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United Nations Platform for Space-based Information for Disaster Management and Emergency Response

Is space technology contributing enough to DRR – Challenges with respect to implementation of HFA and HFA 2

Shirish Ravan

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UN Office for Outer Space Affairs

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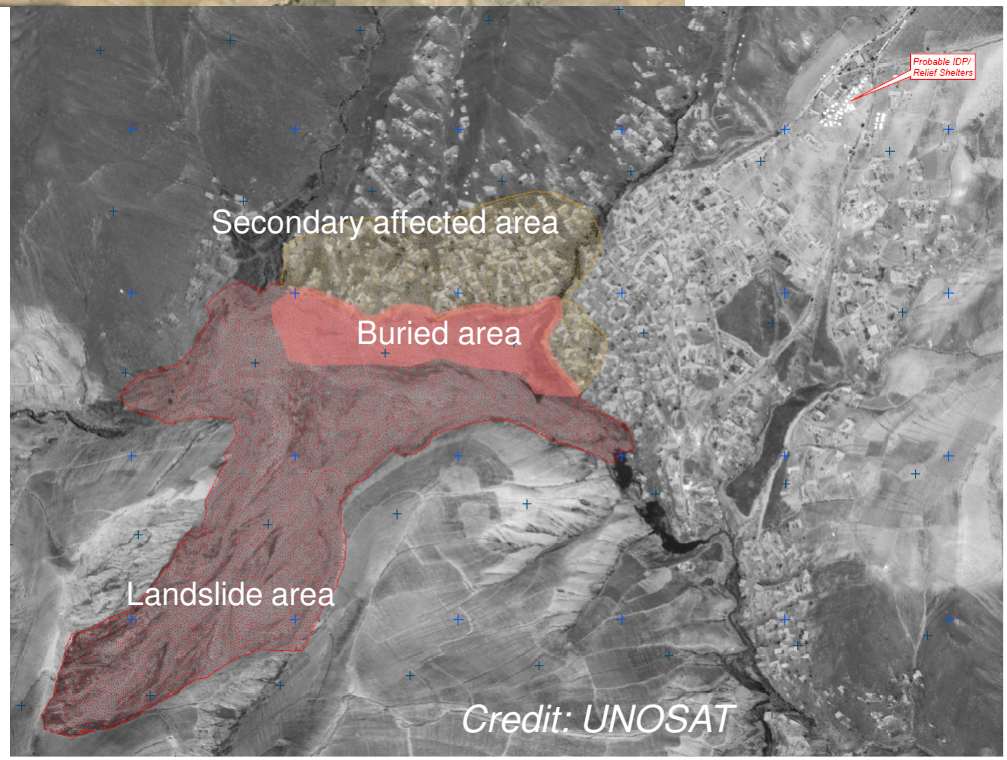
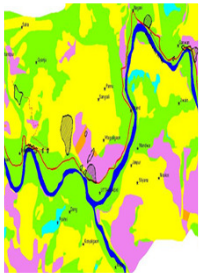
United Nations
Disaster Manag

Ab Barek, Afghanistan Landslide
2 May 2014
Over 2,500 victims

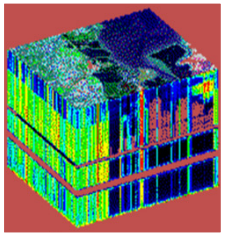
1. **Critical role of space based information in DRM?**
2. **Is it contributing enough in decision making in DRR?**
3. **What's the gap?**
4. **What needs to be done?**



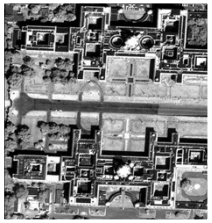
Earth Observation from Space



Spatially extensive mapping

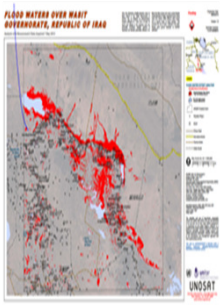


Beyond 'human eye' capability

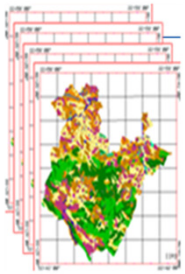


Localised event detection

Access difficult or dangerous sites



Near real time response



Geo-referenced and calibrated

More than 40 nations with imaging satellites -160 sensors

‘Space’ in Disaster Risk Management

Global scale

Local scale

Life Saving Products

Mitigation & Preparedness Planning

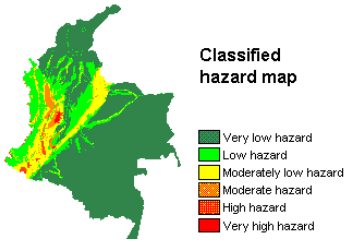
- Vulnerability and risk assessment
- Modelling impact
- Early warning

Emergency Response

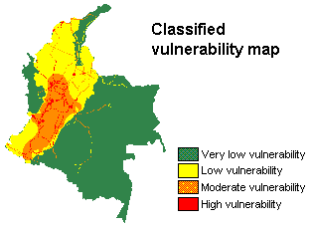
- Specific event
- Rapid provision
- Map information
- Support crisis management

Recovery & Rehabilitation

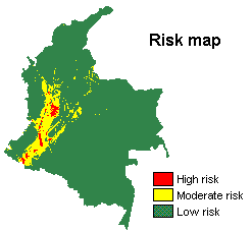
- Situation maps
- Time series
- Monitoring



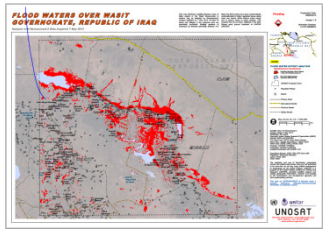
Hazard maps



Vulnerability maps



Risk maps



Response maps

HFA – Priority Actions

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.

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HFA Priority 1

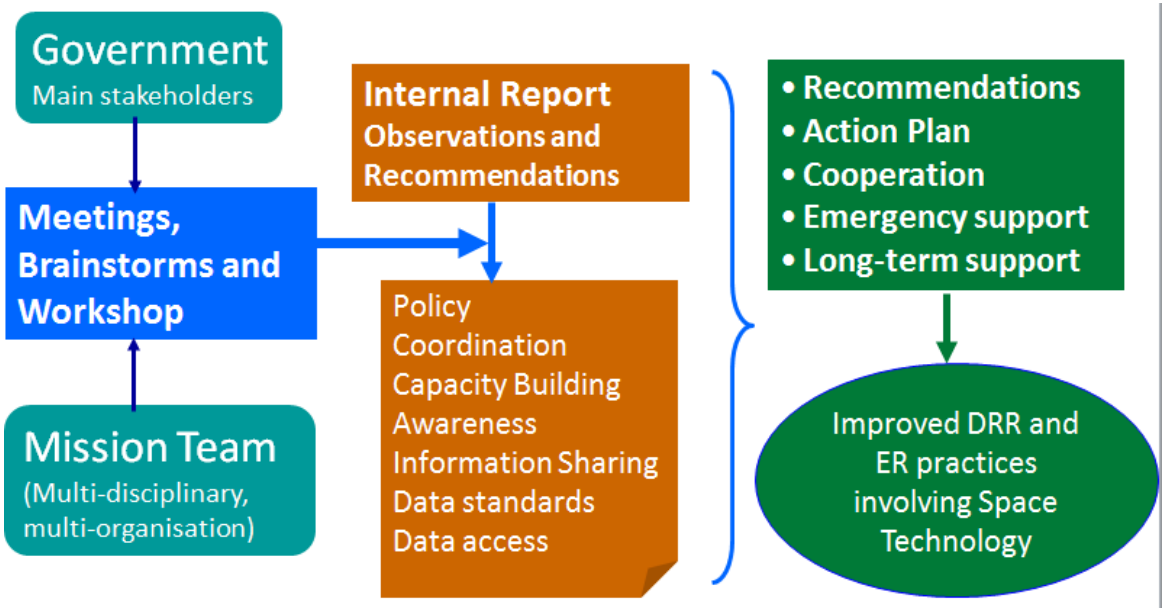
Disaster risk reduction - national and local priority with a strong institutional basis for implementation.





UN-SPIDER Contribution

UN-SPIDER Technical Advisory Support & Missions



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UN-SPIDER Technical Advisory Support

ASIA

1. Bangladesh
2. India
3. Indonesia
4. Myanmar
5. Sri Lanka
6. Vietnam

Pacific

1. Fiji
2. Samoa
3. Solomon Islands
4. Tonga

Support offered to more than 25 countries

Africa

1. Burkina Faso
2. Burundi
3. Cameroon
4. Cape Verde
5. Chad
6. Congo
7. DR Congo
8. Gabon
9. Ghana
10. Kenya
11. Malawi
12. Mozambique
13. Nigeria
14. Sudan

Challenges observed through UN-SPIDER Technical Advisory Missions

- No mention of **geospatial information in DM plans**, policies, law
  - leverage on potential of geospatial data
  - enforce mandatory use of geospatial information for DRR
- Lack of **data sharing policies** for DRR purpose
  - Restrictions on maps and images
  - Institutional coordination
- **State of geospatial information** (satellite images, baseline, thematic and operational datasets)

  Case 1: Does not exist with authorities

  Case 2: Exists, but not complete and well structured

  Case 3: Exists but not accessible to other agencies

Challenges observed through UN-SPIDER Technical Advisory Missions

- **Access** to high resolution and all weather data
  - Budget provision to buy post disaster data
  - Access to existing data archives
- **Capacity** to use available space based information products
  - Relevant expertise in Disaster Management agencies
  - Use this information for hazard and risk mapping
- Lack of **information preparedness** for effective response
  - Geospatial Information scattered in different ministries poses challenge
  - Data interoperability, SDI framework needed

HFA Priority 2

HFA Priority 2 & 3

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

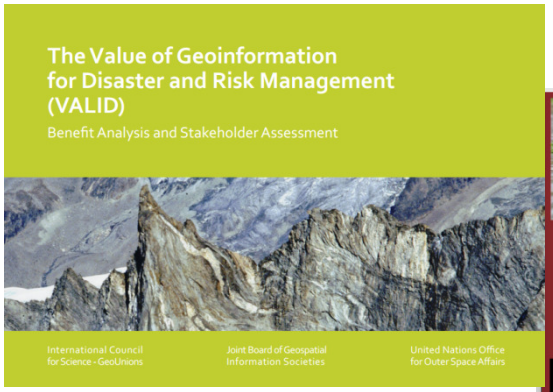
Use knowledge, innovation and education to build a culture of safety and resilience

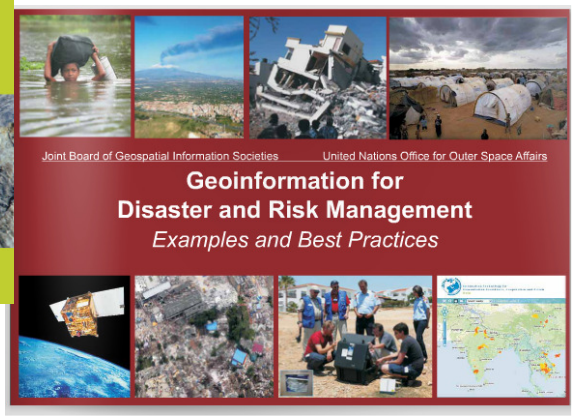




UN-SPIDER Contribution

- Follow-up of Advisory Mission recommendations
- Capacity building
- Knowledge management (www.un-spider.org)





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UN-SPIDER Capacity Building Efforts

2013

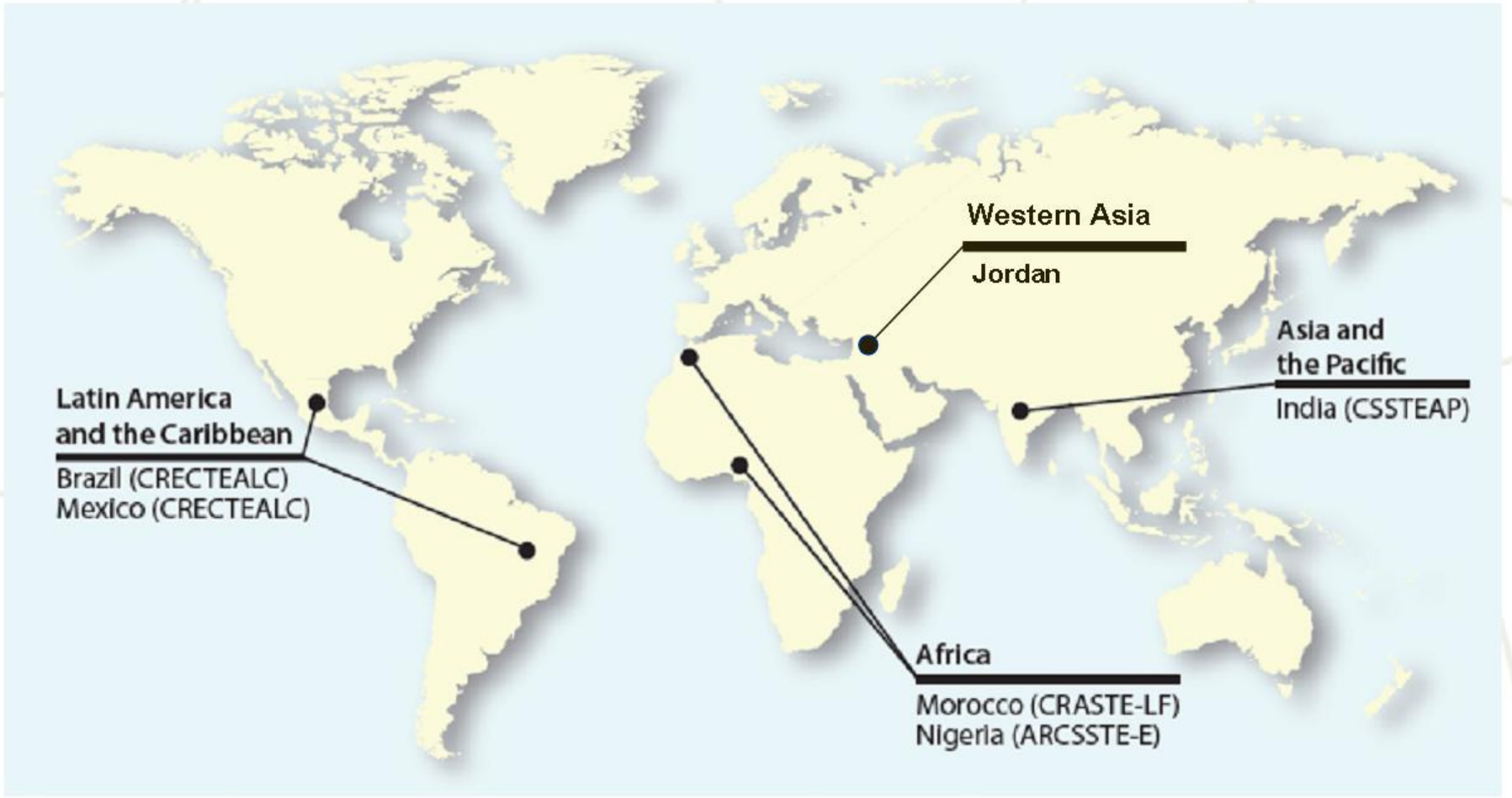
Sri Lanka
Myanmar
Bangladesh
Mozambique
Cameroon
China & India (International)

2014

ICIMOD member states (International)
Bangladesh
Vietnam
Sri Lanka
China (International)

…long way to go

Centres for Space Science and Technology Education (affiliated to the United Nations)



Regional Centres offers training in wide range of space applications

HFA Priority 4

HFA Priority 4

Reduce the underlying risk factors

UN-SPIDER Contribution

UNOOSA covers wide range of thematic areas of space applications

- Disaster Management
- Natural Resources Management
- Environmental Monitoring (Climate Change)
- Tele-health/Tele-medicine
- Global Navigation Satellite Systems
- COSPAS-SARSAT
- Space Law
- Socio-Economic Benefit

HFA Priority 5

HFA Priority 5

Strengthen disaster preparedness for effective response at all levels.





UN-SPIDER Contribution

Partner Organisations

Regional Support Offices

AHA CENTRE ASEAN Coordinating Centre for Humanitarian Assistance on disaster management | LAPAN | UNITED NATIONS Office for Outer Space Affairs | UNITED NATIONS ESCAP Economic and Social Commission for Asia and the Pacific | Australian Aid

Workshop Report

ASEAN WORKSHOP on "Development of Mechanisms for Acquisition and Utilization of Space-Based Information during Emergency Response"

Organized by the

Indonesian National Institute of Aeronautics and Space (LAPAN)

In collaboration with

United Nations Platform for Space-based Information for Disaster management and Emergency Response (UN-SPIDER)

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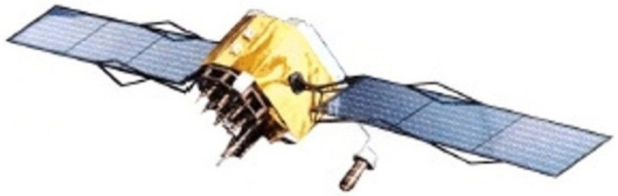
…Towards HFA 2

Pre-Conference Event	**Investing in Geospatial and space-based information to support DRR & CCA investment**
Schedule	09:00 to 12:00 on 22 June 2014
Theme to be addressed	Subtheme 2: Improving Public Investments for Disaster and Climate Risk Management to Protect and Sustain Development Gains
Organizers	**UN-SPIDER (UNOOSA)** **GFDRR (World Bank)** Co-leads: Asian Disaster Reduction Centre of China and National Disaster Reduction Centre of China

3rd World Conference on Disaster Risk Reduction 2015, Sendai Japan

Interventions to promote effective use of space based and geospatial information in DRR

Space technology in DRR & climate change



Trans-boundary Rivers

- Flood early warning
- Flood plain management
- Water management

Shared Coastline

- Cyclone/tsunami early warning
- Threats due to Sea level rise

Shared Eco-systems

- Integrated ecosystem management
- Sustained bioresource utilization

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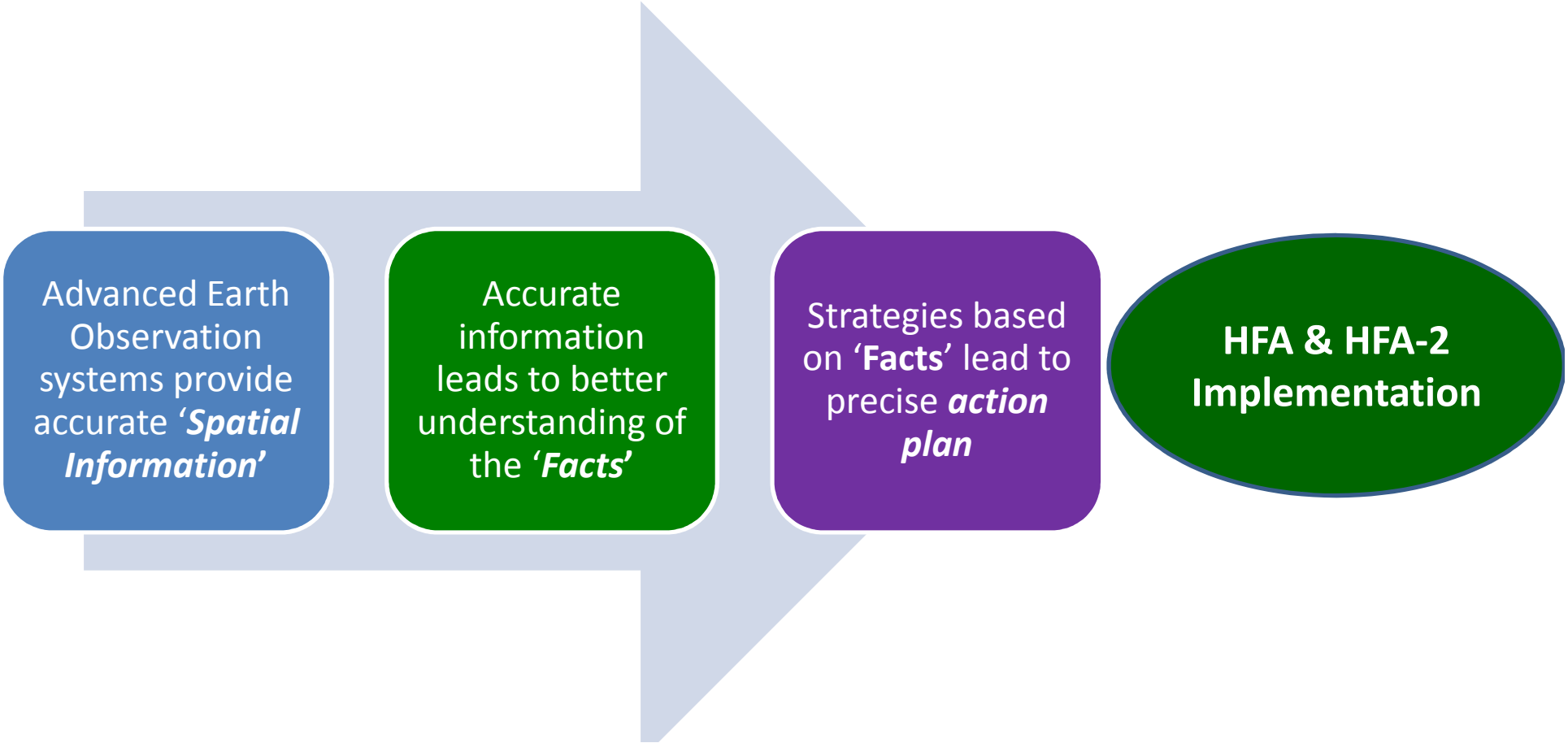

'Space' will play critical role in HFA & HFA 2 Implementation

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Announcement

4TH Annual UN-SPIDER Conference in Beijing
United Nations International Conference on Space-based Technologies for Disaster Management - "Multi-hazard Disaster Risk Assessment"

Venue: Beijing, China (Grand Gongda Jianguo Hotel)
Dates: 15-17 September 2014

October 2013 – 3rd UN-SPIDER Beijing Conference

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United Nations Platform for Space-based Information for Disaster Management and Emergency Response

Bringing benefits of the space to humanity

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