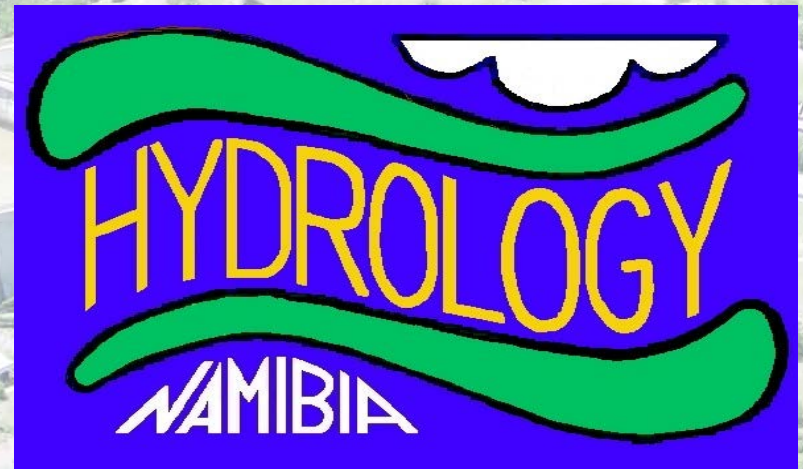


Ministry of Agriculture water and  
Forestry  
Water Affairs Department  
Directorate of Resource management  
Division: Hydrology





# Flood Forecasting system

- Satellite products
  - TRMM, MODIS, ESA Sentinel 1A
  - G-WADI & NASA SensorWebs among many others, to monitor floods and the rainfall potential from convective clouds
  - Platforms that aid in indirect monitoring of flow widths such as JRC GDACS, or in direct monitoring of flow widths with conversion to water levels/discharge such as ESA's TigerNet WOIS are utilised for flood warning purposes.
  - After analysing these products together with in-situ data when available, a daily flood bulletin is compiled.



# ESA TIGER-NET WOIS

## Sentinel-1 Flood Monitoring of Caprivi Flood Plain, Namibia



### Legend

- Country border
- Derived HAND Index > 10 m
- Flooded areas

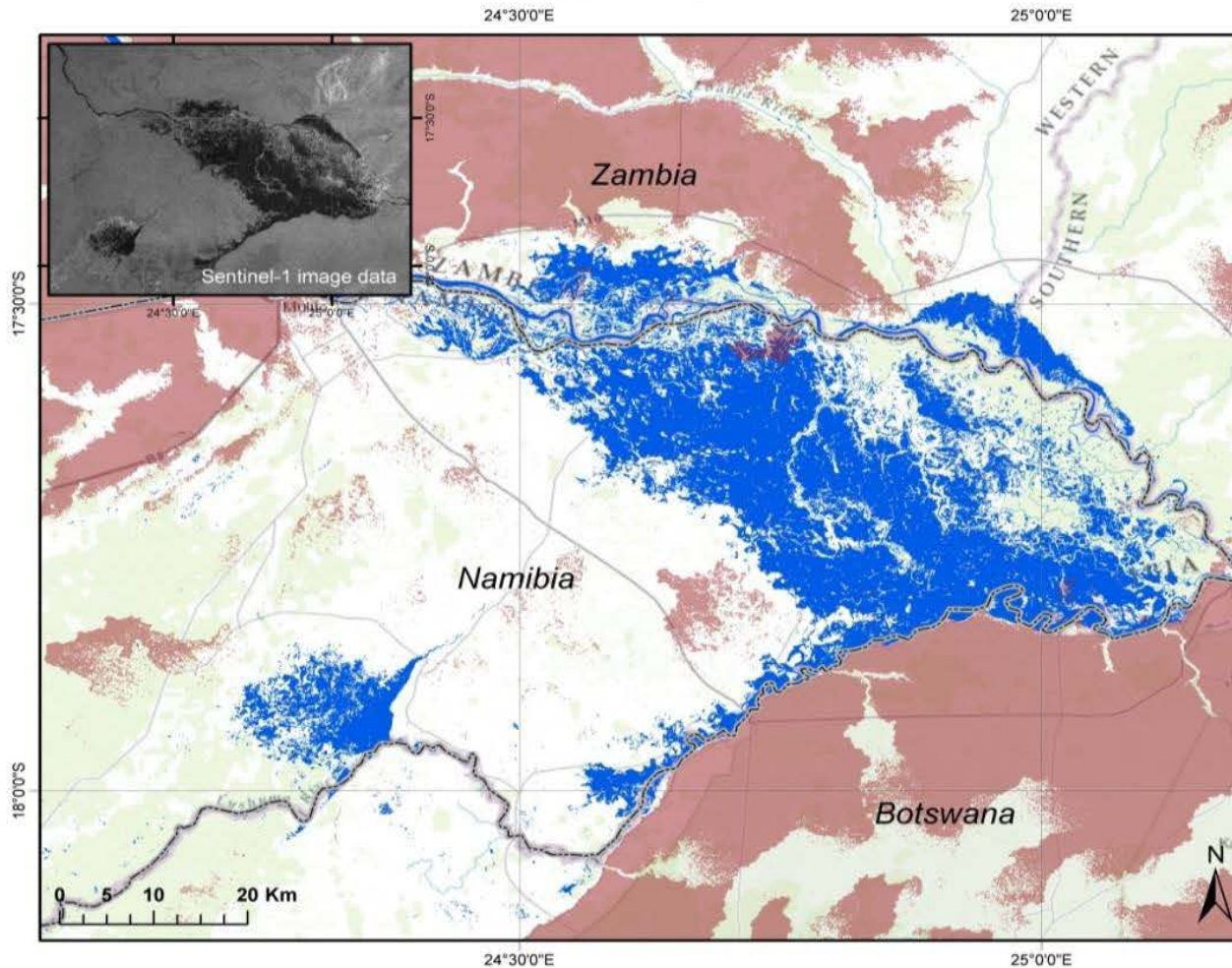
### Description:

This map shows the flooding situation in the Caprivi flood plain of Zambezi River on 13th of April, 2014. The flood was delineated with the Water Observation and Information System (WOIS) based on SENTINEL-1A satellite data. The flood map is overlaid on the World Topographical layer.

### Source data:

SENTINEL-1A IW mode, 20 m resolution, acquired on 13th of April, 2014 at 03:50 GMT.  
SENTINEL-1 image was provided by the European Space Agency.

Cartographic Reference  
Projection: EPSG:4326  
Datum: WGS 84





# *Monitoring Station*



- Telemetry
- Gauge plate
- *SADC-HYCOS*
- Rain-gauges: manual & automatic
- *Mini-Orpheus & Thallimedes*

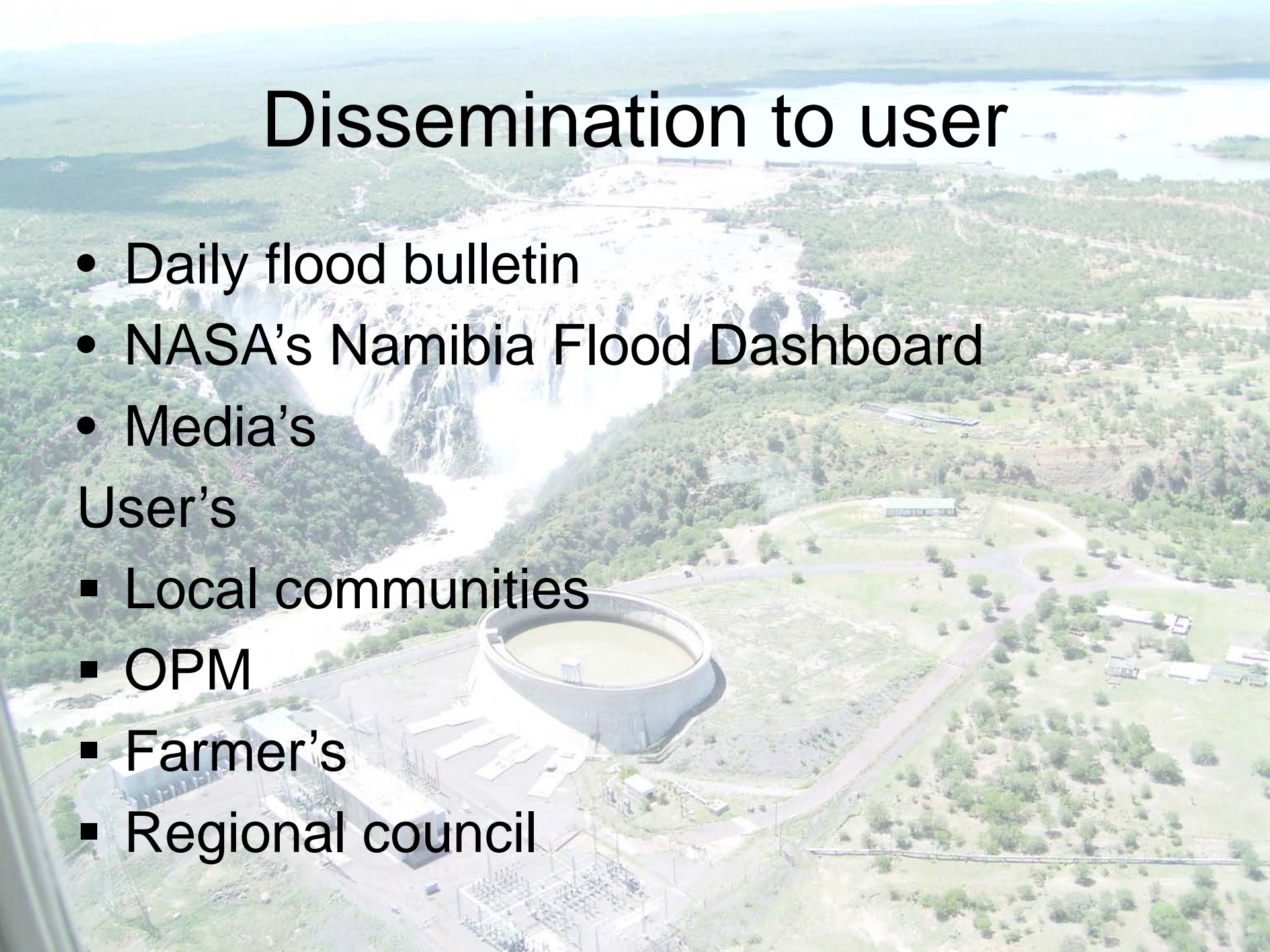


# Dissemination to user

- Daily flood bulletin
- NASA's Namibia Flood Dashboard
- Media's

## User's

- Local communities
- OPM
- Farmer's
- Regional council





# Challenges

- Coordination among stakeholders
- Gaps in the data: hinders effective modelling , calibration of systems
- Inadequate staff
- Curb vandalism
- Poor maintenance of certain stations
- Need for proper surveying of the gauging instruments & training
- Lack of involvement of community members in hydrological investigations and monitoring.