"JMA/WMO TRAINING WORKSHOP ON CALIBRATION AND MAINTENANCE OF METEOROLOGICAL INSTRUMENTS IN RA II(ASIA)"

COUNTRY REPORT

by

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HEAD OF METEOROLOGICAL NETWORK AND EARTHQUAKE

Tsukuba, Japan

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Outline :

1. Organizational Structure
2. Strategic Functions
3. Current Status of Facilities
4. Roadmap & Action Plan 2011 – 2015
5. Conclusion

1.Organizational Structure

Department of Meteorology and Hydrology(DMH)

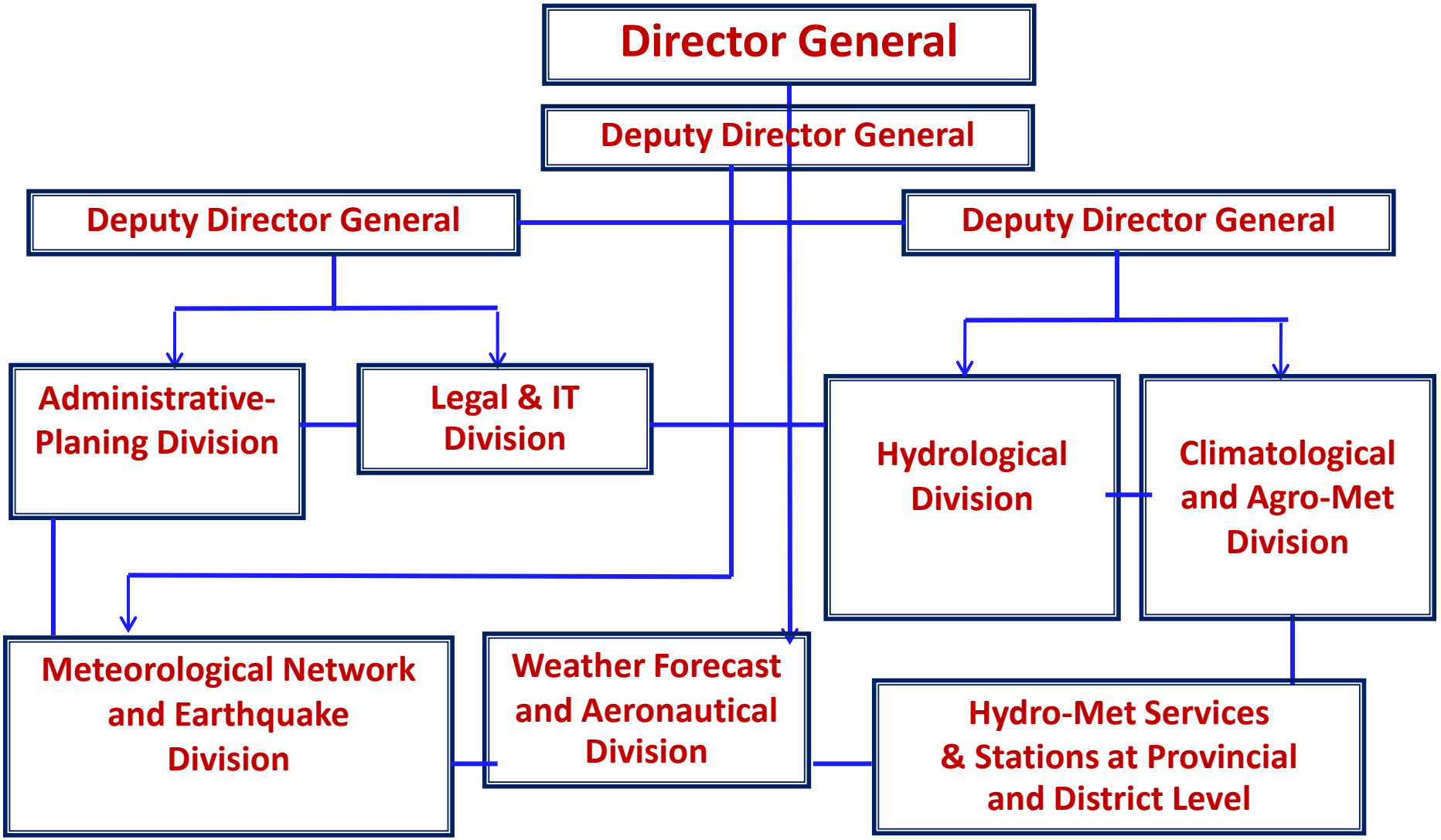
DMH Headquarters in
Vientiane Lao PDR.

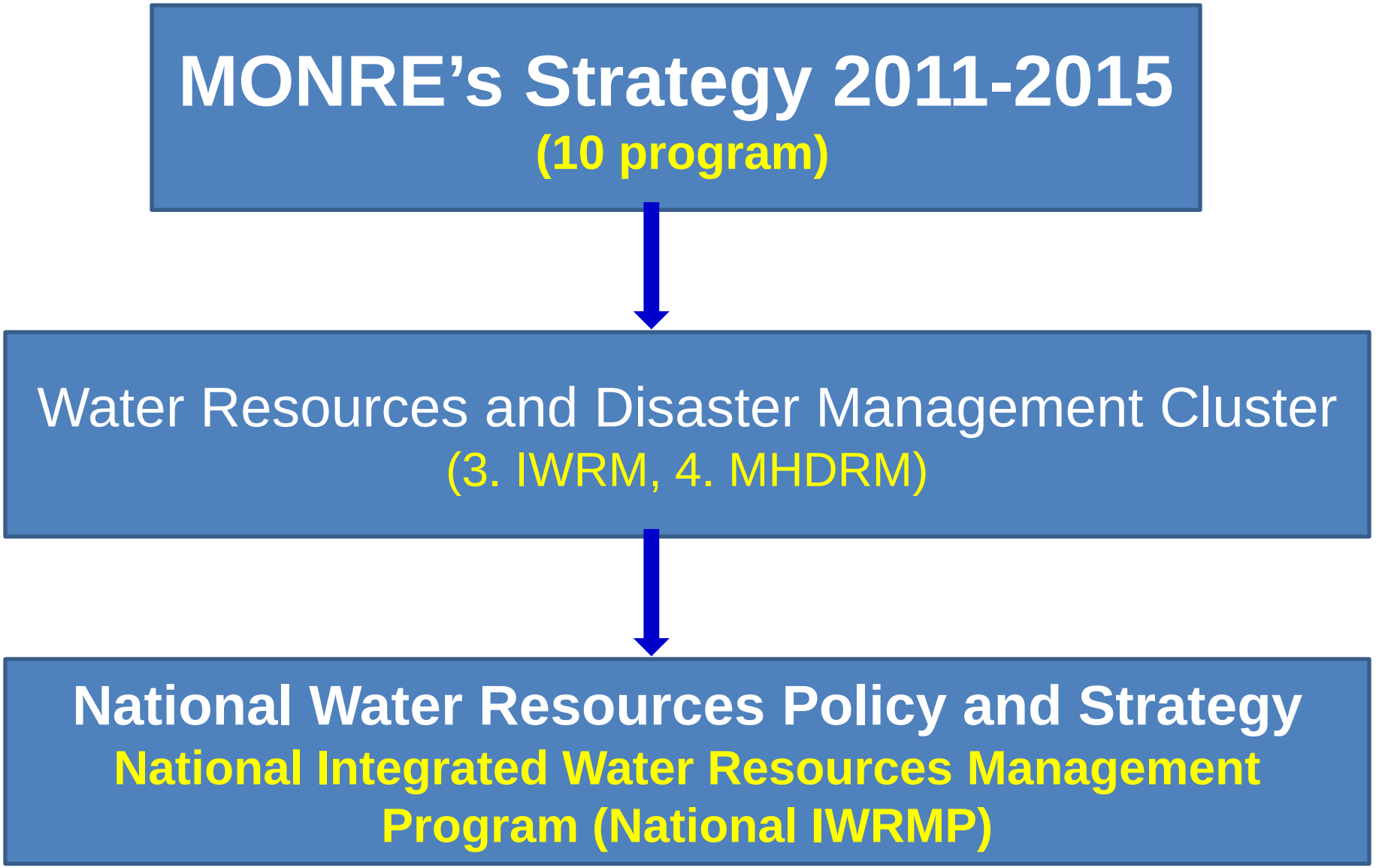
Doppler RADAR by Japanese Grant

- **DMH Lao PDR is one of government Departments under Ministry of Natural Resources and Environment (MONRE).**

- **Organizational Structure of DMH composes of Divisions at Headquarters and Hydro-Met Services and stations at Provincial and District level.**

❖ Organizational Chart of DMH




MONRE's Strategy 2011-2015
(10 program)
Water Resources and Disaster Management Cluster
(3. IWRM, 4. MHDRM)
National Water Resources Policy and Strategy
National Integrated Water Resources Management Program (National IWRMP)

2. Strategic Functions :

- The Meteorology-Hydrology and Disaster Risk Management is a part of the National IWRM Program 2011-2015
- Department of Meteorology and Hydrology (DMH) is committed to implementing this National IWRM Program consistently with the declaration of the 1st MRC Summit and implementation of the Prime Minister's Decree No19/PM, dated July 2010 on disaster risk management and early warning system

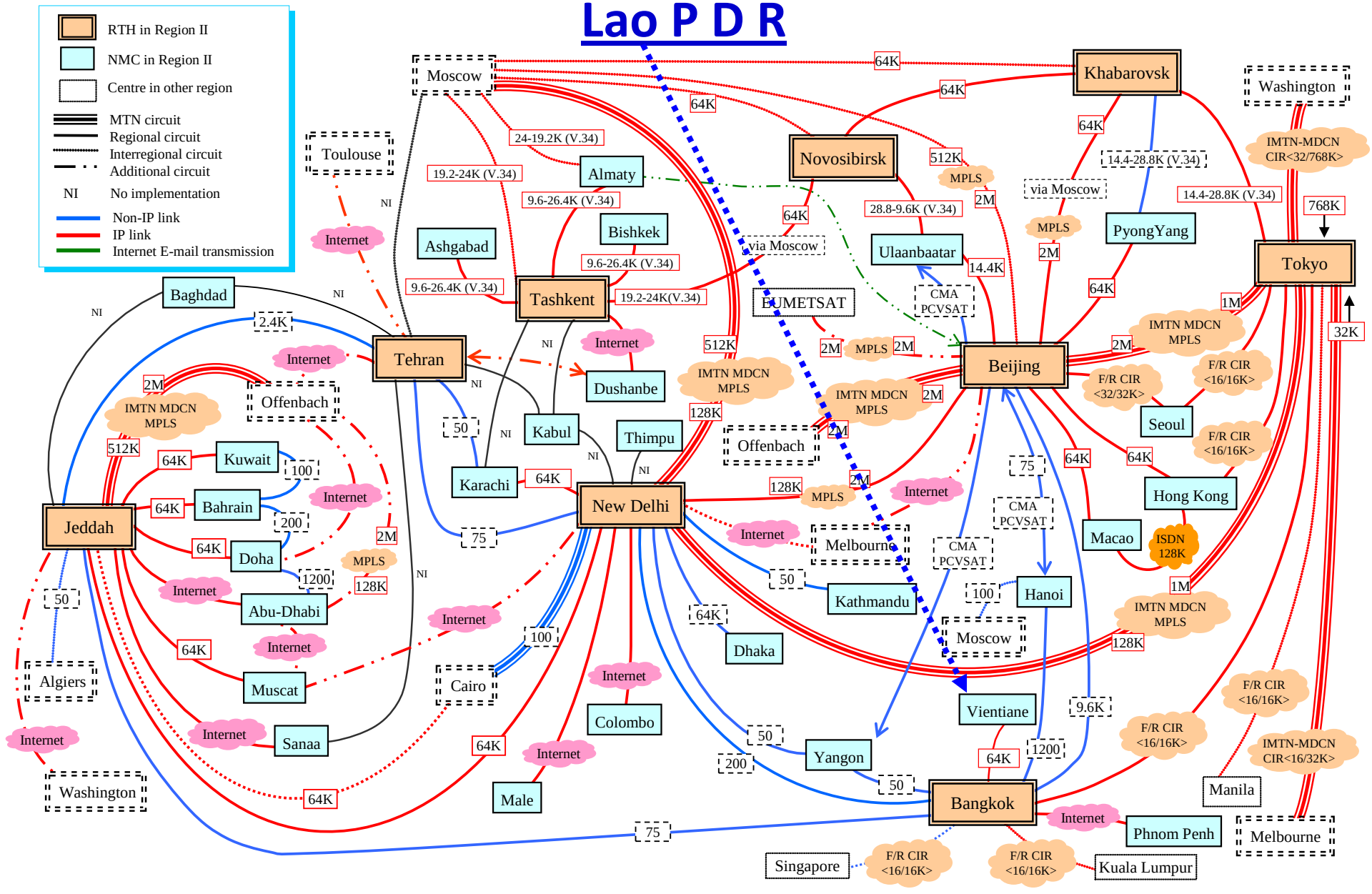
DMH's Main Functions for 2011-2015

- Identify framework of Weather, Climate and Water related disaster risk management
- Establishment the early warning systems
- Providing meteorological and hydrological services
- Providing earthquake related data and information
- International and Regional commitments implementation

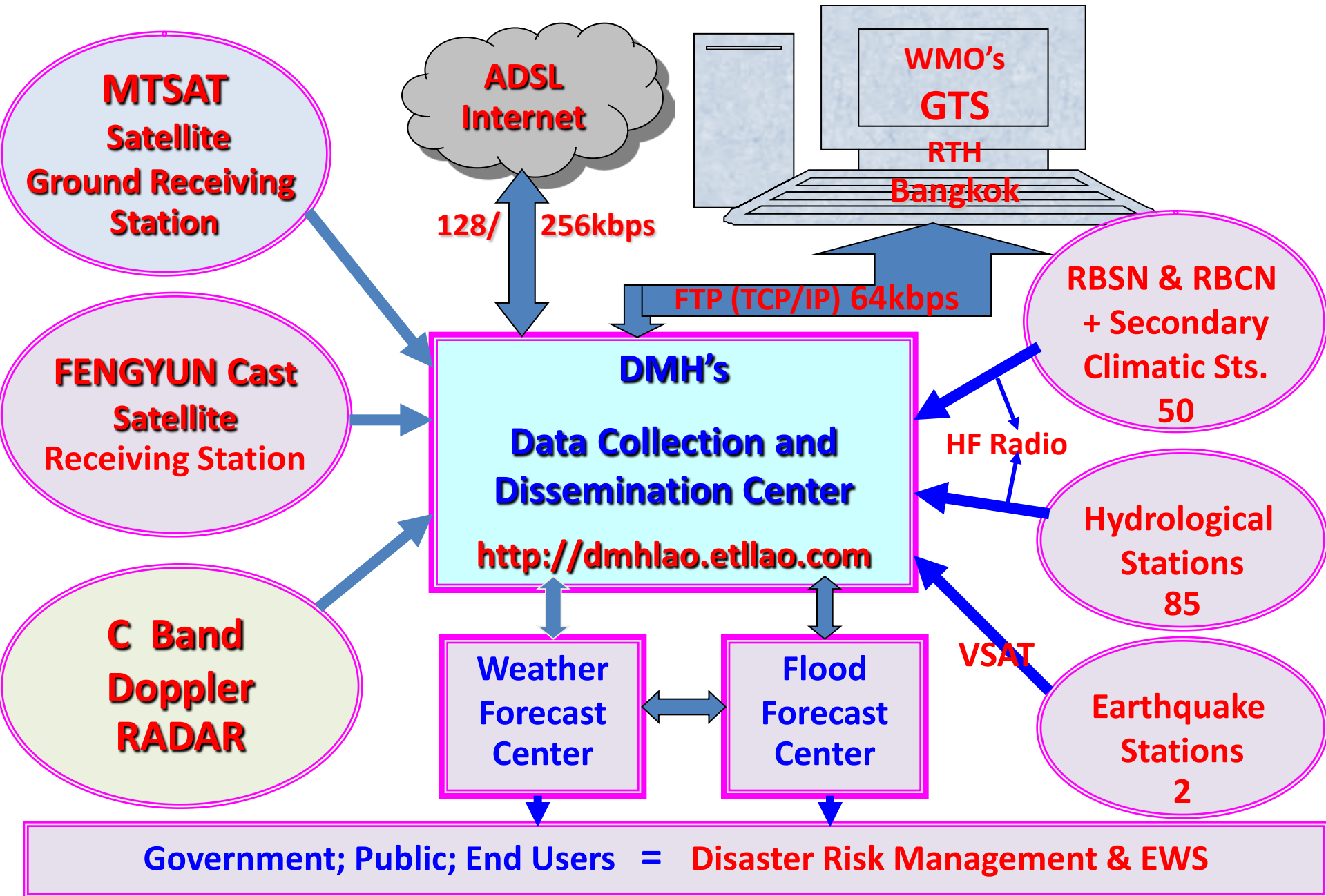
3.Current Status of Facilities

Regional Network for Data Sharing

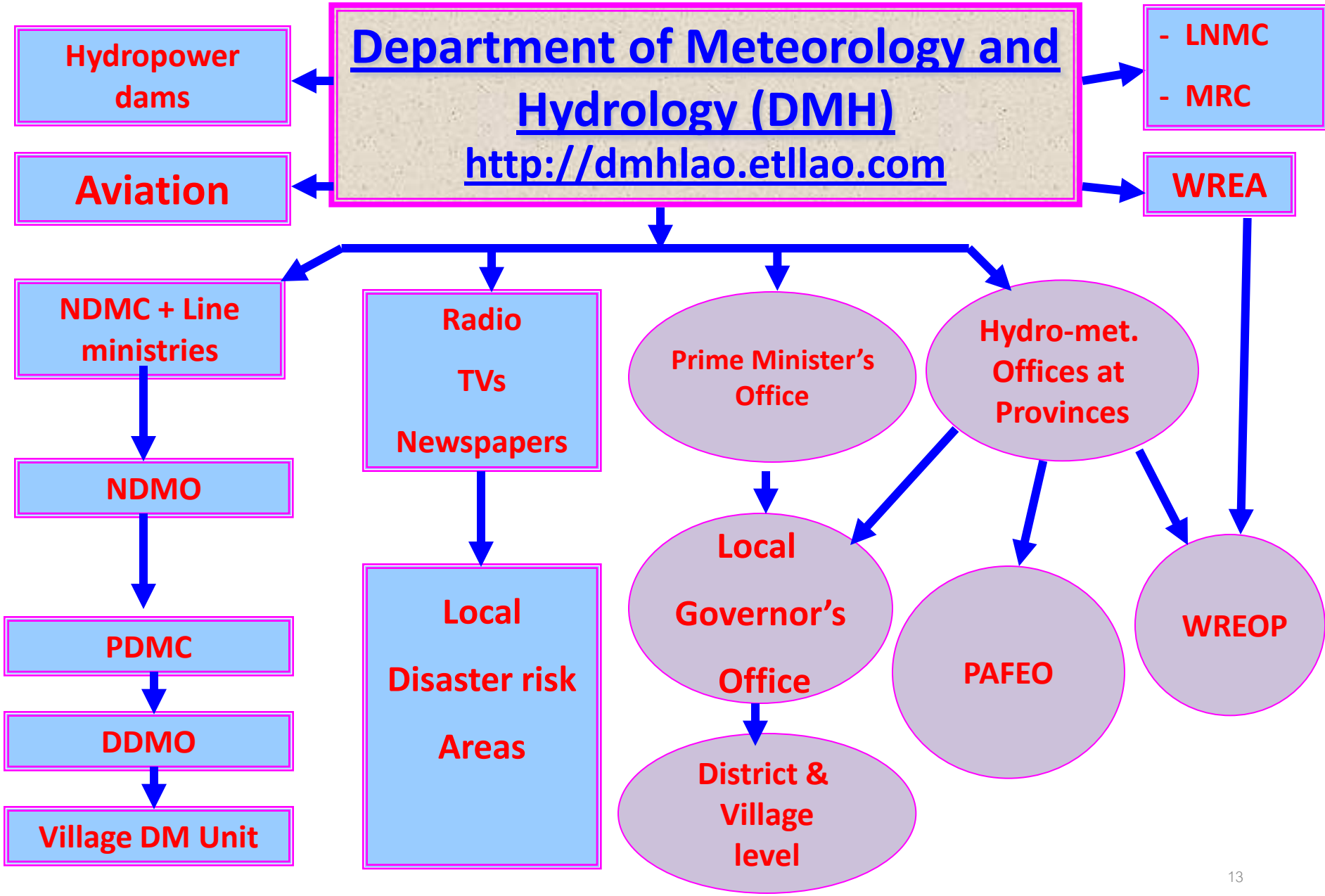
Facilities for regional involvement, GTS network



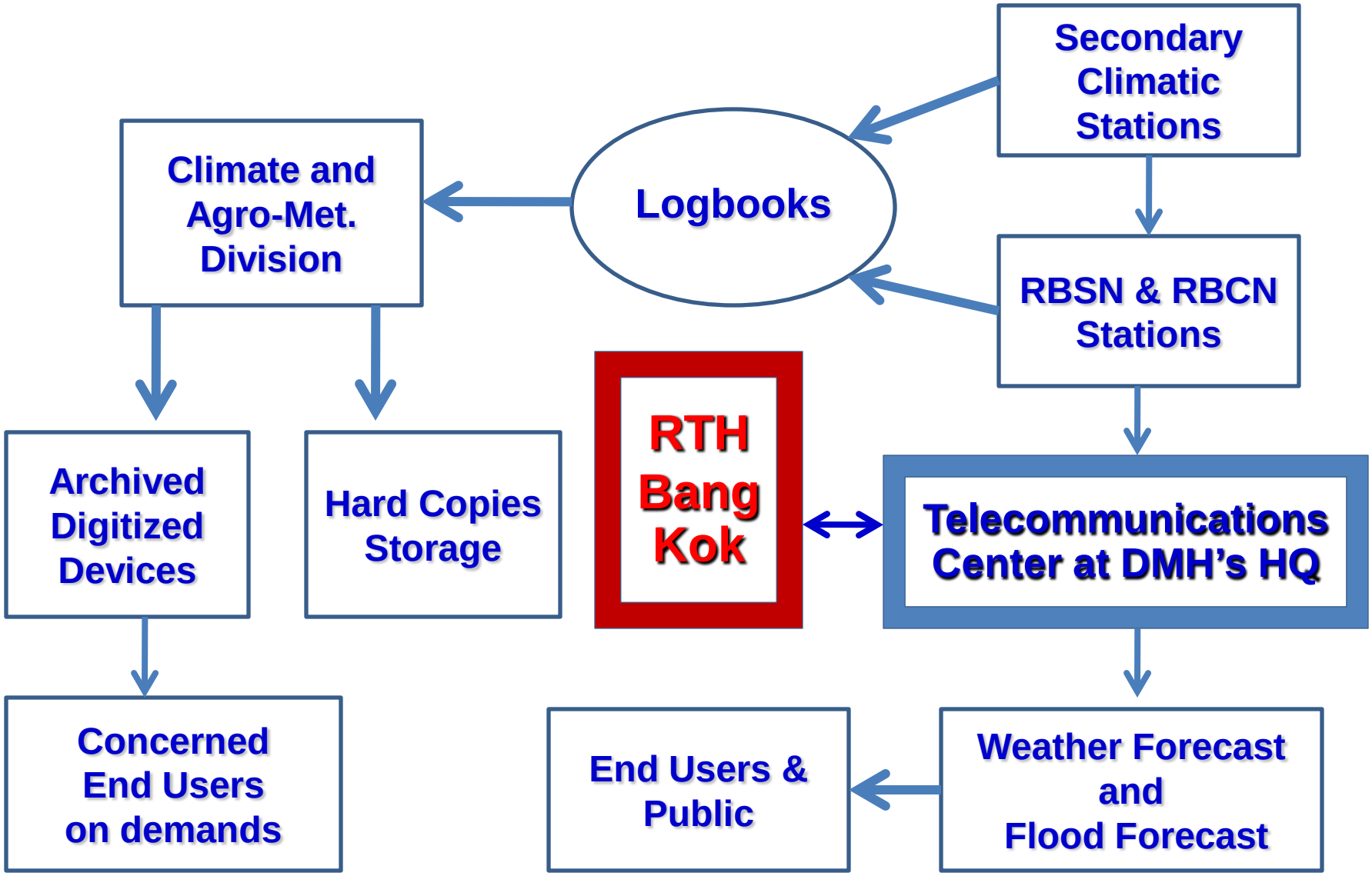
Communications and Dissemination



Hydro-met Data, information dissemination network



Data Flow to Users and Archiving



3.1 Surface observation station

- **Manned surface observation station**

  - Main Synoptic Meteorological station = 17 .

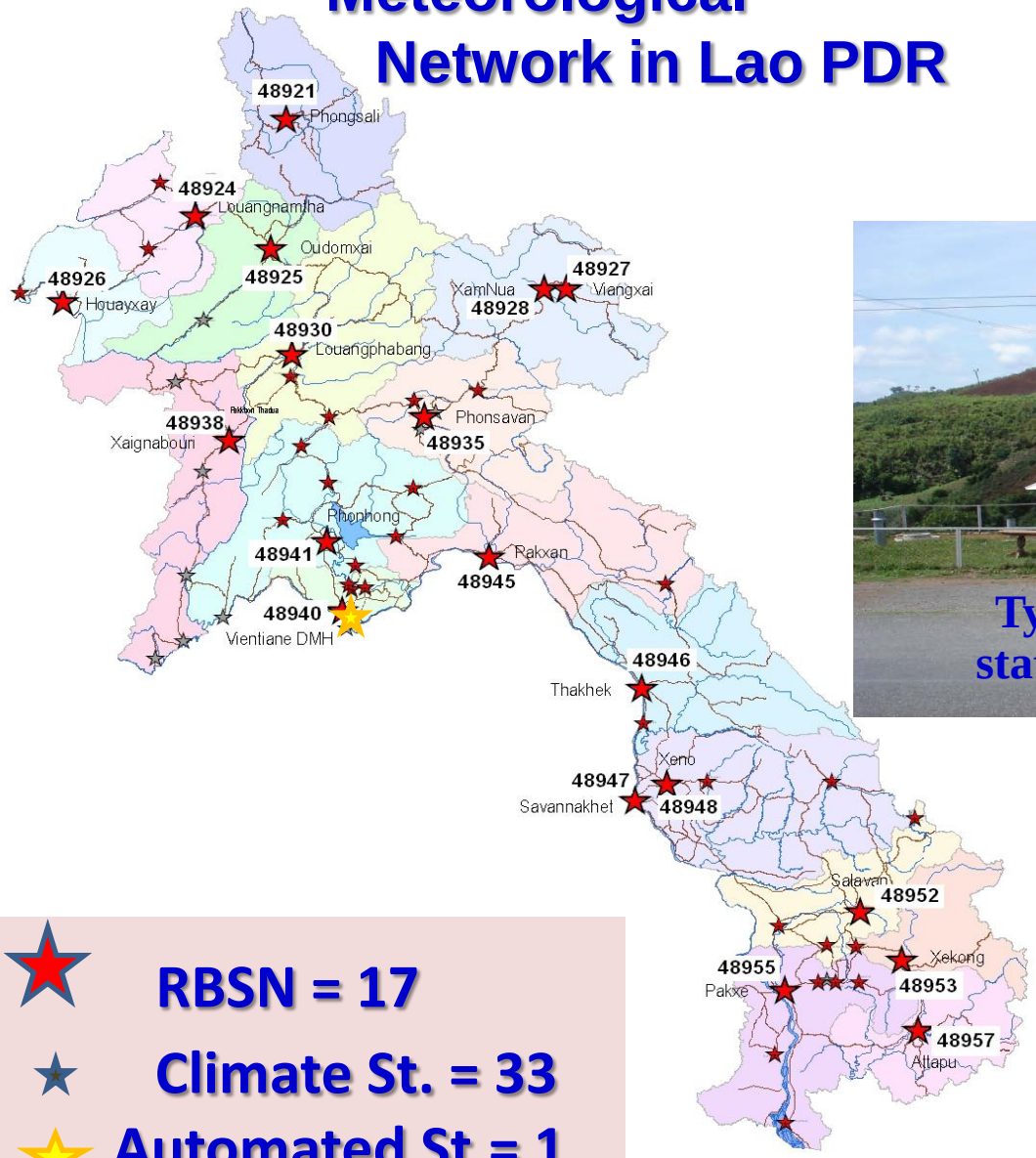
  - Climatologically and/or Agro meteorological

  Stations = 33.

- **Automated surface observation station = 1**

  Test using

Meteorological Network in Lao PDR



Typical Manned surfaces observation station with Conventional instruments

Typical automated surfaces observation station with Conventional instruments

3.2 INSTRUMENTS IN OPERATIONAL USE

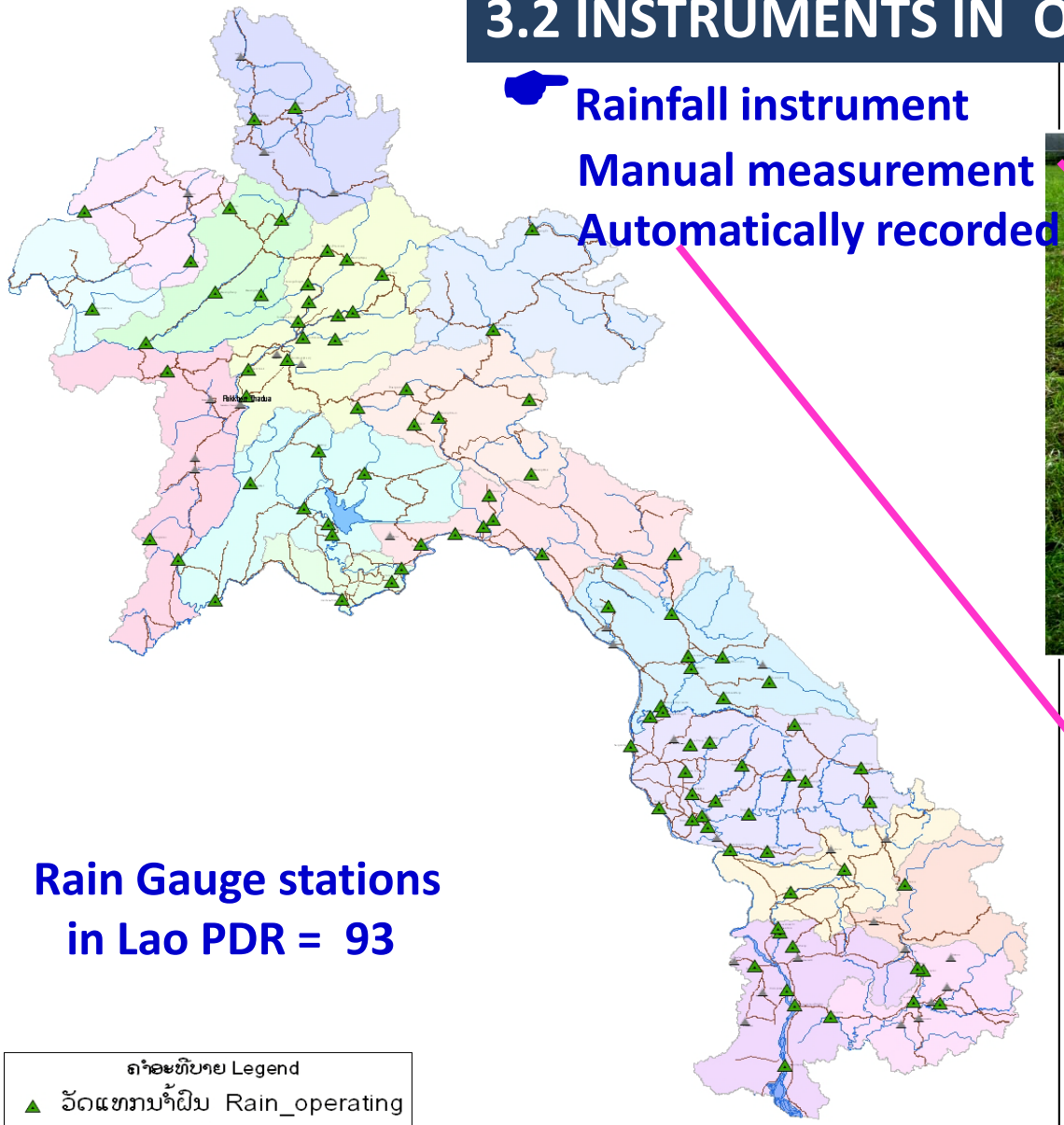
Rainfall instrument

Manual measurement

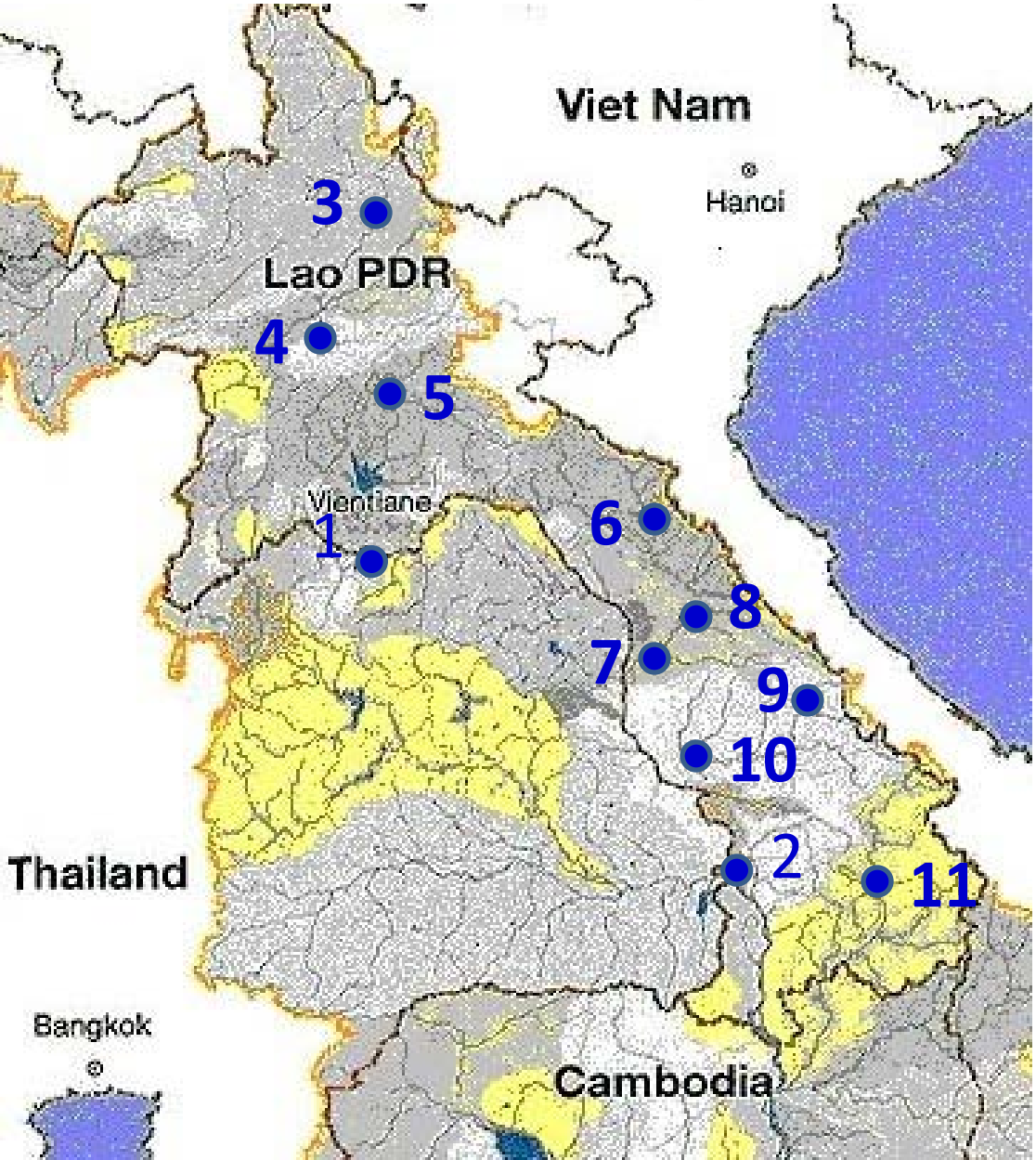
Automatically recorded

Classical manual type rain gauge

Rain Gauge stations in Lao PDR = 93



Automatic recorded rainfall stations = 11 stations
Hydrological Cycle Observation Stations (MRC - HYCOS)
Automated data acquisition and telemetry communication



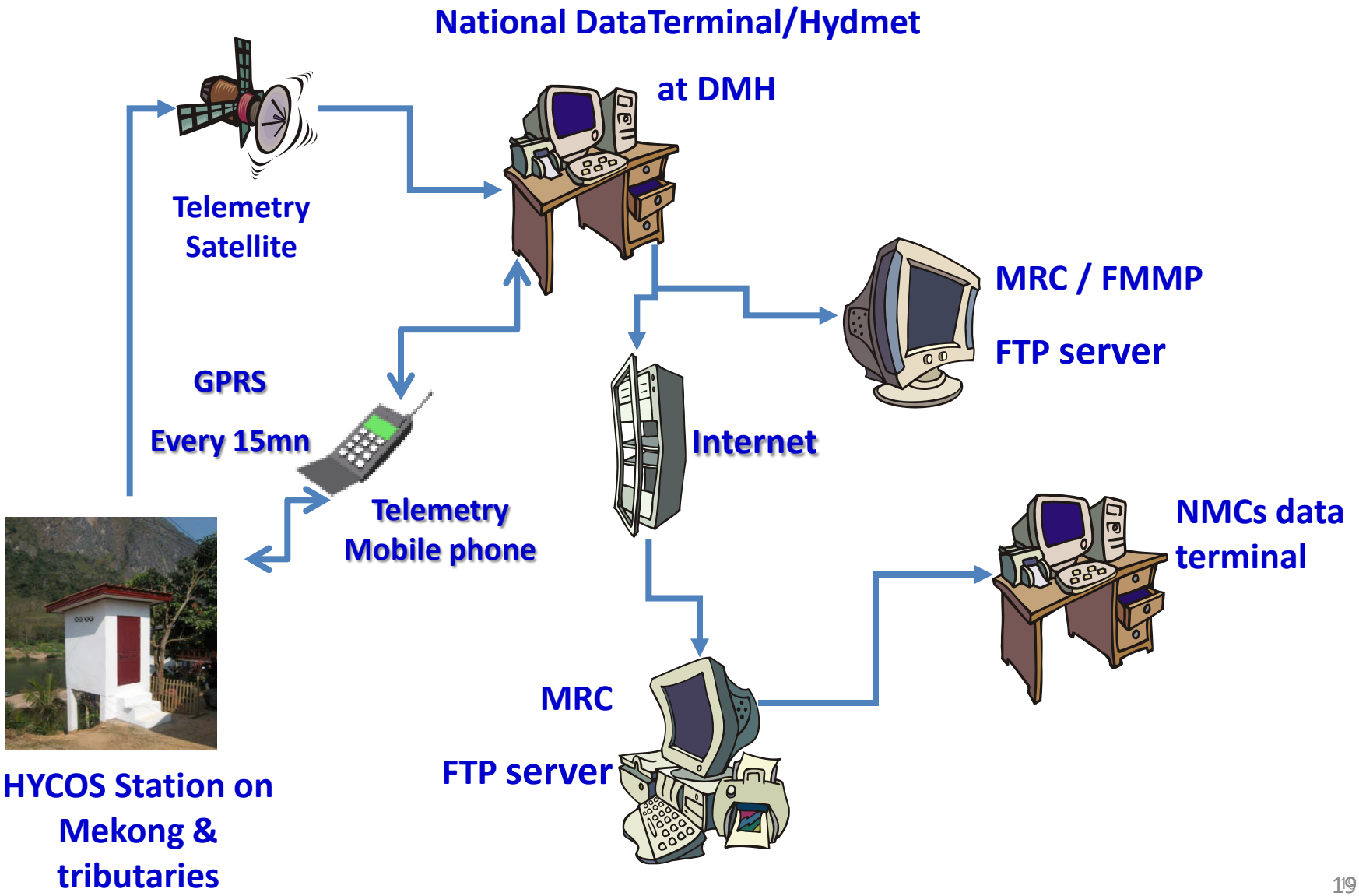
Mekong = 2 stations

1. Vientiane (km4)
2. Pakse

Tributaries = 9 st.

3. Muang Ngoy (Nam Ou)
4. Muang Nan (Nam Khan)
5. Phou Kout (Nam Ngum)
6. Napae (Nam Phao)
7. Xebangfai (Nam Xebangfai)
8. Mahaxai (Nam Xebangfai)
9. Sobnam (Nam Xebanghieng)
10. Kengdone (Nam Xebanghieng)
11. Veunkhen (Nam Xekong)

Real time data from HYCOS Stations



Automatic data logger station

Rainfall instrument in operational use
Manufactured by Hydrological services PTY. LMD.
Tipping Bucket Rain gauge Model TB3

Acquisition of data from sensors & upload into GPRS network OTT Equipment. All systems (OTT CBS, OTT DuoSens, TB3, Battery and Solar panel is in good condition

Pressure Instrument in operational use

Manufactured by societe précis – Mecanique , 95870 Bezons, France

OPERATIONAL USE

Manufactured by LAMBBECHT GERMANY

CALIBRATION

Measurement pressure

Recorded pressure

Temperature Instrument in operational use

Manufactured by LAMBRECHT GERMANY

OPERATIONAL USE

Measurement Temperature

Maximum

Minimum

Measurement Temperature

Surface temperature

Underground temperature

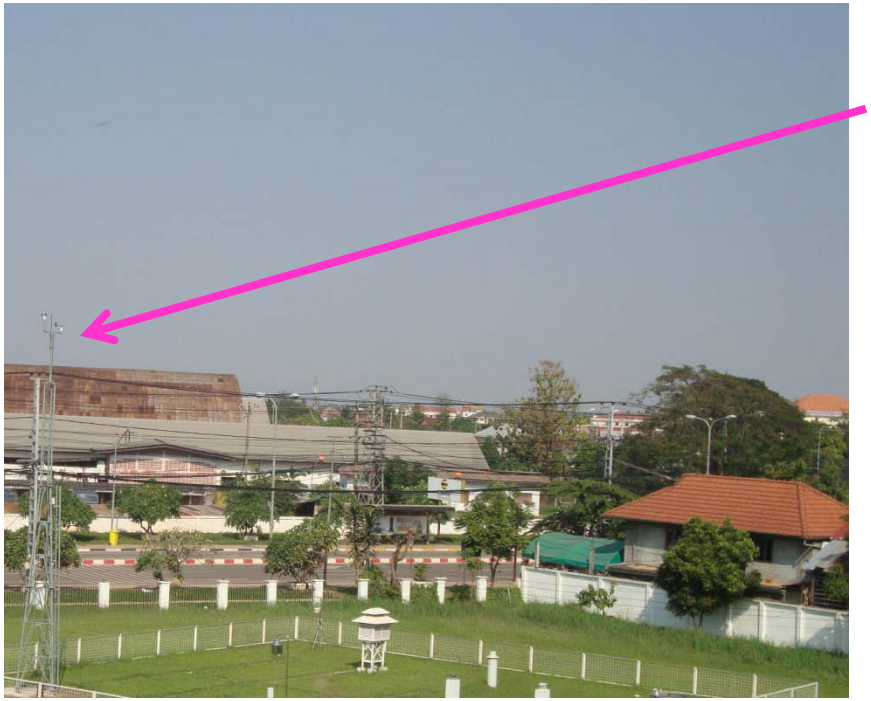
Huminity Instrument in operational use

OPERATIONAL USE

Manufactured by LAMBRECHT GERMANY

CALIBRATION

Wind Instrument in operational use



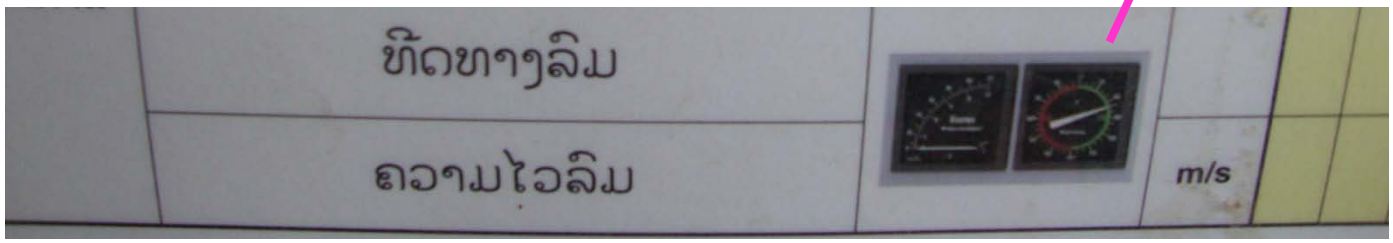
Manufactured by LAMBRECHT GERMANY

OPERATIONAL USE properties

Manufactured by LAMBRECHT GERMANY

OPERATIONAL USE properties

- wind direction
- wind speed

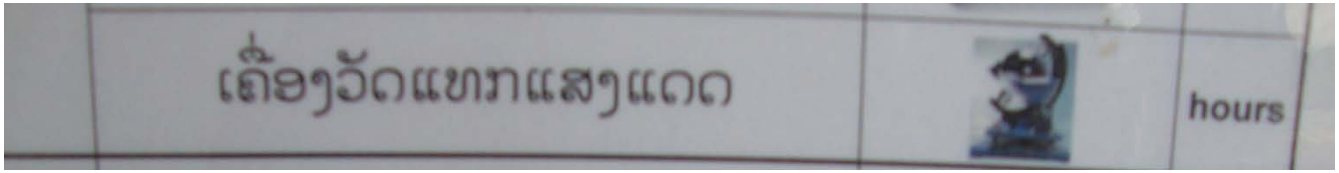


Sunshine duration Instrument in operational use

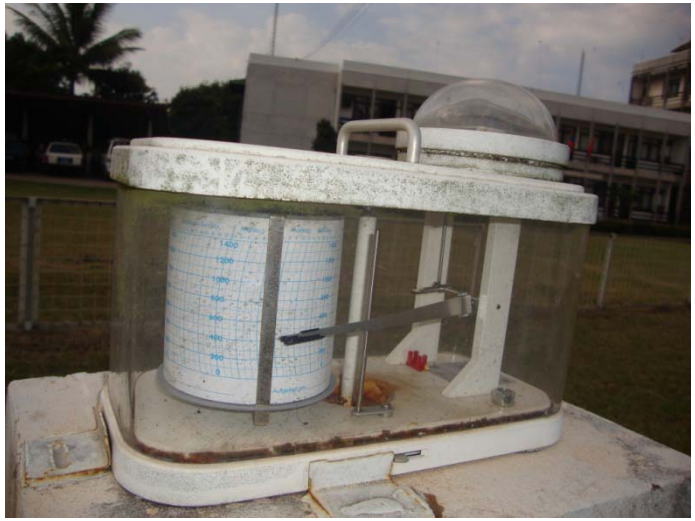
Manufactured by LAMBRECHT GERMANY

CALIBRATION

Measurement sunshine duration

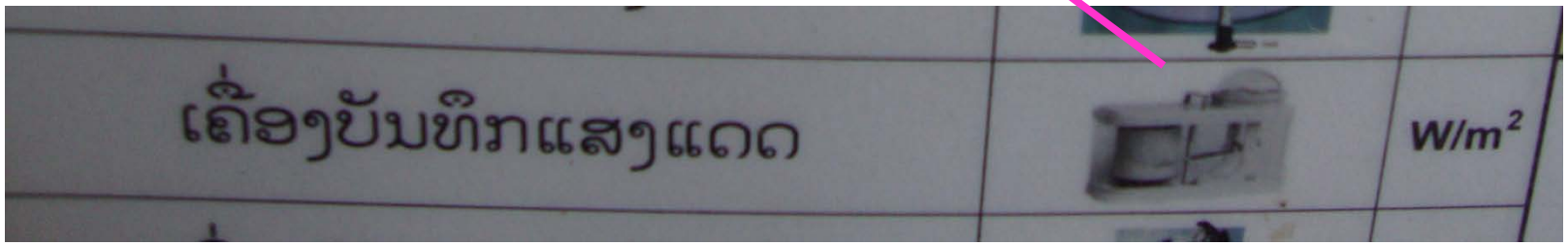


Recording Instrument



Manufactured by LAMBRECHT GERMANY

CALIBRATION Test run battery is not sufficient



3.3 Standards and equipments for calibration

Standard and equipments for calibration, before up to now ours service does not have them.

4. Problem in observation and instrument

- **Capacity is low**
- **Lack of Knowledge of maintenace**
- **Instruments for hydro-met data collection & dissemination network are old**

4 .1 Action Plan 2011-2015

A. Policy, strategy, Decree and law related to Meteorological-Hydrological and Earthquake

B. Establishment Early Warning Systems for flood, drought and multi-natural hazards

C. Projects contributing to regional commitments on data sharing and exchanges

D. Strengthening the capacity of DMH for disaster risk management & Services of weather, Climate and hydrological products to aviation, agriculture and other sectors related to the water resources management and linked to Food Security.

5. Conclusion

- *In fulfilling mandate and functions, DMH has been encountering various challenges.*
- *DMH has been striving for its improvement on both capability of human resources and technical facilities (Instrument for operating use, standard and equipment for calibration)*
- *External supports are the most key reliable resources, DMH has to request for transfer of knowledge, funds, expertise, technical assistance, consultancy to be provided by development partners and government.*