

17/07/2012

Concepts of Geo-referenced Information for disaster risk management system in Asia-Pacific region

Nitin Kumar Tripathi, PhD
IDD Consultant, ESCAP
Coordinator, Remote Sensing and GIS FoS,
Asian Institute of Technology
Thailand nitinkt@ait.asia

1

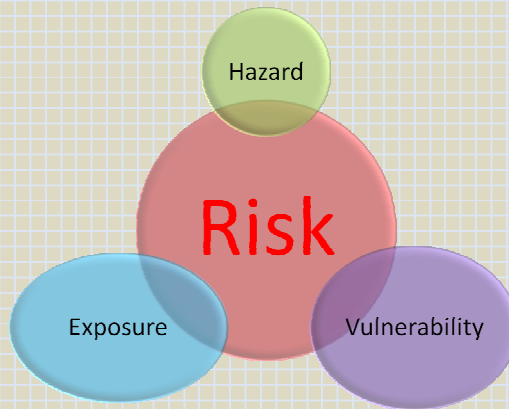
Content

- Disaster Risk Management
- Disasters in Asia and Pacific
- Need of Geospatial Data for DRM
- Database Issues
- Need for Georeferencing
- Need for Georeferenced System
- GeoPortals for DRM
- Q/A

17/07/2012

2

Mapping Disaster Risk Areas



Disaster risk map
mapping of hazard,
exposure and
vulnerability
and finally combining
- integrated overlay

• Hazard, exposure and vulnerability **differ from region to region**

- topography,
- socio-economic condition and
- environmental/ climatic variables

• **Disaster Risk Reduction (DRR)** - the policy objectives of reducing risk

• **Disaster Risk Management (DRM)** - the actions needed to achieve those objectives

Disasters in Asia and Pacific

- Of the total natural disasters in the world, the Asia and the Pacific region included 90% of those, 65% of death, and 38% of economic damage (2001 -2010)
- UNDP
 - 24 out of 49 LDCs, most of which are in Asia and the Pacific, face high levels of disaster risk
- The vulnerability of economically challenged Least Developed Countries (LDCs), Land-locked Developing Countries (LLDCs) and Small Island Developing States (SIDS) is a crucial issue due to
 - lack of Disaster Preparedness Mechanism and
 - gaps in baseline geospatial data

17/07/2012

5

Hyogo Framework for Action

- 168 countries *during World Conf. on Disaster Reduction in Kobe, Japan in January 2005*
- Hyogo Framework for Action (HFA) - targeted to reduce disaster losses – lives, social, economic, and environmental assets by 2015
- Substantial progress but there is a lot still to be achieved in next 4 years
- Basic Needs for DRR
 - a national facility for georeferenced maps

17/07/2012

6

Need of Geospatial Data

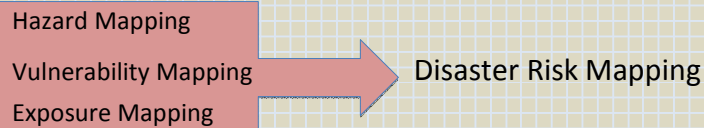
- HFA Priority 2 states
 - *identify, assess and monitor disaster risks and enhance early warning*
- These objectives need **satellite data**
 - Various sensors and various space platforms
 - Different resolution
 - Different scene geometry
- **Necessity to make them compatible** for overlay for analysis and finding the desired information on extent and magnitude of hazards, producing maps of exposure, vulnerability and risk for mitigation
- **Possible only by georeferencing**

17/07/2012

7

Geospatial and Statistical Data Needs for DRM

Data requirements for different disasters differ to conduct:



- Post Disaster Damage and Loss Assessment (DaLA)
- Preparedness & response (Evacuation Routes and Shelters)


17/07/2012

8


UNITED NATIONS ESCAP Economic and Social Commission for Asia and the Pacific

GEO-REF Information Sharing Platform for Disaster Management

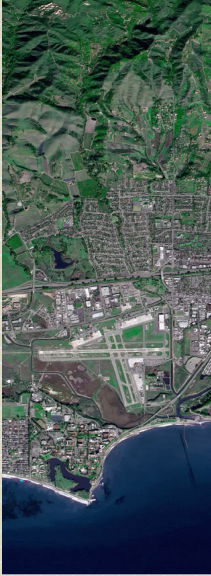
Various Formats & Data Types:




Maps




Socio-economic data



Satellite Image



Weather



Global Positioning System


Station	High	Low	Low Temp	High Wind	Low Wind	Baromet	Comments
001	1000	1000	1000	1000	1000	1000	1000
002	1000	1000	1000	1000	1000	1000	1000
003	1000	1000	1000	1000	1000	1000	1000
004	1000	1000	1000	1000	1000	1000	1000
005	1000	1000	1000	1000	1000	1000	1000
006	1000	1000	1000	1000	1000	1000	1000
007	1000	1000	1000	1000	1000	1000	1000
008	1000	1000	1000	1000	1000	1000	1000
009	1000	1000	1000	1000	1000	1000	1000
010	1000	1000	1000	1000	1000	1000	1000
011	1000	1000	1000	1000	1000	1000	1000
012	1000	1000	1000	1000	1000	1000	1000
013	1000	1000	1000	1000	1000	1000	1000
014	1000	1000	1000	1000	1000	1000	1000
015	1000	1000	1000	1000	1000	1000	1000
016	1000	1000	1000	1000	1000	1000	1000
017	1000	1000	1000	1000	1000	1000	1000
018	1000	1000	1000	1000	1000	1000	1000
019	1000	1000	1000	1000	1000	1000	1000
020	1000	1000	1000	1000	1000	1000	1000

Tabular Records


UNITED NATIONS ESCAP Economic and Social Commission for Asia and the Pacific

GEO-REF Information Sharing Platform for Disaster Management


Landsat Bands



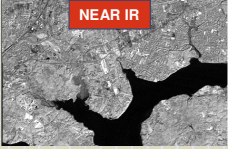
Band 1




Band 2




Band 3



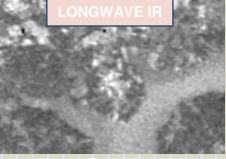
Band 4



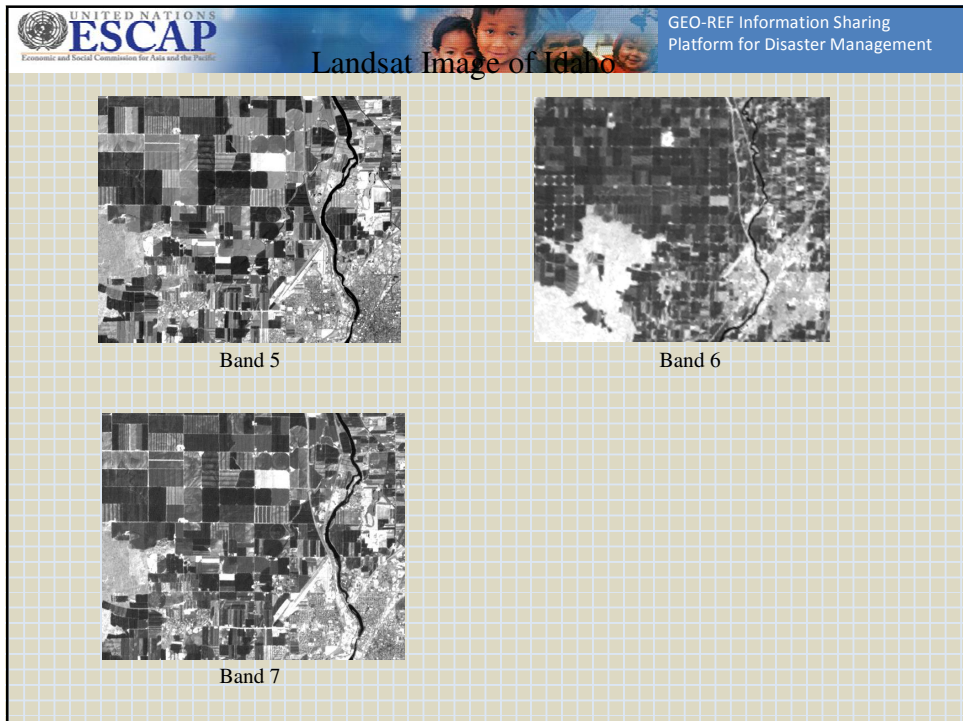
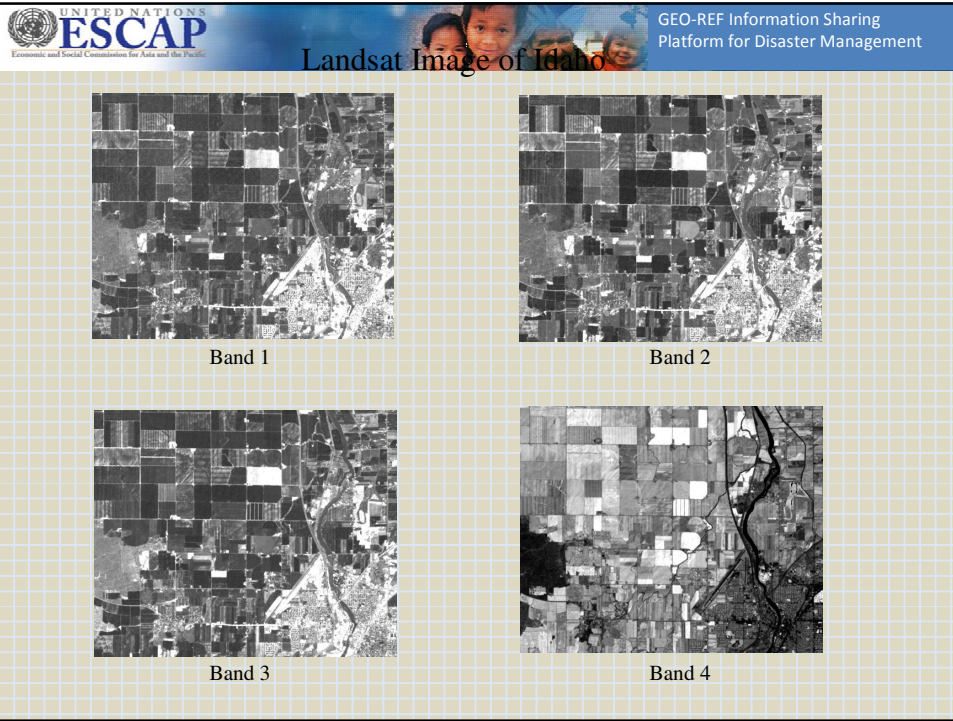
Band 5

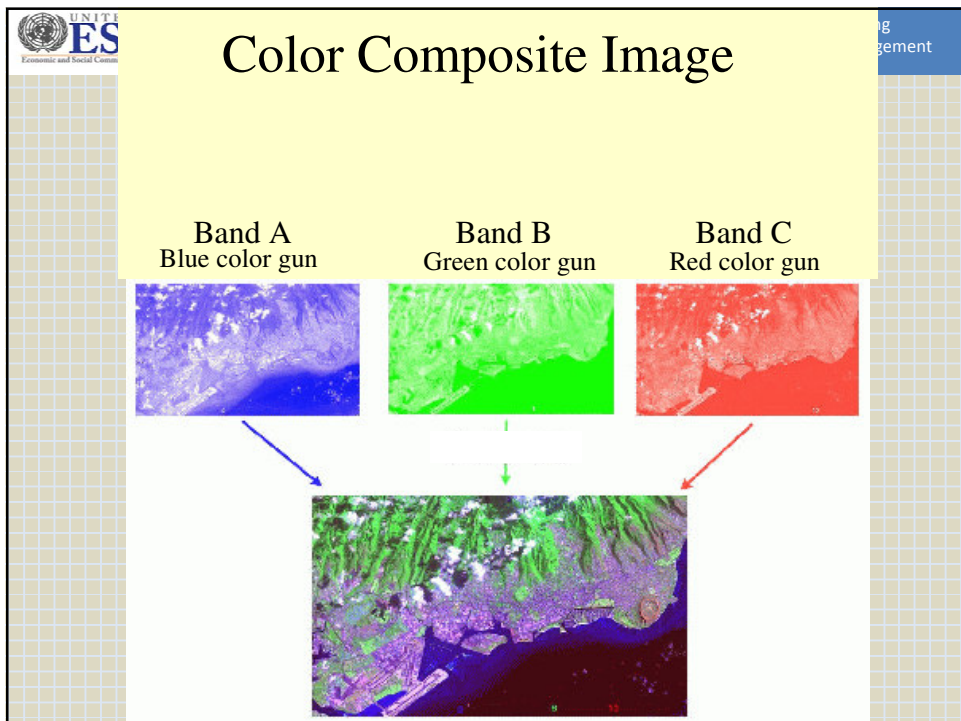
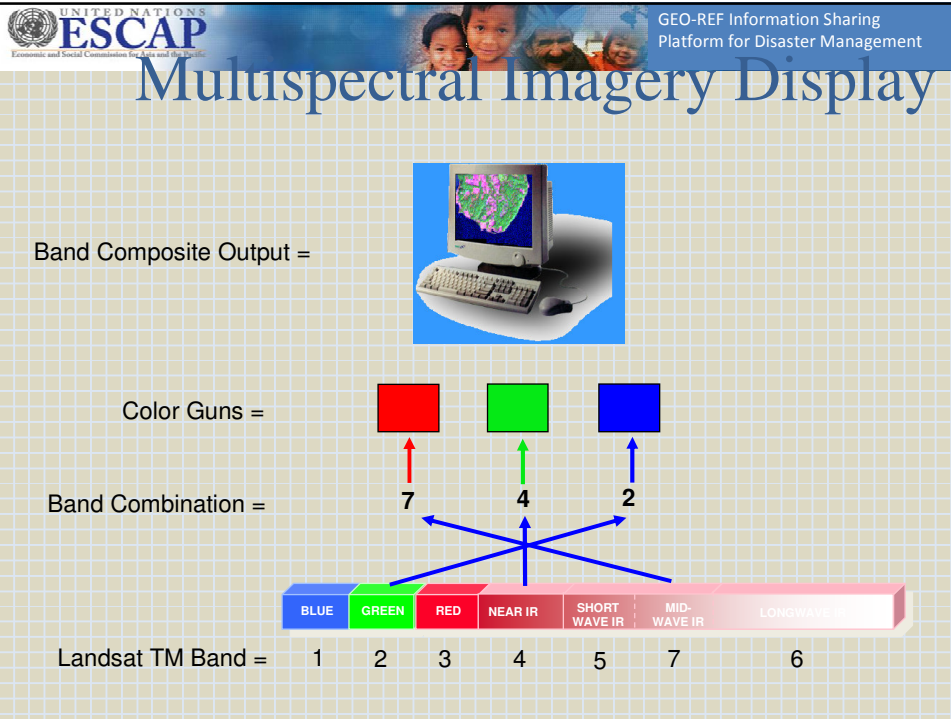



Band 7



Band 6








 UNITED NATIONS
ESCAP
 Economic and Social Commission for Asia and the Pacific

GEO-REF Information Sharing
 Platform for Disaster Management

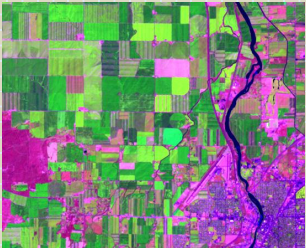
Landsat TM Image of Idaho




321



432



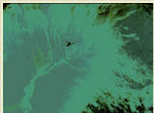
543


 UNITED NATIONS
ESCAP
 Economic and Social Commission for Asia and the Pacific


GEO-REF Information Sharing
 Platform for Disaster Management

Selected satellite remote sensing systems

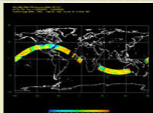
NASA Visible Earth: [long list](#)




ASTER (Advanced Spaceborne Thermal Emission and Reflection Radiometer)







AVHRR (Advanced Very High Resolution Radiometer)



CERES (Clouds and the Earth's Radiant Energy System)



DMSP/OLS (Defense Meteorological Satellite Program/Operational Linescan System)

预览已结束，完整报告链接和二维码如下：

https://www.yunbaogao.cn/report/index/report?reportId=5_7516

