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Bangladesh Country Office
Disaster Risk Reduction Unit

WFP Bangladesh Bulletin

MONSOON MONITORING & EARLY WARNING

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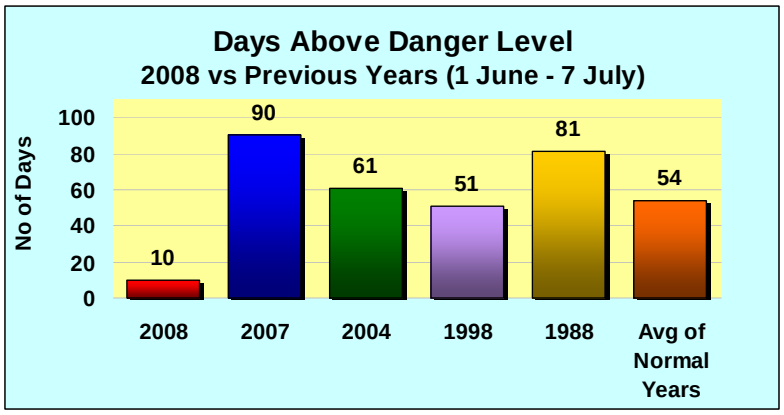
HIGHLIGHTS

- The risk of a large scale flood for the coming week is low to medium. The situation is expected to remain relatively stable in the coming days.
- As of the morning of the 8th July 2008, all FFWC (Flood Forecasting and Warning Center) river level monitoring stations were below danger level, except one station within Netrokona district. Seven other stations were at warning level or higher. All other 64 stations reported normal status.
- The Bangladesh Meteorological Department/ BMD recorded heavy to very heavy rains for three coastal locations (Patuakhali, Khepupara, and Hatiya) during the last two days. Heavy rains also fell upstream within the bordering Indian states of upper West Bengal, and Bihar.
- As of the morning of 8th July, India's Central Water Commission was reporting a total of six river stations above danger level; three in Assam and three in Bihar. Thirteen other stations, were at or above warning level; eight in Bihar, four in Assam, and one in West Bengal.
- In comparison to last year (2007), river levels this year in Bangladesh have less frequently reached danger level during the period 1st June thru 7th July.

Historical Perspective Analysis: 2008 River Levels vs Previous Years

Each of the river level monitoring stations of Flood Forecasting and Warning Center/ FFWC has its own designated "danger level". The number of days rivers flow at or above danger level at these stations can serve as a useful indicator for flood monitoring. The following analyses, conducted for the period 1st June thru 7th July for 26 key monitoring stations North of Dhaka, focuses on the following questions:

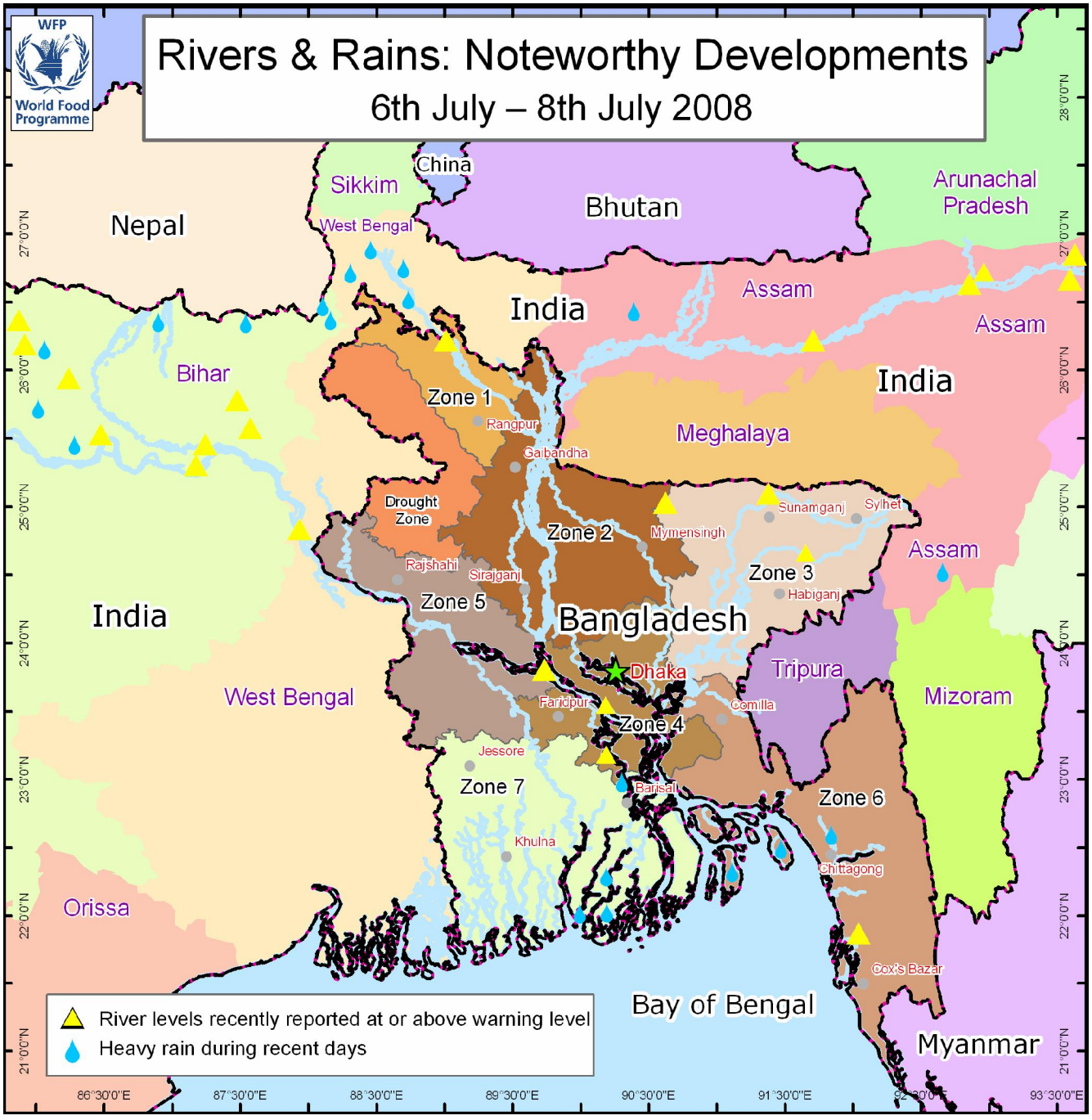
How many days have water levels been at or *above* danger level for 2008?
How does 2008 compare with the previous "mega flood years" of 2007, 2004, 1998, & 1988?
How does 2008 compare with the "normal years"?



The graph above shows very few days (only 10 during 2008) when rivers reached danger level for the stations considered. In comparison, during last year (2007), there were many more days (90) when these same rivers touched danger level or higher. Readers should be aware that results presented above, represent only a snap-shot in time (i.e., for the period 1 June thru 7 July). Using the FFWC data, WFP will update this analysis on a weekly basis through the 2008 Monsoon season. Results will change significantly (i.e., the inter year comparisons) as the season progresses. It is interesting to note that the bar above representing "Avg. of Normal Years" varies little from the past "Mega Flood Years" of 2004 and 1998. This is because the high counts (number of days above danger level) associated with those mega-flood years only manifested themselves during late July and August, when large floods normally occur.

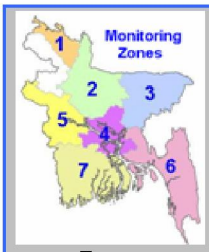
Note: 1) Period considered: 1st June thru 7th July, (2) Normal Years: 1986, 1987, 1989-1997, 1999-2003, 2005, 2006
3) Mega Flood Years: 2007, 2004, 1998, 1988, (4) Analysis based on 21,164 (26 x 37 x 22) river level observations during previous years.

Monsoon 2008: Situation Map



- Within Bangladesh, 1 FFWC river monitoring station in Netrokona was above danger level as of the morning of 8th July. Seven other stations were at warning level, and 64 reported normal status.
- Upstream in the neighboring Indian states of Assam, Bihar, and West Bengal, 19 stations were at or above warning level. Six of the 19 were above danger level; three in Assam, and three in Bihar.
- Heavy to very heavy rains recently fell along the Southern and Southeastern coasts of Bangladesh.
- Upstream rainfall was also heavy at specific locations in Bihar and upper West Bengal.

Flood Risk Analysis

 Zones	Districts	River Basin	Heavy Rainfall events last 2 days (within zone)	Heavy Rainfall events last 2 days (upstream Basin)	River Levels (within zone)	River Levels (upstream basin)	Rainfall Forecast (next 48 hours)	Overall Flood Risk
Zone 1 North West	Panchagarh Nilphamari Lalmonirhat Rangpur	Tista	L	H	L	L	L	**Low**
Zone 2 North Central	Kurigram Gaibandha Jamalpur Sherpur Bogra Sirajganj Mymensingh Tangail	Brahmaputra/ Jamuna	L	L	L	H	L	**Low**
Zone 3 North East	Sylhet Sunamganj Netrokona Kishoreganj Habiganj Moulavibazar Narsingdi Brahmanbaria	Meghna	L	L	M	L	M	**Low**
Zone 4 Central	Dhaka Gazipur Manikganj Munshiganj Narayanganj Faridpur Madaripur Shariatpur Chandpur	Convergence of Brahmaputra, Padma and Meghna	L	L	M	M	L	**Medium**
Zone 5 West Central	Rajshahi Nawabganj Natore Pabna Kushtia Meherpur Chuadanga Jhenaidah Magura Rajbari	Padma/ Ganges	L	H	L	H	L	**Medium**
Zone 6 South East	Comilla Lakshmipur Noakhali Feni Chittagong Khagrachari Rangamati Bandarban Cox's bazar	Lower Meghna	M	L	L	H	M	**Medium**
Zone 7 South West	Jessore Narail Gopalganj Satkhira Khulna Bagerhat Pirojpur Barisal Jhalokati Patuakhali Barguna Bhola	Coastal	M	L	L	M	M	**Low**

Methodology Used for Flood Risk Analysis (see table previous page)

Five simple indicators were used to estimate flood risk for seven zones within Bangladesh (see small inset map p-3). The indicators used are :

(a) Heavy rainfall events during the last 2 days within the zone.

(b) Heavy rainfall events during the last 2 days upstream from the zone

(c) River levels within the zone

(d) River levels upstream from the zone (either outside Bangladesh or inside)

(e) Rainfall forecast/expected within approximately the next 48 hours.

The threshold used for defining “heavy” rainfall was 70 mms or more within a 24 hour period. Regarding river levels, only those cases where rivers were “at warning level or above”, were considered. The amount of rainfall expected/ forecast varied both across and within zones. Some areas are expected to receive as little as 30-50 mms total in the coming days, while others are forecast to receive 75 mms or more. A value of “low” in the table on page 3 will be closer to the low end on this range, a value of “high” will be closer to the high end.

All 5 indicators were used as inputs to determine “overall flood risk”. In order of importance, more consideration was given to “river levels within the zone”, moderate importance was given to river levels upstream and to recent rainfall upstream. Relatively lower consideration was given to rainfall in the zone and to the rainfall forecast.

Data and Information Sources

Rainfall Recent Past:
BMD/ Bangladesh Meteorological Department
FFWC/ Flood Forecasting and Warning Center: http://www.ffwc.gov.bd/
IMD/ Indian Meteorological Department: http://www.imd.gov.in
NASA TRMM/ Tropical Rainfall Measuring Mission: http://trmm.gsfc.nasa.gov/publications_dir/potential_flood.html

Rainfall Forecast:
CPC/ Climate Prediction Center: http://www.cpc.ncep.noaa.gov
IMD/ Indian Meteorological Department: http://www.imd.gov.in

River Levels:
FFWC/ Flood Forecasting and Warning Center: http://www.ffwc.gov.bd/
CWC/ Central Water Commission, India: http://www.india-water.com/ffs/index.htm

Note: 1. This Bulletin is available at WFP Bangladesh website at http://bangladesh.wfp.org and LCG DER Website at http://www.lcgbangladesh.org/derweb/index.php
2. Comments on this bulletin should be sent to hewhr.bangladesh@wfp.org