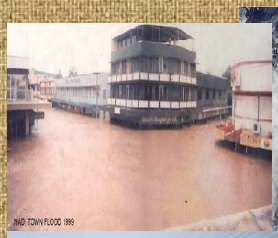
NGI's Role in Disaster Management – Fiji Scenario

Fiji Delegation Presentation
Samuela Naicegucegu

Source: internet

Land Mass – 18,400 km² made of some 300 islands
Population - 837,271 in 2007 census
Economy – GDP (per capita) in 2010- 6182.8

Disasters in Fiji





Impact of Cyclones, Flooding and Coastal erosion

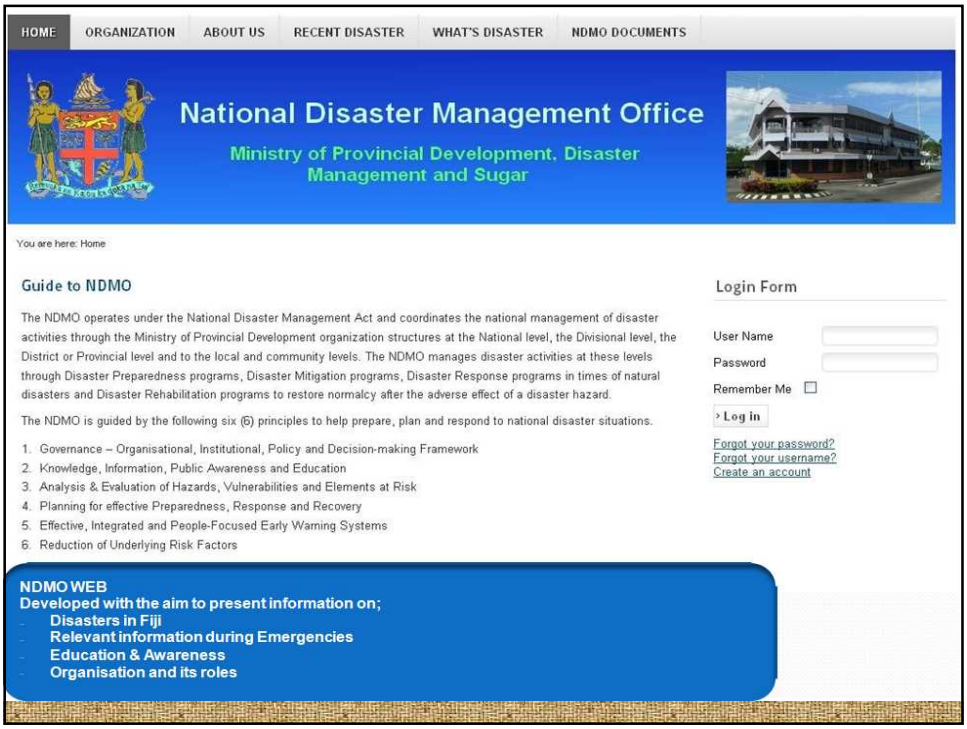
Perception

Equipment

People mentality

Statistics

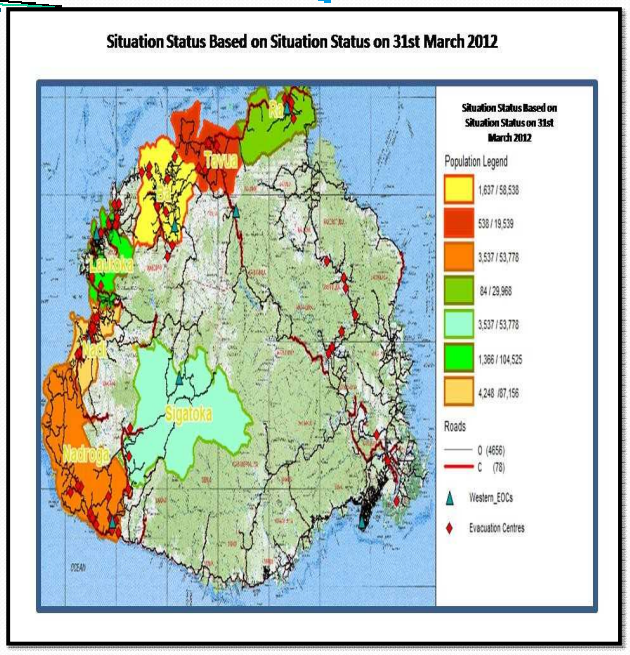
- Since 1980
  - 36 recorded disasters
  - 221 fatalities
  - cost over FD$1bn
  - (source: NDMO)
- In 2013 alone , damages incurred by one cyclone (TC Evans) - FD$94.9m



NDMO GIS

Development of The NDMO GIS Project;

- **Establishment of Baseline Information (FLIS, SOPAC)**
- **Evacuation Centres 815 Locations submitted from the 4 Divisions**
- **Vulnerable Areas 45% due to unavailability of data from received from the Divisions**
- **Emergency Mapping – Critical Areas / Infrastructure to assist with the Planning Team** [*using MapInfo Software*]



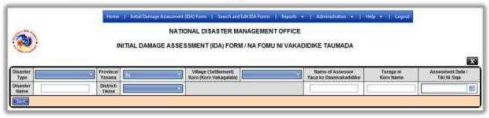
Online Initial Damage Assessment

Type in the ***Username*** and ***Password*** that has been supplied to you in the space labeled.

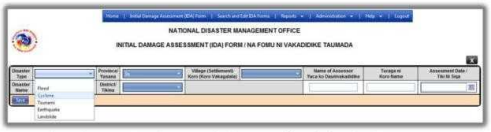
**Using this tool has enabled the NDMO to access the required information more efficiently and accurately compared to before e.g.; waiting for Divisions for final submission (time consuming)*

MAIN FORM

When user's login they will come to the main form page below:



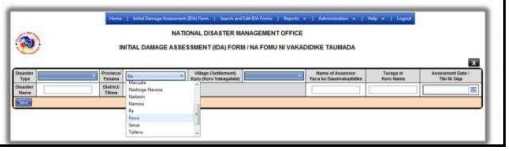
This is the common part of both IDA Form 1 and IDA Form 2. To enter data into the forms please follow the steps below:



1. Choose the appropriate ***Disaster Type*** that has occurred from the dropdown list
2. Then fill in the ***Disaster Name*** that identifies the particular disaster.

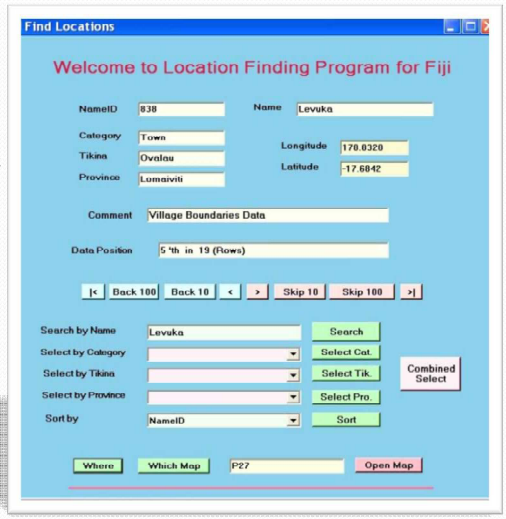
Note: Always use the unique name that is given to the disaster, this is to ensure the reports generated are consistent

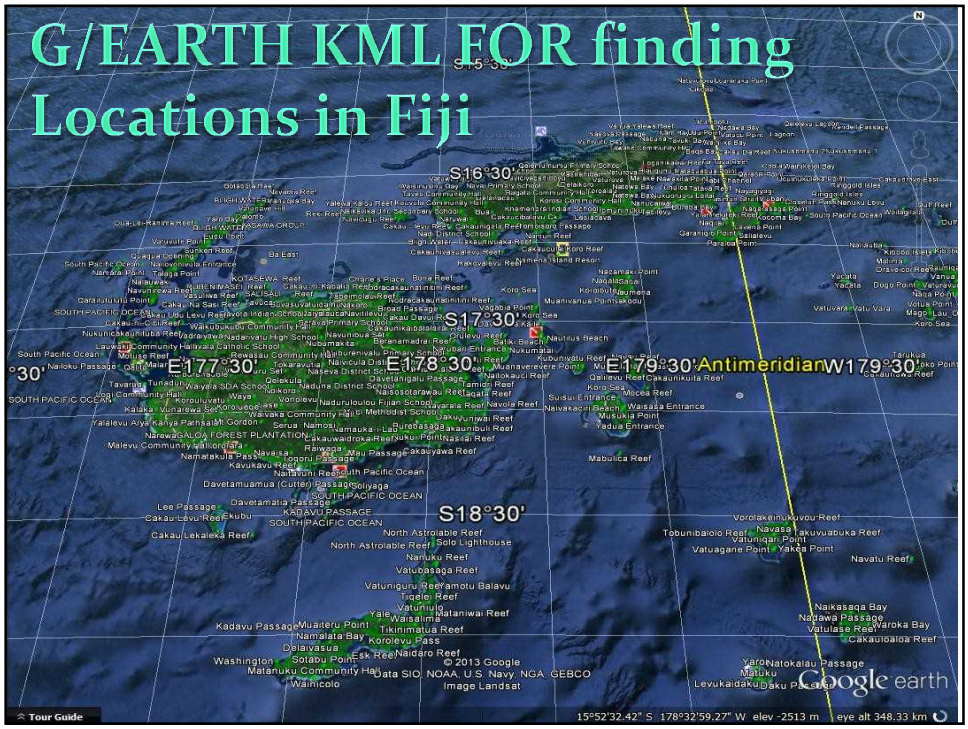
3. Next we fill in the location data, to pick the particular ***Village*** the IDA form belongs to we first pick the ***Province*** from the dropdown list:



Location Finding Tool (SQL Database)

- Developme
  Location re Programme
  easier acces finding plac
  within Fiji- e
  geographic location
  Eg: Locating
  Evacuation Ce



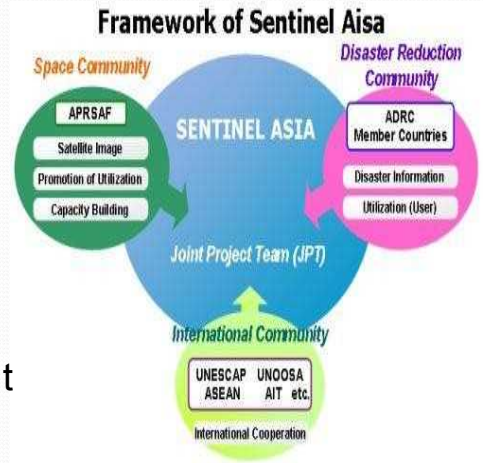


Emergency Managers Weather Information Network [EMWIN]

- A system used to provide timely dissemination of warnings, watches, graphics, and other hyd meteorological products to emergency managers
- Within the satellite footprint, t EMWIN data stream can be received directly from the satelli using a small receiving dish, an inexpensive receiver and down converter and a PC for data management and display.

SENTINEL ASIA [JAXA SATELITE SYSTEM]

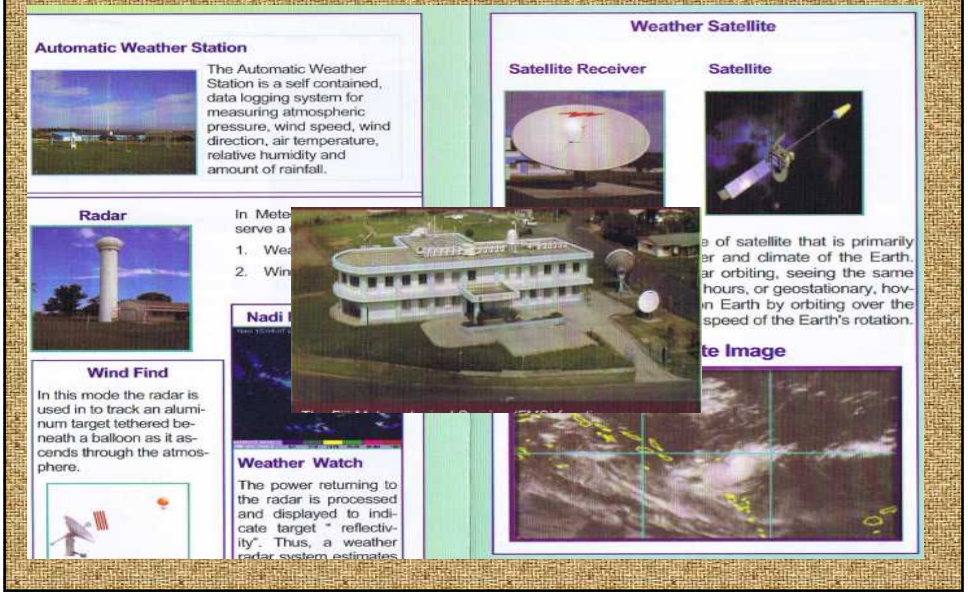
- Sentinel Asia is a voluntar basis initiative led by the APRSAF (Asia-Pacific Regional Space Agency Forum) to support disaster management activity in th Asia-Pacific region by applying the WEB-GIS technology and



SENTINEL ASIA CONT...

- Upon The Government's request Jaxa will provide ;
  - Satellite imagery (and data permitted by data provider) and value-added images with extraction of stricken area, etc.
  - On-site digital camera images
  - Wildfire hotspot information and data
  - Rainfall (short-term and long-term) information and data
  - Meteorological satellite imagery and data

Fiji Meteorological Services



Weather Stations

Synoptic Station

- Network of stations distributed all over the islands
- Compiled reports every 3 hours in an international numerical code

Climatological Stations

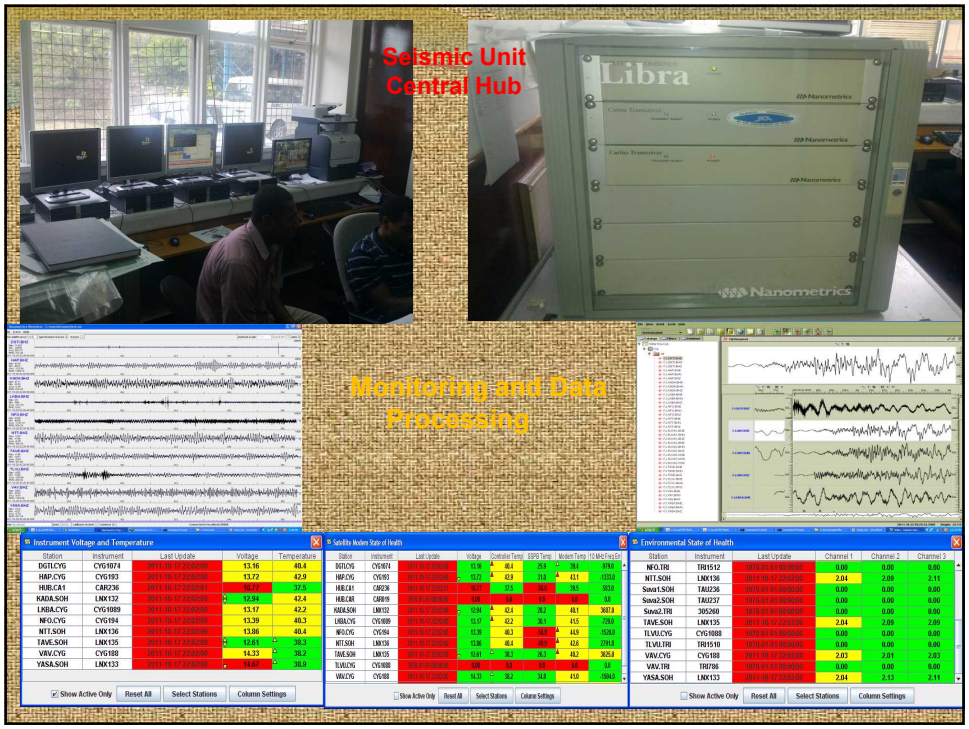
- More detailed information on temperatures, humidity, rainfall, radiation, sunshine hour and wind
- Stations in outer islands run by govt. officials on the spot

Automatic Weather Stations (AWS)

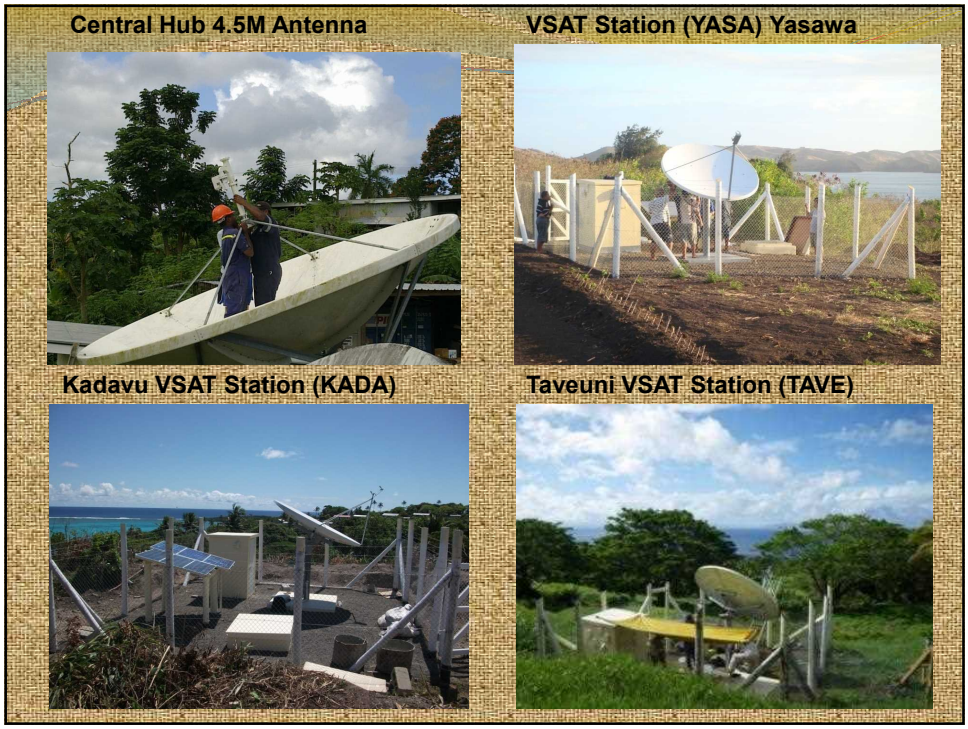
- Automatically transmits or records observations obtained by measuring instruments
- data includes date, time of observation, station indicators, wind speed, direction, temperature, relative humidity, MSL pressure and rainfall

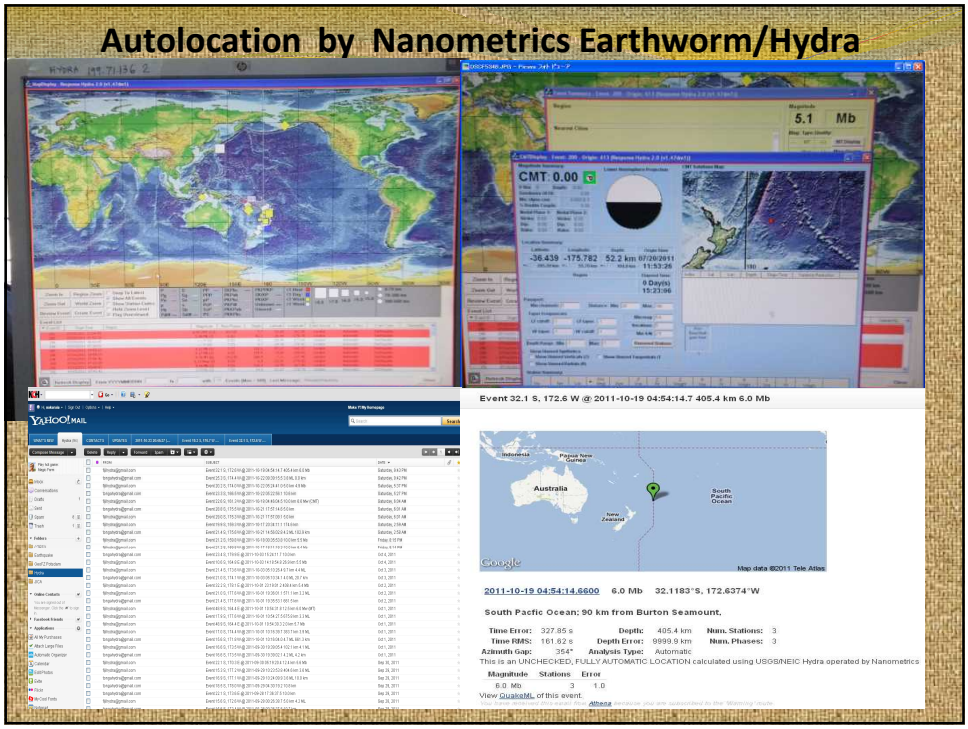
Rainfall Stations

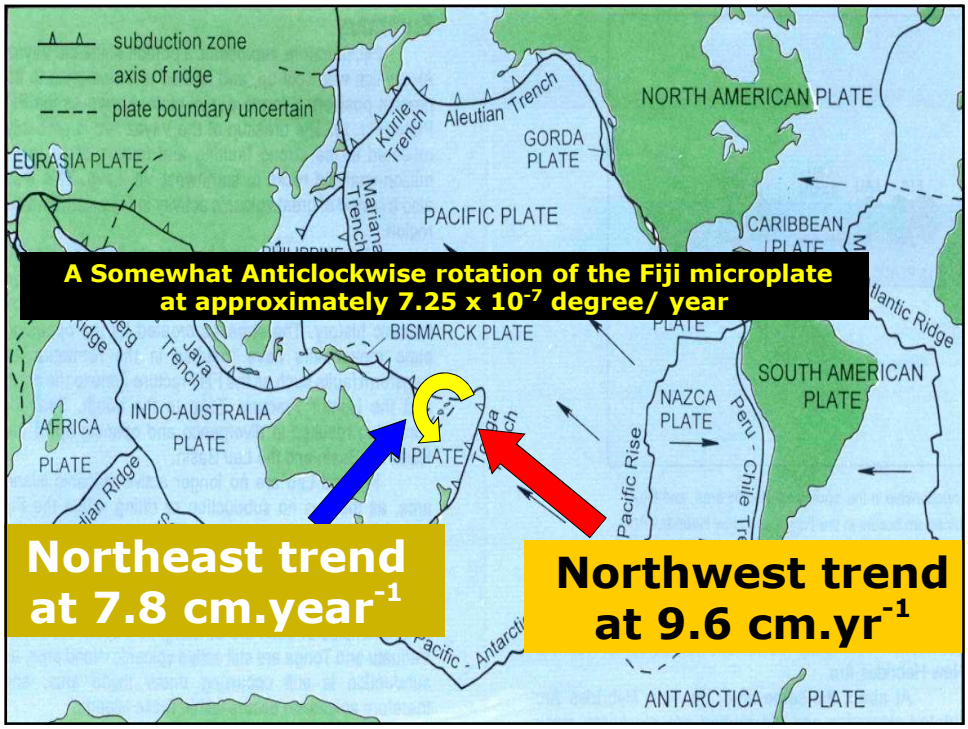
- Provide rainfall data that are measured everyday
- Outer stations are manned by designated officials residing closer to them.

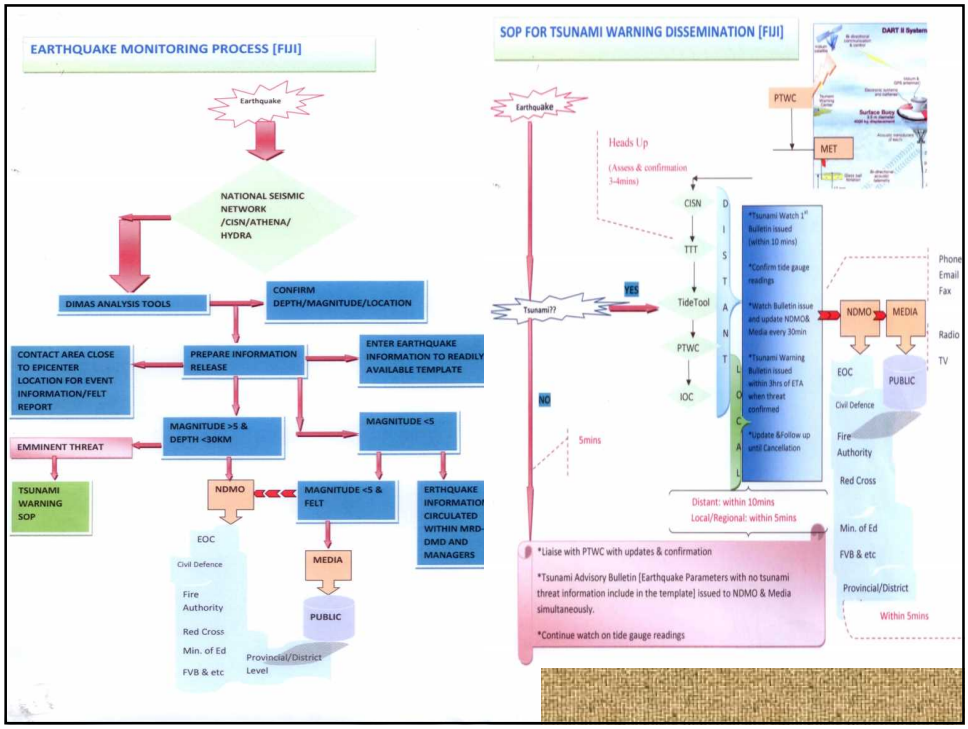



FIJI VSAT SEISMIC NETWORK 2011
Dogotuki VSAT Station
Yasawa VSAT Station
Taveuni VSAT Station
Tailevu VSAT Station
Suva Hub
Lakeba VSAT Station
Kadavu VSAT Station
JICA
NIED


Central Hub 4.5M Antenna
VSAT Station (YASA) Yasawa
Kadavu VSAT Station (KADA)
Taveuni VSAT Station (TAVE)


Autolocation by Nanometrics Earthworm/Hydra
Event 32.1 S, 172.6 W @ 2011-10-19 04:54:14.7 405.4 km 6.0 Mb
2011-10-19 04:54:14.6600 6.0 Mb 32.1183°S, 172.6374°W
South Pacific Ocean; 90 km from Burton Seamount.

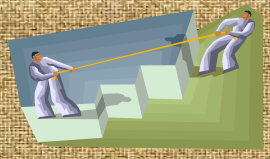

subduction zone
axis of ridge
plate boundary uncertain
EURASIA PLATE
Kurile Trench
Aleutian Trench
NORTH AMERICAN PLATE
GORDA PLATE
PACIFIC PLATE
CARIBBEAN PLATE
A Somewhat Anticlockwise rotation of the Fiji microplate at approximately 7.25 x 10-7 degree/ year
BISMARCK PLATE
Java Trench
AFRICA PLATE
INDO-AUSTRALIA PLATE
NAZCA PLATE
SOUTH AMERICAN PLATE
Pacific Rise
Peru - Chile Tr
Northeast trend at 7.8 cm.year-1
Northwest trend at 9.6 cm.yr-1
ANTARCTICA PLATE



Ethics in Data for Disaster Management?

No CLEAR Principles on How we producing data

Information evolved in fragmented and inconsistent manners reflecting fragmented institutional arrangements



Data and Information for institutional use only

WHEN

- Perhaps HOW data was produced is no that important- Is it available?

SPEED

- How soon can data be captured and allow for dissemination?

ACCURACY

- Is the data reliable and will it help?

EFFECTIVENES & EFFICIENCIES

Roles of Disaster Management Agencies

Spatial literacy is important

Adaptation to technology and the recognition of the need to evolve

National Disaster Agencies as manager of relevant data sets

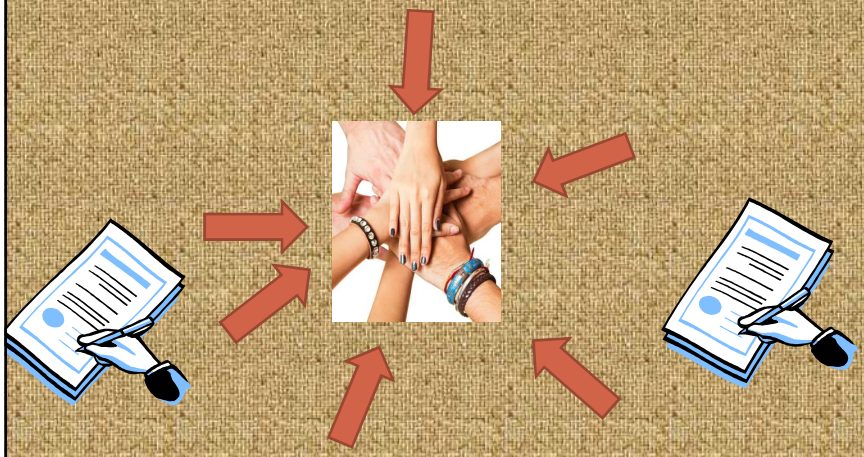
GEOSPATIAL INFORMATION

Agencies to Authority

encourage the involvement of the general public

being trusted sources of data/information

Centralization of Activities



Assurance of Data Quality

creation of common spatial units pertaining to standard units, unique identifier and status of data within the framework of
Spatial Data Infrastructures.

ISO ???

Reference Frames serving as standard for Mapping Datum the need for Fiji to adopt the Global Reference Frame whether its ITRF or GNSS. Fiji is till on WGS 72 spheroid.

Needs for disaster management

share vision in geospatial information in national, regional and global disaster management networks

platform for sharing is guaranteed so that data can be disseminated in a timely manner

the need for ethical behavior in capturing and dissemination of data for either proactive or reactive purpose

mutual relationship between public and private sector – both public and private sectors can reinforce each other in Disaster Management for Fiji

Provisions for Technology Transfer & Assistances