

# Disaster Risk Management In Cambodia

**22-26 June 2014, Bangkok, Thailand**



National Committee for Disaster Management

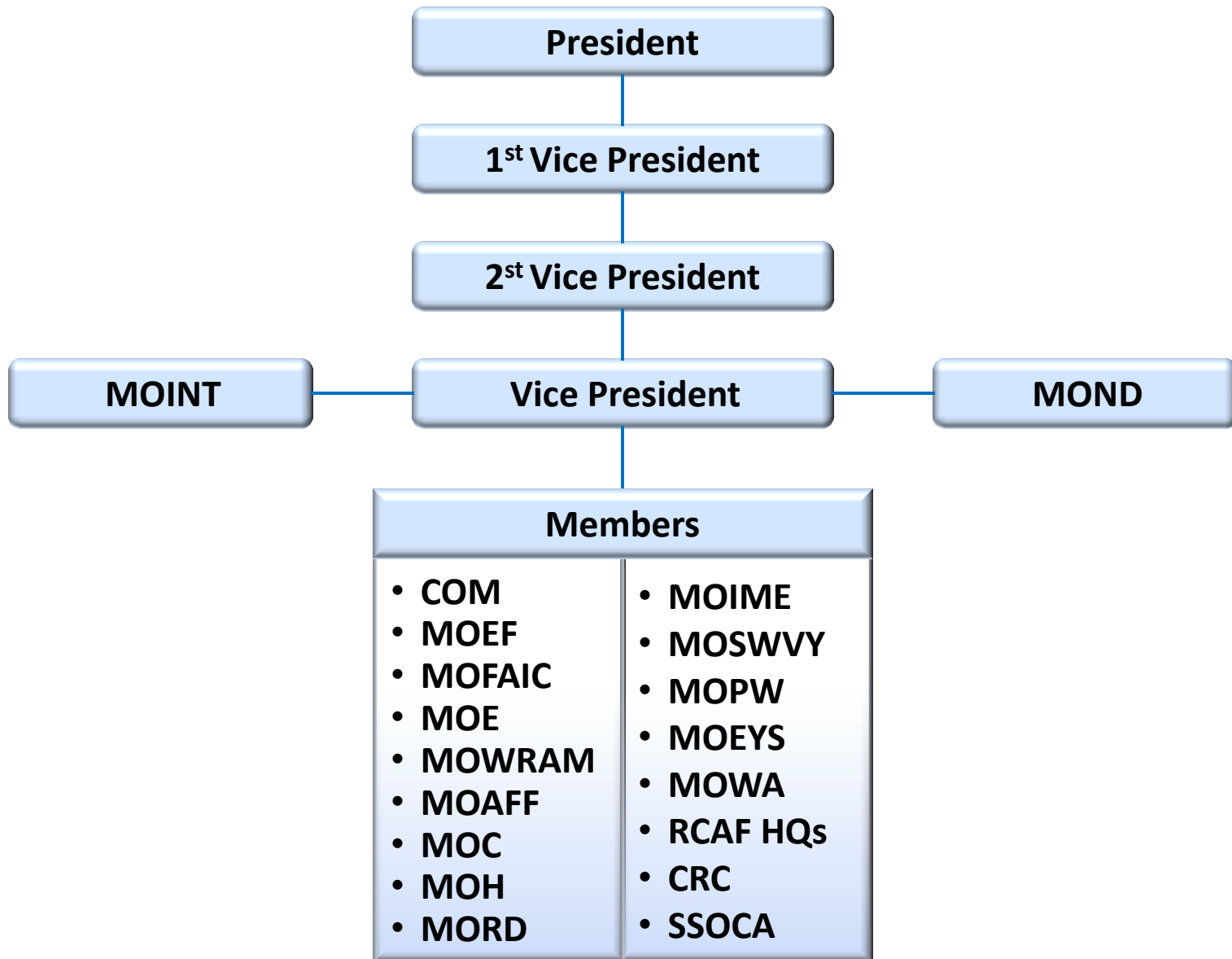
# Kingdom of Cambodia



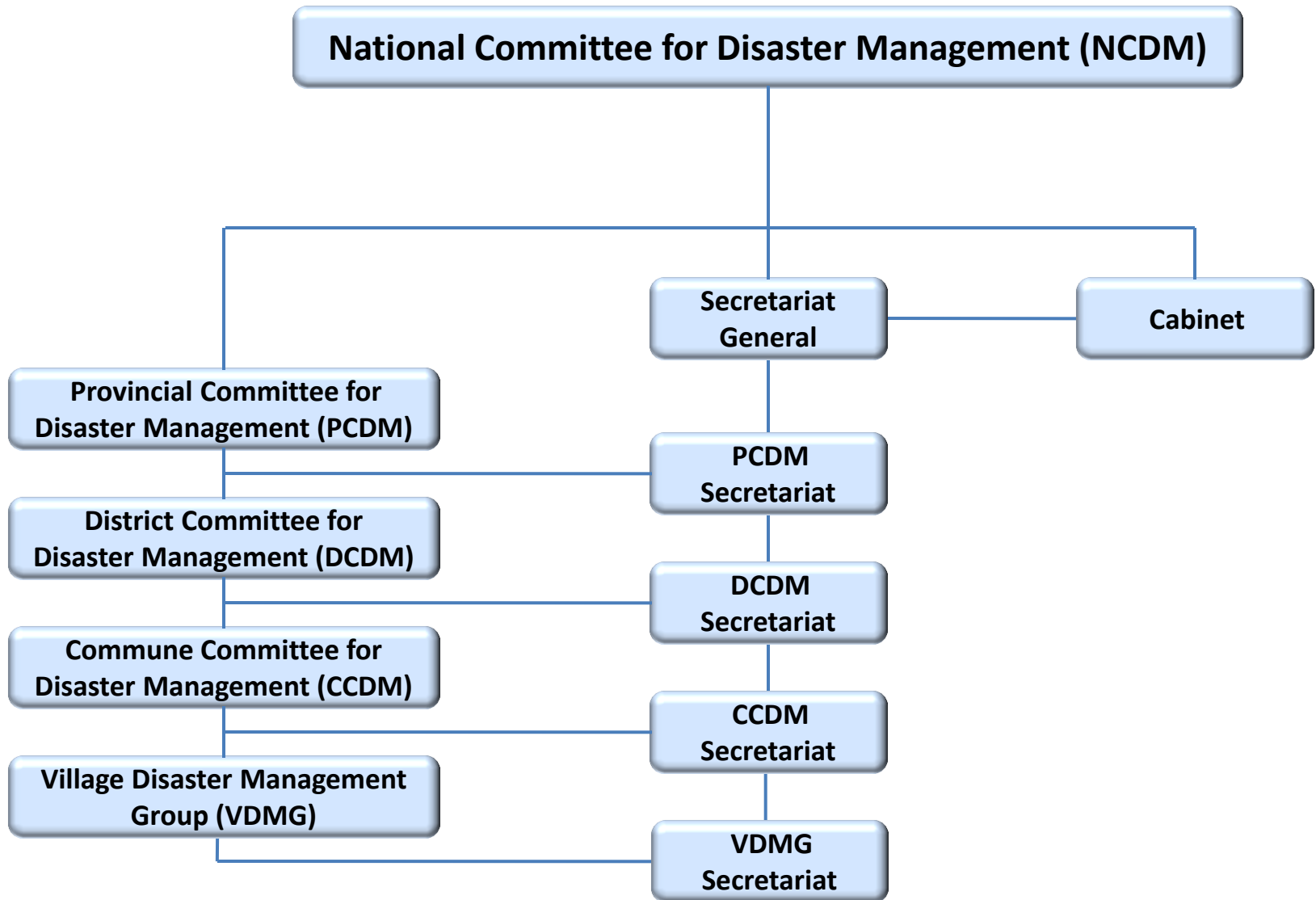
- Country Name : **Kingdom of Cambodia**
- Population : **14.68 Million** (UN, 2012)
  - Urban : 20%
  - Rural : 80%
  - Growth Rate : 1.46% ( UN, 2012)
  - Density : 83 Per. Sq. Km
- Capital : Phnom Penh
- Area : **181,035 Sq Km**
- Province/Capital : **25**
- Major Language : Khmer
- Major Religion : Buddhism
- Currency : Cambodian Riel (  $\text{៛}$  )
- Bordered By :
  - **Thailand** to the West
  - **Lao PDR** to the North
  - **Viet Nam** to the East
  - **Gulf of Thailand** to the South



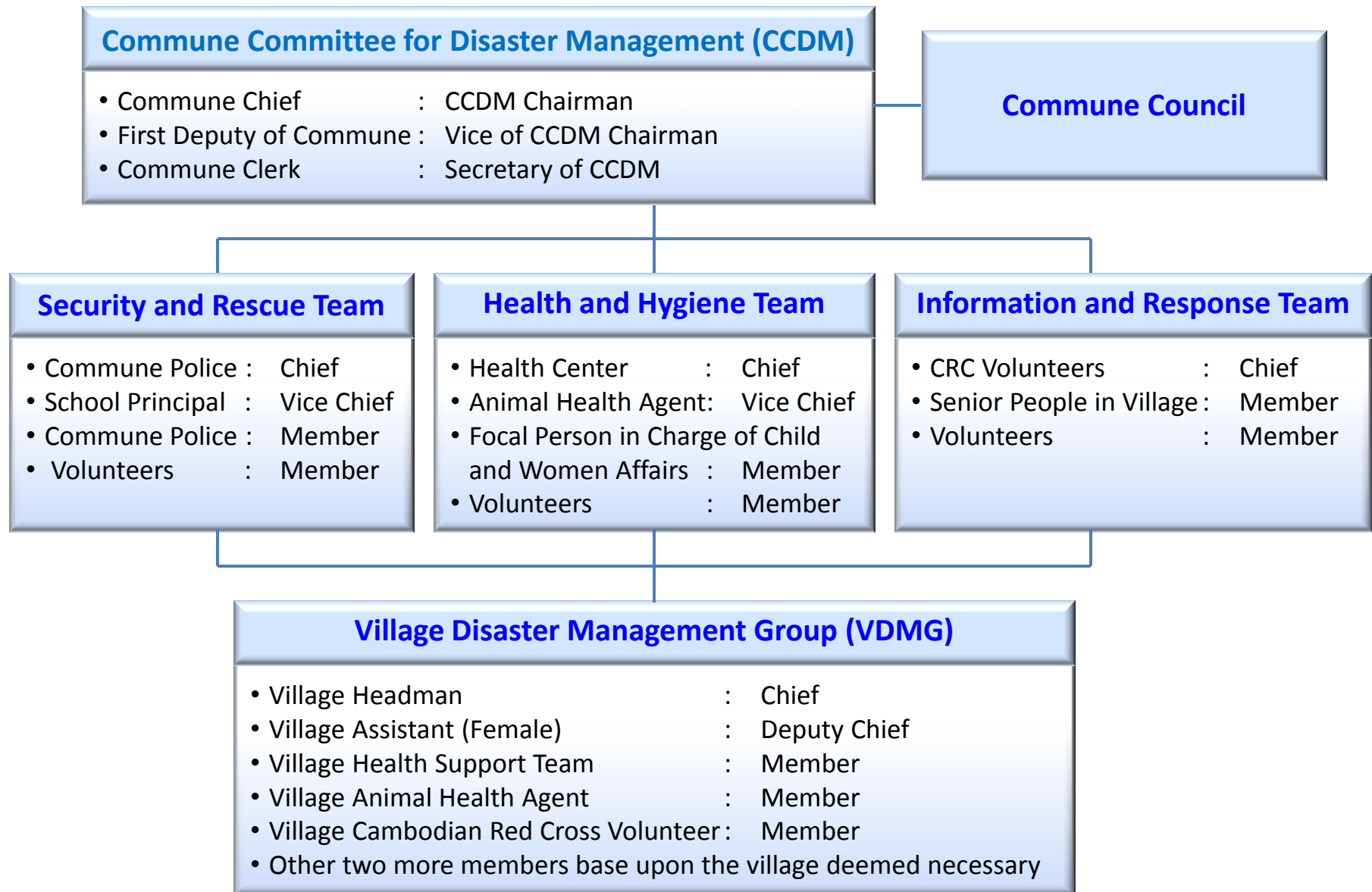
# Disaster Management System in Cambodia



# NCDM Mechanism Structure



# Commune Coordination Mechanism



# Hazard Overview

- Cambodia is considered one of the most hazard-prone countries in South-East Asia;
- Cambodia is also vulnerable to **climate change** due to the **increase of rising temperatures** and shifts in the **timing and duration** of seasons;
- Cambodia has been experienced of several type of hazards such as: **Flood, Lightning**, Fire, Tropical Storm/Typhoon, Epidemic, **Drought**, Riverbank Collapse and Traffic Accident [\*];
- Over decades, **Floods, Drought**, epidemics and storms had threatened the well-being of Cambodian people as well as economic of the country.



# Cambodia Disaster Loss and Damage Database (CamDi)

DesConsultar - Charts / Q

camdi.ncdm.gov.kh/DesInventar/main.jsp?dataIng=EN

 **National Committee for Disaster Management**  
**Cambodia Disaster Loss & Damage Database (CamDi)**

Profile Query View data View map Charts Statistics Reports Thematic Crosstab ☒ English Data

Region **ប្រទេសកម្ពុជា - Cambodia** - [kh855] Query Definition Keyword search (slow)

Select events and geographic units, and set the options that specify the disasters you want to query:

| Disaster type       | Province     | District            | Commune          | Cause |
|---------------------|--------------|---------------------|------------------|-------|
| Flood               | Kampong Thom | Baray               | Chey             |       |
| Fire                | Prey Veng    | <b>Kampong Svay</b> | Damrei Slab      |       |
| Storm               | Phnom Penh   | Krong Stueng Saen   | Kampong Kou      |       |
| Drought             | Ratanak Kiri | Prasat Ballangk     | Kampong Svay     |       |
| Lightning           | Kampong Cham | Prasat Sambour      | Ni Pechr         |       |
| Pest Outbreak       | Battambang   | Sandan              | Phat Sanday      |       |
| Epidemic            | Svay Rieng   | Santuk              | San Kor          |       |
| River Bank Collapse | Kampong Speu | Stoung              | Tbaeng           |       |
|                     | Pursat       |                     | Trapeang Ruessei |       |
|                     | Preah Vihear |                     | Kdei Doung       |       |

Use Ctrl-Click and/or Shift-Click to deselect or for multiple selections. If no selections are made, all items will be selected.  
NOTE: Selections of District have precedence over selections of Province

| Select only events with:                  |                      |                                         |                      | Select events that affected:            |                                           |                                                                  |  | Logic |
|-------------------------------------------|----------------------|-----------------------------------------|----------------------|-----------------------------------------|-------------------------------------------|------------------------------------------------------------------|--|-------|
| <input type="checkbox"/> Deaths           | <input type="text"/> | <input type="checkbox"/> Injured        | <input type="text"/> | <input type="checkbox"/> Water supply   | <input type="checkbox"/> Sewerage         | <input type="radio"/> OR<br><input checked="" type="radio"/> AND |  |       |
| <input type="checkbox"/> Houses Destroyed | <input type="text"/> | <input type="checkbox"/> Houses Damaged | <input type="text"/> | <input type="checkbox"/> Health sector  | <input type="checkbox"/> Education        |                                                                  |  |       |
| <input type="checkbox"/> Victims          | <input type="text"/> | <input type="checkbox"/> Affected       | <input type="text"/> | <input type="checkbox"/> Industries     | <input type="checkbox"/> Transportation   |                                                                  |  |       |
| <input type="checkbox"/> Evacuated        | <input type="text"/> | <input type="checkbox"/> Relocated      | <input type="text"/> | <input type="checkbox"/> Communications | <input type="checkbox"/> Power and Energy |                                                                  |  |       |
| <input type="checkbox"/> Hospitals        | <input type="text"/> | <input type="checkbox"/> Missing        | <input type="text"/> | <input type="checkbox"/> Relief         | <input type="checkbox"/> Agriculture      |                                                                  |  |       |
|                                           |                      |                                         |                      | <input type="checkbox"/> Other sectors  |                                           |                                                                  |  |       |

Windows Taskbar: 9:32 AM 18-Jun-14

Sources: (CamDi), <http://camdi.ncdm.gov.kh>



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# Cambodia Disaster Loss and Damage Database (CamDi)

 Profile
  Query
  View data
  View map
  Charts
  Statistics
  Reports
  Thematic
  Crosstab
  English Data

Region: **Cambodia** - [kh855]

Generated Report

Results: 15 hits. 1 Pages : [get it](#)

| Serial | Event | Province         | District             | Date (YMD) | DataCards | Deaths | Affected | Education centers | Hospitals | Damages in crops Ha. |
|--------|-------|------------------|----------------------|------------|-----------|--------|----------|-------------------|-----------|----------------------|
| 30     | Flood | Banteay Meanchey | Mongkol Borei        | 2011/10/19 | 1         | 7      | 2918     | 49                | 10        | 0                    |
| 31     | Flood | Banteay Meanchey | Phnum Srok           | 2011/10/19 | 1         | 1      | 511      | 2                 | 0         | 0                    |
| 32     | Flood | Banteay Meanchey | Preah Netr Preah     | 2011/10/19 | 1         | 1      | 2742     | 19                | 3         | 30136                |
| 33     | Flood | Banteay Meanchey | Ou Chrov             | 2011/10/19 | 1         | 1      | 3578     | 4                 | 1         | 1853                 |
| 34     | Flood | Banteay Meanchey | Krong Serei Saophoan | 2011/10/19 | 1         | 6      | 1044     | 14                | 0         | 3125                 |
| 35     | Flood | Banteay Meanchey | Thma Puok            | 2011/10/19 | 1         | 1      | 0        | 0                 | 0         | 0                    |
| 36     | Flood | Banteay Meanchey | Svay Chek            | 2011/10/19 | 1         | 2      | 1923     | 1                 | 0         | 922                  |
| 37     | Flood | Banteay Meanchey | Malai                | 2011/10/19 | 1         | 0      | 623      | 5                 | 1         | 50                   |
| 38     | Flood | Banteay Meanchey | Krong Paoy Paet      | 2011/10/19 | 1         | 0      | 2309     | 6                 | 1         | 451                  |
| 39     | Flood | Banteay Meanchey | Ou Chrov             | 2012/9/25  | 1         | 2      | 2705     | 21                | 0         | 6503                 |
| 40     | Flood | Banteay Meanchey | Krong Paoy Paet      | 2012/9/25  | 1         | 2      | 4496     | 7                 | 0         | 0                    |
| 41     | Flood | Banteay Meanchey | Malai                | 2012/9/25  | 1         | 0      | 1431     | 7                 | 0         | 7938                 |
| 42     | Flood | Banteay Meanchey | Krong Serei Saophoan | 2012/9/25  | 1         | 0      | 531      | 5                 | 0         | 8400                 |
| 43     | Flood | Banteay Meanchey | Phnum Srok           | 2012/9/25  | 1         | 0      | 135      | 0                 | 0         | 430                  |
| 44     | Flood | Banteay Meanchey | Mongkol Borei        | 2012/9/25  | 1         | 0      | 414      | 0                 | 0         | 3959                 |

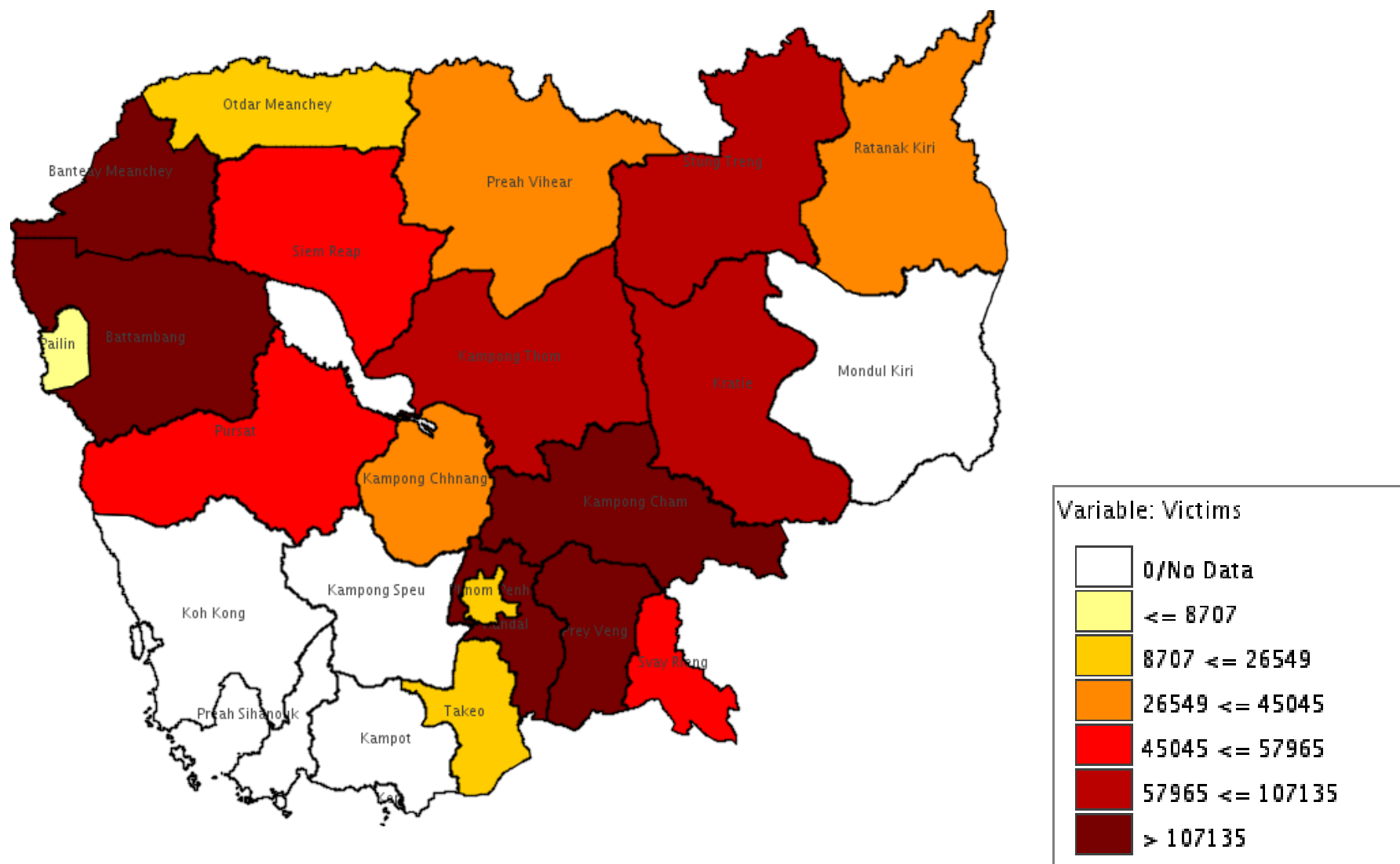
Results: 15 hits. 1 Pages :

Sources: (CamDi), <http://camdi.ncdm.gov.kh>



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# 2013 Map of Flood Victims (CamDi)

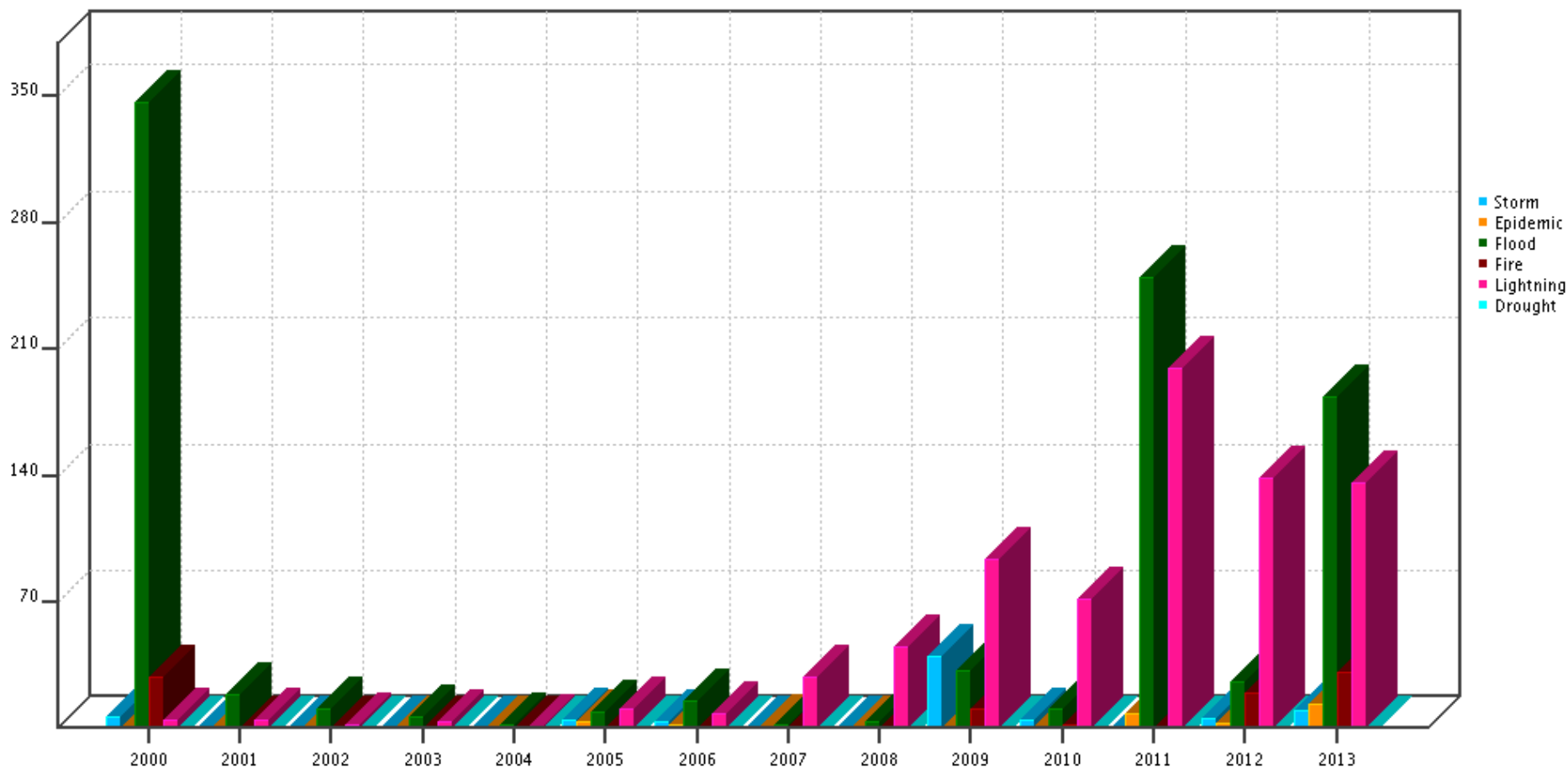


Sources: (CamDi), <http://camdi.ncdm.gov.kh>



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# Deaths From Multi-Hazards By Year (2000 – 2013)



Sources: (CamDi), <http://camdi.ncdm.gov.kh>



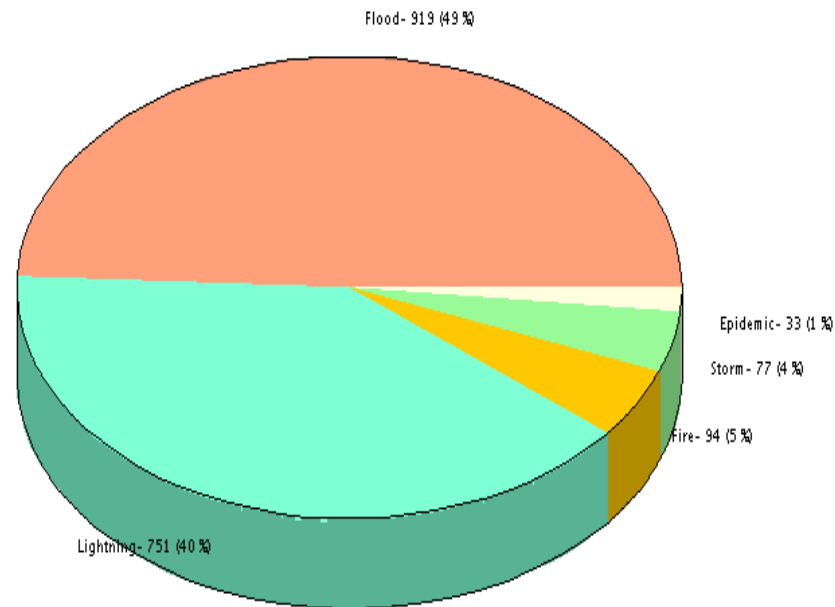
# Deaths and Victims From Multi-Hazards By Year (2000 - 2013)

| Event        | Flood      |            | Lightning  |         | Fire      |         | Storm     |         | Epidemic |           | Drought |           |
|--------------|------------|------------|------------|---------|-----------|---------|-----------|---------|----------|-----------|---------|-----------|
| Year         | Deaths     | Victims    | Deaths     | Victims | Deaths    | Victims | Deaths    | Victims | Deaths   | Victims   | Deaths  | Victims   |
| 2000         | 347        | 3305582    | 5          | 0       | 29        | 0       | 7         | 66      | 0        | 0         | 0       | 0         |
| 2001         | 19         | 590026     | 5          | 0       | 0         | 489     | 912       |         | 0        | 0         | 0       | 20283     |
| 2002         | 11         | 960321     | 2          | 0       | 0         | 30      | 0         | 723     | 0        | 0         | 0       | 842563    |
| 2003         | 7          | 96999      | 4          | 0       | 0         | 108     | 0         | 5191    | 0        | 0         | 0       | 0         |
| 2004         | 2          | 8430       | 1          | 0       | 0         | 337     | 0         | 1713    | 0        | 0         | 0       | 455327    |
| 2005         | 9          | 72567      | 11         | 0       | 0         | 3082    | 5         | 1252    | 4        | 0         | 0       | 1024335   |
| 2006         | 15         | 807202     | 8          | 9       | 0         | 1002    | 4         | 2442    | 2        | 0         | 0       | 100592    |
| 2007         | 2          | 75156      | 29         | 4       | 1         | 1448    | 0         | 6238    | 1        | 0         | 0       | 0         |
| 2008         | 4          | 43601      | 45         | 4       | 0         | 1662    | 0         | 21507   | 0        | 1         | 0       | 31706     |
| 2009         | 32         | 528597     | 94         | 111     | 11        | 3330    | 40        | 17204   | 0        | 1         | 0       | 0         |
| 2010         | 11         | 141748     | 72         | 18      | 2         | 3936    | 5         | 20729   | 1        | 0         | 0       | 0         |
| 2011         | 250        | 1884402    | 200        | 5       | 0         | 1319    | 0         | 4093    | 8        | 0         | 0       | 358       |
| 2012         | 26         | 54909      | 139        | 37      | 20        | 3850    | 6         | 4235    | 3        | 0         | 0       | 25563     |
| 2013         | 184        | 1893198    | 136        | 2049    | 31        | 1396    | 10        | 24867   | 14       | 12        | 0       | 0         |
| <b>TOTAL</b> | <b>919</b> | 10,462,738 | <b>751</b> | 2237    | <b>94</b> | 21,989  | <b>77</b> | 111,172 | 33       | <b>14</b> | 0       | 2,500,727 |

Sources: (CamDi), <http://camdi.ncdm.gov.kh>



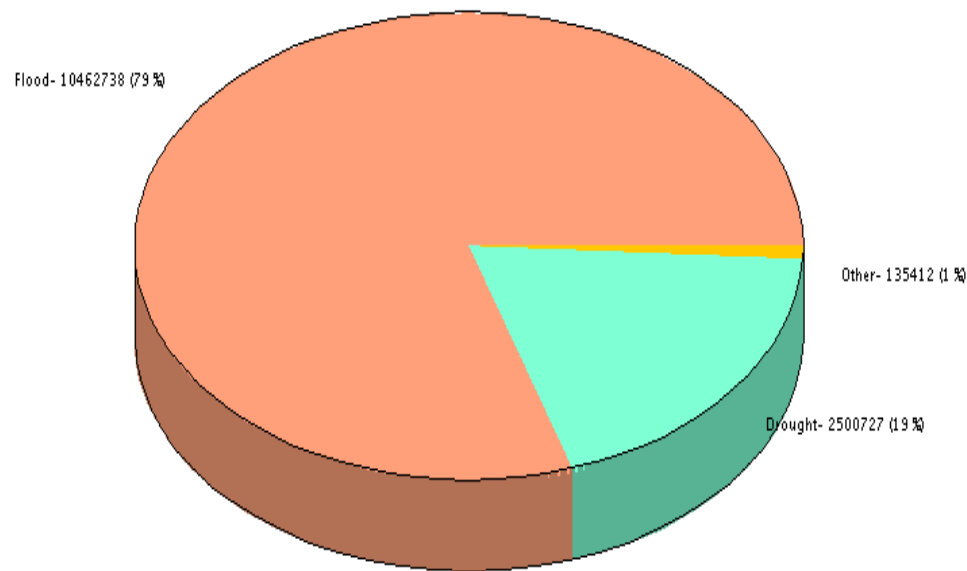
# Percentage of Deaths Caused by Multi-Hazards (2000 - 2013)



Sources: (CamDi), <http://camdi.ncdm.gov.kh>



# Percentage of Victims Caused by Multi-Hazards (2000 - 2013)

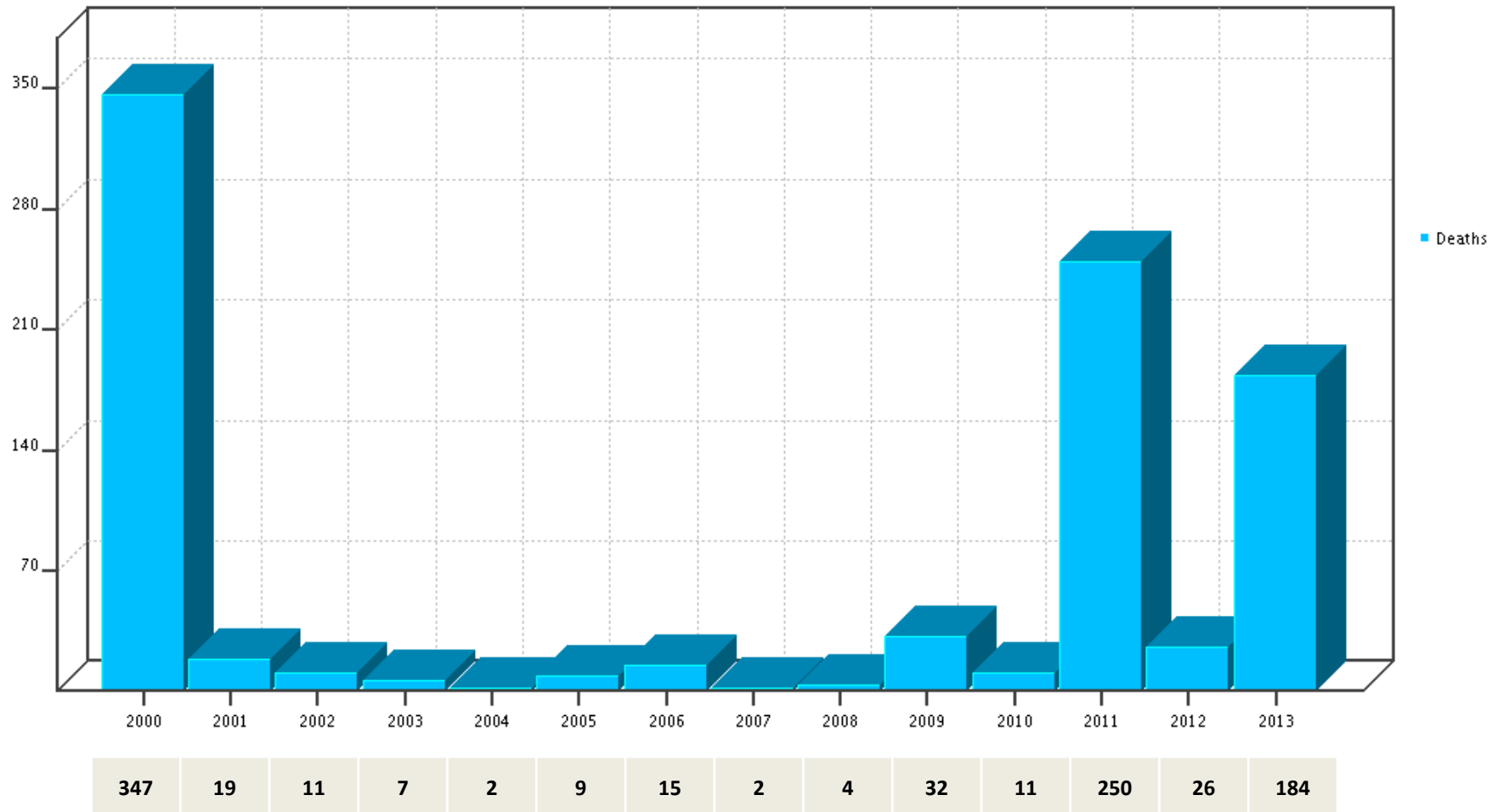


Sources: (CamDi), <http://camdi.ncdm.gov.kh>



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# Deaths Caused by Floods (2000 – 2013)

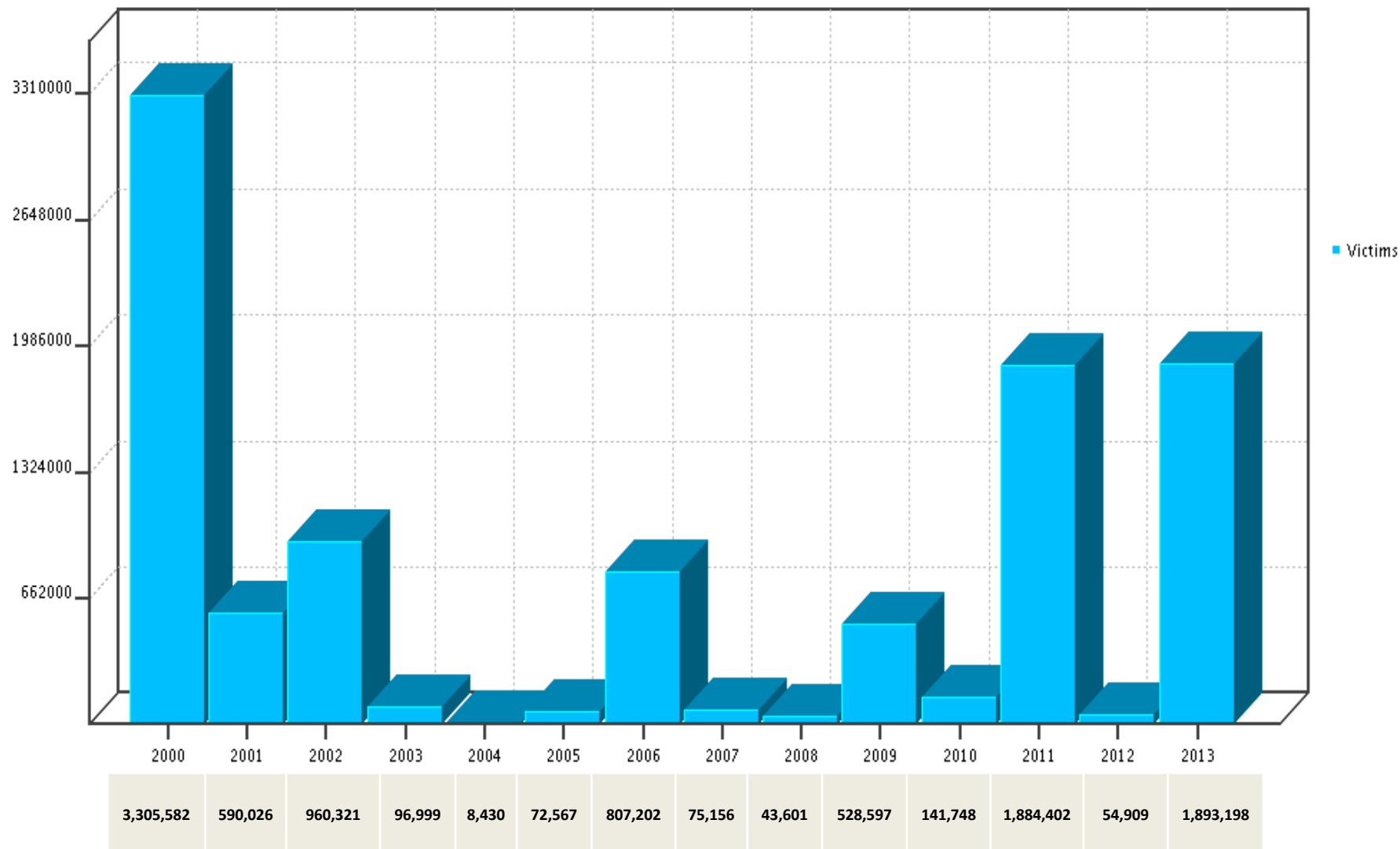


Sources: (CamDi), <http://camdi.ncdm.gov.kh>



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# Victims Caused by Floods (2000 – 2013)



Sources: (CamDi), <http://camdi.ncdm.gov.kh>



# Disaster Damage and Loss

## Summary of Damage and Losses (DaLA)

| Sectors and Sub-Sectors | 2009 Ketsana Typhoon   |       |               | 2011 Flood             |        |               | 2013 Flood             |        |               |
|-------------------------|------------------------|-------|---------------|------------------------|--------|---------------|------------------------|--------|---------------|
|                         | Effects (US\$ Million) |       |               | Effects (US\$ Million) |        |               | Effects (US\$ Million) |        |               |
|                         | Damage                 | Loss  | Total         | Damage                 | Loss   | Total         | Damage                 | Loss   | Total         |
| Infrastructure          | 17.26                  | 11.49 | 28.75         | 375.70                 | 34.70  | 410.40        | 134.27                 | 0.00   | 134.27        |
| Social Sector           | 39.55                  | 3.33  | 42.89         | 34.70                  | n/a    | 34.70         | 16.46                  | 38.45  | 54.91         |
| Productive Sector       | 1.05                   | 59.01 | 60.06         | 40.80                  | 138.80 | 179.60        | 2.54                   | 164.59 | 167.13        |
| Cross-Cutting Sector    | 0.21                   | 0.10  | 0.31          | 0.00                   | n/a    | n/a           | n/a                    | n/a    | n/a           |
| <b>TOTAL</b>            | 58.07                  | 73.93 | <b>132.01</b> | 451.20                 | 173.50 | <b>624.70</b> | 153.27                 | 203.04 | <b>356.31</b> |

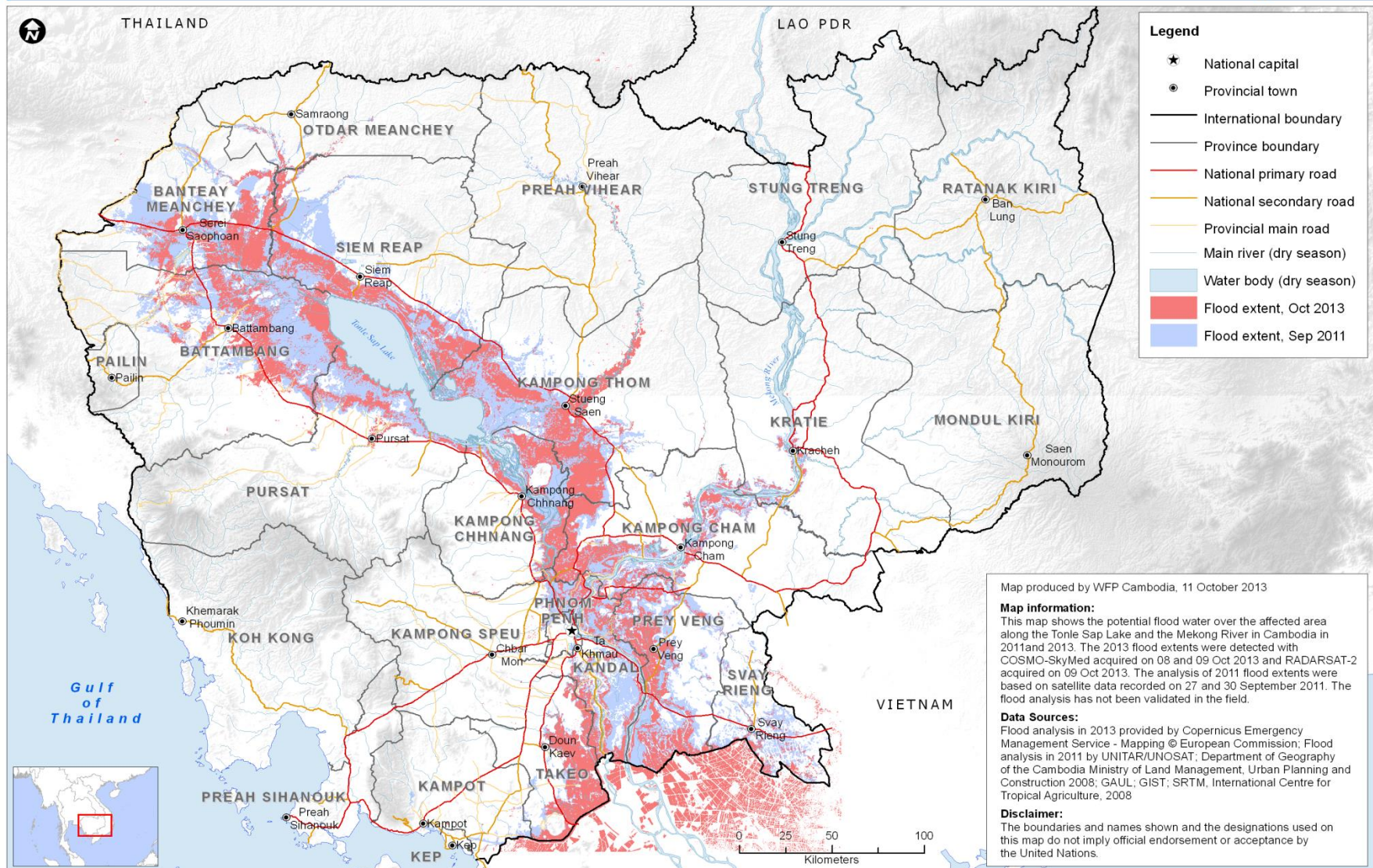
**Sources:** Ketsana Comprehensive Post-Disaster Needs Assessment (March 2010), ADB Flood Damage Emergency Reconstruction Project (Preliminary. Assessment, March 2012), and Post-Flood Early Recovery Needs Assessment (April 8, 2014)

**Note:** Damage and Loss Assessment (DaLA)



# Map of the 2013 Flood Extent in Cambodia

## Overview of Flood Extent in Cambodia, October 2013



# Structural DRR Measures

- Engineered buildings;
- Non-engineered buildings;
- Retrofit of existing buildings;
- Strengthening and protecting infrastructure;
- Protection of lifelines and critical facilities (high ground/ structure);
- Flood protection measures;
- Structural warning systems.



# Non-Structural DRR Measures

- DRR & CCA action plan/ contingency plan;
- Warning systems;
- Business continuity plan;
- Strengthening building codes/ regulations;
- Land-use managements;
- Public awareness campaigns;
- Education/training/ exercises.



# Concerned Ministries - Institutions

- Ministry of Water Resources and Meteorology (**MOWRAM**) is mandated to produce and disseminate the forecasting and early warning information to the entire country;
- **NCDM** in partnership with other stakeholders (Ministries-Institutions, PCDM/DCDM, humanitarian agencies etc.) assume the coordination role;
- Regional Flood Management and Mitigation Center (RFMMC) of the Mekong River Commission (**MRC**) based in Vientiane (Lao PDR) is responsible for producing and disseminating flood forecasting and early warning information for its member states in the Lower Mekong Basin, including Cambodia.

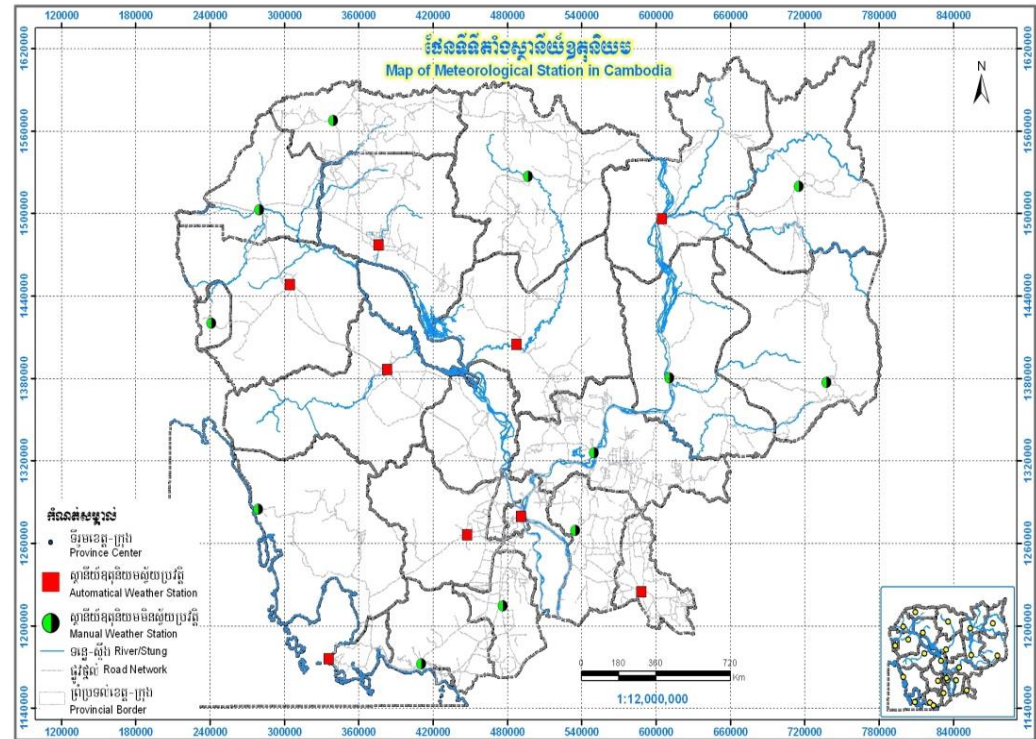


# Weather Forecasting System (1)

## Domestic Data and Information

### A. Surface Observation

- Synoptic Station Consists of: 21-Synoptic Stations including 9-Automatic Stations;
- 21-Synoptic are operating with manned observational equipment;
- Data and information receiving by SMS, E-mail, Fax, and Phone.



Sources: MOWRAM



# Weather Forecasting System (2)

## Global Data and Information

### B. Surface and Upper Air Data and Information

#### GTS

- NWP
- SATAID
- Digital atmosphere
- GPV Data

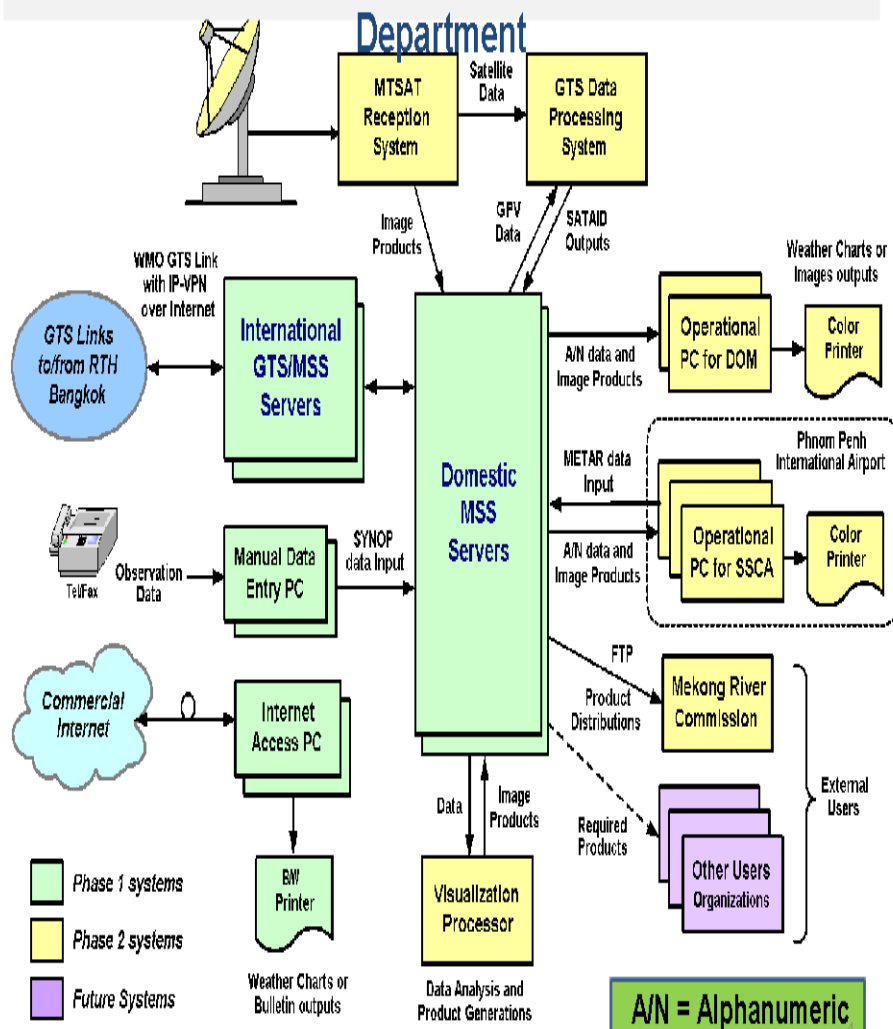
#### MTSAT

#### Online

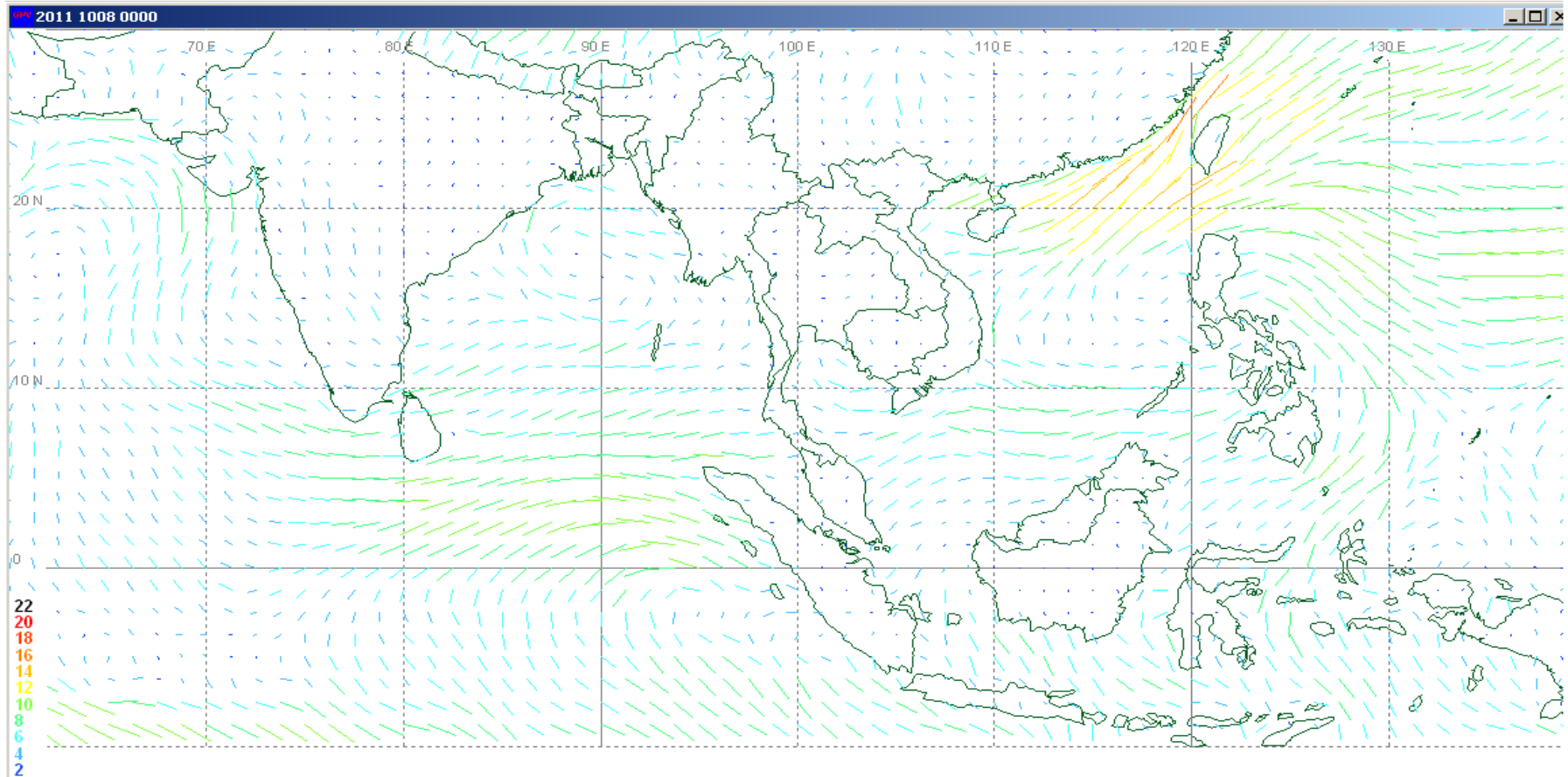
- NWP
- Weather Map,
- Satellite Imagery

(Sources: JMA, Hong Kong Observatory, BOM, NOAA etc.)

### 3-Data / Processing Flow on the Meteorological Information Systems for Cambodia Meteorology Department



## GPV VIEWER SOFTWARE TO SEE GPV DATA



GPV Time 2011/10/08 00:00

'Wind Spd Dir Vec' 6-hour forecast values (10/08 06:00)

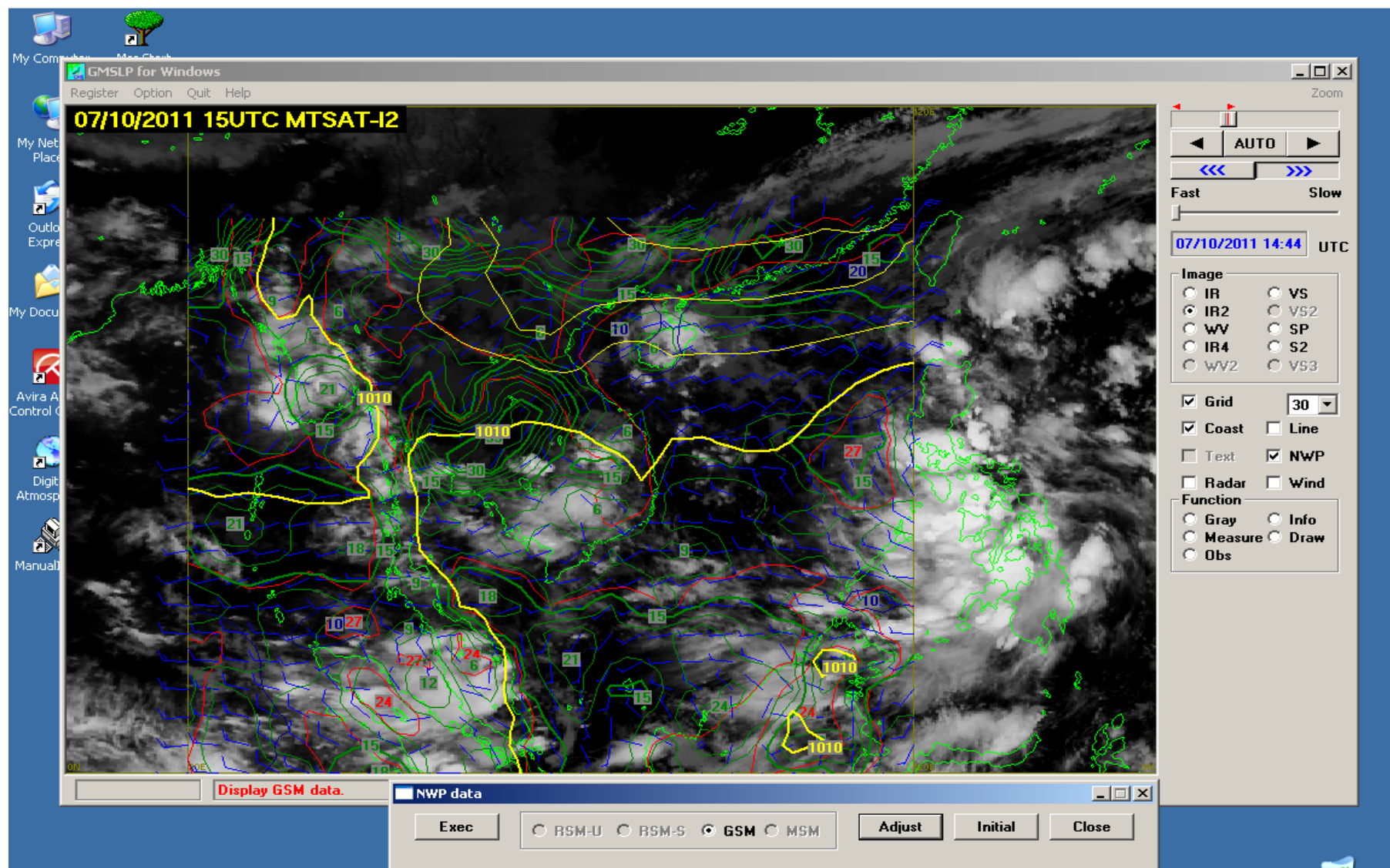
| Animation                              | 00                    | 06                               | 12                    | 18                    | 24                    | 30                    | 36                    | 42                    | 48                    | 54                    | 60                    | 66                    | 72                    | 96                    | 120                   | 144                   | 168                   | 192                   |
|----------------------------------------|-----------------------|----------------------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| <input type="radio"/> Surface Pressure | <input type="radio"/> | <input type="radio"/>            | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| <input type="radio"/> Wind Speed       | <input type="radio"/> | <input type="radio"/>            | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| <input type="radio"/> Wind Spd Dir Vec | <input type="radio"/> | <input checked="" type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| <input type="radio"/> Wave Hight       | <input type="radio"/> | <input type="radio"/>            | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| <input type="radio"/> Wave Ht Dir Vec  | <input type="radio"/> | <input type="radio"/>            | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| <input type="radio"/> Wave Period      | <input type="radio"/> | <input type="radio"/>            | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

Clear

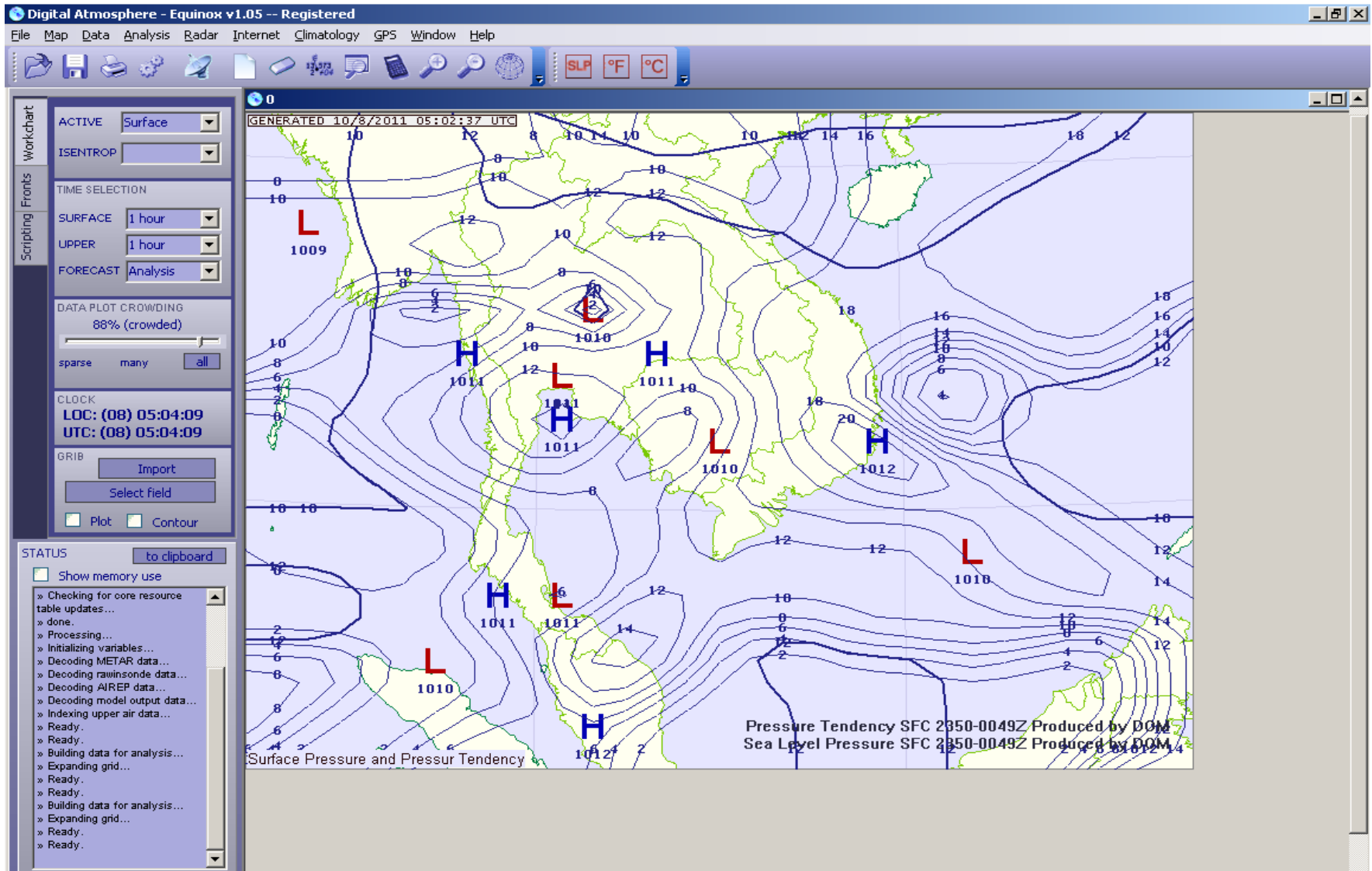
Close



## SATAID TO SEE GPV AND SATTLLITE DATA



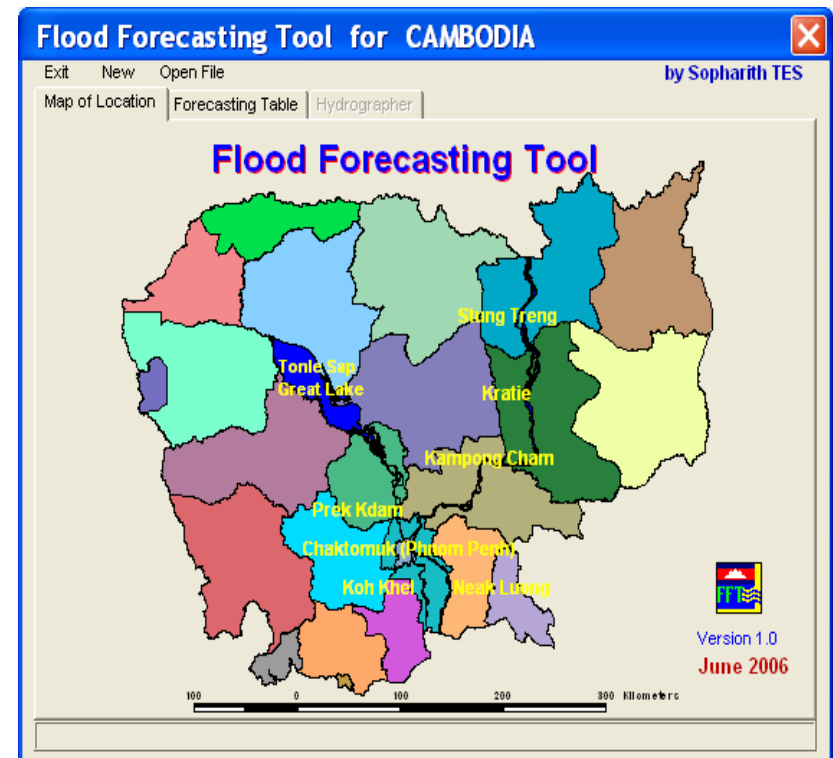
# Digital Atmosphere Software for Analysis



# River Flood Forecasting System (1)

## Domestic Data and Information

- River Flood Forecasting System in Cambodia is carried out by Department of Hydrology and River Works (DHRW) of the Ministry of Water Resources and Meteorology (MOWRAM);
- So far, the system could forecast 3-days flood levels at **7-stations** located at the mainstream of rivers: **Mekong River, Bassac River and Tonle Sap Lake**;
- **4-stations** were installed along **Mekong River**: Stung Treng, Kratie, Kampong Cham and Neak Loeung;
- **2-stations** were installed along **Bassac River**: Phnom Penh and Koh Khel;
- **1-station** was installed at **Tonle Sap Lake**: Prek Kdam;
- The multi-regression model has been applied as a tool to simulate the flood level forecasts.



Sources: MOWRAM



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# River Flood Forecasting System (2)

## Flood Forecasting in the Flood Plain

- The multi-regression model has been applied as a tool to simulate the flood level forecasts;
- Understandable, applicable tools and methods available at communities (staff gauge, flood markers and flood emergency response boards);
- Flood forecasts carried out by the DHRW.

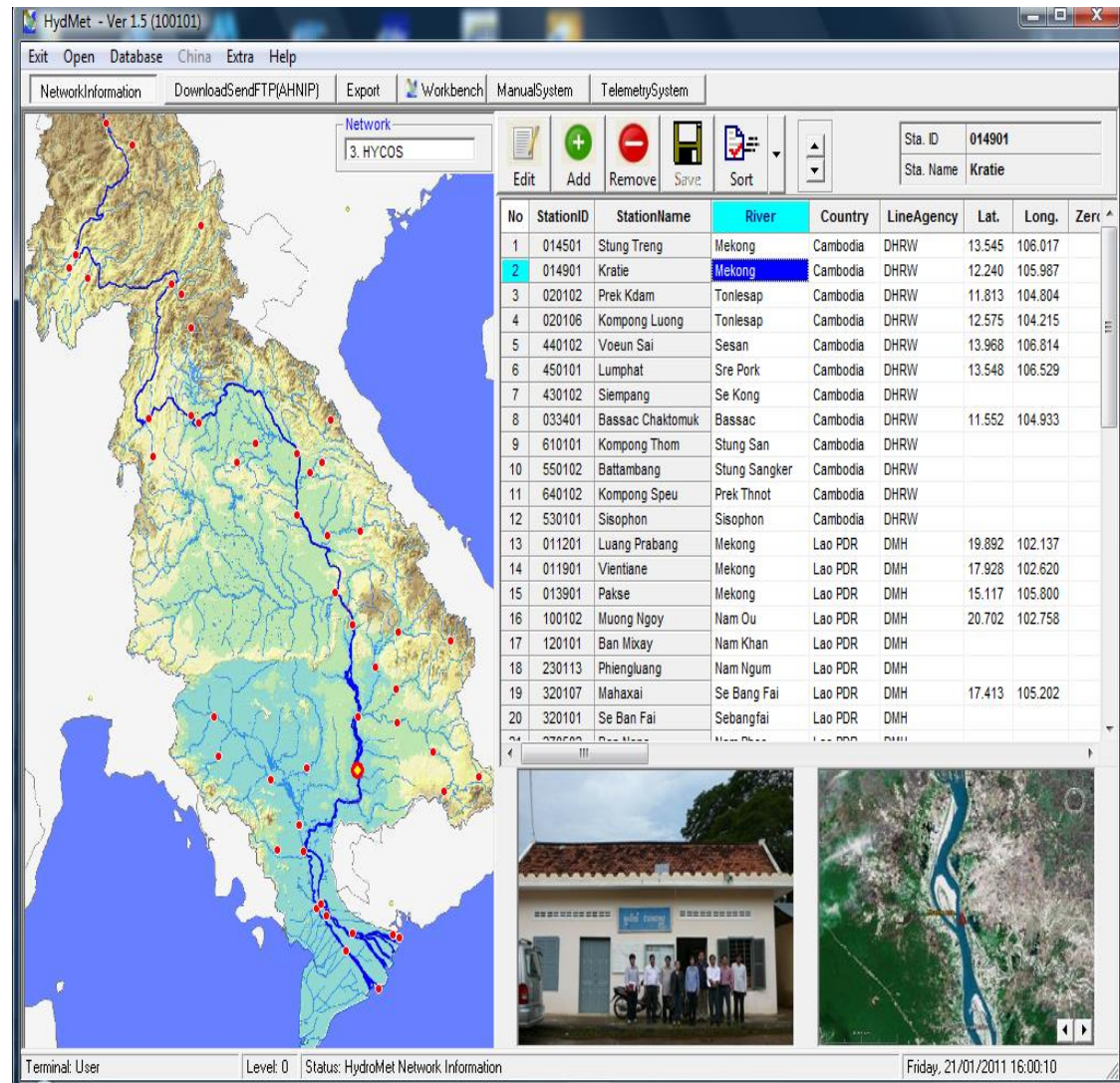
Sources: MOWRAM



# River Flood Forecasting System (3)

## Regional Data and Information

- Basin-wide Real time Data Collection Network;
- Data Transmission every 15mn;
- Mekong-HYCOS: 12-stations in Cambodia among 32-stations of MRC Network;
- Real time data above are very important for flood forecasting and warning.



Sources: MOWRAM



# 4-Classifications of Flood Level In Cambodia

| Based on<br>Annual Maximum Water<br>Level at <b>Bassac-<br/>Chaktomuk Station</b> | <b>Little Flood</b> | <b>Moderate Flood</b>        | <b>Heavy Flood</b>           | <b>Severe Flood</b> |
|-----------------------------------------------------------------------------------|---------------------|------------------------------|------------------------------|---------------------|
|                                                                                   | Lower<br><9.00m     | Between<br>>9.00m to <10.00m | Between<br>10>00m to <11.00m | Higher<br>> 11.00 m |

## Flood Travel time

| Station     | Flow Duration Arrives at<br>Phnom Penh-Chaktomuk |
|-------------|--------------------------------------------------|
| Vientiane   | 9 days                                           |
| Pakse       | 5 days                                           |
| Stung Treng | 3 days                                           |
| Kratie      | 2 days                                           |
| Kg Cham     | 1 day                                            |



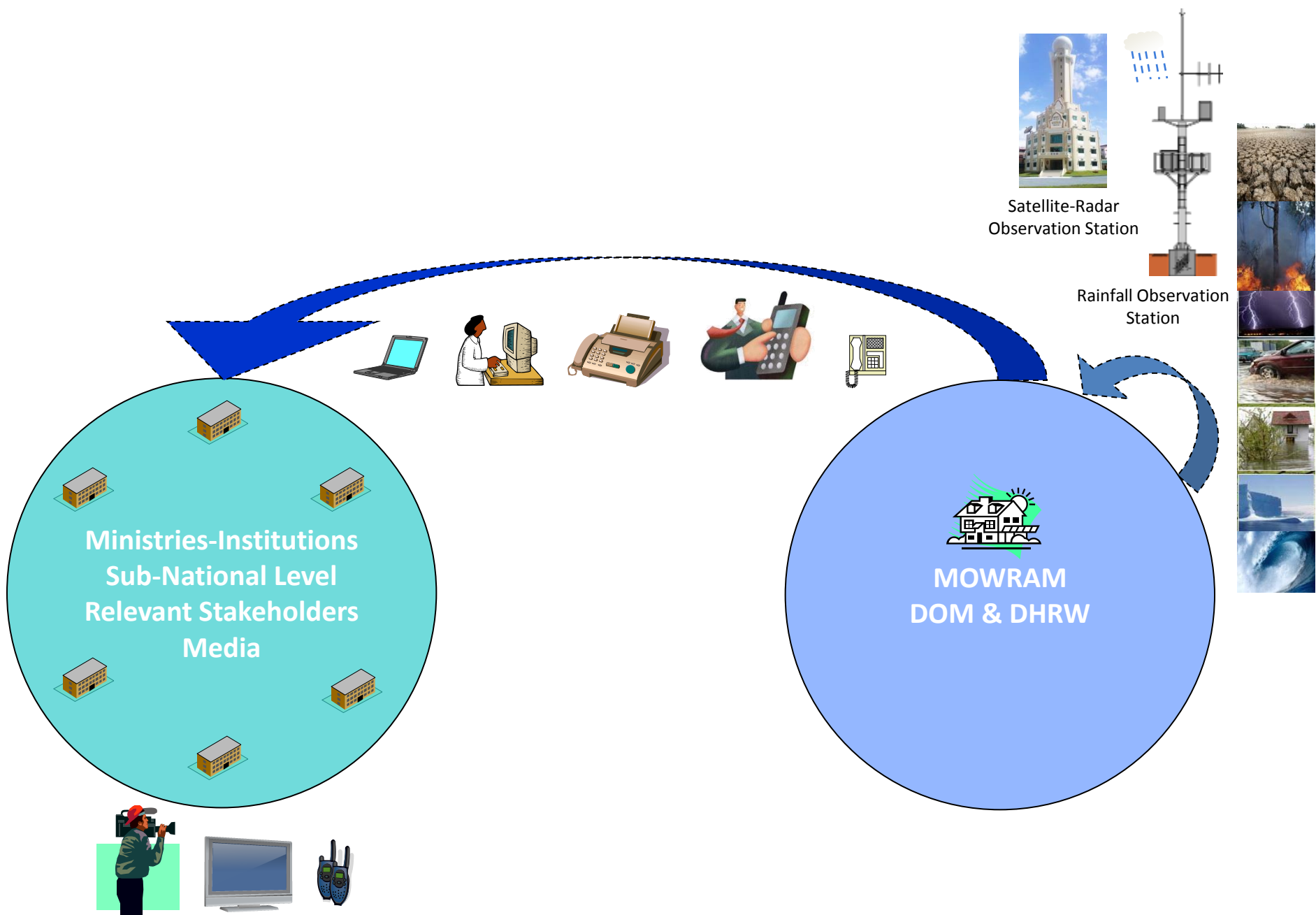
Sources: MOWRAM



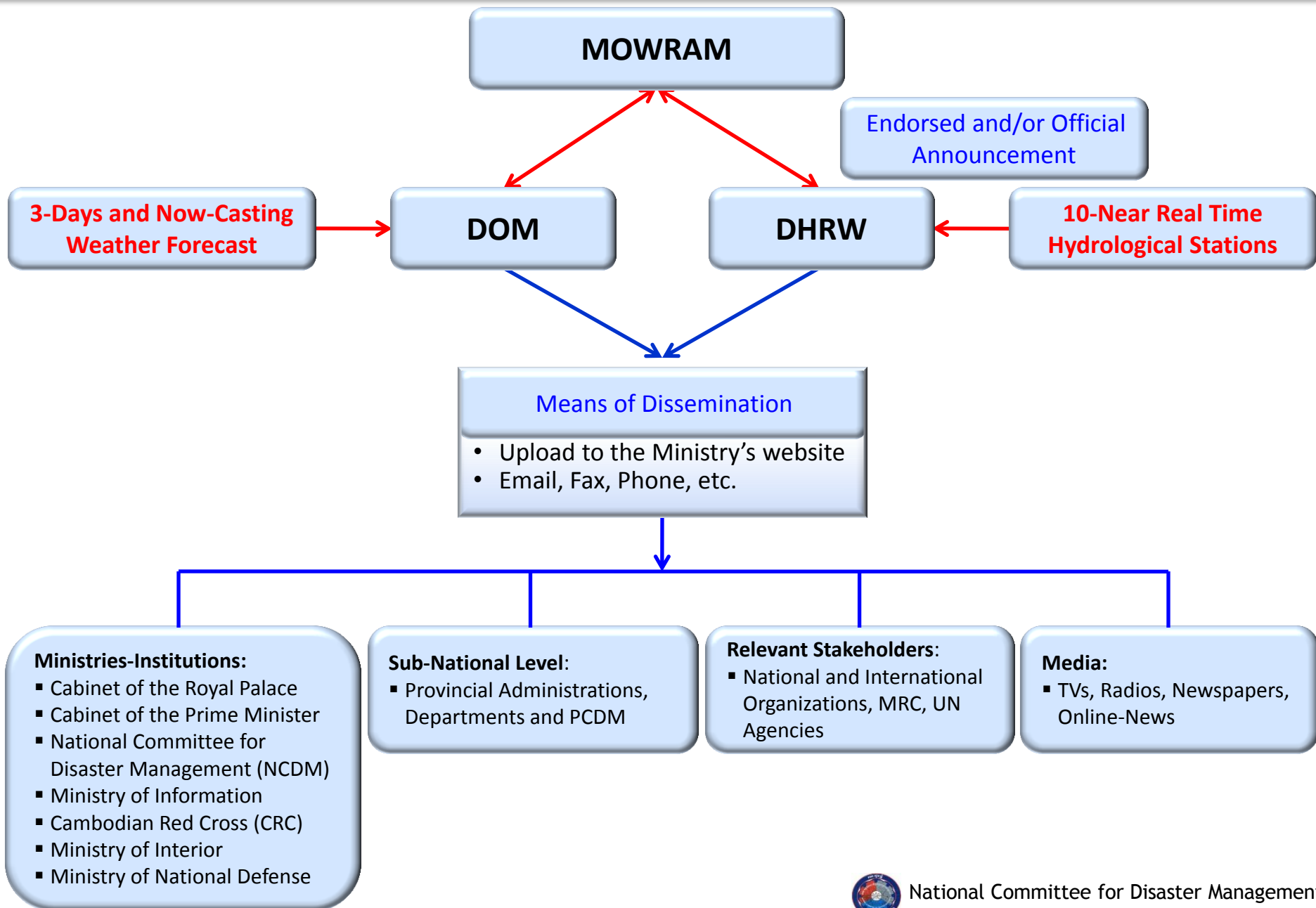
National Committee for Disaster Management

## HYDROLOGICAL STATIONS IN CAMBODIA





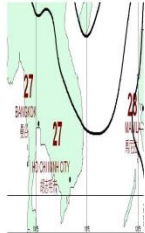
# Dissemination of Forecasting and Early Warning Information



**ព្រះរាជាណាចក្រកម្ពុជា**  
**ជាតិ សាសនា ព្រះមហាក្សត្រ**

**ក្រសួងធនធានទឹក និងឧតុនិយម**  
**នាយកដ្ឋាន ឧតុនិយម**

**1.ស្ថានភាពអាកាសធាតុ ថ្ងៃទី 12 ខែតុលា ឆ្នាំ 2012**



**ព្រះរាជាណាចក្រកម្ពុជា ទទួលបានព័ត៌មានអាកាសធាតុពីប្រទេសកម្ពុជា លក្ខណៈបែបបទអភិបាលកិច្ចអាកាសធាតុនៅក្នុងនោះ:**

**ក.វាលទំនាប:**សីតុណ្ហភាពអប្បបរមាពី 23- 25 °C និងអតិបរមាពី 30-32 °C ផ្ទៃមេឃមានពពកពិតទៅមធ្យម ខ្យល់បក់មកពីទិសបាត់ដំបងមានល្បឿនពី 2- 4 m/s និងអាចមានភ្លៀង ផ្កា រន្ទះ តិចតួចនៅផ្នែកខ្លះនៃរាជធានីភ្នំពេញ ខេត្តកណ្តាល តាកែវ កំពង់ស្ពឺ កំពង់ឆ្នាំង កំពង់ធំ ស្វាយរៀង និង ខេត្តព្រៃវែង ។

**ខ.ខ្ពង់រាប:**សីតុណ្ហភាពអប្បបរមាពី 23- 25 °C និងអតិបរមាពី 30-32 °C ផ្ទៃមេឃមានពពកពិតទៅមធ្យម ខ្យល់បក់មកពីទិសបាត់ដំបងមានល្បឿនពី 2- 4m/s និងអាចមានភ្លៀង ផ្កា រន្ទះ តិចតួចនៅផ្នែកខ្លះនៃខេត្ត កំពង់ចាម ក្រចេះ ស្ទឹងត្រែង រតនៈគិរី មណ្ឌលគិរី និងខេត្តត្បូងឃ្មុំ ។

**គ.មាត់សមុទ្រ:** សីតុណ្ហភាពអប្បបរមាពី 21- 23 °C និងអតិបរមាពី 28- 30 °C ផ្ទៃមេឃមានពពកពិតទៅមធ្យម ខ្យល់បក់មកពីទិសទិសឦសានមានល្បឿនពី 2- 4m/s និងអាចមានភ្លៀង ផ្កា រន្ទះ តិចតួចនៅផ្នែកខ្លះនៃខេត្តកែប កំពត និងខេត្ត កោះកុង រលកសមុទ្រមានកម្រិតពី 1.00m -1.50m ។

**2.ស្ថានភាពអាកាសធាតុ ថ្ងៃទី 13 -15 ខែតុលា ឆ្នាំ2012**

| រាជធានី-ខេត្ត | 13                                    | 14                                    | 15                                    |
|---------------|---------------------------------------|---------------------------------------|---------------------------------------|
| ភ្នំពេញ       | 07:01-14:00                           |                                       |                                       |
|               | សីតុ: 24 - 32 °C<br>ខ្យល់: NW - 2 m/s | សីតុ: 24 - 32 °C<br>ខ្យល់: NW - 2 m/s | សីតុ: 24 - 33 °C<br>ខ្យល់: SW - 2 m/s |
|               | 14:01-07:00                           |                                       |                                       |
| កណ្តាល        | សីតុ: 25 - 33 °C<br>ខ្យល់: NW - 2 m/s | សីតុ: 25 - 33 °C<br>ខ្យល់: NW - 2 m/s | សីតុ: 25 - 33 °C<br>ខ្យល់: SW - 3 m/s |
|               | 07:01-14:00                           |                                       |                                       |
|               | សីតុ: 23 - 32 °C<br>ខ្យល់: NW - 2 m/s | សីតុ: 24 - 32 °C<br>ខ្យល់: NW - 2 m/s | សីតុ: 24 - 32 °C<br>ខ្យល់: SW - 2 m/s |
| តាកែវ         | សីតុ: 24 - 33 °C<br>ខ្យល់: NW - 2 m/s | សីតុ: 25 - 33 °C<br>ខ្យល់: NW - 2 m/s | សីតុ: 25 - 33 °C<br>ខ្យល់: SW - 2 m/s |
|               | 07:01-14:00                           |                                       |                                       |
|               | សីតុ: 23 - 32 °C<br>ខ្យល់: NW - 2 m/s | សីតុ: 24 - 32 °C<br>ខ្យល់: NW - 2 m/s | សីតុ: 24 - 33 °C<br>ខ្យល់: SW - 2 m/s |
| កំពង់ស្ពឺ     | សីតុ: 24 - 33 °C<br>ខ្យល់: NW - 2 m/s | សីតុ: 25 - 33 °C<br>ខ្យល់: NW - 2 m/s | សីតុ: 25 - 34 °C<br>ខ្យល់: SW - 2 m/s |
|               | 07:01-14:00                           |                                       |                                       |
|               | សីតុ: 23 - 32 °C<br>ខ្យល់: NW - 2 m/s | សីតុ: 23 - 32 °C<br>ខ្យល់: NW - 2 m/s | សីតុ: 23 - 33 °C<br>ខ្យល់: SW - 2 m/s |
| កំពង់ធំ       | សីតុ: 24 - 33 °C<br>ខ្យល់: NW - 2 m/s | សីតុ: 24 - 33 °C<br>ខ្យល់: NW - 2 m/s | សីតុ: 24 - 34 °C<br>ខ្យល់: SW - 2 m/s |
|               | 07:01-14:00                           |                                       |                                       |
|               | សីតុ: 23 - 31 °C<br>ខ្យល់: NW - 2 m/s | សីតុ: 24 - 31 °C<br>ខ្យល់: NW - 2 m/s | សីតុ: 24 - 32 °C<br>ខ្យល់: SW - 2 m/s |
| កំពង់ចំរើ     | សីតុ: 24 - 33 °C<br>ខ្យល់: NW - 2 m/s | សីតុ: 25 - 33 °C<br>ខ្យល់: NW - 2 m/s | សីតុ: 25 - 34 °C<br>ខ្យល់: SW - 2 m/s |
|               | 07:01-14:00                           |                                       |                                       |
|               | សីតុ: 23 - 31 °C<br>ខ្យល់: NW - 2 m/s | សីតុ: 24 - 31 °C<br>ខ្យល់: NW - 2 m/s | សីតុ: 24 - 32 °C<br>ខ្យល់: SW - 2 m/s |
| កំពង់ស្ពឺ     | សីតុ: 24 - 33 °C<br>ខ្យល់: NW - 2 m/s | សីតុ: 25 - 33 °C<br>ខ្យល់: NW - 2 m/s | សីតុ: 25 - 34 °C<br>ខ្យល់: SW - 2 m/s |
|               | 07:01-14:00                           |                                       |                                       |
|               | សីតុ: 23 - 32 °C<br>ខ្យល់: NW - 2 m/s | សីតុ: 23 - 32 °C<br>ខ្យល់: NW - 2 m/s | សីតុ: 23 - 33 °C<br>ខ្យល់: SW - 2 m/s |
| កំពង់ធំ       | សីតុ: 24 - 33 °C<br>ខ្យល់: NW - 2 m/s | សីតុ: 25 - 33 °C<br>ខ្យល់: NW - 2 m/s | សីតុ: 25 - 34 °C<br>ខ្យល់: SW - 2 m/s |
|               | 07:01-14:00                           |                                       |                                       |
|               | សីតុ: 23 - 31 °C<br>ខ្យល់: NW - 2 m/s | សីតុ: 24 - 31 °C<br>ខ្យល់: NW - 2 m/s | សីតុ: 24 - 32 °C<br>ខ្យល់: SW - 2 m/s |
| កំពង់ចំរើ     | សីតុ: 24 - 33 °C<br>ខ្យល់: NW - 2 m/s | សីតុ: 25 - 33 °C<br>ខ្យល់: NW - 2 m/s | សីតុ: 25 - 34 °C<br>ខ្យល់: SW - 2 m/s |
|               | 07:01-14:00                           |                                       |                                       |
|               | សីតុ: 23 - 31 °C<br>ខ្យល់: NW - 2 m/s | សីតុ: 24 - 31 °C<br>ខ្យល់: NW - 2 m/s | សីតុ: 24 - 32 °C<br>ខ្យល់: SW - 2 m/s |

**ព្រះរាជាណាចក្រកម្ពុជា**  
**ជាតិ សាសនា ព្រះមហាក្សត្រ**

**ក្រសួងធនធានទឹក និងឧតុនិយម**  
**នាយកដ្ឋាន ជលសាស្ត្រ និងការងារទន្លេ**

**ប្រតិភូប្រតិភូនិង លក្ខណៈបែបបទអភិបាលកិច្ចអាកាសធាតុនៅក្នុងនោះ:**

**1-កម្ពស់ទឹកព័ត៌មានប្រើប្រាស់នៅថ្ងៃទី 14-10-2012 វេលាម៉ោង 07 ព្រឹក តាមបណ្តាស្ថានីយជលសាស្ត្រ:**

| ឈ្មោះស្ថានីយ                           | ទឹកមានកម្ពស់ (ម៉ែត្រ) | ជ្រៅបង្អស់ (ម៉ែត្រ) | ជ្រៅបង្អស់ (ម៉ែត្រ) | ជ្រៅបង្អស់ (ម៉ែត្រ) | ទឹកភ្លៀង (មម) | Wn ម៉ែត្រ |
|----------------------------------------|-----------------------|---------------------|---------------------|---------------------|---------------|-----------|
|                                        |                       |                     |                     |                     | 13-10-2012    |           |
| 1-ទន្លេមេគង្គ-ស្ទឹងត្រែង (Stung Treng) | 5.17                  | +0.02               | -3.53               | -1.48               | 9.0           | 10.70     |
| 2-ទន្លេមេគង្គ-ក្រចេះ (Kratie)          | 13.44                 | -0.35               | -6.52               | -2.90               | n             | 22.00     |
| 3-ទន្លេមេគង្គ-កំពង់ចាម(Kg.cham)        | 9.68                  | -0.45               | -4.86               | -2.33               | 0.3           | 15.20     |
| 4-ទន្លេបាសាក់-ចតុមុខ(Chaktomuk)        | 7.94                  | -0.23               | -2.81               | -1.46               | n             | 10.50     |
| 5-ទន្លេមេគង្គ-អ្នកលៀង (Neak Luong)     | 5.80                  | -0.15               | -2.08               | -0.94               | 14.8          | 7.50      |
| 6-ទន្លេបាសាក់-កោះខែល (Koh Khel)        | 6.69                  | -0.03               | -1.17               | -0.13               | 5.0           | 7.40      |
| 7-ទន្លេសាប-ព្រែកក្តាម (Prek Kdam)      | 7.47                  | -0.12               | -2.67               | -1.19               | n             | 9.50      |

**2-កម្ពស់ទឹកព្យាករណ៍សំរាប់ថ្ងៃទី 15-10-2012 ដល់ថ្ងៃទី 17-10-2012 តាមបណ្តាស្ថានីយជលសាស្ត្រ:**

| ឈ្មោះស្ថានីយ                           | កម្ពស់ទឹកព្យាករណ៍តាមស្ថានីយជលសាស្ត្រ (គិតជាម៉ែត្រ) |   |            |   |            |   |
|----------------------------------------|----------------------------------------------------|---|------------|---|------------|---|
|                                        | 15-10-2012                                         |   | 16-10-2012 |   | 17-10-2012 |   |
| 1-ទន្លេមេគង្គ-ស្ទឹងត្រែង (Stung Treng) | 5.07                                               | ↓ | 5.02       | ↓ | 4.99       | ↓ |
| 2-ទន្លេមេគង្គ-ក្រចេះ (Kratie)          | 13.34                                              | ↓ | 13.19      | ↓ | 13.14      | ↓ |
| 3-ទន្លេមេគង្គ-កំពង់ចាម(Kg.cham)        | 9.45                                               | ↓ | 9.32       | ↓ | 9.21       | ↓ |
| 4-ទន្លេបាសាក់-ចតុមុខ(Chaktomuk)        | 7.76                                               | ↓ | 7.64       | ↓ | 7.54       | ↓ |
| 5-ទន្លេមេគង្គ-អ្នកលៀង (Neak Luong)     | 5.65                                               | ↓ | 5.50       | ↓ | 5.36       | ↓ |
| 6-ទន្លេបាសាក់-កោះខែល (Koh Khel)        | 6.63                                               | ↓ | 6.57       | ↓ | 6.52       | ↓ |
| 7-ទន្លេសាប-ព្រែកក្តាម (Prek Kdam)      | 7.34                                               | ↓ | 7.23       | ↓ | 7.15       | ↓ |

**ស្ថានភាពទឹកទន្លេ:** ស្ថានភាពទឹកទន្លេមេគង្គ ទន្លេសាប និងទន្លេបាសាក់ស្របតាមបណ្តាស្ថានីយជលសាស្ត្រ កម្ពស់ទឹកនៅបឹងទន្លេសាប ស្ថានីយក្រចេះ-កំពង់ស្ពឺមានកម្ពស់ 7.47m ទាបជាងប្រៀបចិត្ត 0.02m។

ភ្នំពេញ ថ្ងៃទី 14 ខែ 10 ឆ្នាំ 2012

**បានឃើញនិងបញ្ជាក់**  
**អគ្គនាយកអគ្គនាយកដ្ឋានធនធានទឹក និងឧតុនិយម**  
**និងនាយកនាយកដ្ឋាន**

**ហ៊ុន ច័ន្ទ**

**ហ៊ុន ច័ន្ទ**

លេខ ៣៦៤ បណ្តាស្ថានីយ ព្រះបរមរាជវាំង សង្កាត់ផ្សារដើមឈូំ ភ្នំពេញ ទូរស័ព្ទ/ទូរសារ : (៨៥៥) ២៣ ៧២៦ ០៨៨  
#364 Preah Monivong Blvd, Sangkat Phsar Daerm Thkov, Phnom Penh, Cambodia E-mail: dhrw.cambodia@online.com.kh  
Web site http://www.dhrw-cam.org



**ព្រះរាជាណាចក្រកម្ពុជា**  
**ជាតិ សាសនា ព្រះមហាក្សត្រ**  
នាគា ៖ ០៩០៩

**ក្រសួងធនធានទឹក និងឧតុនិយម**

លេខ **១៣៩ អនក្រ**

**សេចក្តីជូនដំណឹងស្តីពី**  
**ស្ថានភាពអាកាសធាតុ និងស្ថានភាពទឹកជំនន់**

ក្រសួងធនធានទឹក និងឧតុនិយម សូមជម្រាបជូនដំណឹងបន្ថែមដល់ក្រសួង-ស្ថាប័នពាក់ព័ន្ធ អាជ្ញាធរដែនដី និងសាធារណជនឱ្យបានជ្រាបថា : នៅវេលាម៉ោង 13 h 00 រសៀល នាថ្ងៃទី 01 ខែតុលា ឆ្នាំ 2012 វិសម្ព័ន្ធមួយ ដែលបានកើតឡើងនៅក្នុងសមុទ្រឥណទាន បានវិវត្តខ្លួនទៅជាកូនព្យុះ មានឈ្មោះថា " GAEMI " ។ មកដល់ព្រឹក ថ្ងៃទី 02 ខែតុលា ឆ្នាំ 2012 កូនព្យុះ GAEMI កំពុងស្ថិតនៅសមុទ្រឥណទាន ត្រង់ចំណុចខ្សែស្របទី 17 អង្សា នៃរយៈទទឹងខាងជើង និងខ្សែវ៉ូល្លេទី 114 អង្សា 8 នៃរយៈបណ្តោយខាងកើត និងមានចម្ងាយប្រមាណ 700 Km ភាគខាងកើតពីក្រុងដាណាម ប្រទេសវៀតណាម ។

យោងតាមការព្យាករណ៍ កូនព្យុះនេះនឹងវិវត្តទៅជាកូនព្យុះ ហើយនឹងធ្វើដំណើរទៅដល់ស្រូវប្រទេសវៀតណាម ភាគកណ្តាល នៅថ្ងៃទី 06 ឬទី 07 ខែតុលា ខាងមុខនេះ ។ ព្យុះនេះនឹងមានឥទ្ធិពលលើព្រះរាជាណាចក្រកម្ពុជា ចាប់ពីថ្ងៃទី 04 ដល់ថ្ងៃទី 08 ខែតុលា ឆ្នាំ 2012 ដោយធ្វើឱ្យផ្ទៃមេឃមានសភាពអាក្រក់ មានពពកច្រើនមីរដេរដាស មានភ្លៀងធ្លាក់រាយប៉ាយស្ទើរគ្រប់ទីកន្លែង ព្រមទាំងមានខ្យល់បក់បោកខ្លាំង និងអាចមានជំនន់ទឹកភ្លៀងនៅតាមបណ្តា ខេត្តមួយចំនួន ដូចជា :

- ១- **តំបន់ខ្ពង់រាប** : មានខេត្តកំពង់ចាម មណ្ឌលគីរី រតនគិរី ក្រចេះ ស្ទឹងត្រែង ឧត្តរមានជ័យ និងខេត្តព្រះវិហារ ។
- ២- **តំបន់ទំនាបកណ្តាល** : មានខេត្តសៀមរាប និងខេត្តកំពង់ធំ ។
- ៣- **តំបន់មាត់សមុទ្រ** : មានខេត្តកោះកុង កែប កំពត និងខេត្តព្រះសីហនុ ។ រលកសមុទ្រអាចមានកំពស់ ពី 1,50 m ទៅ 2,50 m ។

ឥទ្ធិពលរបស់ព្យុះនេះ ក៏នឹងធ្វើឱ្យទឹកជំនន់ទន្លេមេគង្គហាក់ឡើងផងដែរ ។

យោងលើស្ថានភាពអាកាសធាតុ ដូចបានជម្រាបជូនខាងលើ ក្រសួងធនធានទឹក និងឧតុនិយម សូមអំពាវនាវ ដល់ក្រសួង-ស្ថាប័នពាក់ព័ន្ធ អាជ្ញាធរដែនដី និងប្រជាពលរដ្ឋ ដែលរស់នៅតាមបណ្តាខេត្តដូចបានជម្រាបជូនខាងលើ ពិសេសតំបន់ជាប់នឹងផ្ទៃទឹកឆ្នេរ សូមបង្កើនការយកចិត្តទុកដាក់ប្រុងប្រយ័ត្នខ្ពស់ ដើម្បីចៀសវាងនូវគ្រោះថ្នាក់ និង ការប៉ះពាល់ដល់ទ្រព្យសម្បត្តិផ្សេងៗ ដែលអាចកើតមានឡើងជាមួយគ្នា ។ **ចំពោះប្រជាជនសាមសមុទ្រ សូមផ្អាក ការស្វាគមន៍ភ្ញៀវចាប់ពីថ្ងៃទី 05 ដល់ថ្ងៃទី 07 ខែតុលា ឆ្នាំ 2012 ។**

រាជធានីភ្នំពេញ, ថ្ងៃទី 02 ខែតុលា ឆ្នាំ 2012



**លីម គាន់ហោ**



**ព្រះរាជាណាចក្រកម្ពុជា**  
**ជាតិ សាសនា ព្រះមហាក្សត្រ**  
នាគា ៖ ០៩០៩

**ក្រសួងធនធានទឹក និងឧតុនិយម**

លេខ **១៣៩ អនក្រ**

**សេចក្តីជូនដំណឹង**  
**ស្តីពី ស្ថានភាពទឹកជំនន់ទន្លេមេគង្គ**

បន្ទាប់ពីបានធ្វើការតាមដានលើស្ថានភាពអាកាសធាតុ និងស្ថានភាពទឹកទន្លេមេគង្គរួចមក ក្រសួងធនធានទឹក និងឧតុនិយម សូមជម្រាបជូនដំណឹងដល់សាធារណជនឱ្យបានជ្រាបថា : បច្ចុប្បន្ន ប្រព័ន្ធសម្ពាធន ( ITCZ ) ដែលកំពុង អូសកាត់ពីលើអាងទន្លេមេគង្គ ( ពីប្រទេសមីយ៉ាន់ម៉ា ទៅមហាសមុទ្រឥណទានភាគខាងកើតប្រទេសហ្វីលីពីន ) បាន និង កំពុងមានឥទ្ធិពលមកលើអាងទន្លេមេគង្គ ដោយបង្កឱ្យមានភ្លៀងធ្លាក់ច្រើននៅក្នុងប្រទេសកម្ពុជា ឡាវ ថៃ ពិសេសនៅ ក្នុងអាងទន្លេមេគង្គភាគខាងលើ ។

ស្ថានភាពនេះ នឹងបណ្តាលឱ្យទឹកទន្លេមេគង្គកម្ពុជា ទន្លេត្នោត ទន្លេសាប និងទឹកក្នុងបឹងទន្លេសាប ចាប់កើន ឡើង ធ្វើឱ្យតំបន់ទំនាបមួយចំនួនដែលស្ថិតនៅអមដងទន្លេខាងលើ ចាប់ផ្តើមលិចជាបន្តបន្ទាប់ ដែលការលិចនេះក៏នឹងធ្វើ ឱ្យមានការប៉ះពាល់ដល់ដំណាំកសិកម្មរបស់ប្រជាពលរដ្ឋនៅតំបន់ទាំងនោះផងដែរ ។

អាស្រ័យដូចបានជម្រាបជូនខាងលើ សូមអាជ្ញាធរដែនដី និងប្រជាពលរដ្ឋ ដែលរស់នៅតាមដងទន្លេមេគង្គកម្ពុជា ទន្លេសាប ទន្លេត្នោត និងនៅតំបន់ជុំវិញបឹងទន្លេសាប សូមមានវិធានការប្រមូលកសិផលឱ្យទាន់ពេលវេលា និងសូម បង្កើនការយកចិត្តទុកដាក់ប្រុងប្រយ័ត្នខ្ពស់ ចំពោះស្ថានភាពទឹកជំនន់ខាងលើ ដើម្បីចៀសវាងនូវគ្រោះថ្នាក់ផ្សេងៗ ដែល អាចកើតមានឡើងជាមួយគ្នា ។

រាជធានីភ្នំពេញ, ថ្ងៃទី 0៤ ខែកក្កដា ឆ្នាំ ២០១២



**លីម គាន់ហោ**





## Mekong Bulletin

MRC Secretariat

P.O. Box 623 #576, National Road #2, Chak Angre Krom, Meancheay, Phnom Penh, Cambodia

Tel: (855-23) 425353, Fax: (855-23) 425363, Email: floodforecast@mrcmekong.org

Forecast period from: 17 October to 21 October 2012

Date: 16 October 2012

| LOCATION            | 24-hr<br>Observed<br>Rainfall<br>(mm) | Zero<br>gauge<br>above<br>M.S.L<br>(m) | Flood level (m) | Observed W. level<br>against zero gauge<br>(m) |        | Forecasted Water Levels (m) |        |        |        |        | There is currently no<br>flood warning in place<br>at monitored sites on<br>the Mekong |    |    |    |    |    |
|---------------------|---------------------------------------|----------------------------------------|-----------------|------------------------------------------------|--------|-----------------------------|--------|--------|--------|--------|----------------------------------------------------------------------------------------|----|----|----|----|----|
|                     |                                       |                                        |                 | 15-Oct                                         | 16-Oct | 17-Oct                      | 18-Oct | 19-Oct | 20-Oct | 21-Oct | 16                                                                                     | 17 | 18 | 19 | 20 | 21 |
|                     | Jinghong*                             | -                                      |                 |                                                | 536.70 | -                           |        |        |        |        |                                                                                        |    |    |    |    |    |
| Chiang Saen         | nr                                    | 357.110                                | 11.80           | 4.01                                           | 4.05   | 4.07                        | 4.00   | 3.90   | 3.80   | 3.71   |                                                                                        |    |    | ↓  |    |    |
| Luang Prabang       | nr                                    | 267.195                                | 18.00           | 7.96                                           | 7.96   | 7.95                        | 8.03   | 8.05   | 8.01   | 7.95   |                                                                                        |    |    |    |    |    |
| Chiang Khan         | nr                                    | 194.118                                | 17.40           | 8.04                                           | 7.92   | 7.90                        | 7.95   | 8.00   | 8.05   | 8.05   | ↓                                                                                      |    |    |    |    |    |
| Vientiane           | nr                                    | 158.040                                | 12.50           | 4.85                                           | 4.69   | 4.59                        | 4.55   | 4.59   | 4.68   | 4.77   | ↓                                                                                      |    |    |    |    |    |
| Nongkhai            | nr                                    | 153.648                                | 12.20           | 5.57                                           | 5.39   | 5.25                        | 5.19   | 5.24   | 5.32   | 5.42   | ↓                                                                                      | ↓  |    |    |    |    |
| Paksane             | nr                                    | 142.125                                | 14.50           | 6.92                                           | 6.76   | 6.60                        | 6.47   | 6.45   | 6.50   | 6.63   | ↓                                                                                      | ↓  | ↓  |    |    | ↑  |
| Nakhon Phanom       | nr                                    | 130.961                                | 12.70           | 4.66                                           | 4.60   | 4.52                        | 4.41   | 4.34   | 4.30   | 4.29   |                                                                                        |    | ↓  |    |    |    |
| Thakhek             | nr                                    | 129.629                                | 14.00           | 5.85                                           | 5.80   | 5.75                        | 5.69   | 5.65   | 5.66   | 5.68   |                                                                                        |    |    |    |    |    |
| Mukdahan            | nr                                    | 124.219                                | 12.60           | 4.40                                           | 4.37   | 4.33                        | 4.27   | 4.23   | 4.21   | 4.20   |                                                                                        |    |    |    |    |    |
| Savannakhet         | nr                                    | 125.410                                | 13.00           | 3.31                                           | 3.28   | 3.23                        | 3.18   | 3.16   | 3.16   | 3.19   |                                                                                        |    |    |    |    |    |
| Khong Chiam         | nr                                    | 89.030                                 | 16.20           | 5.25                                           | 5.17   | 5.02                        | 4.86   | 4.74   | 4.65   | 4.57   |                                                                                        | ↓  | ↓  | ↓  |    |    |
| Pakse               | nr                                    | 86.490                                 | 12.00           | 3.90                                           | 3.89   | 3.85                        | 3.80   | 3.75   | 3.70   | 3.65   |                                                                                        |    | ↓  | ↓  |    | ↓  |
| Stung Treng         | nr                                    | 36.790                                 | 12.00           | 5.00                                           | 4.86   | 4.76                        | 4.72   | 4.63   | 4.56   | 4.50   | ↓                                                                                      | ↓  |    | ↓  | ↓  | ↓  |
| Kratie              | nr                                    | -1.080                                 | 23.00           | 13.28                                          | 12.95  | 12.68                       | 12.50  | 12.38  | 12.29  | 12.16  | ↓                                                                                      | ↓  | ↓  | ↓  | ↓  | ↓  |
| Kompong Cham        | nr                                    | -0.930                                 | 16.20           | 9.51                                           | 9.32   | 9.14                        | 8.99   | 8.86   | 8.77   | 8.70   | ↓                                                                                      | ↓  | ↓  | ↓  | ↓  | ↓  |
| Phnom Penh (Bassac) | 13.5                                  | -1.020                                 | 12.00           | 7.80                                           | 7.69   | 7.61                        | 7.51   | 7.45   | 7.40   | 7.35   | ↓                                                                                      | ↓  | ↓  | ↓  | ↓  | ↓  |
| Phnom Penh Port     | -                                     | 0.000                                  | 11.00           | 7.00                                           | 6.88   | 6.78                        | 6.70   | 6.62   | 6.56   | 6.50   | ↓                                                                                      | ↓  | ↓  | ↓  | ↓  | ↓  |
| Koh Khel            | 0.0                                   | -1.000                                 | 7.90            | 6.59                                           | 6.50   | 6.42                        | 6.37   | 6.32   | 6.28   | 6.25   | ↓                                                                                      | ↓  | ↓  | ↓  | ↓  | ↓  |
| Neak Luong          | 0.6                                   | -0.330                                 | 8.00            | 5.73                                           | 5.64   | 5.56                        | 5.49   | 5.43   | 5.38   | 5.33   | ↓                                                                                      | ↓  | ↓  | ↓  | ↓  | ↓  |
| Prek Kdam           | nr                                    | 0.080                                  | 10.00           | 7.38                                           | 7.29   | 7.22                        | 7.15   | 7.09   | 7.03   | 6.98   | ↓                                                                                      | ↓  | ↓  | ↓  | ↓  | ↓  |
| Tan Chau            | 18.6                                  | 0.000                                  | 4.50            | 3.12                                           | 3.08   | 3.03                        | 2.98   | 2.94   | 2.91   | 2.88   | ↓                                                                                      | ↓  | ↓  | ↓  | ↓  | ↓  |
| Chau Doc            | -                                     | 0.000                                  | 4.00            | 2.85                                           | 2.83   | 2.79                        | 2.75   | 2.71   | 2.69   | 2.67   | ↓                                                                                      | ↓  | ↓  | ↓  |    |    |

### REMARKS:

-: not available.

nr: reference stations without forecast.

nr: no rain.

| LEGEND              |   |
|---------------------|---|
| rising water level  | ↑ |
| stable water level  |   |
| falling water level | ↓ |
| normal              |   |
| alarm situation     |   |
| flood stage         |   |

Note: stable water level is defined as a daily change of less than 10 cm from Chiang Saen to Savannakhet; less than 5 cm at Pakse and Stung Treng and no more than 3 cm from Kratie downstream.

Flood stage is when the flood level is exceeded; the flood level is determined by the member states.

Alarm situation is defined as a situation when flood level is forecast within the next three days.

River Flood Forecaster

Nguyen Tien Kien

For Operations Manager

Nguyen Tien Kien

REMARKS:  
Unit: m3/s

| Station name          | ID  | Observed discharges |        |        |        |        | Forecasted discharges |        |        |        |        |
|-----------------------|-----|---------------------|--------|--------|--------|--------|-----------------------|--------|--------|--------|--------|
|                       |     | 10-Oct              | 11-Oct | 12-Oct | 13-Oct | 14-Oct | 15-Oct                | 16-Oct | 17-Oct | 18-Oct | 19-Oct |
|                       |     | 10-Oct              | 11-Oct | 12-Oct | 13-Oct | 14-Oct | 15-Oct                | 16-Oct | 17-Oct | 18-Oct | 19-Oct |
| Jinghong              | JIN |                     |        |        |        |        |                       |        |        |        |        |
| Chiang Saen           | CSA | 3416                | 3224   | 3144   | 3016   | 3032   | 3016                  | 3080   | 3109   | 2997   | 2895   |
| Luang Prabang         | LUA | 4890                | 4760   | 4540   | 4340   | 4210   | 4088                  | 4088   | 4062   | 4125   | 4154   |
| Chiang Khan           | CKH | 5511                | 5641   | 5576   | 5394   | 5160   | 4952                  | 4820   | 4801   | 4852   | 4904   |
| Vientiane             | VIE | 4630                | 4740   | 4850   | 4770   | 4600   | 4450                  | 4290   | 4191   | 4153   | 4191   |
| Nongkhai              | NON | 4792                | 4857   | 4987   | 4965   | 4814   | 4608                  | 4414   | 4282   | 4195   | 4253   |
| Paksane               | PAK | 5666                | 5567   | 5589   | 5633   | 5622   | 5512                  | 5336   | 5156   | 5021   | 4999   |
| Nakhon Phanom         | NAK | 6674                | 6807   | 6750   | 6693   | 6712   | 6693                  | 6579   | 6423   | 6214   | 6074   |
| Thakhek               | THA | 6596                | 6748   | 6710   | 6615   | 6634   | 6615                  | 6520   | 6419   | 6303   | 6225   |
| Mukdahan              | MUK | 6680                | 6820   | 6920   | 6920   | 6840   | 6800                  | 6740   | 6662   | 6548   | 6458   |
| Savannakhet           | SAV | 6656                | 6515   | 6394   | 6555   | 6736   | 6776                  | 6716   | 6613   | 6509   | 6475   |
| Khong Chiam           | KHO | 9371                | 9394   | 9348   | 9233   | 9095   | 8968                  | 8774   | 8424   | 8062   | 7801   |
| Pakse                 | PKS | 9246                | 9084   | 9111   | 9031   | 8815   | 8555                  | 8529   | 8426   | 8283   | 8161   |
| Stung Treng           | STR | 20696               | 19335  | 15372  | 14320  | 14444  | 13391                 | 12691  | 12191  | 11991  | 11551  |
| Kratie                | KRA |                     |        |        |        |        |                       |        |        |        |        |
| Kompong Cham          | KOM |                     |        |        |        |        |                       |        |        |        |        |
| Phnom Penh (Bassac)   | PPB |                     |        |        |        |        |                       |        |        |        |        |
| Phnom Penh Port       | PPP |                     |        |        |        |        |                       |        |        |        |        |
| Koh Khel (Bassac)     | KOH |                     |        |        |        |        |                       |        |        |        |        |
| Neak Luong            | NEA |                     |        |        |        |        |                       |        |        |        |        |
| Prek Kdam (Tonle Sap) | PRE |                     |        |        |        |        |                       |        |        |        |        |
| Tan Chau              | TOH |                     |        |        |        |        |                       |        |        |        |        |
| Chau Doc (Bassac)     | CCO |                     |        |        |        |        |                       |        |        |        |        |



National Committee for Disaster Management

# Challenges and Way Forward

- NCDM's capacity is limited in dissemination of disaster information across all levels, due to:
  - Insufficient funding;
  - Dated communication systems;
  - Lack of equipment and high technology applications;
- The Early Warning System project has been supported by UNDP and implemented by MoWRAM;
- Strengthening capacity of DMIS technologies and management;
- The CamDi online Disaster Loss and Damage Database will be launched on **15 July 2014**.



# THANK YOU



National Committee for Disaster Management