



VIET NAM METEOROLOGICAL AND HYDROLOGICAL ADMINISTRATION (VNMHA)

INTRODUCTION VNMHA

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Department of Personnel and Organization of VNMHA**

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ORGANIZATION DEVELOPMENT OF VNMHA

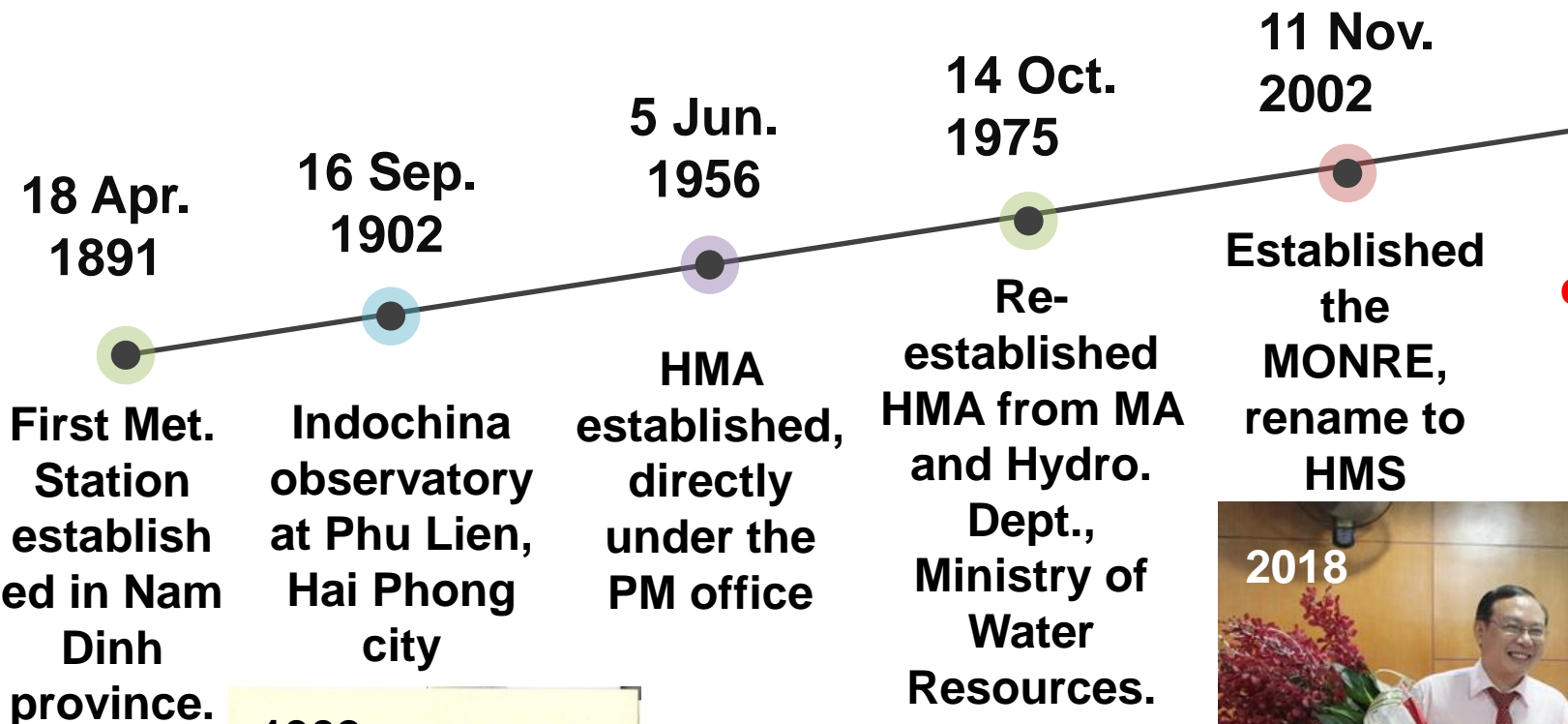




**23 Jan.
2018**

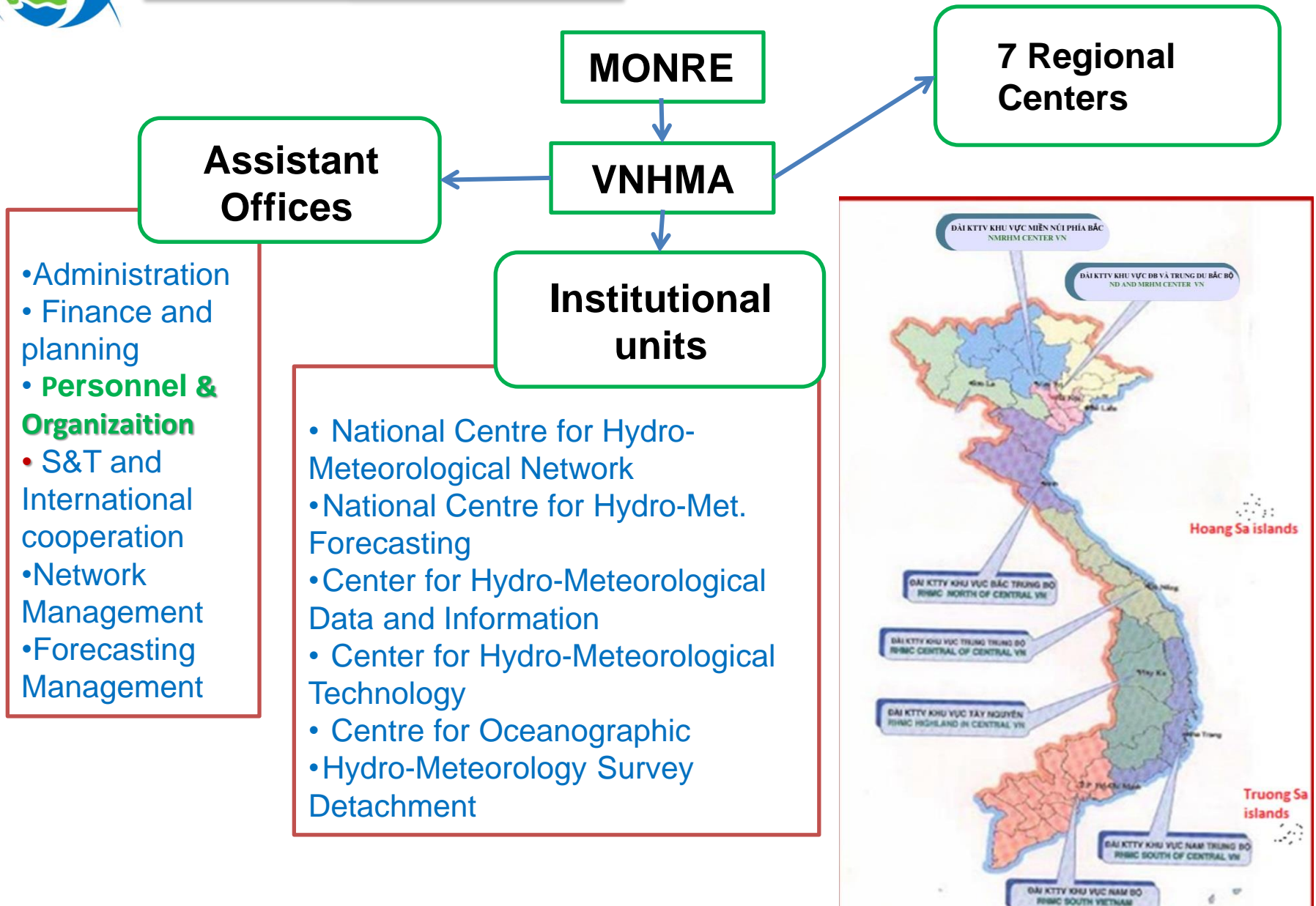


**Re-
established
VNMHA,
under the
MONRE.**





ADMINISTRATIONS

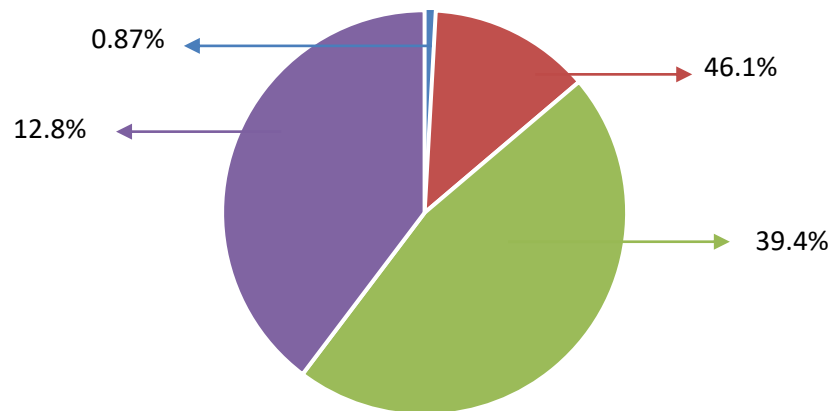




HUMAN RESOURCES OF VNMHA

Total staff of VNMHA has **2,744** people (Male: 1377 people, accounting for 50.18%; Female: 1345 people, accounting for 49.82%), in which:

- Doctor: **24** people, accounting for 0.87%,
- Master: **352** people, accounting for 12.8%;
- Bachelor: **1266** people, accounting for 46.1%;
- College and below: **1081** people, accounting for 39.4%.



■ Doctor ■ Master ■ University ■ College and below



OUR MAIN MISSIONS



State management and Implementing the Law



Managing, exploiting the national Hydro-Met station networks



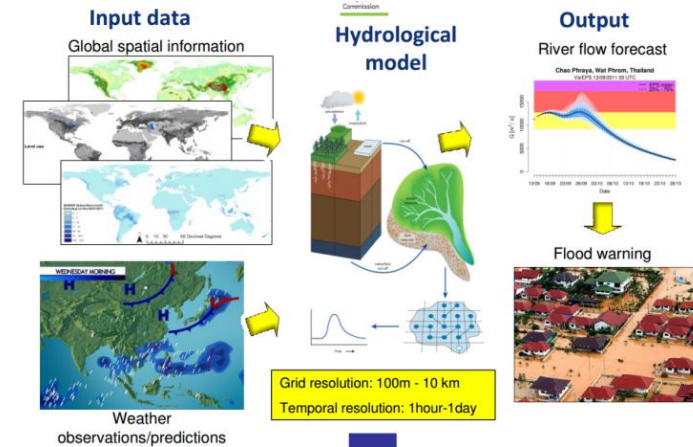
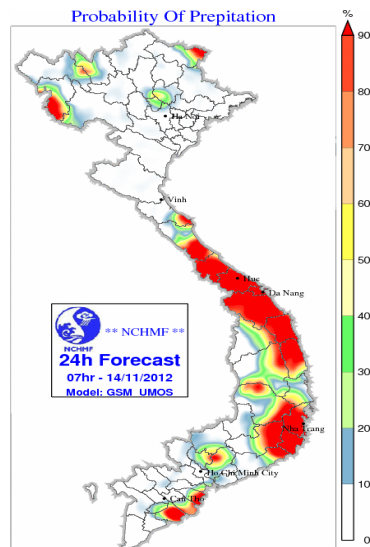
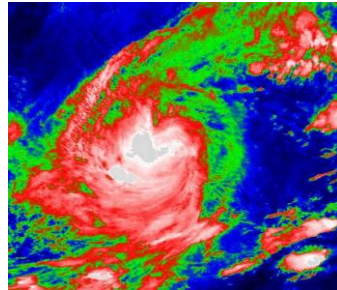
Carrying out observations on air and water environment, lightning detection, Climate change



Natural Hazard Forecasting and warning



Supply the public and private services





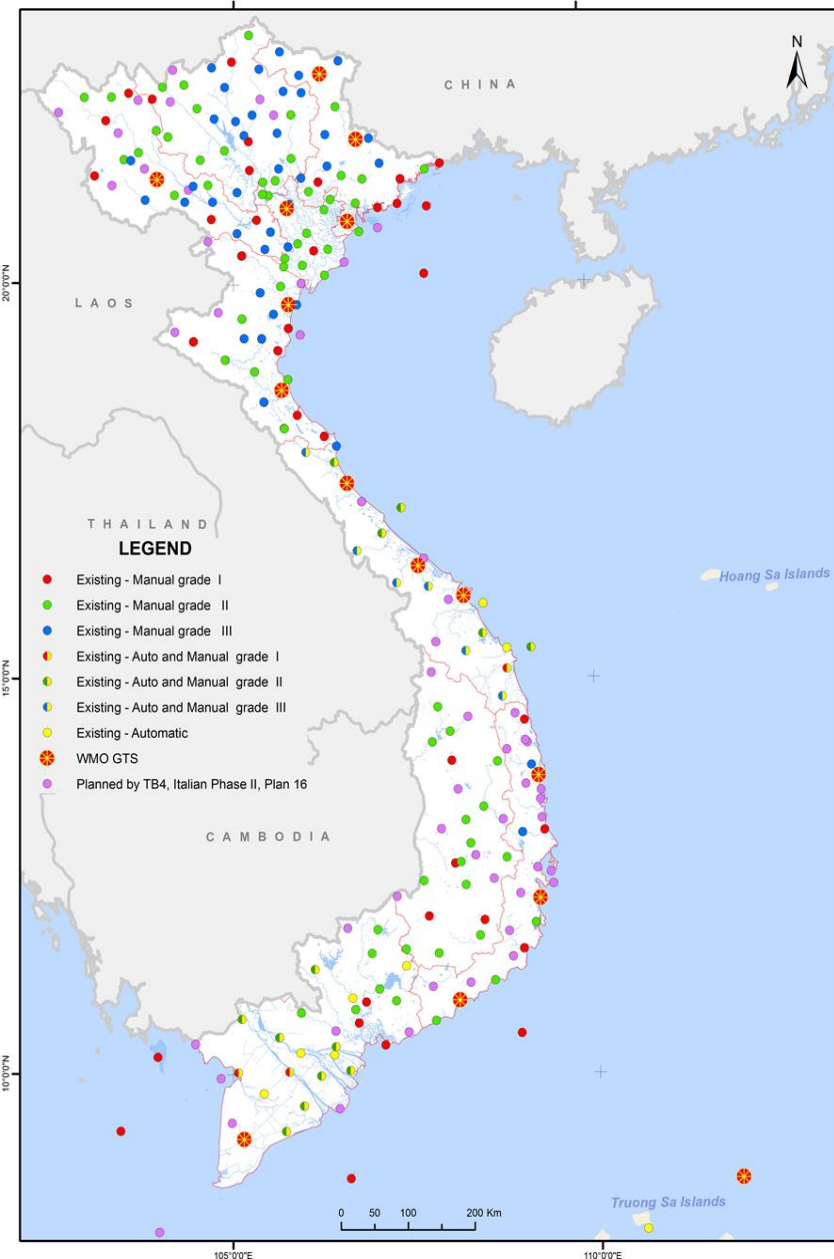
OBSERVATION SYSTEM

International

- * 400 surface synoptic stations
- * 250 upper-air stations
- * Global NWP Products: JMA, ECMWF
- * Remote sensing: Himawari, lightning

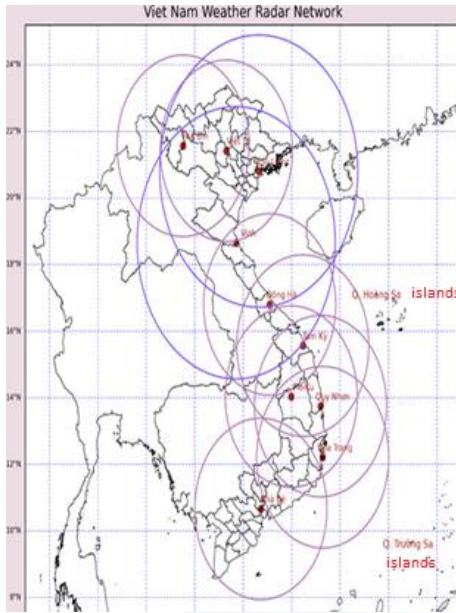
Domestic

- * Surface Meteo. Stations: 186
- * Raingauge sites : 889 (414+475)
- * Radiation: 14
- * Hydrological Stations: 232
- * Marine Met. Stations: 23
- * Aero- Meteorological Observation
- * Weather radars: 10
- * Air and water environment observation stations: 179
- * 18 Lightning detectors





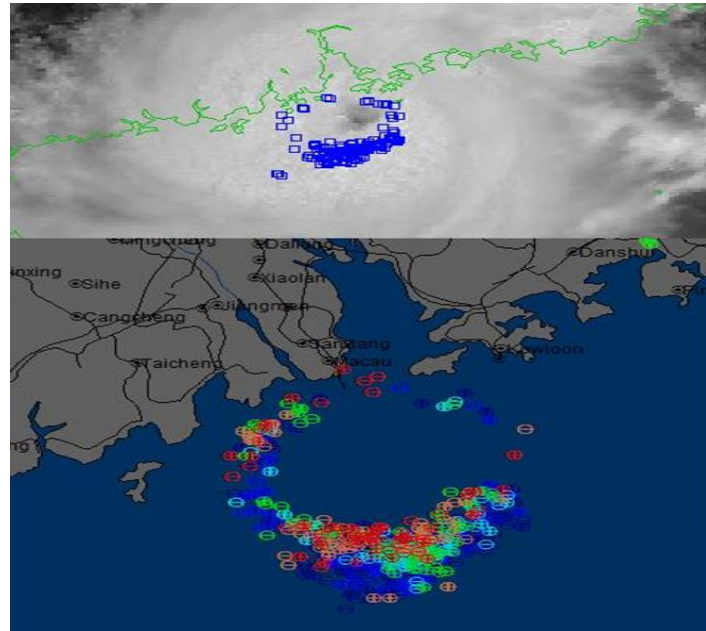
WEATHER RADAR SYSTEM



Weather Radar System in 2025

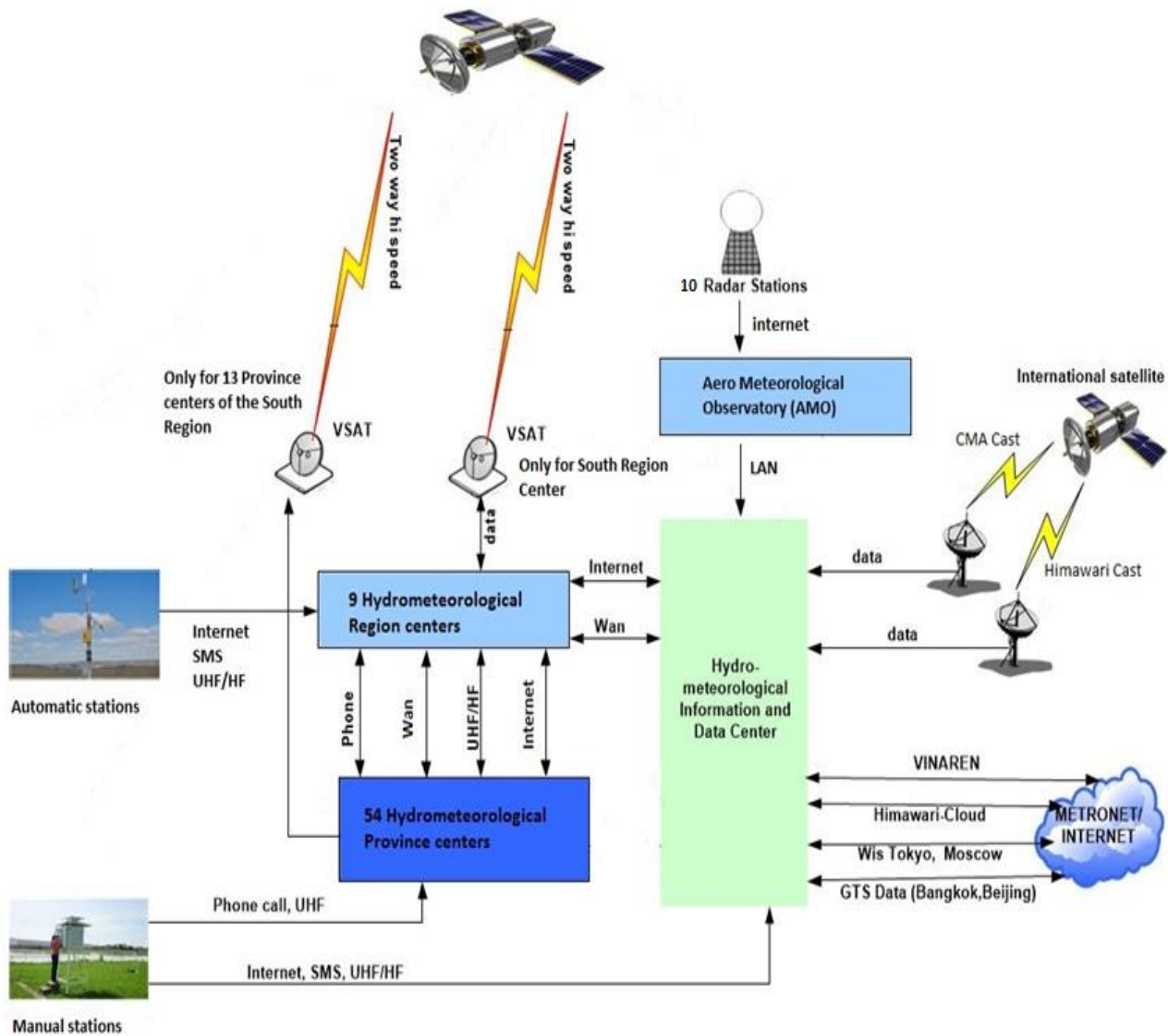


REMOTE SENSING DEVICES





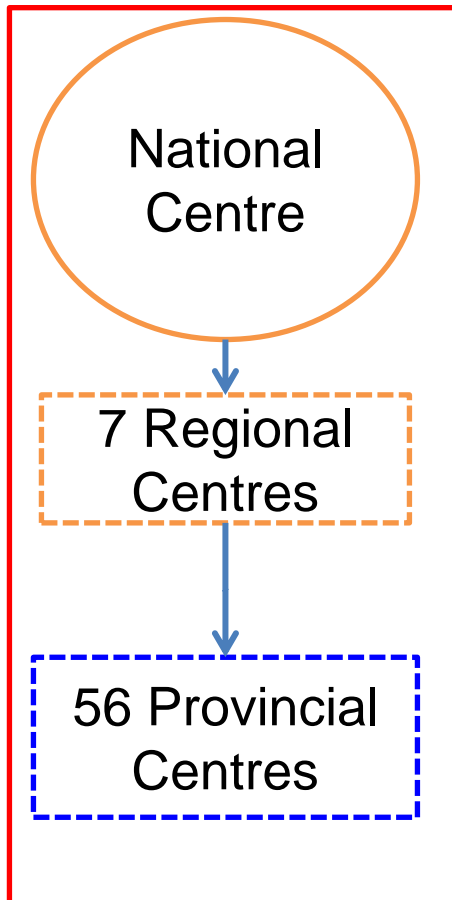
DATA COLLECTION





FORECASTING AND WARNING

Forecasting system 3 Levels



Natural Hazard Forecasting and warning

- Tropical cyclone
- Heavy rainfall
- Thunderstorm
- Hail, Gust wind
- Extreme hot/cold
- Flood, Flash flood, landslide
- Drought, salinity intrusion
- Storm surge
- Dry spell

Information Distribution

- Disaster management agencies
- Central/local Government Org.
- Media (TV, radio)
- Website/ SMS
- Community



INTERNATIONAL COOPERATIONS

Multilateral Cooperation

Viet Nam is a member of WMO since 1955 and succeeded in 1976.

Viet Nam has relations with various organizations: UNDP, UNEP, UNESCO, ESCAP, Typhoon Committee, ASCMG, APCC, WB, ADB, ADPC, Me kong River Commission, APCC, etc.

Bilateral Cooperation

Australia, Cambodia, China, Denmark, Finland, Italy, Japan, Korea, Lao PDR, Norway, Russia, France, USA ...



OUR FUTURE

1. Observation Network.

- New obs. devices: aircraft, wind chasing, mobile vehicle sounding, wind profiling radar, GNSS, rockets,...
- More dense AWS and automatic stations....

2. Forecast Technologies (NWP):

- A system of **non-static meso-scale** (2-5km)
- The **typhoon high-resolution track** and intensity forecast model
- **Data assimilation** for regional models
- The short and medium-range ensemble forecast system for Vietnam based on multi-models, initial disturbance analysis
- Regional/Global climate models for climate and climate change
- Ensemble Kalman filter (LETKF) to WRF-ARW system

3. IT development: IoT and Cloud Computing

