate change. Strategies include, but are not limited to: adopting integrated approaches; prioritizing the most vulnerable; using the best available science; applying risk management tools and methods; and applying ecosystem-based approaches. These strategies were informed in part by a series of public outreach meetings held across the country, involving NGOs, local communities, and private sector representatives. Additionally, the NSTC Subcommittee on Disaster Reduction has engaged with the Task Force to help ensure that the disaster reduction perspective is incorporated into these strategies with the recognition that a number of aspects of mitigating disaster risks can also be effective for climate change adaptation.

**Context & Constraints:**

See above.

**Priority for action 4: Core indicator 2**

*Social development policies and plans are being implemented to reduce the vulnerability of populations most at risk.*

**Level of Progress achieved: 3**

Institutional commitment attained, but achievements are neither comprehensive nor substantial

**Key Questions and Means of Verification**

Do social safety nets exist to increase the resilience of risk prone households and communities? Yes

<b>Crop and property insurance</b>	Yes
<b>Temporary employment guarantee schemes</b>	No
<b>Conditional and unconditional cash transfers</b>	No
<b>Micro finance (savings, loans, etc.)</b>	No
<b>Micro insurance</b>	No

## Description:

The U.S. seeks to support the efforts of state and local governments to improve the disaster preparedness of vulnerable populations. For example, public preparedness materials have been produced in multiple languages that are widely spoken in specific areas as well as in Braille, then using the media that serves those populations to achieve effective distribution. NSF and other agencies support social science research to improve understanding of how to effectively communicate with vulnerable populations to achieve effective results. Also, in accordance with federal civil rights laws and regulations, FEMA provides guidance, tools, methods and strategies to integrate and coordinate emergency management inclusive of individuals with access and functional needs. Furthermore, the National Flood Insurance Program (NFIP) offers flood insurance to homeowners, renters, and business owners if their community participates in the NFIP. Participating communities agree to adopt and enforce ordinances that meet or exceed FEMA requirements to reduce the risk of flooding.

## Context & Constraints:

See above.

## Priority for action 4: Core indicator 3

*Economic and productive sectorial policies and plans have been implemented to reduce the vulnerability of economic activities*

### Level of Progress achieved: 3

Institutional commitment attained, but achievements are neither comprehensive nor substantial

## Key Questions and Means of Verification

Are the costs and benefits of DRR incorporated into the planning of public investment? Yes

**National and sectoral public investment systems incorporating DRR.**

Yes

**Please provide specific examples: e.g. public infrastructure, transport and communication, economic and productive assets**

**Investments in retrofitting infrastructures including schools and hospitals**

Yes

## Description:

The U.S. recognizes that business interruption is a major cause of losses in the wake of disaster events and that many small businesses that close their doors after a disaster will not reopen. A number of programs are in place to address the needs of the private sector and help build resilience to disasters. For example, Ready Business assists businesses in developing a preparedness program by providing tools to create a plan that addresses the impact of many hazards. The tools utilize an “all hazards approach” and follow the program elements within National Fire Protection Association 1600, Standard on Disaster/Emergency Management and Business Continuity Programs. Also, the U.S. Small Business Association (SBA) provides low interest disaster loans to homeowners, renters, businesses of all sizes and private, nonprofit organizations to repair or replace real estate, personal property, machinery & equipment, inventory and business assets that have been damaged or destroyed in a declared disaster.

## Context & Constraints:

See above.

## Priority for action 4: Core indicator 4

*Planning and management of human settlements incorporate disaster risk reduction elements, including enforcement of building codes.*

### Level of Progress achieved: 4

Substantial achievement attained but with recognized limitations in key aspects, such as financial resources and/ or operational capacities

## Key Questions and Means of Verification

Is there investment to reduce the risk of vulnerable urban settlements? Yes

<b>Investment in drainage infrastructure in flood prone areas</b>	Yes
<b>Slope stabilisation in landslide prone areas</b>	Yes
<b>Training of masons on safe construction technology</b>	Yes
<b>Provision of safe land and housing for low income households and communities</b>	No
<b>Risk sensitive regulation in land zoning and private real estate development</b>	Yes
<b>Regulated provision of land titling</b>	Yes

## Description:

Building codes represent a key component of disaster risk reduction in the U.S. Such codes are predominantly adopted, implemented, and enforced at the state and local levels.

FEMA manages several risk analysis programs to assess the impact of natural hazards that lead to effective strategies for reducing risk. FEMA has initiated Risk MAP to deliver quality data to increase public awareness and support community action that reduces risk to life and property. Through this program, FEMA expects to ensure: that 80 percent of the Nation's flood hazards data is current; that local officials are aware of risks from natural hazards; and that communities take action to reduce risk. These efforts simultaneously provide local officials, communities and citizens with the information they need to reduce the risk of loss of life and property from flooding. Participating communities in the National Flood Insurance Program (NFIP) agree to adopt and enforce ordinances that meet or exceed requirements to reduce the risk of flooding.

For more than a decade, the Federal Alliance for Safe Homes (FLASH) has served a critical role in educating Americans about the ways they can lessen the impacts of hurricanes, floods, fires, earthquakes, and other natural hazards on their homes. Over its history, FLASH has built a unique coalition of more than 100 organizations ranging from local governments to private sector enterprises, to the insurance industry and the federal government, all committed to reducing the damage from natural hazards.

## Context & Constraints:

See above.

## Priority for action 4: Core indicator 5

*Disaster risk reduction measures are integrated into post disaster recovery and rehabilitation processes*

### Level of Progress achieved: 4

Substantial achievement attained but with recognized limitations in key aspects, such as financial resources and/ or operational capacities

## Key Questions and Means of Verification

Do post-disaster programmes explicitly incorporate and budget for DRR for resilient recovery? Yes

<b>% of recovery and reconstruction funds assigned to DRR</b>	0
<b>DRR capacities of local authorities for response and recovery strengthened</b>	Yes
<b>Risk assessment undertaken in pre- and</b>	Yes

Measures taken to address gender based issues in recovery No

### Description:

The U.S. has a number of programs in place to incorporate hazard mitigation into post-disaster recovery processes in order to avoid repetitive losses and build more resilient communities. These programs include post-disaster mitigation grants, rebuilding requirements under the National Flood Insurance Program, and many others.

The National Disaster Recovery Framework is a guide that enables effective recovery support to disaster-impacted states, tribes, territorial and local jurisdictions. It provides a flexible structure that enables disaster recovery managers to operate in a unified and collaborative manner. It also focuses on how best to restore, redevelop and revitalize the health, social, economic, natural and environmental fabric of the community and build a more resilient Nation. A core principle is resilience and sustainability.

The Hazard Mitigation Grant Program, administered by the Federal Emergency Management Agency, provides grants to states and local governments to implement long-term hazard mitigation measures after a major disaster declaration to reduce the loss of life and property due to natural disasters and to enable mitigation measures to be implemented during the immediate recovery from a disaster.

Additionally, the Federal Emergency Management Agency and the American Planning Association, a preeminent professional association of community planners, launched an update and revision of the joint publication Planning for Post-Disaster Recovery and Reconstruction. This publication is one of the most widely used resources in the U.S. for integrating disaster risk reduction into both pre and post disaster development, planning, and programming at all levels.

### Context & Constraints:

See above.

## Priority for action 4: Core indicator 6

*Procedures are in place to assess the disaster risk impacts of major development projects, especially infrastructure.*

### Level of Progress achieved: 4

Substantial achievement attained but with recognized limitations in key aspects, such as financial resources and/ or operational capacities

## Key Questions and Means of Verification

Are the impacts of disaster risk that are created by major development projects assessed? Yes

Are cost/benefits of disaster risk taken into account in the design and operation of major development projects? Yes

<b>Impacts of disaster risk taken account in Environment Impact Assessment (EIA)</b>	Yes
<b>By national and sub-national authorities and institutions</b>	Yes
<b>By international development actors</b>	No

### Description:

The U.S. recognizes that protecting critical infrastructure systems or “lifelines” is essential to developing disaster resilient communities and is investing in the development of integrated models of interdependent systems in order to identify and address additional vulnerabilities.

The National Infrastructure Protection Plan (NIPP) describes an integrated, risk-informed approach used to: establish priorities, determine requirements, and guide resource support for the national critical infrastructure and key resources protection program; focus federal grant assistance to state, local, tribal, and territorial entities; and complement relevant private sector activities. The Department of Transportation (DOT) participates actively in the Transportation Systems Sector of the NIPP, coordinated by the U.S. Department of Homeland Security. DOT also requires that recipients of the Federal Railroad Administration’s development and improvement grants produce safety and security management plans.

The USACE also supports NIPP through its Critical Infrastructure Protection & Resilience (CIPR) Program. The objectives of the CIPR program include assessing and prioritizing Corps-managed critical infrastructure by implementing a portfolio-wide risk assessment framework. Through multi-jurisdictional, discussion-based exercises involving a wide array of public and private stakeholders, the Army Corps also conducts a collaborative dam safety exercise series to identify, analyze, assess, and enhance regional preparedness and disaster resilience.

By Executive Order of the President, Federal agencies are required to avoid, to the extent possible, the long and short-term adverse impacts associated with the occupancy and modification of floodplains, and to avoid direct and indirect support of floodplain development wherever there is a practicable alternative.

Furthermore, under the National Environmental Policy Act, the U.S. Environmental Protection Agency (EPA) conducts interagency reviews of all federally-funded construction projects that may have a significant impact on the environment.

## Context & Constraints:

See above.

# Section 7: Priority for action 5

*Strengthen disaster preparedness for effective response at all levels*

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## Priority for action 5: Core indicator 1

*Strong policy, technical and institutional capacities and mechanisms for disaster risk management, with a disaster risk reduction perspective are in place.*

Level of Progress achieved: 4

Substantial achievement attained but with recognized limitations in key aspects, such as financial resources and/ or operational capacities

### Key Questions and Means of Verification

Are there national programmes or policies for disaster preparedness, contingency planning and response? Yes

<b>DRR incorporated in these programmes and policies</b>	Yes
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<b>The institutional mechanisms exist for the rapid mobilisation of resources in a disaster, utilising civil society and the private sector; in addition to public sector support.</b>	Yes
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Are there national programmes or policies to make schools and health facilities safe in emergencies? Yes

<b>Policies and programmes for school and hospital safety</b>	Yes
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<b>Training and mock drills in school and hospitals for emergency preparedness</b>	Yes
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Are future disaster risks anticipated through scenario development and aligned preparedness planning? Yes

<b>Potential risk scenarios are developed taking into account climate change projections</b>	Yes
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<b>Preparedness plans are regularly updated based on future risk scenarios</b>	Yes
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## Description:

The U.S. has a well-developed emergency management system that operates at all levels of government. Work continues to integrate disaster risk reduction into institutions at the local, state and federal levels as well as in the private sector. At the federal level, the Hospital Preparedness Program, administered by the U.S. Department of Health and Human Services, provides funding for activities that include, but are not limited to, exercising and improving preparedness plans for all-hazards including pandemic influenza, increasing the ability of healthcare systems to provide needed beds, engaging with other responders through interoperable communication systems, tracking bed and resource availability using electronic systems, protecting their healthcare workers with proper equipment, decontaminating patients, enabling partnerships/coalitions, educating and training their healthcare workers, enhancing fatality management and healthcare system evacuation/shelter in place plans, and coordinating regional exercises.

Most training, drills, and programs for school safety are coordinated at the state and local levels. The U.S. Department of Education coordinates the Readiness and Emergency Management for Schools grant program supporting improvements in emergency management plans at the district and school-building levels.

In 2011, regional catastrophic preparedness grant funding provided by the Federal Emergency Management Agency helped support the coordination of regional all-hazard planning for catastrophic events, including planning utilizing potential risk scenarios.

## Context & Constraints:

See above.

## Priority for action 5: Core indicator 2

*Disaster preparedness plans and contingency plans are in place at all administrative levels, and regular training drills and rehearsals are held to test and develop disaster response programmes.*

### Level of Progress achieved: 4

Substantial achievement attained but with recognized limitations in key aspects, such as financial resources and/ or operational capacities

## Key Questions and Means of Verification

Are the contingency plans, procedures and resources in place to deal with a major disaster? Yes

**Plans and programmes are developed with gender sensitivities**

No

**Risk management/contingency plans for continued basic service delivery**

Yes

<b>Operations and communications centre</b>	Yes
<b>Search and rescue teams</b>	Yes
<b>Stockpiles of relief supplies</b>	Yes
<b>Shelters</b>	Yes
<b>Secure medical facilities</b>	Yes
<b>Dedicated provision for disabled and elderly in relief, shelter and emergency medical facilities</b>	Yes
<b>Businesses are a proactive partner in planning and delivery of response</b>	Yes

**Description:**

Working with state and local emergency managers and other government officials, the Department of Homeland Security (DHS) is making substantial investments in disaster response exercises that test plans, such as the National Response Framework, and procedures that have been developed to deal with a major disaster. The National Response Framework and its annexes, address emergency support functions such as communications, mass care, public health and medical services, and private sector coordination, among others.

Coordinated by FEMA, National Level Exercises are conducted annually to provide the U.S. government, at all levels, exercise opportunities to prepare for catastrophic crises ranging from terrorism to natural disasters. The purpose of these exercises is to prepare and coordinate a multiple-jurisdictional integrated response to a national catastrophic event. The National Level Exercise for 2011 simulated a catastrophic major earthquake in the central United States region of the New Madrid Seismic Zone.

Great ShakeOut earthquake drills help people in homes, schools, and organizations practice how to be safe during big earthquakes, and provide an opportunity for everyone to improve their overall preparedness. Over 10.9 million people have registered to participate in ShakeOut drills in 2012. Other examples of preparedness initiatives are the National Weather Service’s StormReady and TsunamiReady programs.

The U.S. Environmental Protection Agency’s Water Security Division works with local water utilities, municipalities and numerous national-scale water-related organizations such as the American Water Works Association, the Association of Metropolitan Water Agencies, and the Association of State Drinking Water Administrators. Work with utilities and municipalities includes seminars to train water utilities in various aspects of disaster response, help in developing standards for vulnerability assessments, business continuity planning processes, financial stability analysis, and emergency response networks that allow utilities to help each other after natural disasters.

USGS supports the Science Application for Risk Reduction (SAFRR) project to develop

disaster scenarios with partner agencies that engage all sectors of society in response exercises in order to promote awareness, preparedness, and resilience. SAFRR created the ShakeOut, which continues as an annual community based drill in 22 states and has been adopted by several other countries. Over 11 million participated in 2011 drills and in 2012 is estimated to exceed 15 million participants.

**Context & Constraints:**

See above.

**Priority for action 5: Core indicator 3**

*Financial reserves and contingency mechanisms are in place to support effective response and recovery when required.*

**Level of Progress achieved: 4**

Substantial achievement attained but with recognized limitations in key aspects, such as financial resources and/ or operational capacities

**Key Questions and Means of Verification**

Are financial arrangements in place to deal with major disaster? Yes

<b>National contingency and calamity funds</b>	Yes
<b>The reduction of future risk is considered in the use of calamity funds</b>	Yes
<b>Insurance and reinsurance facilities</b>	Yes
<b>Catastrophe bonds and other capital market mechanisms</b>	Yes

**Description:**

The U.S. has made significant investments in the wake of natural disasters. In addition to government policies, the private sector has made substantial investments through insurance, re-insurance, catastrophe bonds, and other market mechanisms.

The Robert T. Stafford Disaster Relief and Emergency Assistance Act (Public Law 100-707), signed into law on November 23, 1988, constitutes the statutory authority for most federal disaster response activities, including providing federal assistance programs for both public and private losses sustained in disasters. In another example, in 2011, the National Flood Insurance Program, which helps provide a means for property owners to financially protect themselves, paid \$1,847,882 USD in flood insurance policy claims to property owners.

## Context & Constraints:

See above.

## Priority for action 5: Core indicator 4

*Procedures are in place to exchange relevant information during hazard events and disasters, and to undertake post-event reviews*

Level of Progress achieved: 4

Substantial achievement attained but with recognized limitations in key aspects, such as financial resources and/ or operational capacities

### Key Questions and Means of Verification

Has an agreed method and procedure been adopted to assess damage, loss and needs when disasters occur? Yes

<b>Damage and loss assessment methodologies and capacities available</b>	Yes
<b>Post-disaster need assessment methodologies</b>	Yes
<b>Post-disaster needs assessment methodologies include guidance on gender aspects</b>	No
<b>Identified and trained human resources</b>	Yes

### Description:

The U.S. recognizes the need to learn from disasters and has made substantial investments in post-event reviews and information gathering both for events at home and abroad.

The U.S. National Institute of Standards and Technology (NIST) has established a Disaster and Failure Studies repository for disaster and failure events to identify common vulnerabilities to which hazard mitigation strategies and technologies can be developed to reduce risk. As part of this program, NIST post-disaster studies provide a unique environment to help determine the causes of failure and valuable data that will help design professionals improve the resiliency of infrastructure and to improve disaster risk reduction through changes in design, materials and building codes and standards.

The Department of the Interior's Natural Resource Damage Assessment and Restoration (NRDAR) Program is charge to assess and promote restoration of natural resources injured specifically by oil spills or hazardous substance release. U.S. Government programs also exist to restore natural resources damaged by fires, floods, or other natural disasters.

Preliminary Damage Assessments (PDAs) conducted by the Federal Emergency Management Agency and state emergency managers are joint assessments used to determine the magnitude and impact of an event's damage. A joint team will usually visit local communities and view damage first-hand to assess the scope of damage and estimate repair costs. The states use the results of the PDA to determine if the situation is beyond the combined capabilities of state and local resources and to verify the need for supplemental federal assistance. The PDA also identifies any unmet needs that may require immediate attention.

To facilitate coordinated interagency flood response, regional interagency Fusion Teams have been established to interact during periods when data and information exchange are critical to the agencies' missions. Following the 2011 Mississippi River basin floods, the NWS, USACE, and USGS conducted separate reviews of their respective response and recovery activities. Plans are being developed to compare those results at a joint meeting in federal fiscal year 2013.

### Context & Constraints:

See above.

## Section 8: Drivers of Progress

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### **a) Multi-hazard integrated approach to disaster risk reduction and development**

Levels of Reliance:

Significant and ongoing reliance: significant ongoing efforts to actualize commitments with coherent strategy in place; identified and engaged stakeholders.

Do studies/ reports/ atlases on multi-hazard analyses exist in the country/ for the sub region?: Yes

If yes, are these being applied to development planning/ informing policy?: -- not complete --

Description (Please provide evidence of where, how and who):

The implementation plans for meeting the Grand Challenges for Disaster Reduction developed by the National Science and Technology Council's Subcommittee on Disaster Reduction (SDR) are an all-hazard investment framework focused on the application of science and technology to enhance community resilience to disasters. Individual communities and regions have developed scenarios that address the impacts of multiple hazards in order to improve preparedness and reduce vulnerability. This framework, along with products such as Risk MAP and the Hazards US – Multi-Hazard (HAZUS-MH) software package, are being used to advance a multi-hazard, integrated approach to disaster risk reduction for infrastructure and community development and land use planning.

Science-based scenarios are being use to make disaster risk reduction relevant to communities. WaterAlert and its available subscriber-established threshold exceedance reports are available and are being promoted as a tool for the public to use to create flood risk awareness.

### **b) Gender perspectives on risk reduction and recovery adopted and institutionalized**

Levels of Reliance:

Partial/ some reliance: Full acknowledgement of the issue; strategy/ framework for action developed to address it; application still not fully implemented across policy and practice; complete buy in not achieved from key stakeholders.

Is gender disaggregated data available and being applied to decision-making for risk reduction and recovery activities?: Yes

Do gender concerns inform policy and programme conceptualisation and implementation in a meaningful and appropriate way?: Yes

Description (Please provide evidence of where, how and who):

The U.S. has made investments in social science research through NSF in order to better understand issues associated with gender in disaster mitigation, response and recovery.

## **c) Capacities for risk reduction and recovery identified and strengthened**

Levels of Reliance:

Significant and ongoing reliance: significant ongoing efforts to actualize commitments with coherent strategy in place; identified and engaged stakeholders.

Do responsible designated agencies, institutions and offices at the local level have capacities for the enforcement of risk reduction regulations?: Yes

Are local institutions, village committees, communities, volunteers or urban resident welfare associations properly trained for response?: Yes

Description (Please provide evidence of where, how and who):

The U.S. has made significant investments in building capacity at all levels of government and in the private sector for disaster risk reduction. Additional investments are needed to further improve the Nation's resilience to all hazards. One step in this direction, as previously noted, is FEMA's "Whole Community" planning initiative. The initiative seeks to identify non-traditional resources and partnerships critical to stabilizing and recovering from catastrophic disasters. The approach to planning under the Whole Community initiative breaks the paradigm of 'nested plans' created for each level of government and enables planning for truly coordinated assistance to disaster survivors. FEMA is building on the strengths of local communities and citizens and integrating the public as a critical resource and part of the solution. The faith based communities, fraternal and trade associations, and the broader marketplace are all viewed as important to this collaboration and are included in the Whole Community planning efforts. While the impact of catastrophes will certainly be felt at the federal and state levels, the impacts are most devastating at the community level. Therefore, the overall catastrophic disaster management strategy is being designed to quickly stabilize communities and support their timely recovery and return to self-sufficiency.

## **d) Human security and social equity approaches integrated into disaster risk reduction and recovery activities**

Levels of Reliance:

Partial/ some reliance: Full acknowledgement of the issue; strategy/ framework for action developed to address it; application still not fully implemented across policy and practice; complete buy in not achieved from key stakeholders.

Do programmes take account of socio-environmental risks to the most vulnerable and marginalised groups?: Yes

Are appropriate social protection measures / safety nets that safeguard against their specific socioeconomic and political vulnerabilities being adequately implemented?: Yes

Description (Please provide evidence of where, how and who):

The U.S. is committed to an all-hazards approach that seeks to improve the overall resilience of the nation. The U.S. recognizes the special challenges facing vulnerable population and supports programs to address the needs of those populations.

## **e) Engagement and partnerships with non-governmental actors; civil society, private sector, amongst others, have been fostered at all levels**

Levels of Reliance:

Significant and ongoing reliance: significant ongoing efforts to actualize commitments with coherent strategy in place; identified and engaged stakeholders.

Are there identified means and sources to convey local and community experience or traditional knowledge in disaster risk reduction?: Yes

If so, are they being integrated within local, sub-national and national disaster risk reduction plans and activities in a meaningful way?: Yes

## Description (Please provide evidence of where, how and who):

As previously noted, is FEMA's "Whole Community" planning initiative. The initiative seeks to identify non-traditional resources and partnerships critical to stabilizing and recovering from catastrophic disasters. The approach to planning under the Whole Community initiative breaks the paradigm of 'nested plans' created for each level of government and enables planning for truly coordinated assistance to disaster survivors. FEMA is building on the strengths of local communities and citizens and integrating the public as a critical resource and part of the solution. The faith based communities, fraternal and trade associations, and the broader marketplace are all viewed as important to this collaboration and are included in the Whole Community planning efforts. While the impact of catastrophes will certainly be felt at the federal and state levels, the impacts are most devastating at the community level. Therefore, the overall catastrophic disaster management strategy is being designed to quickly stabilize communities and support their timely recovery and return to self-sufficiency.

Also, through the World Road Association (PIARC), the Federal Highway Administration is leading a working group to address risk associated with natural disasters, climate change and man-made disasters, and security threats'. A report is being prepared to covering approaches for evaluating risks associated with all hazards, practical techniques for managing risks associated with natural disasters, managing climate change risks and the adaptation of transportation infrastructure, and a risk management toolbox—a database of policy, techniques and operational (maintenance) technologies tools for road risk management.

## Contextual Drivers of Progress

### Levels of Reliance:

Partial/ some reliance: Full acknowledgement of the issue; strategy/ framework for action developed to address it; application still not fully implemented across policy and practice; complete buy in not achieved from key stakeholders.

## Description (Please provide evidence of where, how and who):

See above.

# Section 9: Future Outlook

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## Future Outlook Area 1

*The more effective integration of disaster risk considerations into sustainable development policies, planning and programming at all levels, with a special emphasis on disaster prevention, mitigation, preparedness and vulnerability reduction.*

### Overall Challenges:

The U.S. recognizes that disaster resilience is an important aspect of the overall economic health of the Nation and sustainability of its communities.

### Future Outlook Statement:

Community resilience indicators are being explored to help drive more effective integration of disaster risk considerations into sustainable development policies, planning and programming. The ever-growing rate at which data can be shared among disaster stakeholders, the emphasis within government on transparency, and growing interest by the public – in part stimulated by efforts at multi-sectoral engagement and by attractive web-based information products - all contribute to building resilience.

## Future Outlook Area 2

*The development and strengthening of institutions, mechanisms and capacities at all levels, in particular at the community level, that can systematically contribute to building resilience to hazards.*

### Overall Challenges:

As previously noted, is FEMA's "Whole Community" planning initiative. The initiative seeks to identify non-traditional resources and partnerships critical to stabilizing and recovering from catastrophic disasters. The approach to planning under the Whole Community initiative breaks the paradigm of 'nested plans' created for each level of government and enables planning for truly coordinated assistance to disaster survivors. FEMA is building on the strengths of local communities and citizens and integrating the public as a critical resource and part of the solution. The faith based communities, fraternal and trade associations, and the broader marketplace are all viewed as important to this collaboration and are included in the Whole Community planning efforts. While the impact of catastrophes will certainly be felt at the federal and state levels, the impacts are most devastating at the community level. Therefore, the overall catastrophic disaster management strategy is being designed to quickly stabilize communities and support their timely recovery and return to self-sufficiency.

### Future Outlook Statement:

FEMA is building on the strengths of local communities and citizens and integrating the public as a critical resource and part of the solution. The faith based communities, fraternal and trade associations, and the broader marketplace are all viewed as important to this collaboration and are included in the Whole Community planning efforts.

## Future Outlook Area 3

*The systematic incorporation of risk reduction approaches into the design and implementation of emergency preparedness, response and recovery programmes in the reconstruction of affected communities.*

### Overall Challenges:

The National Science and Technology Council's interagency Subcommittee on Disaster Reduction (SDR) has identified a set of Grand Challenges for Disaster Reduction that if met will bolster the capacity of the U.S. to prevent and recover from disasters, thus fulfilling the Nation's commitment to reducing the impacts of hazards and enhancing the safety and economic well-being of every individual and community.

### Future Outlook Statement:

Building on past successes in decision support services, the National Weather Service is launching community-based pilot projects across the country, ranging in focus from emergency response to integrated environmental services, to enhance the nation's preparedness. NOAA's Office of Oceanic and Atmospheric Research and National Environmental Satellite, Data, and Information Service are moving new science and technology into weather service operations that will improve forecasts, increase lead time and ultimately increase weather-readiness. Building a Weather-Ready Nation starts with these internal actions, but requires the action of a vast nationwide network of partners including other government agencies and emergency managers, researchers, the media, insurance industry, non-profits, the private sector, the Weather Enterprise and more.

## Future Outlook Area 4

*The United Nations General Assembly Resolution 66/199, requested the development of a post-2015 framework for disaster risk reduction. A first outline will be developed for the next Global Platform in 2013, and a draft should be finalized towards the end of 2014 to be ready for consideration and adoption at the World Conference on Disaster Reduction in 2015*

Please identify what you would consider to be the single most important element of the post-2015 Framework on Disaster Risk Reduction (2015-2025).:

Improving disaster resilience and reducing disaster risk are important drivers of the overall economic health of a nation and the sustainability of its communities.

## Section 10: Stakeholders

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Organizations, departments, and institutions that have contributed to the report

Organization	Type	Focal Point
Federal Emergency Management Agency (FEMA)	Gov	Candice Abinanti
National Oceanic and Atmospheric Administration (NOAA) and the National Weather Service (NWS)	Gov	Dan Beardsley, Courtney Draggon, David Green
National Science and Technology Council (NSTC) Subcommittee on Disaster Reduction (SDR)	Gov	David Applegate, Bret Schothorst, Sezin Tokar, Dennis Wenger
U.S. Department of State	Gov	Elizabeth Campbell
U.S. Geological Survey (USGS)	Gov	David Applegate, John Eichelberger