

**Use of Space Technology in Disaster
Management in light of Hyogo
Framework for Action 2005-2015:
Building resilience of nations and
communities to disasters**

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The HFA in Brief

- 1. Main Outcome of the World Conference on Disaster Reduction**
January 2005, Kobe, Hyogo, Japan was *The Hyogo Framework for Action 2005-2015: Building the Resilience of Nations and Communities to Disasters – Recognized global guide to facilitate effective implementation of DRR at int'l, regional, national and local levels next 10 years*
- 2. Political commitment of 168 Governments to implement HFA,**
allocate necessary resources and set up the appropriate institutional and legislative frameworks to facilitate its implementation
- 3. Importance of political commitment to engage action and necessary reforms – but DRR is everybody's business - DRR in daily life and work, especially of communities**
- 4. Expected Outcome: The substantive reduction in losses in lives and in the social, economic and environmental assets of communities and countries.**

The HFA in Brief

5. Strategic Goals to attain the expected outcome

- a) *A more effective integration of disaster risk into sustainable development policies, planning and programming at all levels with emphasis on prevention, mitigation, preparedness, and vulnerability reduction.*
- b) *The development and strengthening of institutions, mechanisms and capacities at all levels, especially community level, to build resilience to hazards.*
- c) *The systematic incorporation of risk reduction measures into the design and implementation of emergency preparedness, response and recovery programmes in the reconstruction of affected communities.*



Kosi Floods (Sept 2008)
 -2.7 million affected
 -Crops in 175,000 ha destroyed

HFA – Priority Actions

Priority Actions: The WCDR and members countries adopted five priority actions to guide the implementation of HFA and translate political commitment into action

Priority 1: *Ensure that disaster risk reduction is a national and local priority with a strong institutional basis for implementation.*

Priority 2: *Identify, assess and monitor disaster risks and enhance early warning.*

Priority 3: *Use knowledge, innovation and education to build a culture of safety and resilience at all level.*

Priority 4: *Reduce the underlying risk factors.*

Priority 5: *Strengthen disaster preparedness for effective response at all levels.*

HFA – Priority Actions and relevance of space based information

Priority 1: Ensure that disaster risk reduction is a national and local priority with a strong institutional basis for implementation.

Countries that develop policy, legislative and institutional frameworks for disaster risk reduction and that are able to develop and track progress through specific and measurable indicators.

- 1.1 National platforms consider use of and access to **space based information** to strengthen national integrated disaster risk reduction mechanisms
- 1.2. Update disaster management policies and plans with focus on **use of space based information**
- 1.3 Integrate risk reduction, as appropriate, into development policies and planning
- 1.4 Assess existing human resource capacities and allocate resources for the development of disaster risk management policies, programmes, laws and regulations on disaster risk reduction in all relevant sectors
- 1.5 Community participation: De-centralised planning using space based information (**NRSC Initiative**)

HFA – Priority Actions and relevance of space based information

Priority 2: Identify, assess and monitor disaster risks and enhance early warning.

The starting point for reducing disaster risk and for promoting a culture of disaster resilience lies in the knowledge of the hazards and the physical, social, economic and environmental vulnerabilities to disasters that most societies face.... followed by action taken on the basis of that knowledge.

- 2.1 **National and local risk assessment:** Elaboration of risk mapping and hazard monitoring system, **use space based information to assess the impact of disasters on social, economic and environmental conditions**
- 2.2. **Early warning:** **Integrate geo-spatial information with statistical information** on disaster occurrence, impacts and losses through international, regional, national and local mechanisms and use it for early warning
- 2.3 **Capacity:** Support the improvement of scientific and technical methods and capacities for risk assessment, monitoring and early warning, through research, partnerships, training and technical capacity building. **Promote applications of space-based earth observations, space technologies, GIS, hazard modelling and prediction, weather and climate modelling and forecasting, communication tools**
- 2.4 **Regional risks:** Use **remote sensing to monitor trans-boundary hazards**
- 2.5 Promote scientific and technological research and development, **including space technology applications for DRR**

HFA – Priority Actions and relevance of space based information

Priority 3: Use knowledge, innovation and education to build a culture of safety and resilience at all level.

Disasters can be substantially reduced if people are well informed and motivated towards a culture of disaster prevention and resilience, which in turn requires the collection, compilation and dissemination of relevant knowledge and information on hazards, vulnerabilities and capacities.

- 3.1 Information management and exchange: Strengthen networks amongst providers of geospatial information, use available expertise to develop risk reduction plans. Promote use, application, affordability of recent information, communication and **space-based technologies, as well as earth observations**, to support disaster risk reduction, particularly for the sharing and dissemination of information among different categories of users.
- 3.2 Education and training: Incorporate **use of space- based information** in training and learning programmes in disaster risk reduction targetted at development planners, emergency managers and local government officials.

HFA – Priority Actions and relevance of space based information

Priority 4: Reduce the underlying risk factors.

Disaster risks related to changing social, economic, environmental conditions and land use, and the impact of hazards associated with geological events, weather, water, climate variability and climate change, are addressed in sector **development planning** and programmes as well as in post-disaster situation.

- 4.1 **Environmental and natural resources management:** integrated environmental and natural resource management approaches that incorporate disaster risk reduction (e.g. integrated flood management, management of fragile ecosystems)
- 4.2 **Social and economic development practices:**
 - Food security and remote sensing
 - Epidemics and space based information
 - Post-disaster recovery and rehabilitation process
- 4.3 **Land use planning :**
 - Mainstream disaster risk considerations into planning procedures for urban planning, rural development planning and major infrastructure development.
 - Remote sensing provides crucial information for land use planning.

HFA – Priority Actions and relevance of space based information

Priority 5: Strengthen disaster preparedness for effective response at all levels.

At times of disaster, impacts and losses can be substantially reduced if authorities, individuals and communities in hazard-prone areas are well prepared and ready to act and are equipped with knowledge and capacities for effective disaster management.

- **Availability of space based information** (satellite images, maps etc.) for early warning, risk reduction and response
- Arrangements for **acquisition** (contacts, payment arrangements etc.) and use of space based information
- Mechanism to **collect coordinates** of affected area
- **Geo-spatial data covering socio-economic** aspects to understand impact of disaster
- **Use inputs from space based information to update** disaster preparedness and contingency plans and policies at all levels