

***International  
Flood  
Network  
- IFNet***

-

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Deputy Director General  
IFNet Secretariat

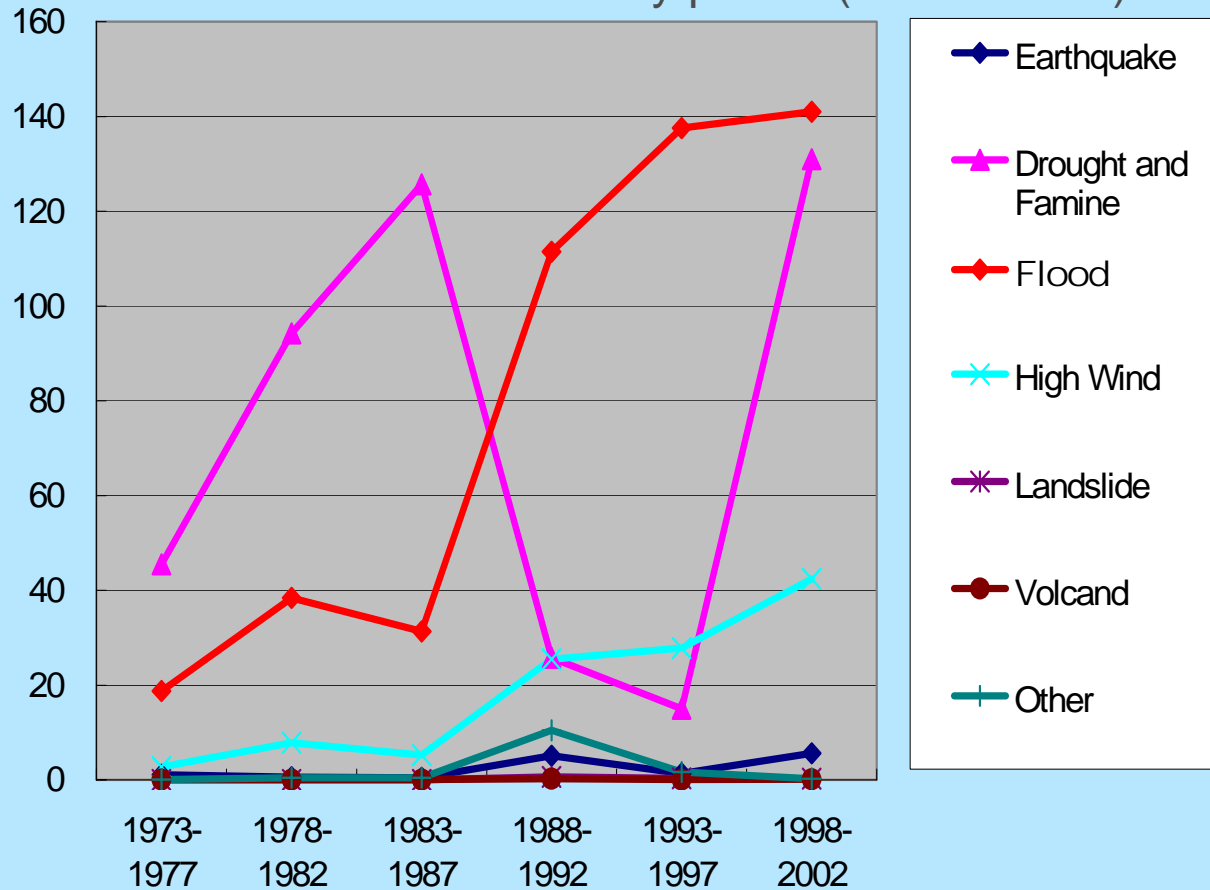
# Today's Contents

- **1. IFNet**  
(International Flood Network)
- **2. GFAS**  
(Global Flood Alert System)

# Increasing Flood Damage

million people

Fig. Number of People Affected by type of disaster and by period (1973 ~ 2002)



Source: World Disasters Report, International Federation of Red Cross and Red Crescent Societies

# Floods in Bangladesh in 2004



Two young girls push a pot full of relief food as they swim back to their submerged homes at the downtown of Dhaka July 25 while flood victims queue up before a homoeopathic dispensary at the neighbouring locality as the government is yet to offer healthcare service.

**Courtesy — New Age**

Copyright: Mr. Shahidul Islam Chowdhury

BANGLADESH

# Floods in Bangladesh in 2004



Septuagenarian Tafurunnisa sashes her way through stinky floodwaters in Dhaka on July 25 to buy essentials at a nearby market that now seems light years away.

# Flood in Fukuoka City, Japan (June 1999)

Inundation of Underground Spaces



# 1. What's IFNet ?

## ◆ Concept

Assisting activities to cope with floods and its related matters

## ◆ Before establishment

Launched by the initiative of MLIT-Japan and IDI-Japan

## ◆ Establishment

At the 3rd World Water Forum in Kyoto

# Governance of IFNet As of 1 April, 2004

Chairperson: **Mr. Avinash C. Tyagi**

*Director of Hydrology and Water Resources,  
World Meteorological Organization (WMO)*



Vice Chairperson: **Mr. Akihiko Nunomura**

*Director of River Planning Division, River Bureau,  
Ministry of Land, Infrastructure and Transport (MLIT), JAPAN*

Vice Chairperson: **Mr. Kees P. van Laarhoven**

*Director General for Water, Ministry of Transport, Public Works  
and Water Management, THE NETHERLANDS*



Acting Director General : **Mr. Kazuo Umeda**

*Director of 2nd Research Department,  
Infrastructure Development Institute (IDI) JAPAN*



# Objectives

## ◆ Platform for Exchanging Information

Flood Related Activities

## ◆ Providing GFAS information

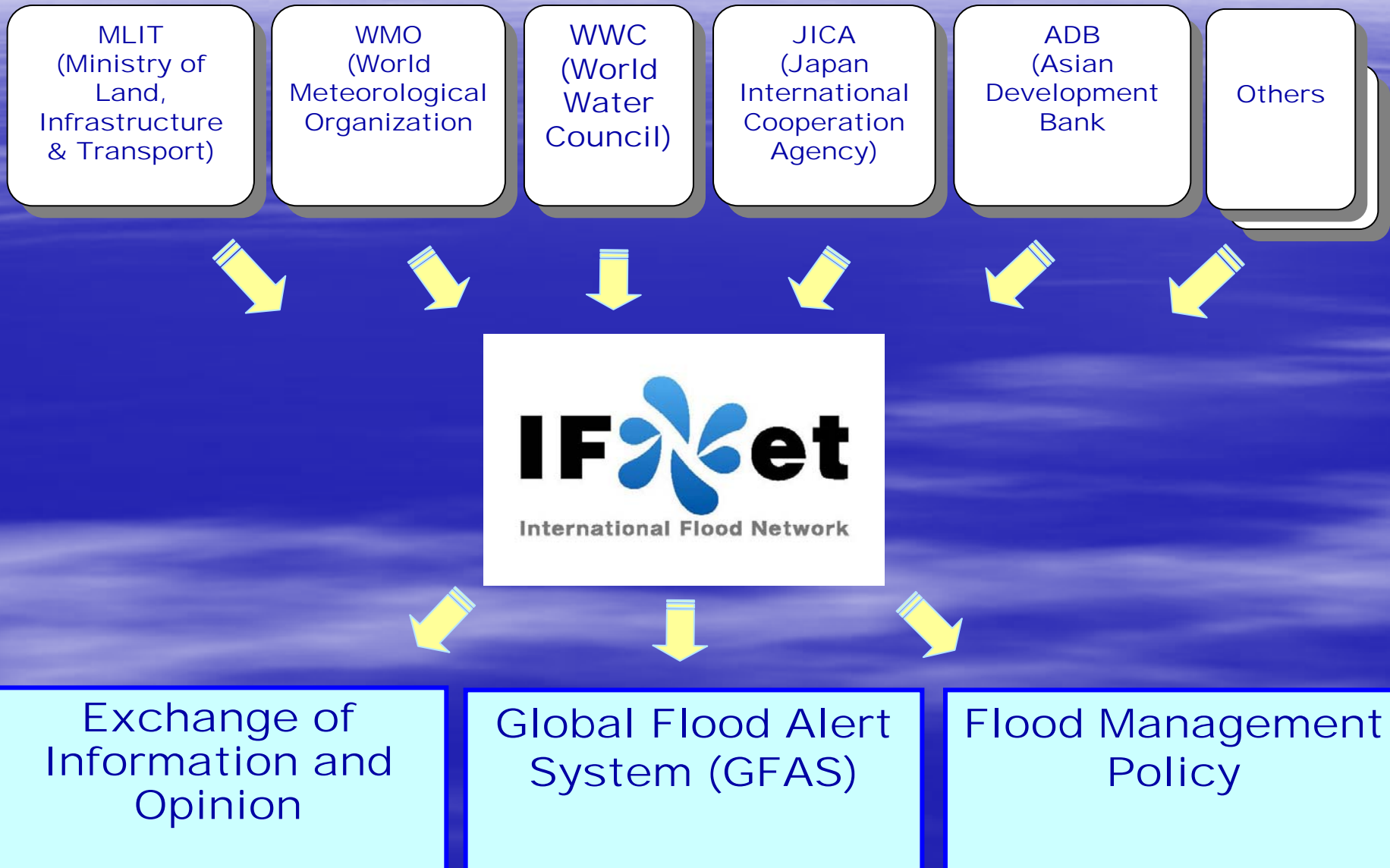
Global Rainfall Map and Rainfall Probability Map

Flood Alert

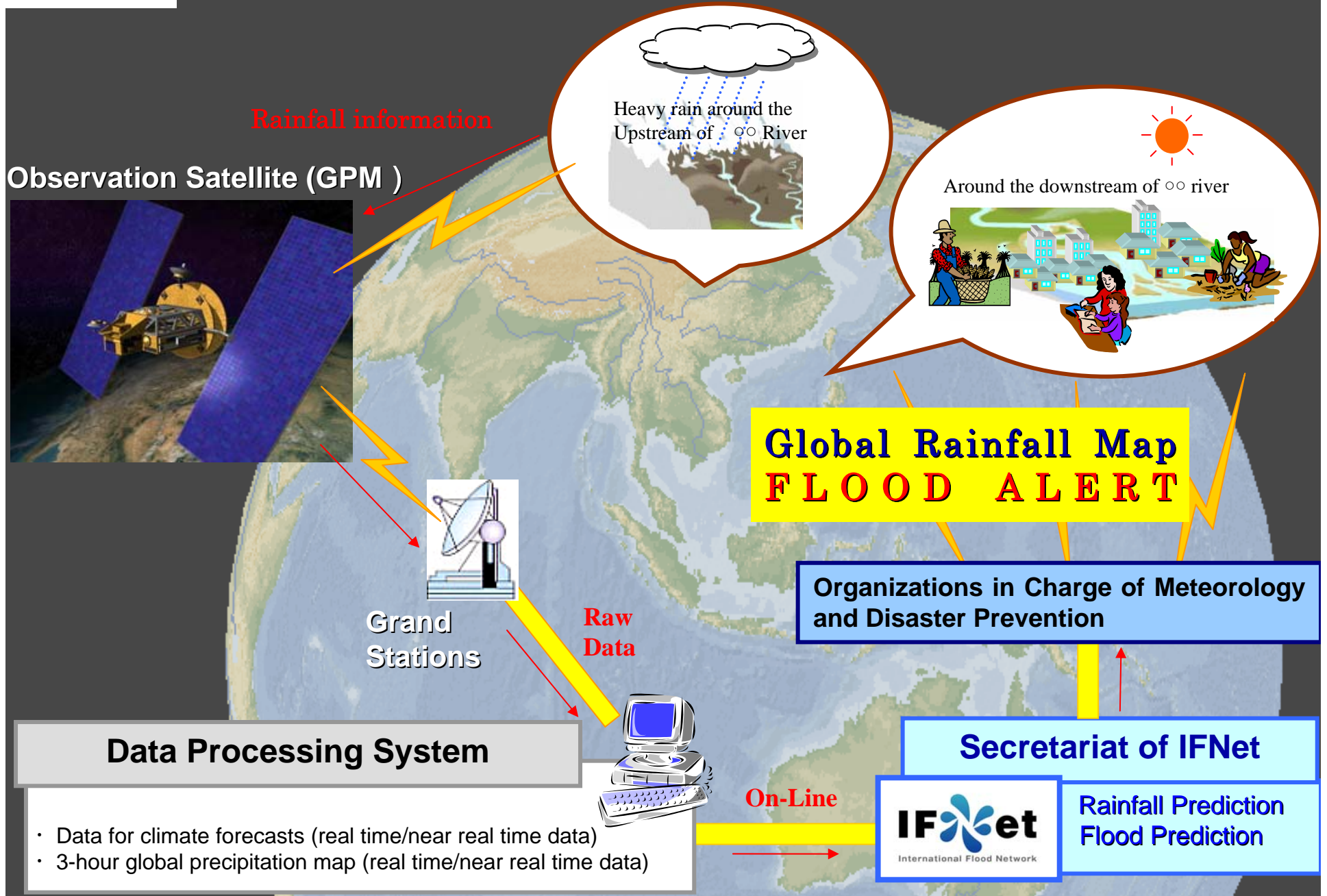
## ◆ Promoting Flood Management Policy

Flood Hazard Map

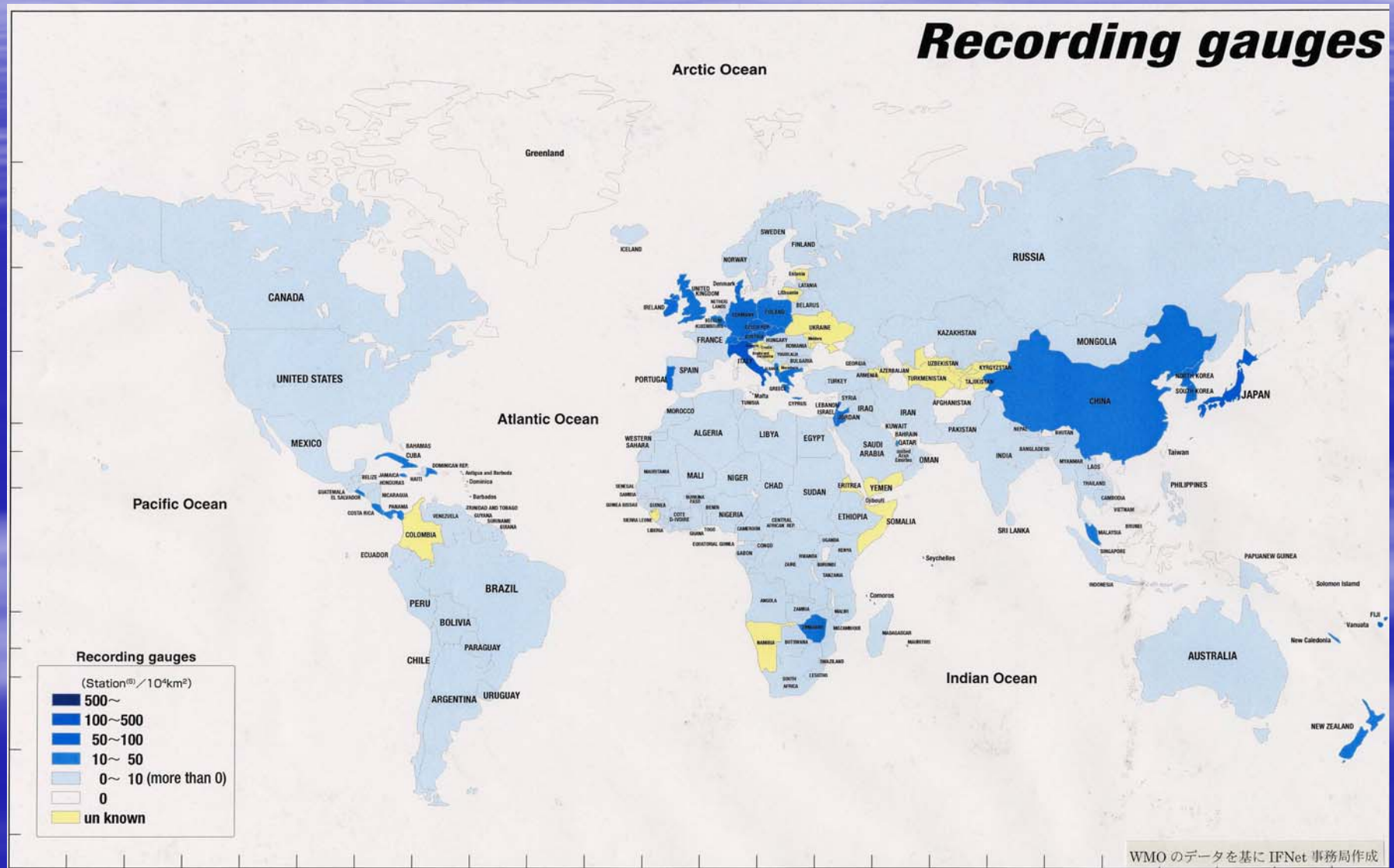
# Overview of IFNet



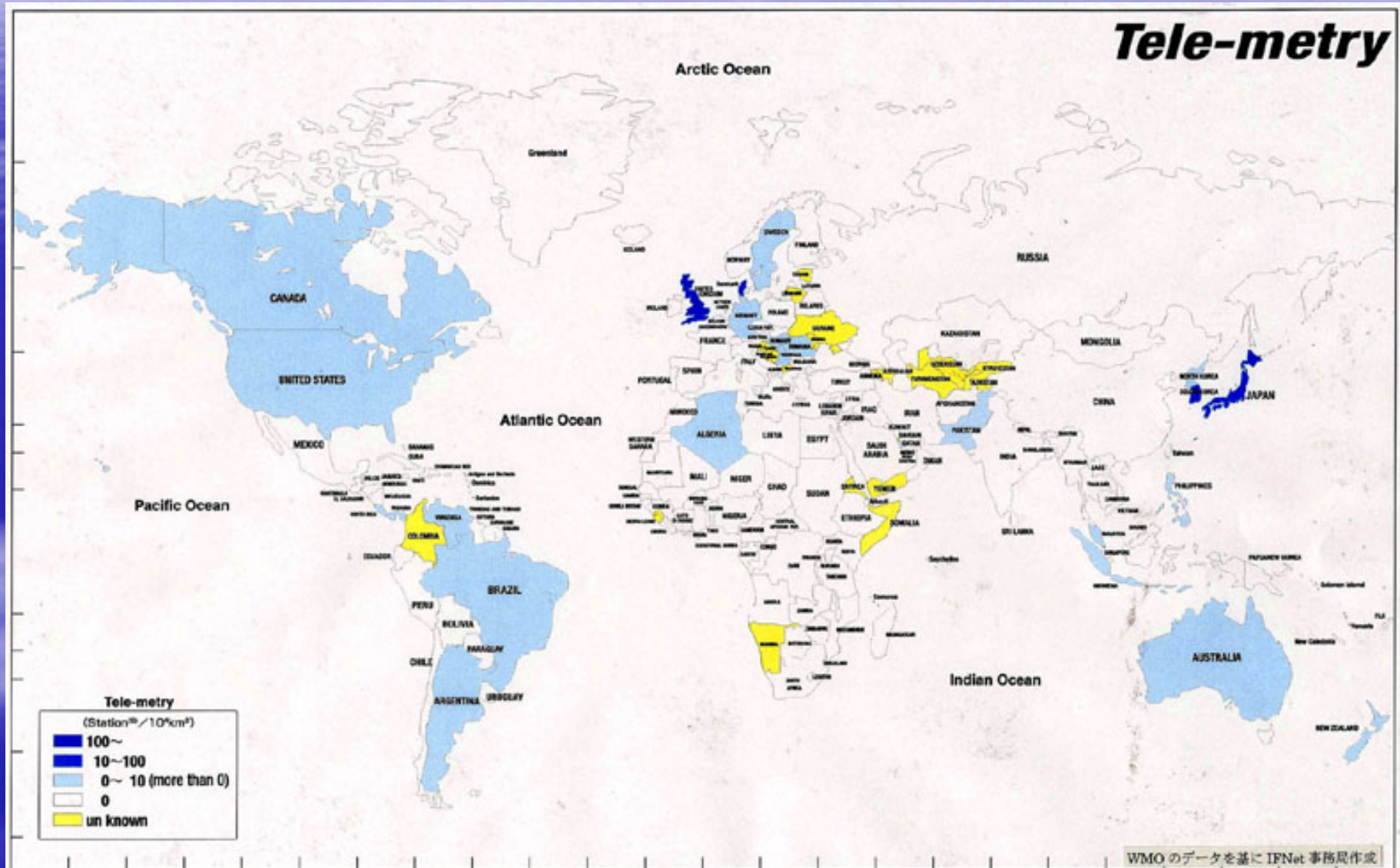
## 2. Global Flood Alert System (GFAS)



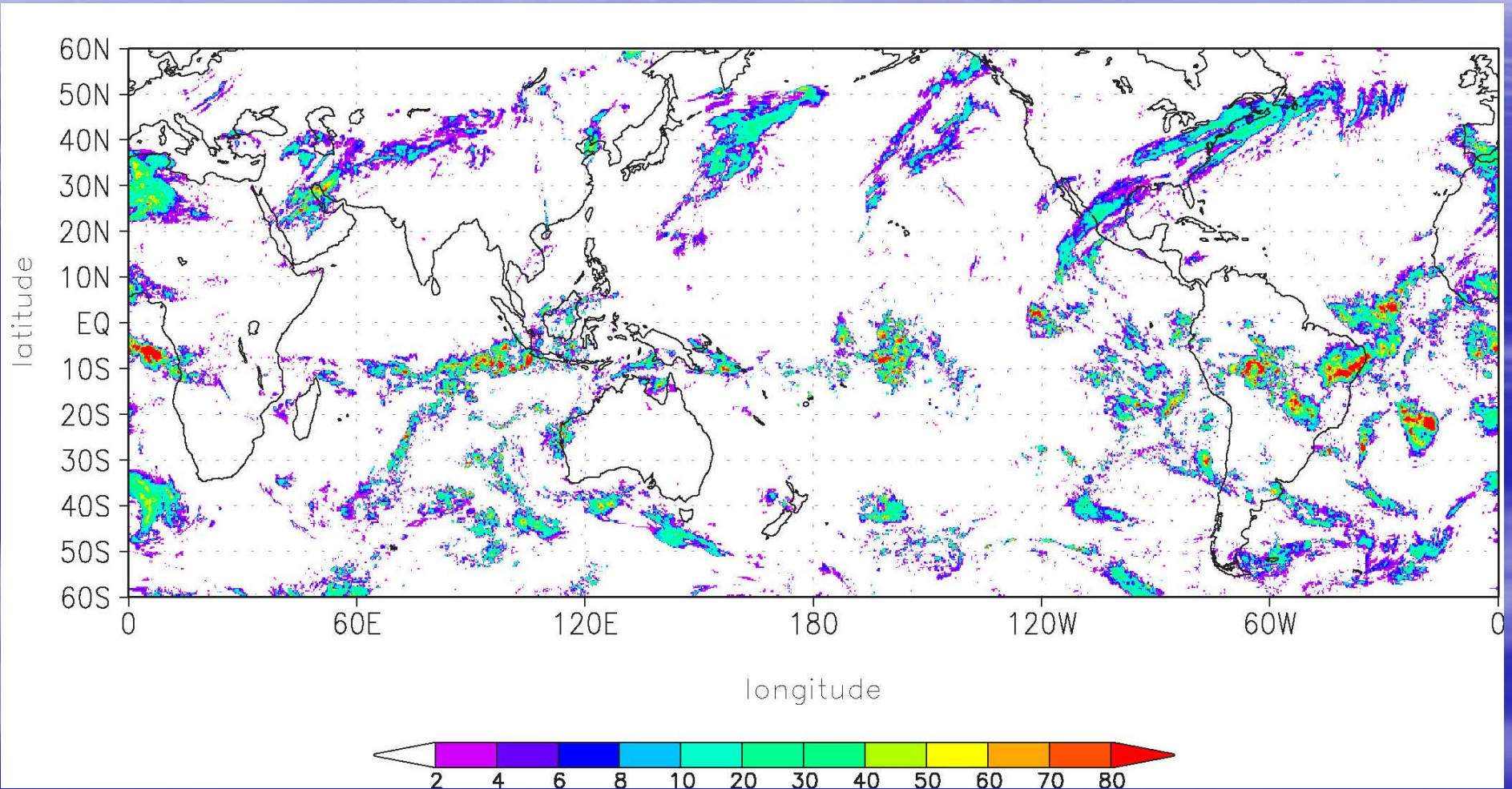
# Recordable Gauges



# Telemetry System



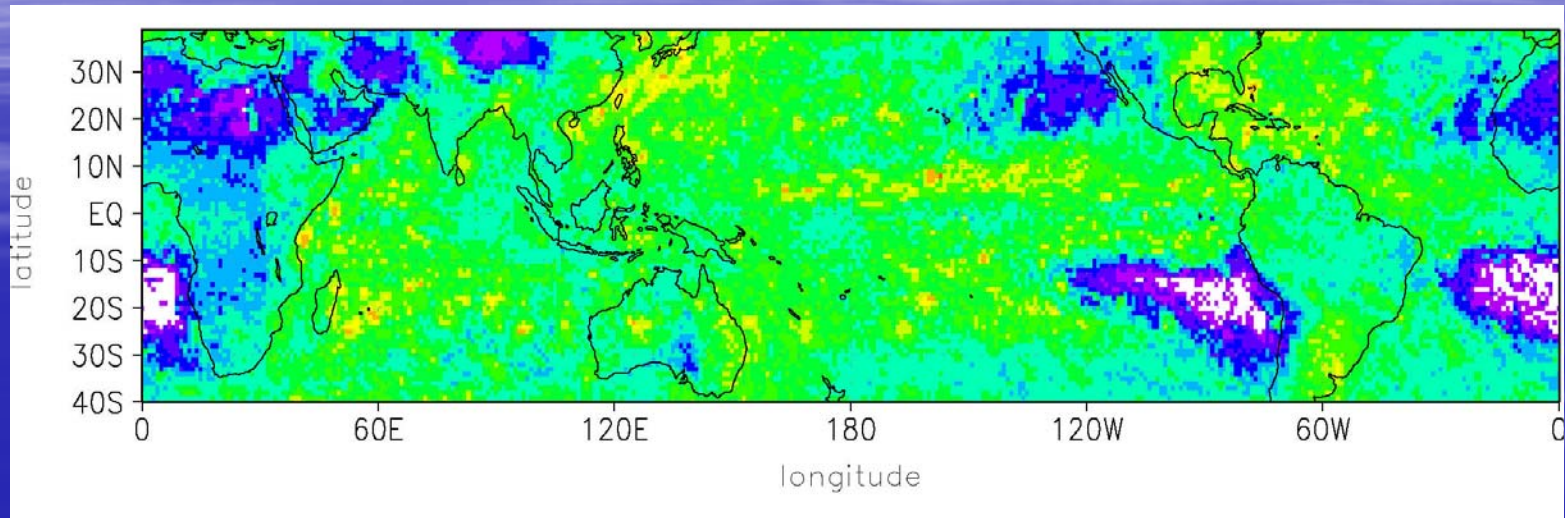
# Daily Precipitation of Aug 1, 2003



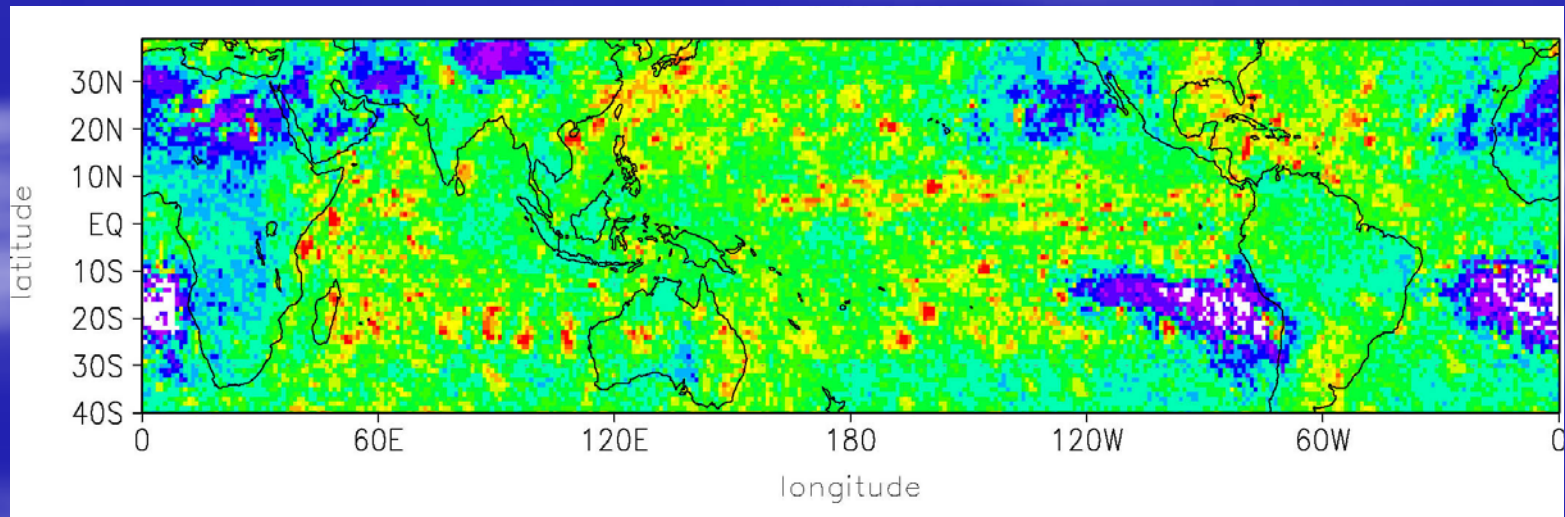
**Derived from TRMM Data of Global Real-Time 3-Hourly  
Precipitation Analyses (3B42RT) by N A S A**

# Daily Precipitation Probability

10-year  
Return Period



30-year  
Return Period



Derived from TRMM Data of Rain Accumulation (3B42RT) by N A S A

# Effectiveness of GFAS

GFAS is effective especially for the following conditions:

- ◆ **Large River Basin** where near-real-time and not hourly data are acceptable,
- ◆ **Without Telemetry**
- ◆ **Trans-boundary River** where prompt data transmission between countries is difficult.



# Characteristics

- ◆ **Internet-based** Rainfall Information System
- ◆ **Global Coverage** by using **Global Satellite** Data
- ◆ **Near-real-time** Rainfall Data with Probability Analysis
- ◆ **Email Alert System**
- ◆ **Free of Charge**

# Schedule of System Development

2003

- System Development using Current Available Satellite Data

2004

- 1<sup>st</sup> Launch of GFAS
  - Global and River Basin Rainfall Maps
  - Excessive Rainfall Area Maps

2005

- Flood Alert Email

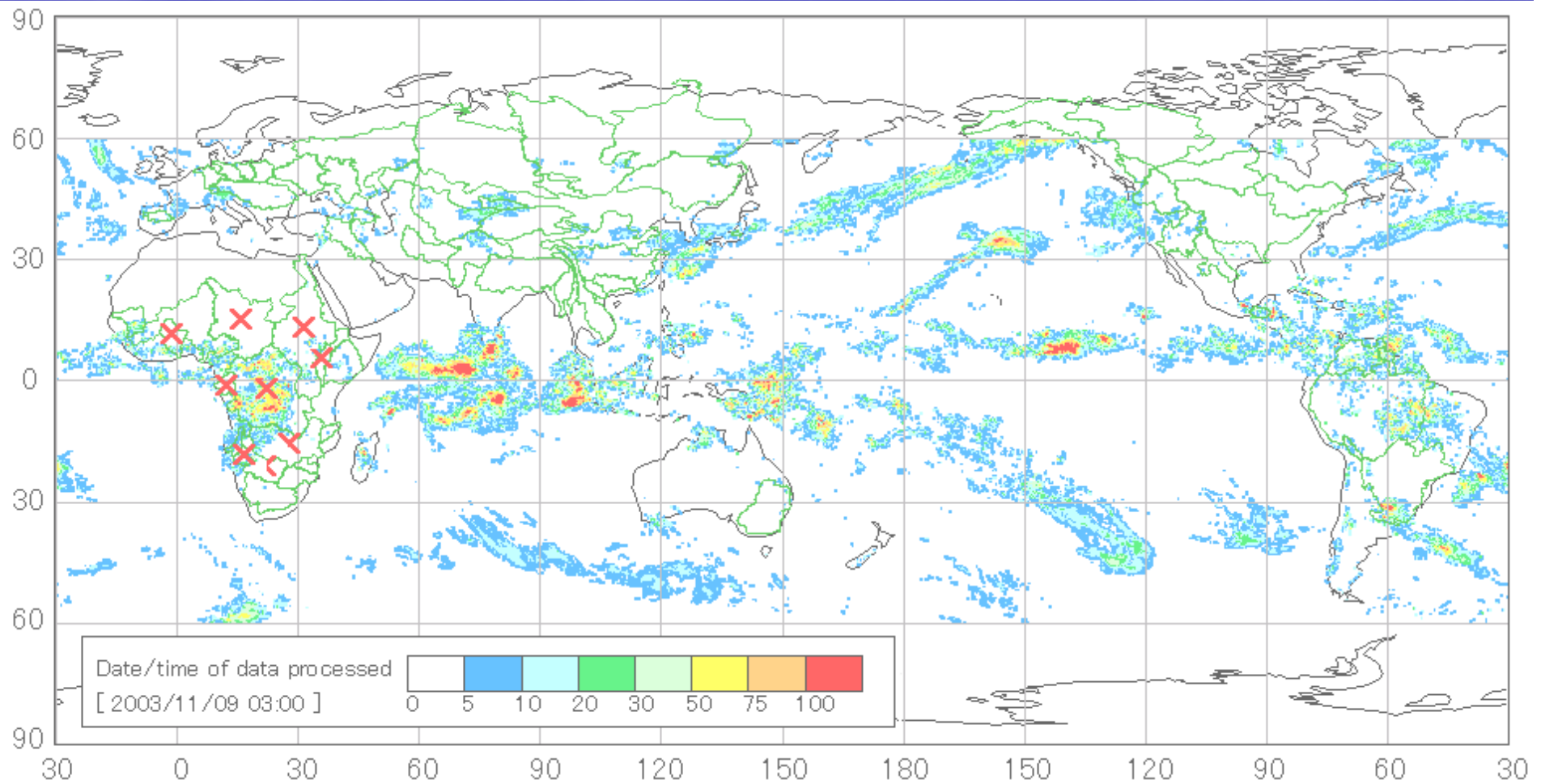
2006

- 4<sup>th</sup> World Water Forum in Mexico

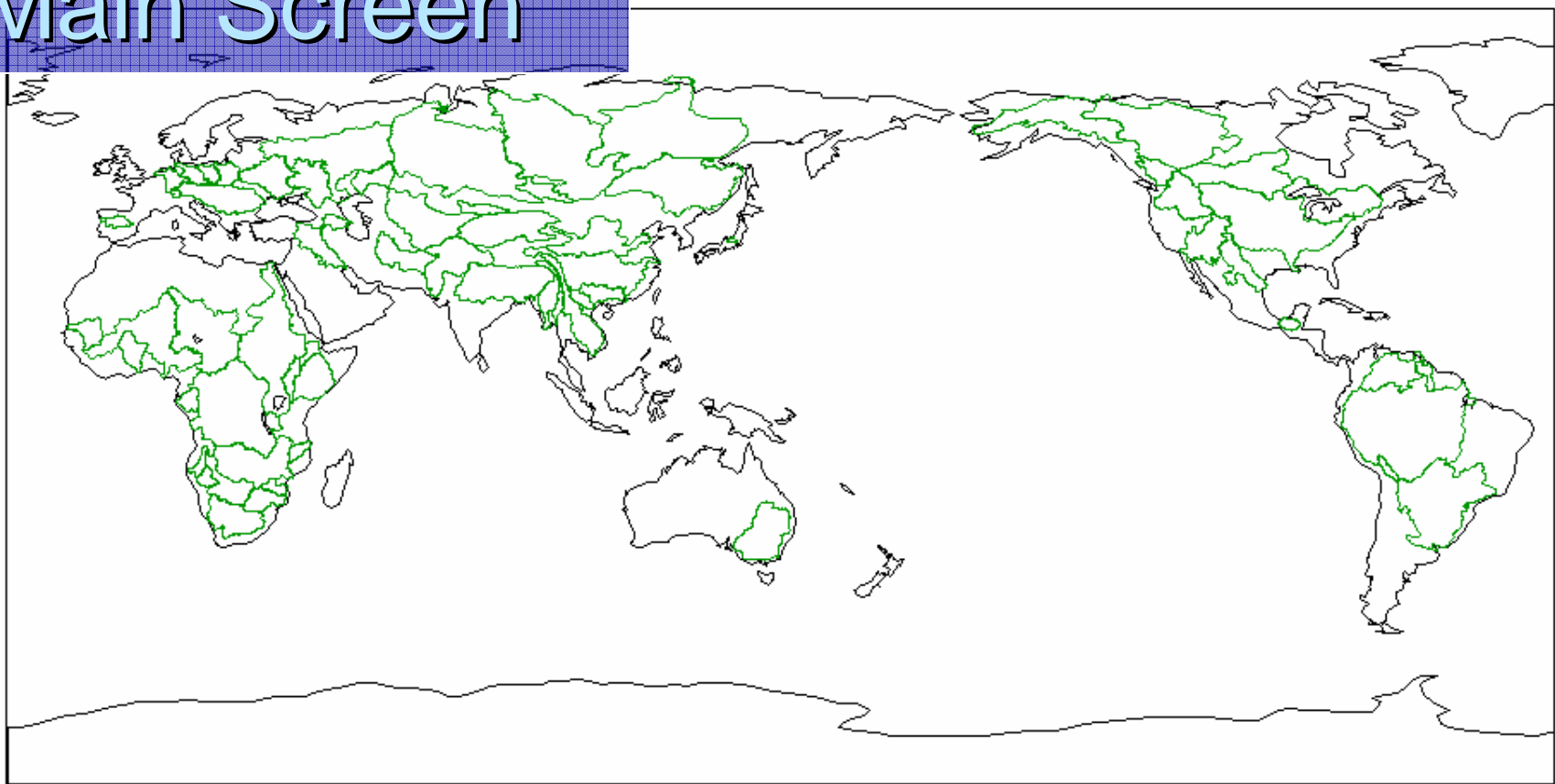
200?

- Establishment of GPM

# Global Flood Alert System



# Main Screen



## Message

Empty message box with a vertical scrollbar on the right side.

## Configuration

Data search

Latest data  
Select time/date  
Select floods

Legend setting   Mail setup

Data list   Basin Maps

## Rainfall return period

1 / 10 Year

Estimate

Calculate daily precipitation

## Update

Automatic update

Interval 15 minutes

Latest data

Clear

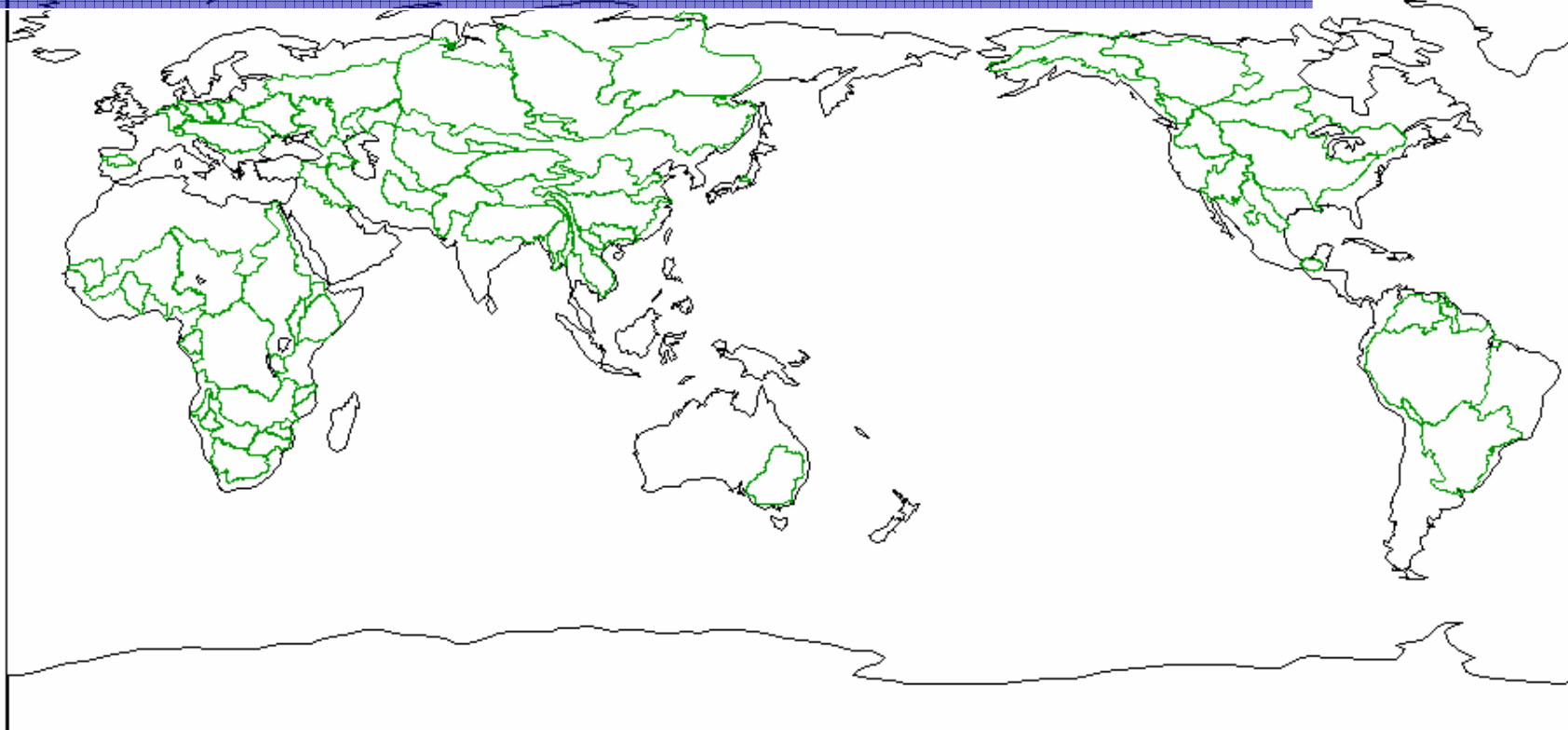
Display daily precipitation

## Select flood

Empty dropdown menu

Close

# Calculate daily precipitation



## Message

Message area containing a scrollable list of messages.

## Configuration

### Data search

Latest data  
Select time/date  
Select floods

Legend setting    Mail setup

Data list    Basin Maps

## Rainfall return period

1 / 10 Year

Estimate

Calculate daily precipitation

## Update

Automatic update

Latest data

Clear

Interval 15 minutes

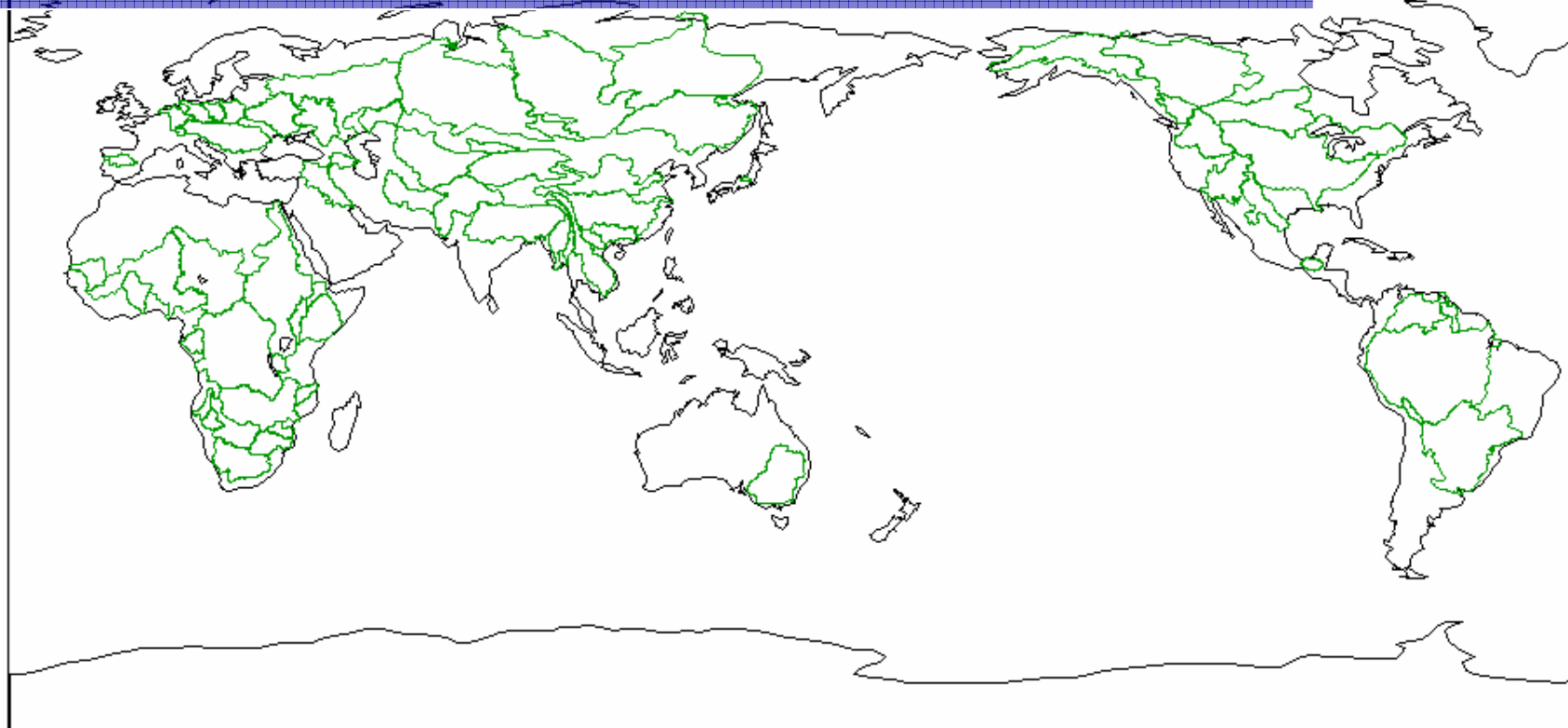
Display daily precipitation

## Select flood

Select flood dropdown menu

Close

# Calculate daily precipitation



### Message

```
*** Launch data processing ***  
(2003/11/14 11:06:23)  
(1) 3B42RT.2003090803.bin  
(2) 3B42RT.2003090806.bin
```

### Configuration

#### Data search

Latest data

Select time/date

Select floods

Legend setting

Mail setup

Data list

Basin Maps

### Rainfall return period

1 / 10 Year

Estimate

Calculate daily precipitation

### Update

Automatic update

Latest data

Clear

Interval 15 minutes

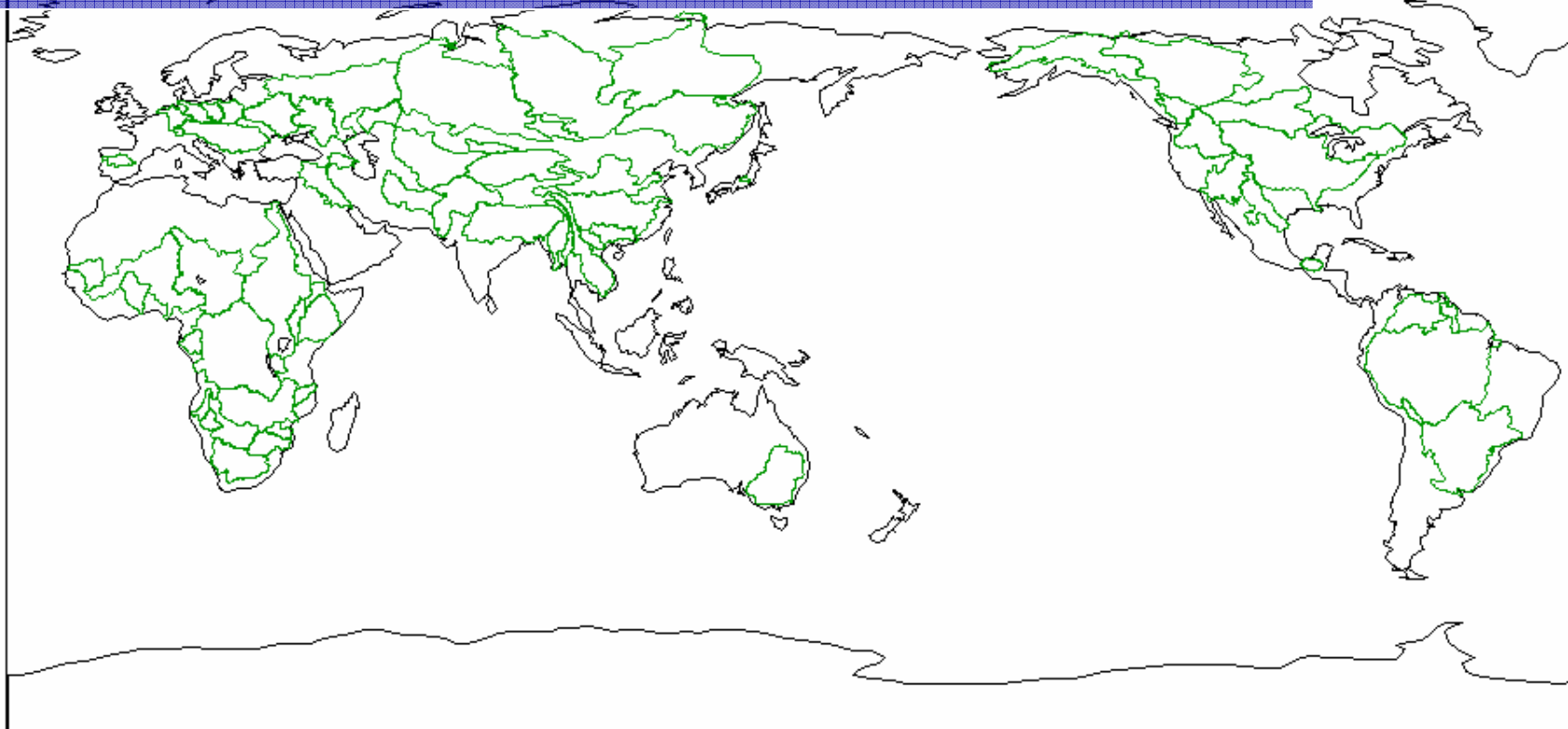
Display daily precipitation

### Select flood

Mekong(2003/09/12)

Close

# Calculate daily precipitation



### Message

```
*** Launch data processing ***  
(2003/11/14 11:06:23)  
(1) 3B42RT.2003090803.bin  
(2) 3B42RT.2003090806.bin  
(3) 3B42RT.2003090809.bin  
(4) 3B42RT.2003090812.bin  
(5) 3B42RT.2003090815.bin  
(6) 3B42RT.2003090818.bin  
(7) 3B42RT.2003090821.bin  
(8) 3B42RT.2003090824.bin  
->Estimation of 24-hour
```

### Configuration

#### Data search

Latest data

Select time/date

Select floods

Legend setting

Mail setup

Data list

Basin Maps

### Rainfall return period

1 / 10 Year

Estimate

Calculate daily precipitation

### Update

Automatic update

Latest data

Clear

Interval 15 minutes

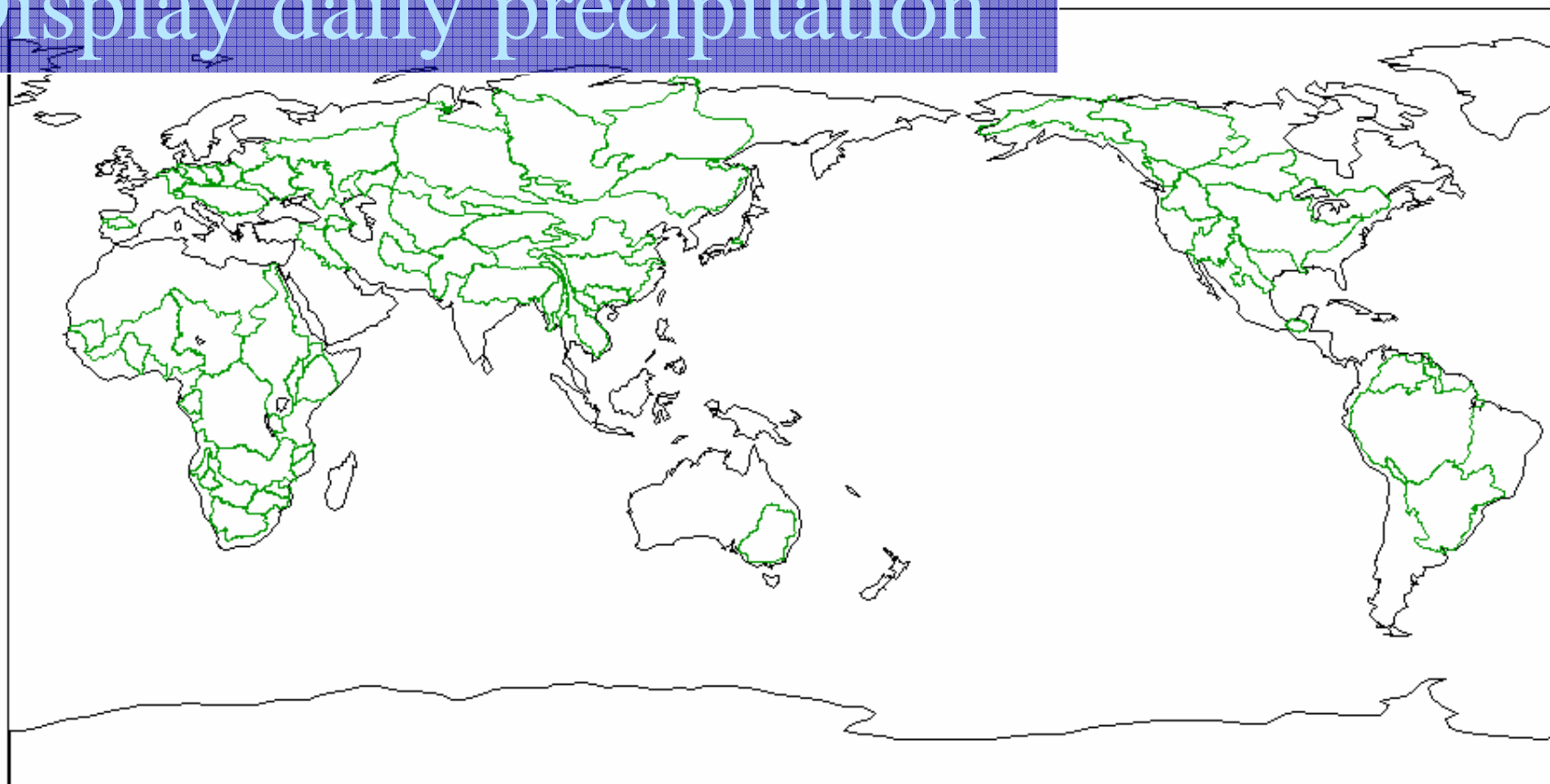
Display daily precipitation

### Select flood

Mekong(2003/09/12)

Close

# Display daily precipitation



## Message

```
*** Launch data processing ***  
(2003/11/14 11:06:23)  
(1) 3B42RT.2003090803.bin  
(2) 3B42RT.2003090806.bin  
(3) 3B42RT.2003090809.bin  
(4) 3B42RT.2003090812.bin  
(5) 3B42RT.2003090815.bin  
(6) 3B42RT.2003090818.bin  
(7) 3B42RT.2003090821.bin  
(8) 3B42RT.2003090900.bin  
→Estimation of 24-hour
```

## Configuration

### Data search

Latest data

Select time/date

Select floods

Legend setting

Mail setup

Data list

Basin Maps

## Rainfall return period

1 / 10 Year

Estimate

Calculate daily precipitation

## Update

Automatic update

Latest data

Clear

Interval 15 minutes

Display daily precipitation

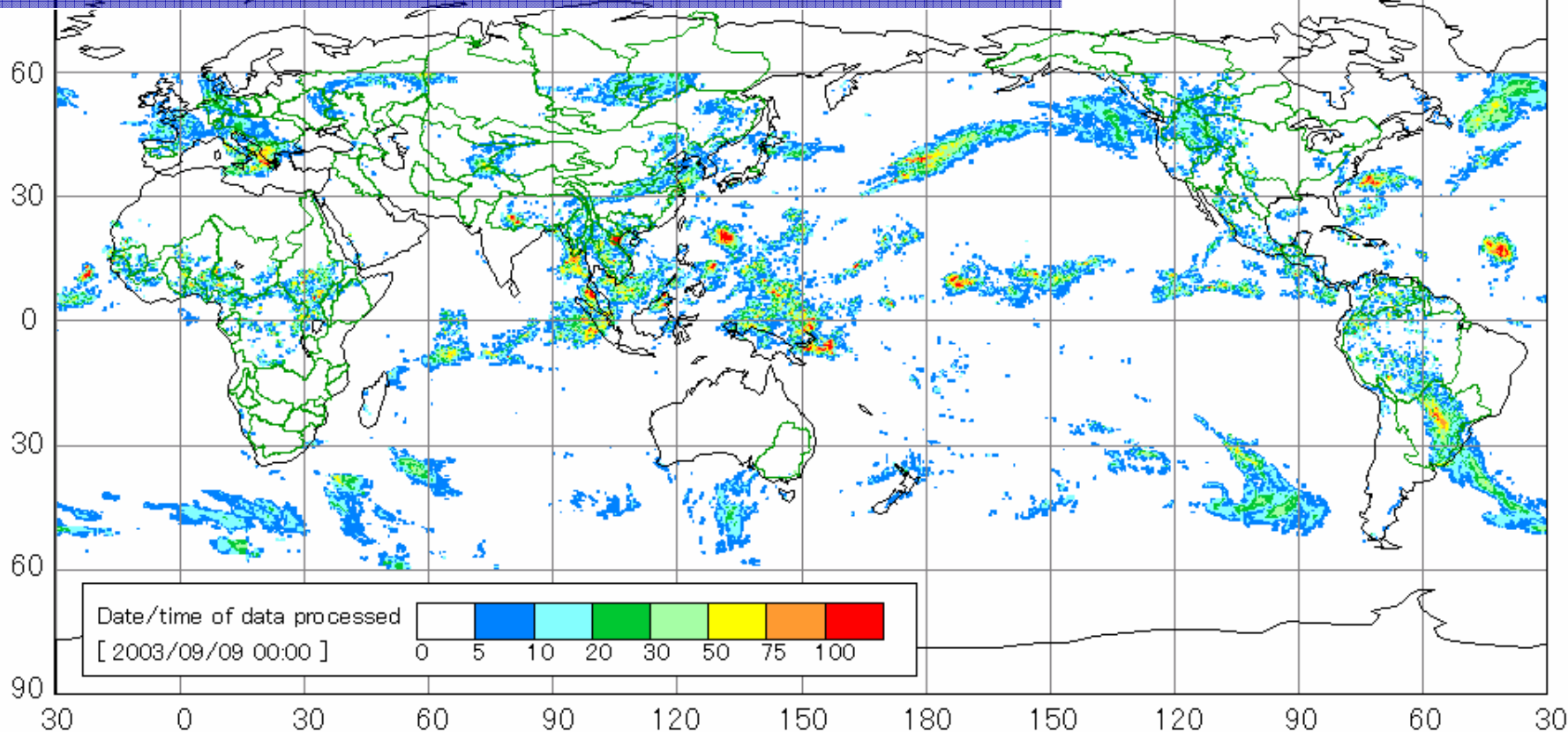
## Select flood

Mekong(2003/09/12)

Close



# Display daily precipitation



## Message

```

*** Launch data processing ***
(2003/11/14 11:06:23)
(1) 3B42RT.2003090803.bin
(2) 3B42RT.2003090806.bin
(3) 3B42RT.2003090809.bin
(4) 3B42RT.2003090812.bin
(5) 3B42RT.2003090815.bin
(6) 3B42RT.2003090818.bin
(7) 3B42RT.2003090821.bin
(8) 3B42RT.2003090900.bin
→Estimation of 24-hour
    
```

## Configuration

### Data search

Latest data

Select time/date

Select floods

Legend setting

Mail setup

Data list

Basin Maps

## Rainfall return period

1 / 10 Year

Estimate

Calculate daily precipitation

## Update

Automatic update

Latest data

Clear

Interval 15 minutes

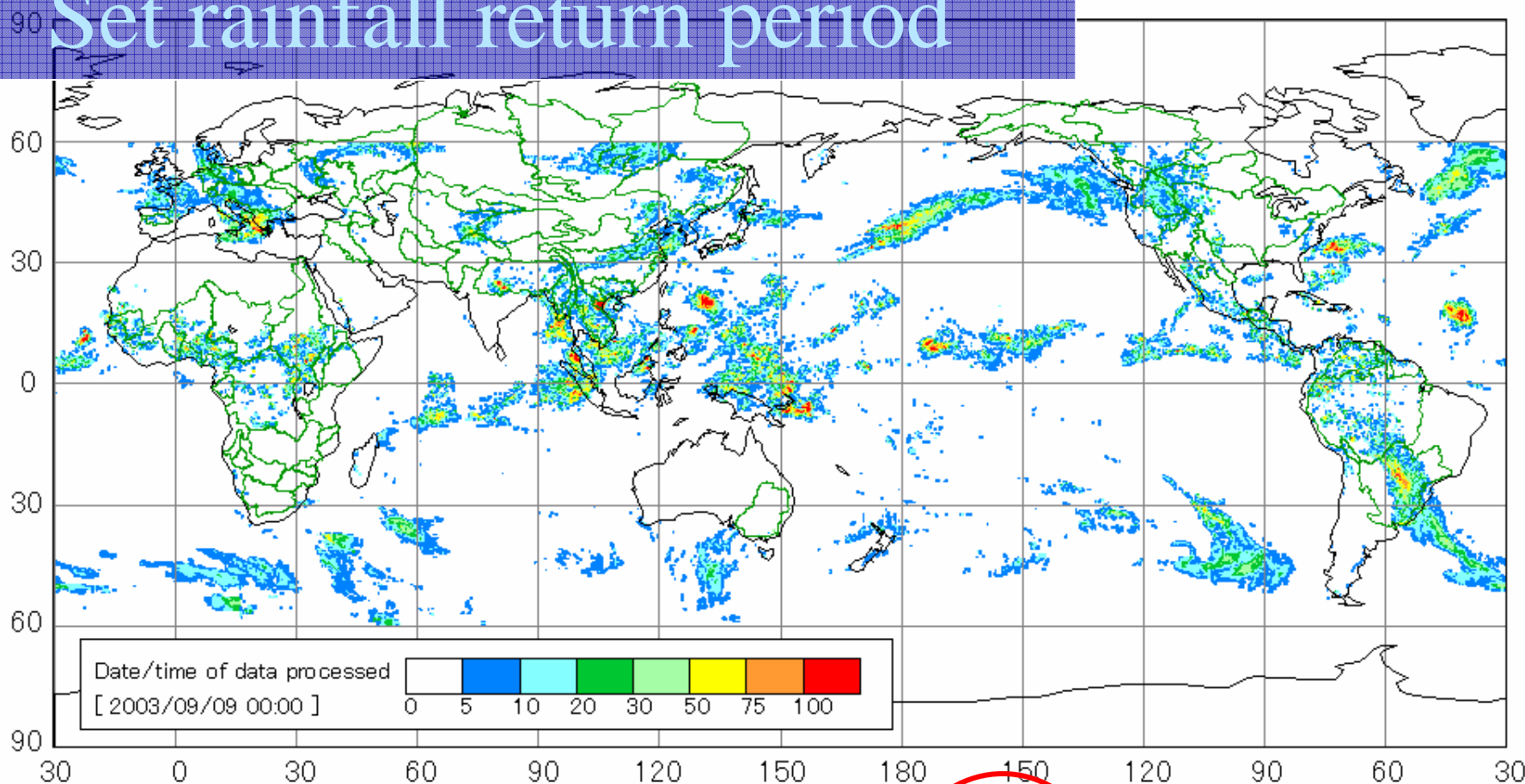
Display daily precipitation

## Select flood

Mekong(2003/09/12)

Close

# Set rainfall return period



## Message

```
*** Launch data processing ***  
(2003/11/14 11:06:23)  
(1) 3B42RT.2003090803.bin  
(2) 3B42RT.2003090806.bin  
(3) 3B42RT.2003090809.bin  
(4) 3B42RT.2003090812.bin  
(5) 3B42RT.2003090815.bin  
(6) 3B42RT.2003090818.bin  
(7) 3B42RT.2003090821.bin  
(8) 3B42RT.2003090900.bin  
→ Estimation of 24-hour
```

## Configuration

Data search

Latest data

Select time/date

Select floods

Legend setting

Mail setup

Data list

Basin Maps

## Rainfall return period

1 / 10 Year

Estimate

Calculate daily precipitation

Update

Interval

minutes

Latest data

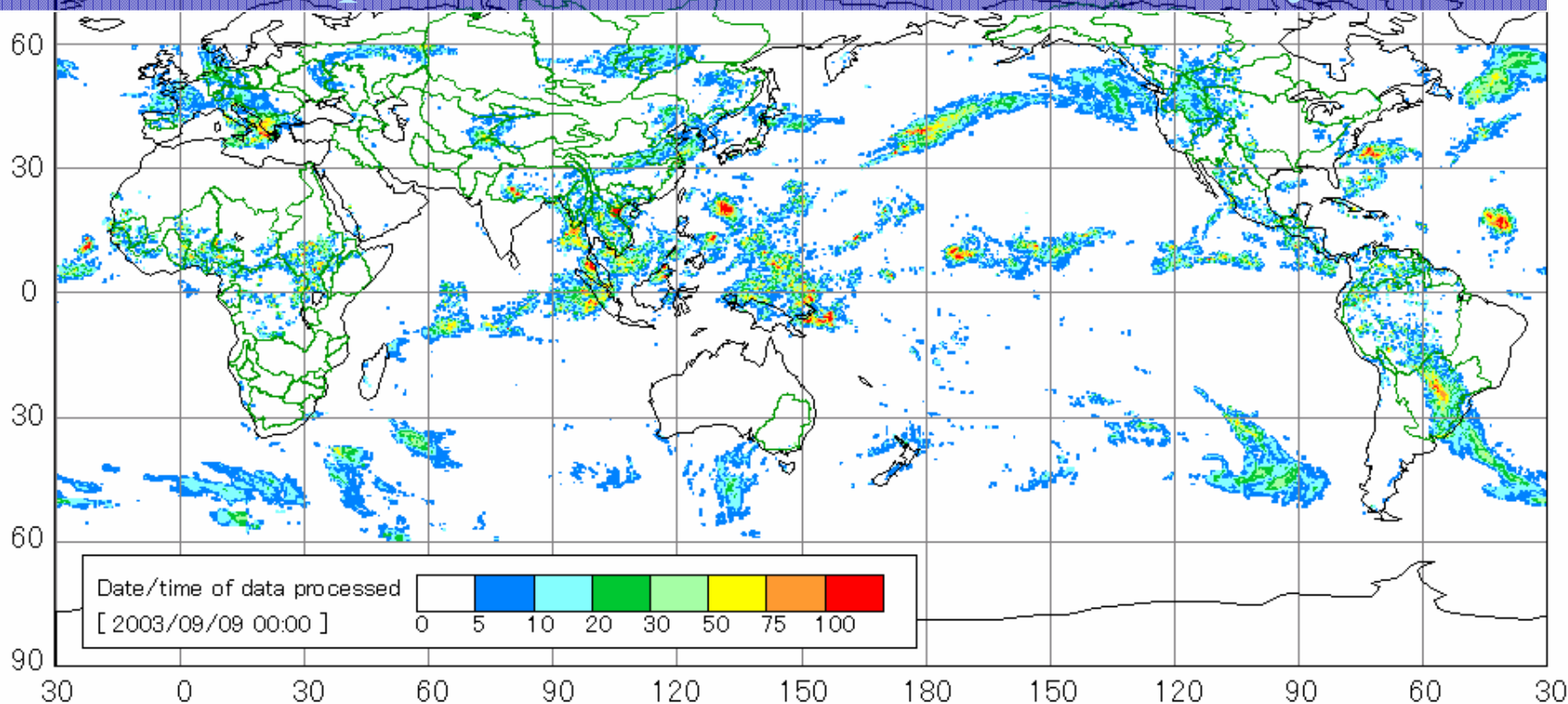
Display daily precipitation

Select

Mekong(2003/09/12)

Close

# Compare Present Precipitation to Precipitation of Estimated Probability



**Message**

```
*** Launch data processing ***
(2003/11/14 11:06:23)
(1) 3B42RT.2003090803.bin
(2) 3B42RT.2003090806.bin
(3) 3B42RT.2003090809.bin
(4) 3B42RT.2003090812.bin
(5) 3B42RT.2003090815.bin
(6) 3B42RT.2003090818.bin
(7) 3B42RT.2003090821.bin
(8) 3B42RT.2003090900.bin
→Estimation of 24-hour
```

**Configuration**

Data search

Latest data

Select time/date

Select floods

Legend setting

Mail setup

Data list

Basin Maps

**Rainfall return period**

1 / 30 Year

**Estimate**

Calculate daily precipitation

**Update**

Automatic update

Interval 15 minutes

Latest data

Clear

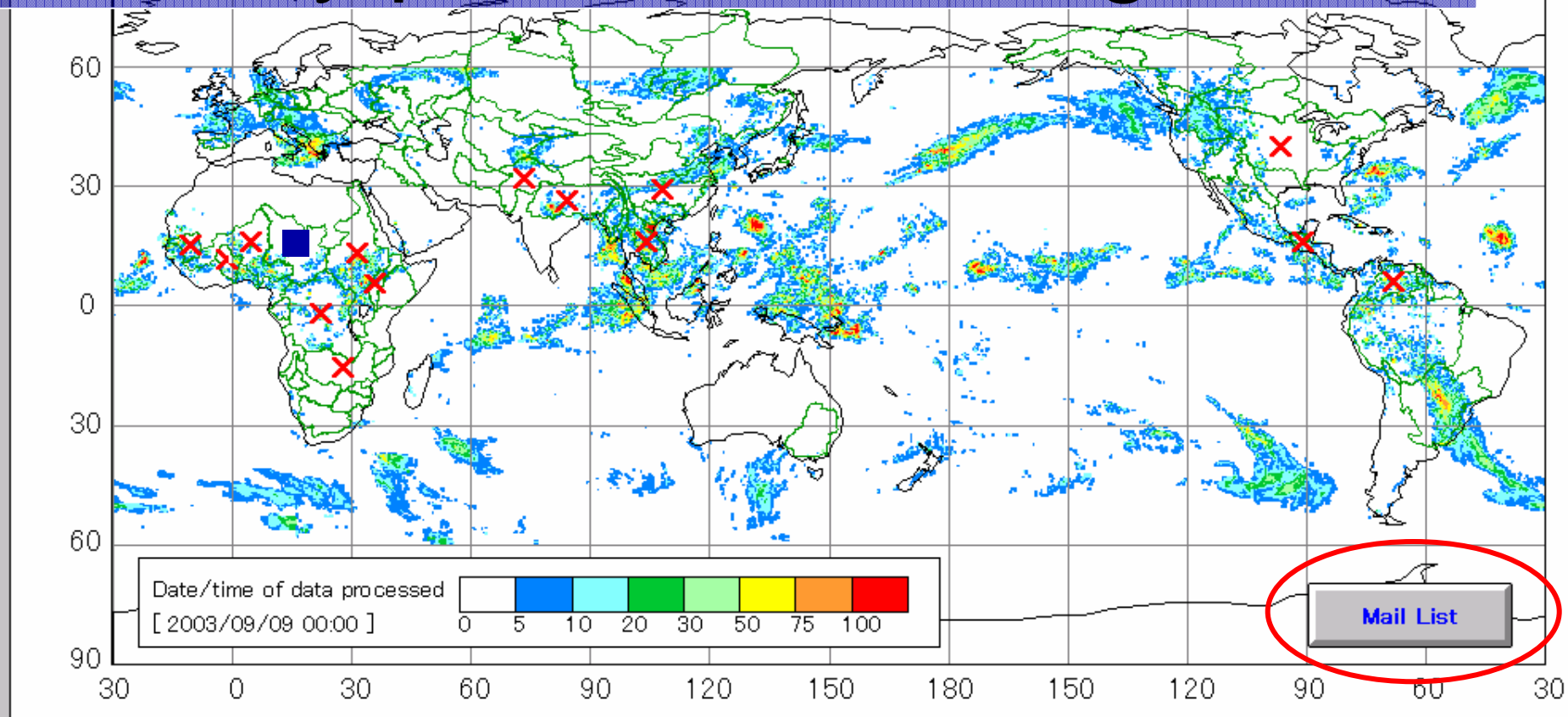
Display daily precipitation

**Select flood**

Mekong(2003/09/12)

Close

# Identify probable flooding areas



**Message**

```
*** Launch data processing ***  
(2003/11/14 11:06:23)  
(1) 3B42RT.2003090803.bin  
(2) 3B42RT.2003090806.bin  
(3) 3B42RT.2003090809.bin  
(4) 3B42RT.2003090812.bin  
(5) 3B42RT.2003090815.bin  
(6) 3B42RT.2003090818.bin  
(7) 3B42RT.2003090821.bin  
(8) 3B42RT.2003090900.bin  
→Estimation of 24-hour
```

**Configuration**

Data search

Latest data  
Select time/date  
Select floods

Legend setting   Mail setup

Data list   Basin Maps

**Rainfall return period**

1 / 30 Year   Estimate

**Update**

Automatic update   Latest data

Interval 15 minutes

**Select flood**

Mekong(2003/09/12)

Calculate daily precipitation  
Clear  
Display daily precipitation  
Close

# Disseminate Alert through Emails

Send Mail List

Basin	The maximum rainfall (mm/day)	Transmission place		
		Check	Organization	person
Nile	157.68	<input checked="" type="checkbox"/>	DDD	DDDDDDDD
Lake Turkana	118.41	<input checked="" type="checkbox"/>	DDD	DDDDDDDD
Indus	98.31	<input checked="" type="checkbox"/>	CCC	CCCCCCCC
Ganges-Brahmaputra-Meghna	107.85	<input checked="" type="checkbox"/>	CCC	CCCCCCCC
Mekong	299.16	<input checked="" type="checkbox"/>	AAA	AAAAAAAAAA
Yangtze	73.41	<input checked="" type="checkbox"/>	BBB	BBBBBBBBBB

Send Mail      close

```
*** Launch data
(2003/11/14 11:00)
(1) 3B42RT.2003090809.bin
(2) 3B42RT.2003090812.bin
(3) 3B42RT.2003090815.bin
(4) 3B42RT.2003090818.bin
(5) 3B42RT.2003090821.bin
(6) 3B42RT.2003090900.bin
(7) 3B42RT.2003090900.bin
(8) 3B42RT.2003090900.bin
→Estimation of 24-hour
```

Select floods

Legend setting      Mail setup

Data list      Basin Maps

Interval 15 minutes

Automatic update

Latest data

Select flood

Mekong(2003/09/12)

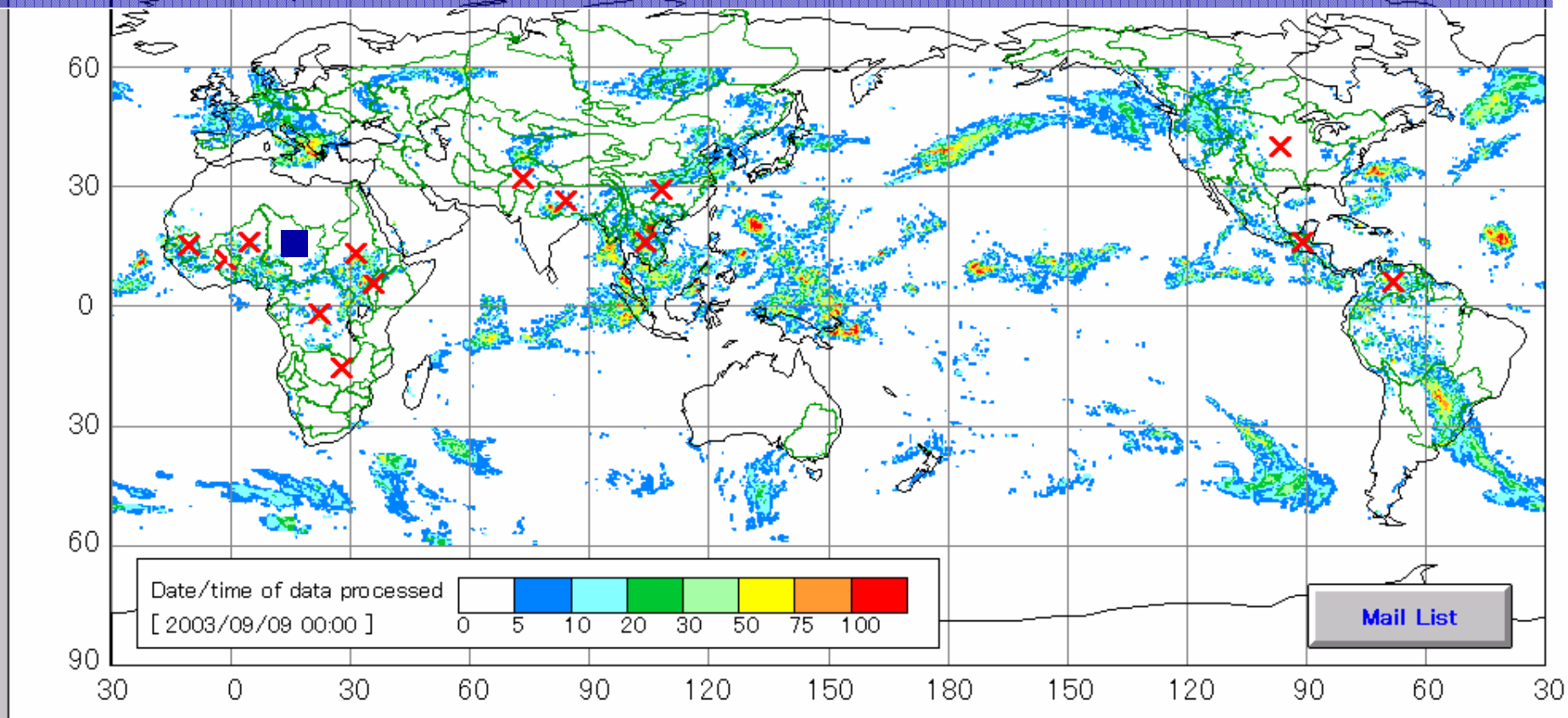
Calculate daily precipitation

Clear

Display daily precipitation

Close

# Display large scale of selected basin



**Message**

```
*** Launch data processing ***  
(2003/11/14 11:06:23)  
(1) 3B42RT.2003090803.bin  
(2) 3B42RT.2003090806.bin  
(3) 3B42RT.2003090809.bin  
(4) 3B42RT.2003090812.bin  
(5) 3B42RT.2003090815.bin  
(6) 3B42RT.2003090818.bin  
(7) 3B42RT.2003090821.bin  
(8) 3B42RT.2003090900.bin  
→Estimation of 24-hour
```

**Configuration**

Data search

Latest data

Select time/date

Select floods

Legend setting

Mail setup

Data list

**Basin Maps**

**Rainfall return period**

1 / 30 Year **Estimate**

**Calculate daily precipitation**

**Update**

Automatic update

Interval 15 minutes **Latest data**

**Clear**

**Display daily precipitation**

**Select flood**

Mekong(2003/09/12)

**Close**

# Display large scale or selected basin

The screenshot shows a software interface for precipitation analysis. The main window is titled 'Basin Map' and contains two sub-panels: 'Precipitation Map' and 'Exceeding Probability'. The 'Precipitation Map' panel shows a map with a blue square indicating a selected basin. The 'Exceeding Probability' panel is currently empty. A 'Display setup\*\*' dialog box is open, allowing users to configure the display. The 'Basin' dropdown menu is set to 'Mekong', and the 'Rainfall return period' dropdown menu is set to '30'. A color scale for precipitation probability is shown below the dialog box, ranging from 0 (white) to 100 (red). The 'Display' button in the dialog box is highlighted with a red circle. The background shows a map of Southeast Asia with precipitation data overlaid. The bottom of the interface includes a status bar with 'Estimation of 24-hour' and a 'Data list' button.

\*\*\* Launch  
(2003/11/  
(1) 3B42F  
(2) 3B42F  
(3) 3B42F  
(4) 3B42F  
(5) 3B42F  
(6) 3B42F  
(7) 3B42F  
(8) 3B42F

→ Estimation of 24-hour

Data list

Basin Maps

Mekong (2003/09/12)

Close

# Display large scale of selected basin

The software interface displays three maps of the Mekong basin:

- Precipitation Map:** Shows precipitation intensity with a color scale from blue (low) to red (high).
- Precipitation Probability Map:** Shows the probability of precipitation, with a color scale from blue (low) to red (high).
- Exceeding Probability:** Shows the probability of exceeding a certain threshold, with a color scale from cyan (low) to red (high).

A legend below the maps indicates the color scale for precipitation and probability, ranging from 0 to 100.

The **Display setup\*\*** dialog box is open, showing the following settings:

- Basin:** Mekong
- Rainfall return period:** 1 / 30

Buttons for **Display** and **Close** are visible in the dialog box.

On the left side, a data list is shown:

```
*** Launch (2003/11/12)
(1) 3B42F
(2) 3B42F
(3) 3B42F
(4) 3B42F
(5) 3B42F
(6) 3B42F
(7) 3B42F
(8) 3B42F
```

At the bottom, there are buttons for **Data list**, **Basin Maps**, and a status bar showing **Mekong (2003/09/12)**.



*Thank you*

**IFNet Secretariat**

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<http://www.internationalfloodnetwork.org>