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Session 5.14: Water Related Disasters - Specially after Tsunami in Asia

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Organisers:
Japan Water Forum, Japan
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Water Related Disasters in India & Global Scenario
India floods

• Monsoons and heavy rain in Western India has resulted in unprecedented floods and landslides in the states of Gujarat (June/July 2005) and Maharashtra (July 2005).
• Flood waters cut off transport routes, communication and power supplies, and have inundated and destroyed homes, destroyed crops and livelihoods, affecting millions in rural and urban areas.
• Mumbai is especially hard-hit. Deaths from India's heaviest rainfall on record have already killed over 800 people.
• The floods in Gujarat forced 5 million people from their homes, and affected up to 20 million people across the state, when annual rainfall was received just in 3 days over 90% of the state.
The **Maharashtra floods of 2005** refers to the flooding of many parts of the Indian state of Maharashtra including large areas of the metropolis of Mumbai (formerly Bombay), a city located on the coast of the Arabian Sea, on the western coast of India, in which at least 1,000 people died.

The floods were caused by the eighth heaviest ever recorded 24-hour rainfall figure of 944 mm (37.2 inches) which lashed the metropolis on 26 July 2005, and intermittently continued for the next day. 644 mm (25.4 inches) was received within the 12-hr period between 8am and 8pm.

The highest 24-hour period in India was 1,168 mm (46.0 inches) in Aminidivi in the Union Territory of Lakshadweep on 6 May 2004 although some reports suggest that it was a new Indian record. The previous record high rainfall in a 24-hour period for Mumbai was 575 mm (22.6 inches) in 1974.

Other places to be severely affected were Raigad, Chiplun, Ratnagiri and Kalyan in Maharashtra and the southern state of Goa.
Maharashtra Floods - 2005

- The floods in the Maharashtra region of India have caused widespread devastation. Millions of people have been affected, and tens of thousands have lost their homes. The floodwaters are being contaminated with dead animals and raw sewerage from damaged sewerage systems and less than adequate sanitation.

- The whole scenario increases the likelihood of outbreaks of water-borne diseases that may rapidly turn into epidemics of preventable diseases that may cost thousands of lives. Children of course are the most vulnerable. Already there are a large number of cases of dysentery, diarrhoea, gastro-enteritis and fevers, with thousands of people being admitted to hospital, and reports that several hundred people have already died from such illnesses.

- The rains have washed away the recently planted rice fields and destroyed thousands of simple mud homes. The destruction of more modest agriculture practiced by the poor farmers has been swept away, and for those who depend on the small farmers for their livelihood – the itinerant laborers, the tribal communities and the landless poor - the impact is life threatening.
The river originates at Powai and meets the Arabian Sea at Mahim Creek flowing through residential and industrial complexes of Powai, Saki Naka, Kurla, Kalina, Vakola, Bandra-Kurla complex, Dharavi and Mahim over a distance of about 15 km.

The river bed is narrow in the initial stretch and is about 10 meters wide but at Bandra-Kurla complex, it is much wider.

**Ecological importance of the river**

Mahim bay area, where Mithi River meets Arabian Sea is a nominated bird sanctuary where migratory birds come for nesting. This part is full of mangroves. When the river was not as polluted as it is today, it used to serve as an important storm water drain for Mumbai but as it has been used as a sewer over the years, its importance as a storm water drain has reduced and on the contrary, it poses as a hazard during high tide bringing polluted water into the city.
Geographical Changes in Mumbai

Geographical transition of Mumbai

1843  1900  1990
Water related disasters- Mumbai -July 2005 Flood
Flood in Mumbai
Flood in Pune City
Other parts of Maharashtra-Nagpur, Pune
European flood August 2005

Berne, Switzerland

An aerial view of Bern, Switzerland
European flood August 2005

A motorway off ramp at Brienzwiler, Switzerland

Boardwalks over the floodwaters in Lucerne

Berne, Switzerland

Switzerland, Lucerne, 26th Aug, 2005
European flood August 2005

Czech Republic, Cesky Tesin

Austria, Ischgl in the Paznaun valley

province of Vorarlberg.

Paznaun valley
Observations

- Flood phenomenal due to climate change
- Environmental Pollution
- Heavy loss to Public
- Loss of infrastructure
- Development / growth-slow down
- Impacts on economic system
Conclusion....

- **Advance studies on climate prediction**
- **Requirement of Radar, Environmental Pollution observatory equipments**
- **Needs for development of Disaster Management Plans (DMP).**
- **Need of Public Awareness for pollution control**
- **Involvement of stakeholders – Govt./Non Govt./Public/Research Institutions etc.**
Let us join hands ..... 
........to meet the challenge

Thank you!