

## Country reports Cambodia

**JMA/WMO Workshop on Quality Management in Surface,  
Climate and Upper-air Observations in RA II (Asia)**

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## **Report on The Status of Weather Observation in Cambodia**

*(Submitted by Peou Phalla, Researching and Forecasting Office, Department of Meteorology)*

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### **Summary and Purpose of Document**

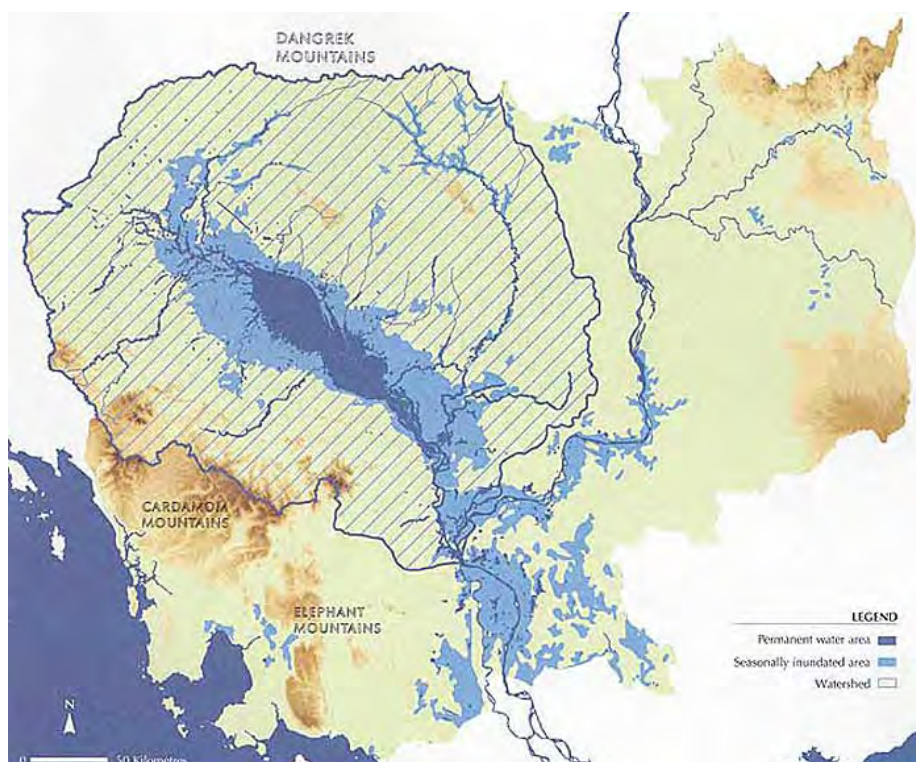
This document contains an overview of the surface and upper-air observations in Japan, with respect to instruments, quality assurance / quality control, training, statistics and applications.

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# Ministry of Water Resources and Meteorology

## Department of Meteorology

### Report on The Status of Weather Observation in Cambodia July, 2010.



## Content

- 1- Background of Cambodia Weather Observation
- 2- Observation Network
- 3- Sitting and Metadata
- 4- Instruments
- 5- Quality Assurance/Quality Control ( real time, non-real time)
- 6- Training
- 7- Statistics issues and Applications.
- 8- Current issues and future plan

## **1- Background of Cambodia Weather Observation**

Cambodia Weather Observation was beginning since 1894.

Cambodia joined the World Meteorological Organization in 1955.

Between 1972-1975, Cambodia carried out of the project under UNDP-Funded. From 1975-79, Cambodia was in the political instable of the Khmer Rouse (Democratic Kampuchea), Weather Observation Network and Service were abandoned and all Equipment were destroyed.

After 1979, weather Observation Service was re-established with the technical and equipment support from Soviet Union and Viet Nam, that was established 5 synoptic stations and 33 rainfall stations.

From 1992-1995, Weather Observation Network and Service were re-habilitated through the project of Danida-Financed Program and implemented by Lutheran World Service. During these years Cambodia Weather Observation was still in a basic of operational system due to the limited of funds.

During the period of the year 2001-2003, Cambodia Weather Observation was improved through the project of JICA; the project installed weather sensor 6 stations and conducted of the site of job training to the staff.

From 2005-2006, under the project of JICA, Global Telecommunication System (GTS) was installed. During 2007-2008, JICA funded project on the Urgent Rehabilitation and Improvement of Civil Aviation Meteorology, the GTS was improved, and MTSAT was installed.

In March 2010, Department of Meteorology was moved to the new place, GTS was re-installed and connected link to Bangkok again on June 14, 2010, and MTSAT was re-installed on July 15, 2010 that was under technical supported and assistant of WMO Volunteer.

## **2- Observation Network**

Cambodia observes only on the Surface and we are not yet to observe on upper air.

### **2-1 Surface Observation:**

#### **2-1-1 Synoptic Station:**

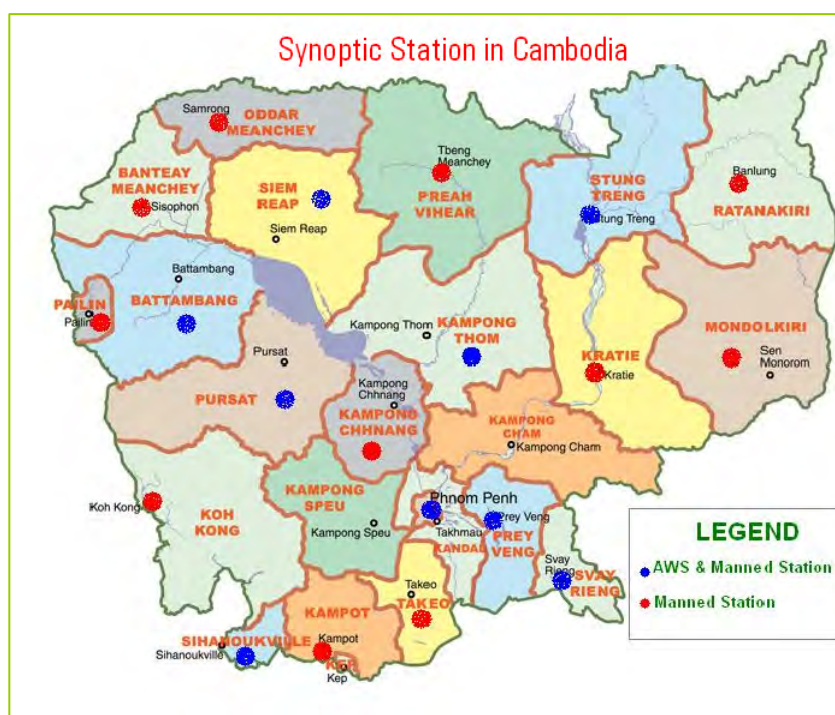
Weather Observation Network in Cambodia consists of:

- 20 synoptic stations including of 9 automatic stations (AWS) was broken and 20 synoptic stations are operational with manned observational equipment.
- 200 manual rainfall stations.

## Weather Observation Stations in Cambodia

BN	SN	CCCC	Place Name	Lat	Long	WMO	Tx	AWS	Remark
48	962		Battambang	13.6N	103.26E	P	00Z	JICA	Manual
48	963		Pailin	12.51N	103.33E				Manual
48	964		Prah Vihear	13.48E					Manual
48	965		KampongThom					MRC	Manual
48	966		Siemreap	13.22N		P	00Z	JICA	AWS & Manual, to be moved
48	968		Pursat	12.31N				MRC	Manual
48	969		BanteayMeanchey						Manual
48	970		KraTie						Manual
48	971		Mondol Kiri						Manual
48	972		StungTreng	13.31N	105.58E			JICA	Manual
48	973		Ratanak Kiri						Manual
48	983		Kampong Som	10.38N	103.29E	P		JICA	Manual
48	985		Kampot	10.37N	104.13E	P	00Z		Manual
48	986		Koh Kong	11.37N	103.00E				Manual
48	991	VDPP	PhnomPenh	11.33N	104.51	P	00Z	JICA	Manual, to be moved
48	993		Takeo						Manual
48	995		KampongCham	12.00N	105.27E	P	00Z		Manual
48	997		PreyVeng			P	00Z	JICA	Manual
48	998		SvayRieng	11.05N	105.48E			JICA	Manual
48			Odor Meanchey	14.11N	103.30E				Manual

### 2-1-2 Map of Observation station in Cambodia



### 2-1-3 Time and Frequency of Observations:

Cambodia conducts operational weather observation for 4 times per day in the main standard times at:

- 00 UTC
- 06 UTC
- 12 UTC
- 18 UCT

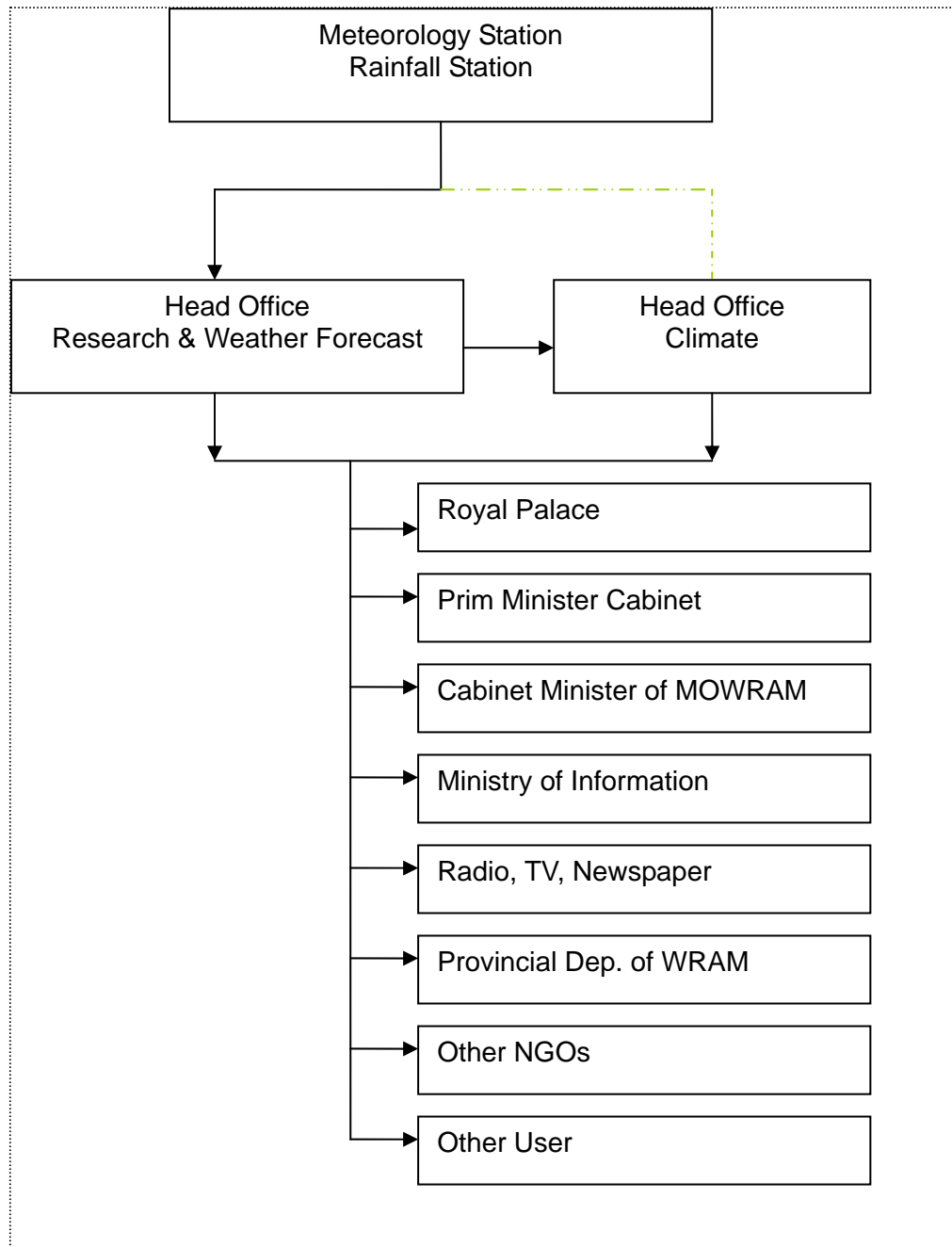
#### **2-1-4 Data flow to users and archives**

Data collection from manned station is recorded in the observation log, and transmitted to Department of Meteorology in Phnom Penh by Telephone and by Fax (HF SSB). The data is transfer first to the Head office of Research and Weather Forecast for using in forecasting, and after the data is transmitted to the Head office of Climate for climatologically use.

Rainfall data collection is carried out by local observation officer. Rainfall data are recorded in a log book that provided by Department of Meteorology, Actually, the rainfall data transmitting to Department of Meteorology only from 34 stations.

The data are analyzed and stored by the Head Office of Climate. The data production is provided to many users such as: Royal Palace, Prim minister Cabinet, Cabinet Ministry of Water Resources and Meteorology, Ministry of Information, Provincial Department of Water Resources and Meteorology, Radio, TV, Newspaper, Other NGO, and Other User.

### Structure of Data Flow and Archive Chart



### **3- Sitting and Metadata**

Surface Observation data in Cambodia is including:

- Air temperature
- Surface wind,
- Solar radiation,
- Evaporation,
- Cloud amount and type,
- Atmospheric pressure,
- Precipitation, amount and intensity,
- Humidity, and
- Visibility

#### **4- Instruments, Sensor, Maintenance**

The installation and maintenance of the instruments is responded by Head Office of Equipment Management. The officers of Head Office of Equipment Management are able to repair only manned instrument. Actually, instruments are repaired when the data at station are reported as error and being installed when it is broken.

#### **5- Quality Assurance/Quality Control ( real time, non-real time)**

Global Telecommunication System (GTS) in Cambodia is frequency error in the connection system between Phnom Penh and Bang Kok.

The data transmitting to GTS is conducted only at 00 UTC, it is non-real time and not address to the framework of Global Observing System (GOS), it is done by the data are not provided from the local station, Technical Capacity is limited and Low cost resolution.

20 Synoptic station are provided the real data only Phnom Penh and Siem Reap, and 18 Synoptic stations provided only one or two data such as Air temperature and Surface wind, all these done its lack of instrument.

#### **6- Training**

The National Weather Center provides the job-training to the staff of the Local observation stations on operation and maintenance of the weather observation station the weather observation by providing as lecture and practice.

#### **7- Statistics issues and Applications**

- Produce surface weather map and Upper Air charts,

#### **8- Current issues and future plan**

- Build technical capacity to the staff
- Reinstall Automatic Station
- Install Upper Air Weather Observation
- Improve telecommunication service
- Improve observation data management