



Information Infrastructure for Disaster Management



An initiative of
**Comprehensive Disaster Management
Programme (CDMP)**

Md. Shahidul Islam, UNDP, Bangladesh

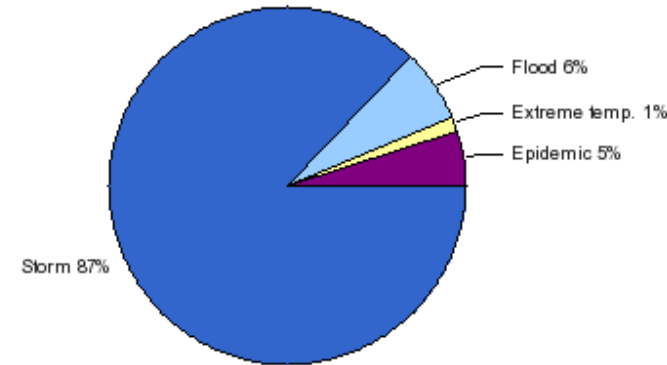
Tasdiq Ahmed, UNDP, Bangladesh



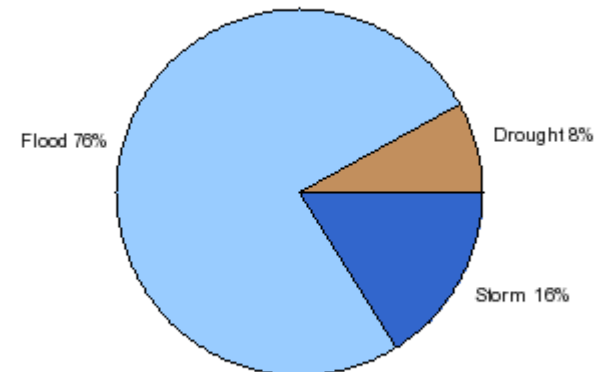
NATIONAL DISASTER CONTEXT

- **Frequently hit by various natural disasters like Cyclones, Storm surges, Floods, Tornadoes, Earthquakes, Droughts and other calamities**
- **Monsoon flooding is an annual occurrence**
- **Climate change is likely to cause significant impact in the form of severe floods, cyclones, droughts, sea level rise and salinity affecting agriculture, livelihoods, natural systems, water supply, health etc.**
- **The disaster vulnerable people demonstrates strong coping capacity to face the disaster challenges**

Percentage of reported people killed by disaster type

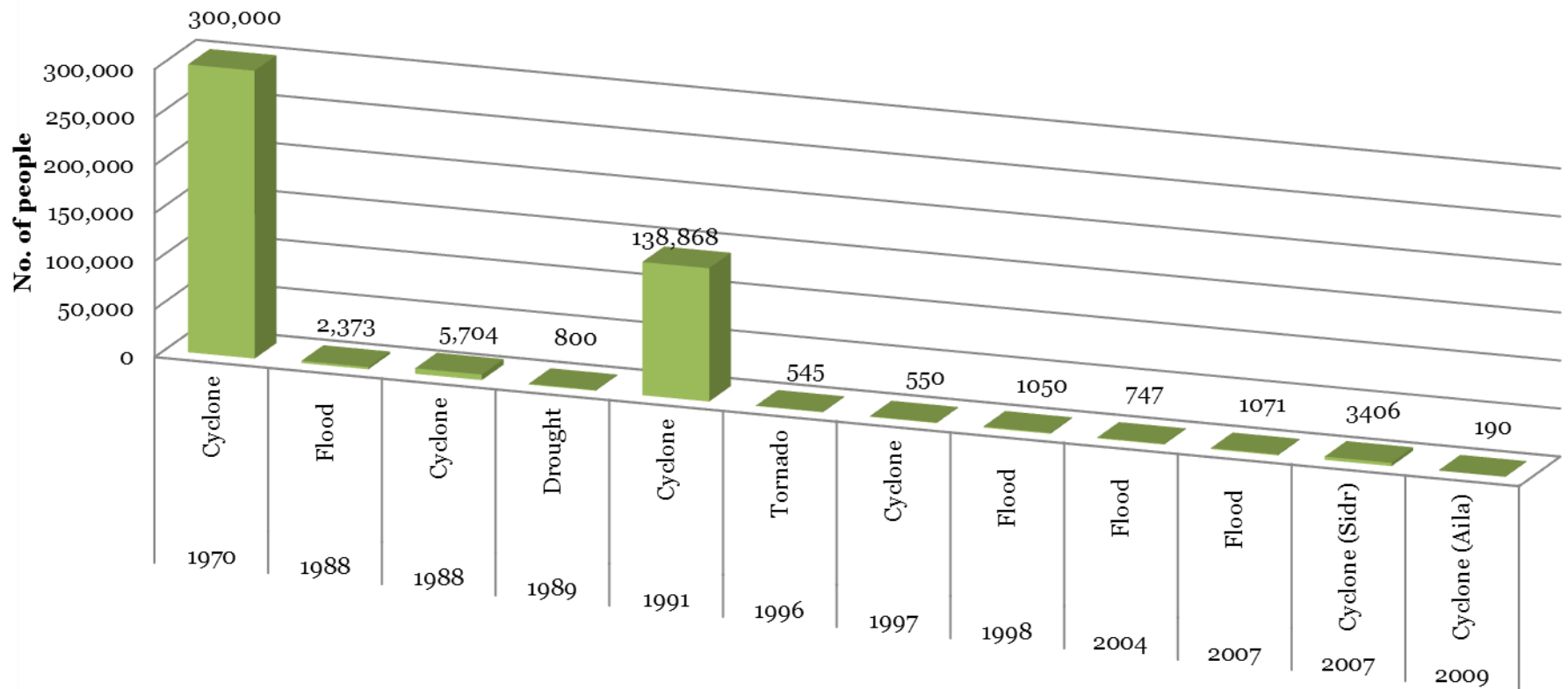


Percentage of reported people affected by disaster type





Death due to disasters

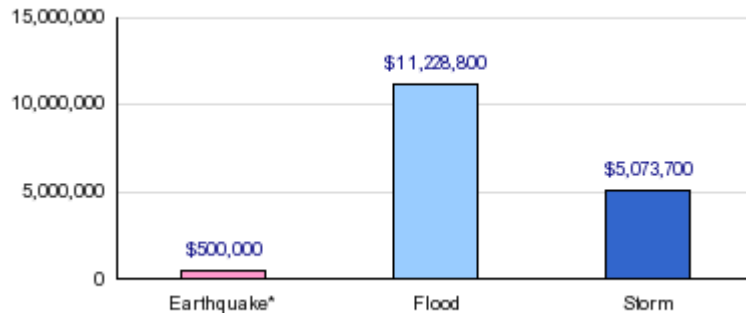


	1970	1988	1988	1989	1991	1996	1997	1998	2004	2007	2007	2009
	Cyclone	Flood	Cyclone	Drought	Cyclone	Tornado	Cyclone	Flood	Flood	Flood	Cyclone (Sidr)	Cyclone (Aila)
■ Death	300,000	2,373	5,704	800	138,868	545	550	1,050	747	1,071	3,406	190



DISASTER AND POVERTY

Reported economic damages by disaster type (US\$ X 1,000)



- **Adverse long-term impact on economic and social activities**
- **The poor are more vulnerable to any kind of disaster**
 - **Depletion of assets**
 - **Income erosion due to loss of employment**
 - **Increase indebtedness**
 - **Out migration**
- **Slow rate of poverty reduction**
- **Reduction of employment opportunities, lack of access to resources, inflation increase)**



Vision, Mission and Objective of DM

Vision:

- ❑ to reduce the vulnerability of people, especially the poor and disadvantaged, to the effects of natural, environmental and human induced hazards to a acceptable humanitarian level and to have in place an efficient emergency response management system

Mission:

- ❑ to achieve a paradigm shift in disaster management from conventional response and relief practice to a more comprehensive risk reduction culture and to promote food security as an important factor in ensuring the resilience of communities to hazards

Objective:

- ❑ to strengthen the capacity of the Bangladesh disaster management system to reduce risk and **improve response and recovery management at all levels**



Establishing DMIC for Strengthening EW and Emergency Response

- ❑ Established ***Disaster Management Information Center (DMIC)*** linking with 64 Districts and 482 Sub-district offices (hardware and software support, Internet, ICT training)

The DMIC is also directly, at present, linked through its DMIN (Disaster Management Information Network) Portal with the following organizations and also providing support to strengthen them.

- ❑ Bangladesh Met Dept (BMD) - upgradation of 35 observatories, LAN, Internet, software support, MoU with for data sharing
- ❑ MoU with FFWC for Flood warning data sharing, enhancing capabilities for longer lead time forecasting
- ❑ Strengthened CPP – equipment, training for community alerting
- ❑ Using the infrastructure of Mobile Phone (CB, IVR)



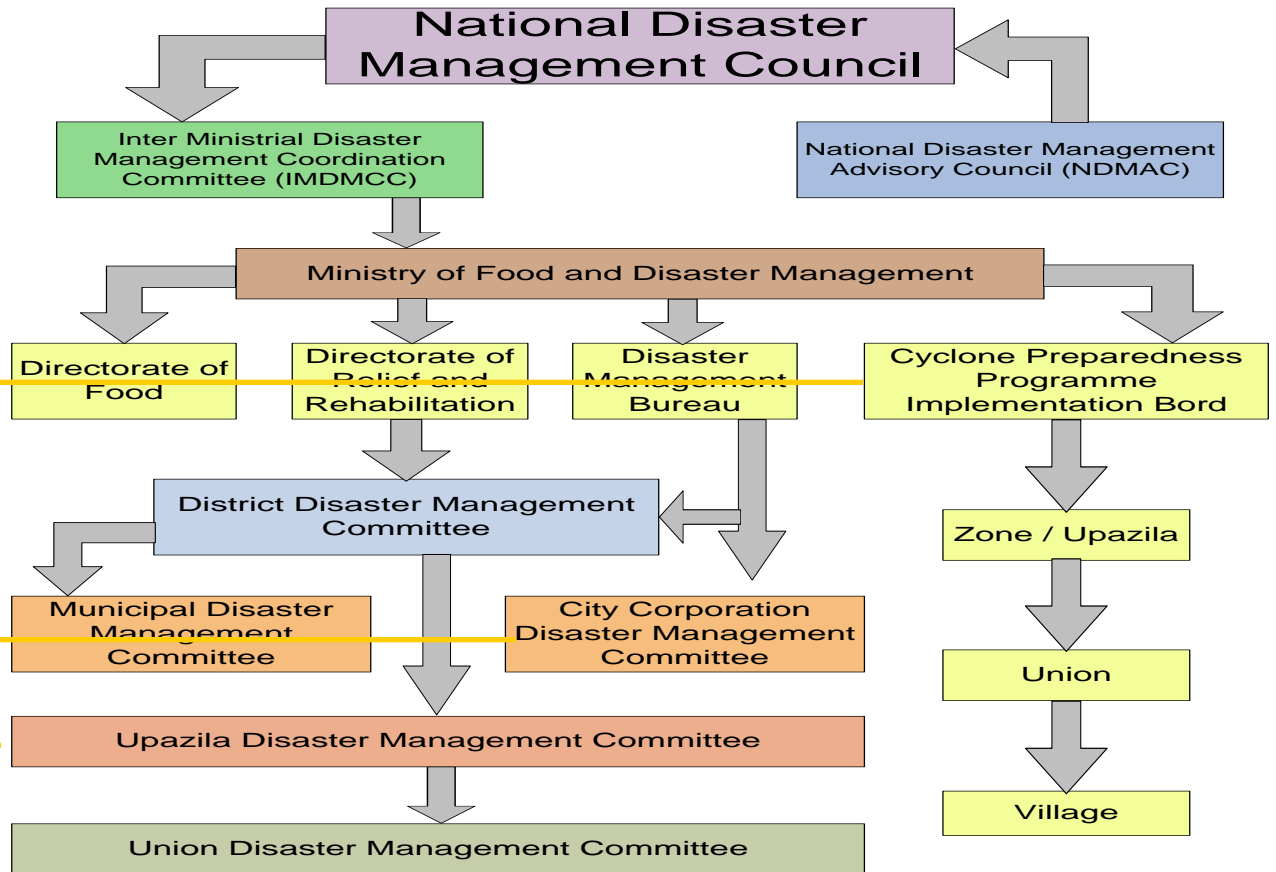
RELEVANCE OF ICTS

ICT plays a critical role in four phases of DM:

- 1. PREPAREDNESS** – ICT /satellite provide reliable and rapid communication, observation and positioning tools.
- 2. MITIGATION** –Location and hazard specific long term mitigation options could be shared for informed decision where application of ICTs is a useful tool. The presence of data and information is crucial to helping decision makers understand the root causes of a disaster
- 3. RESPONSE** –ICT can help sharing instant knowledge and information on the disaster location such as primary damage information, coordination (3W) etc.
- 4. RECOVERY** –ICT provides support to the stakeholders with one stop information bank and connecting people and institution for recovery both livelihood and economic and rehabilitation or shelter construction at emergency situation.



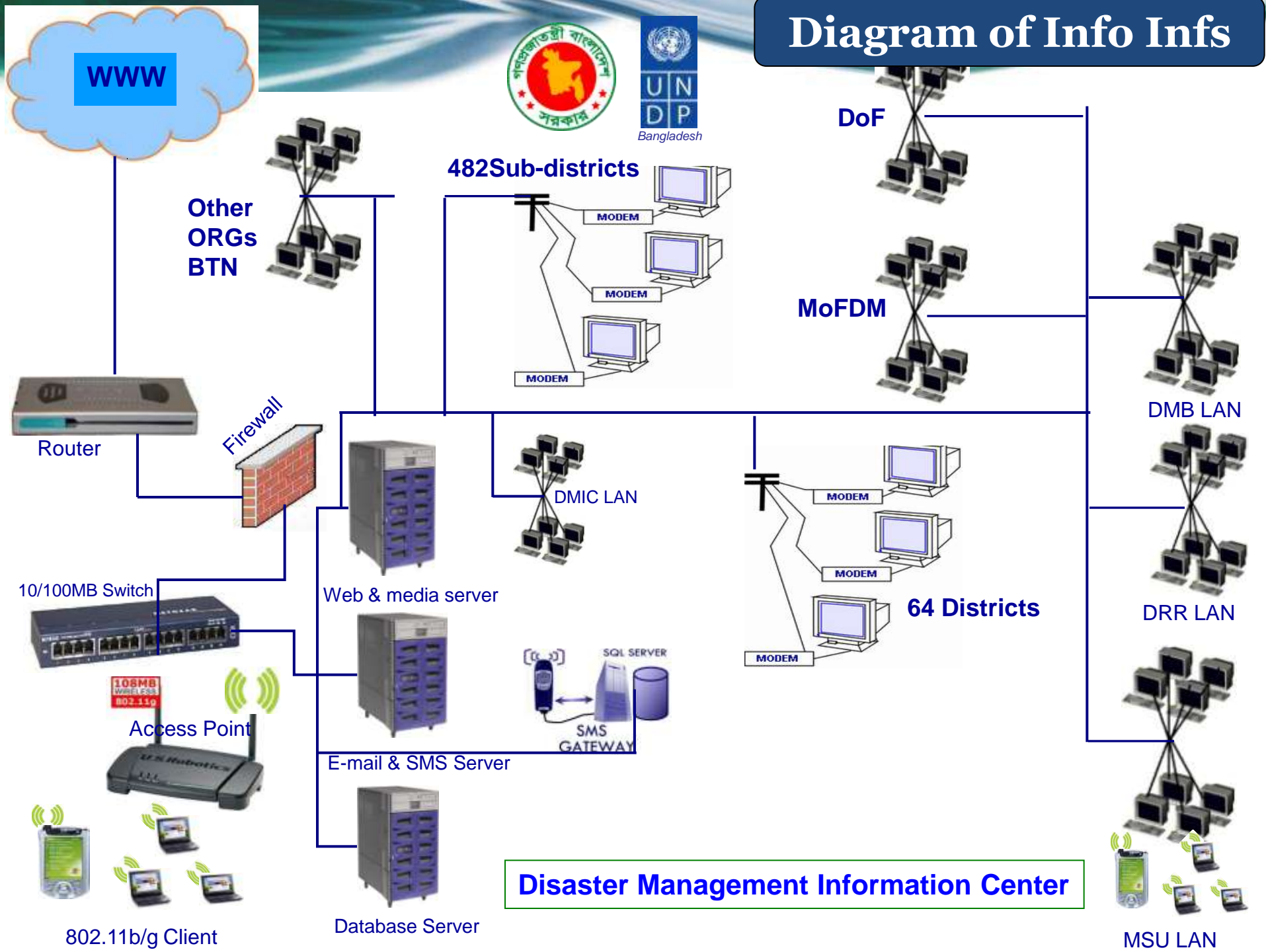
Disaster Management Institutions in Bangladesh



- 1. Computerization
- 2. ICT Skill Training
- 3. Internet and Email Connectivity
- 4. Motivation



Diagram of Info Infs



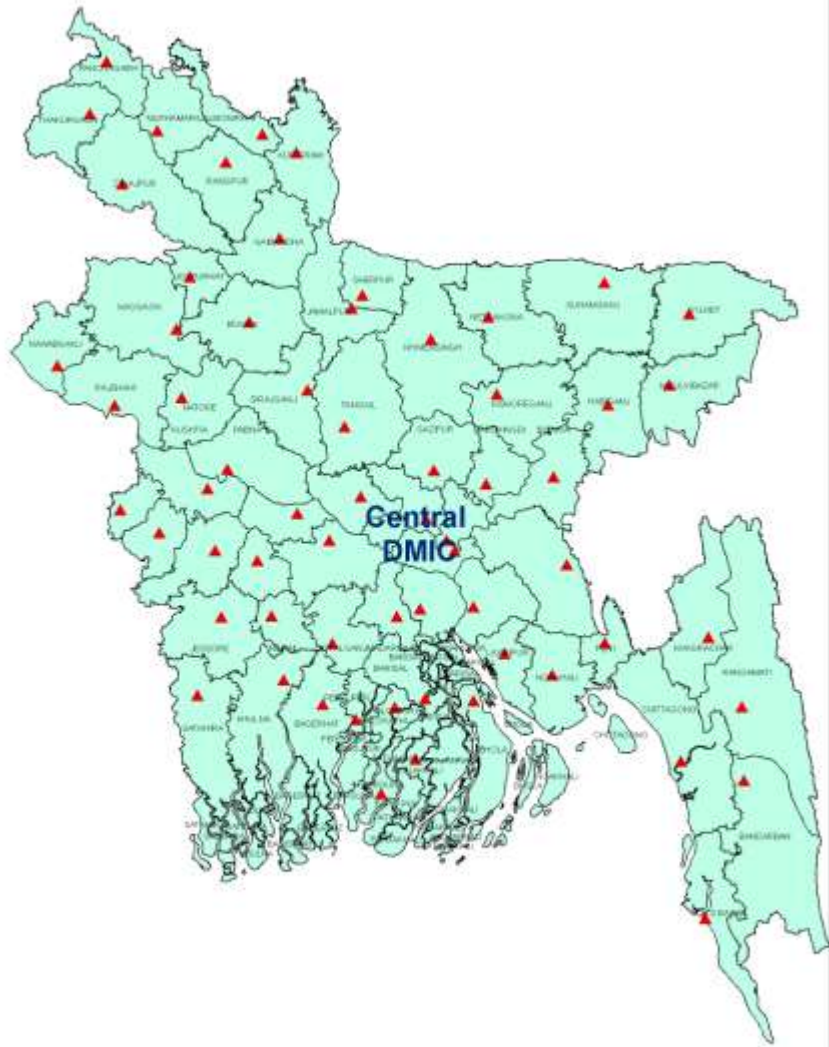
Disaster Management Information Center

Information Infrastructure Node

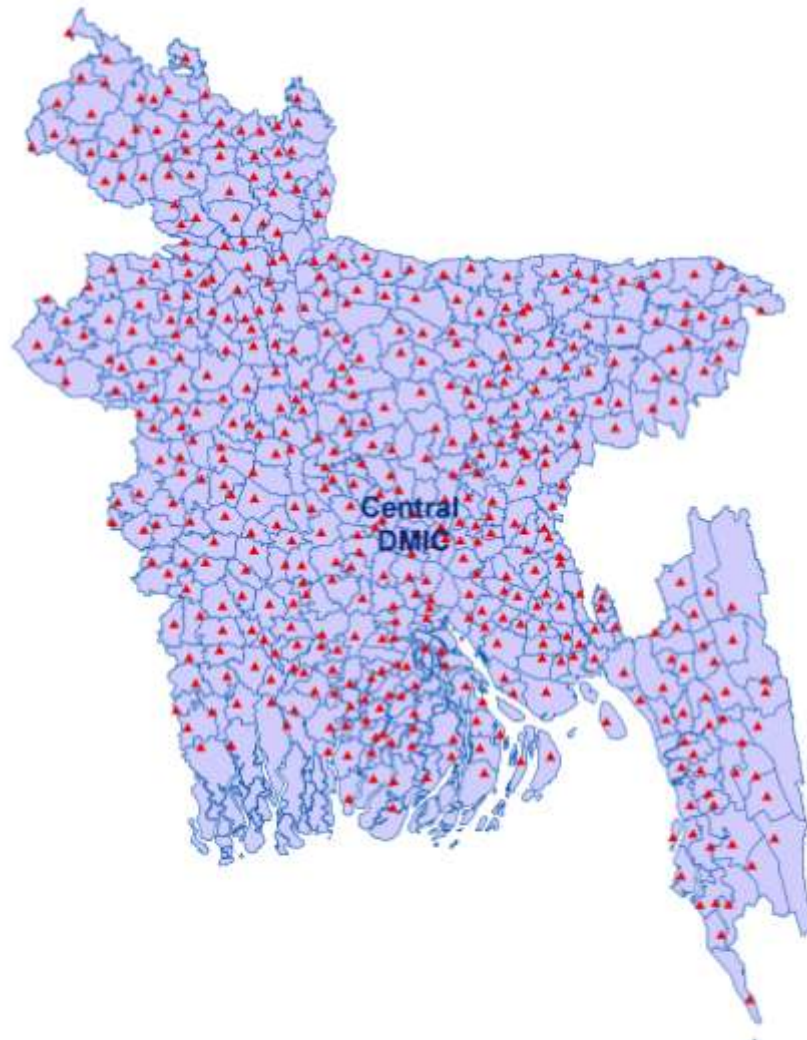


Bangladesh

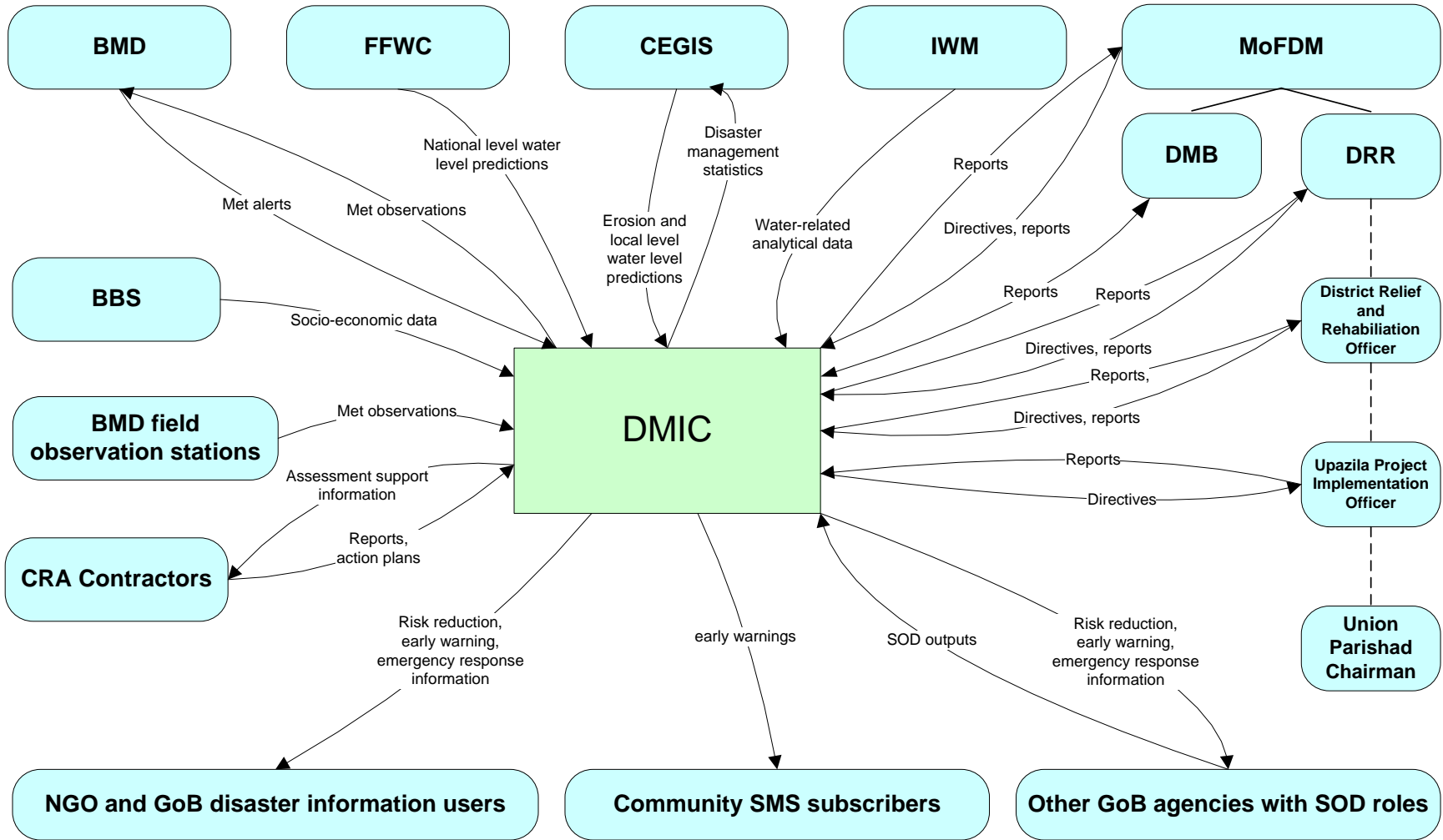
District Level DMIC



Sub-district Level DMIC



Information Flow Focusing SOD

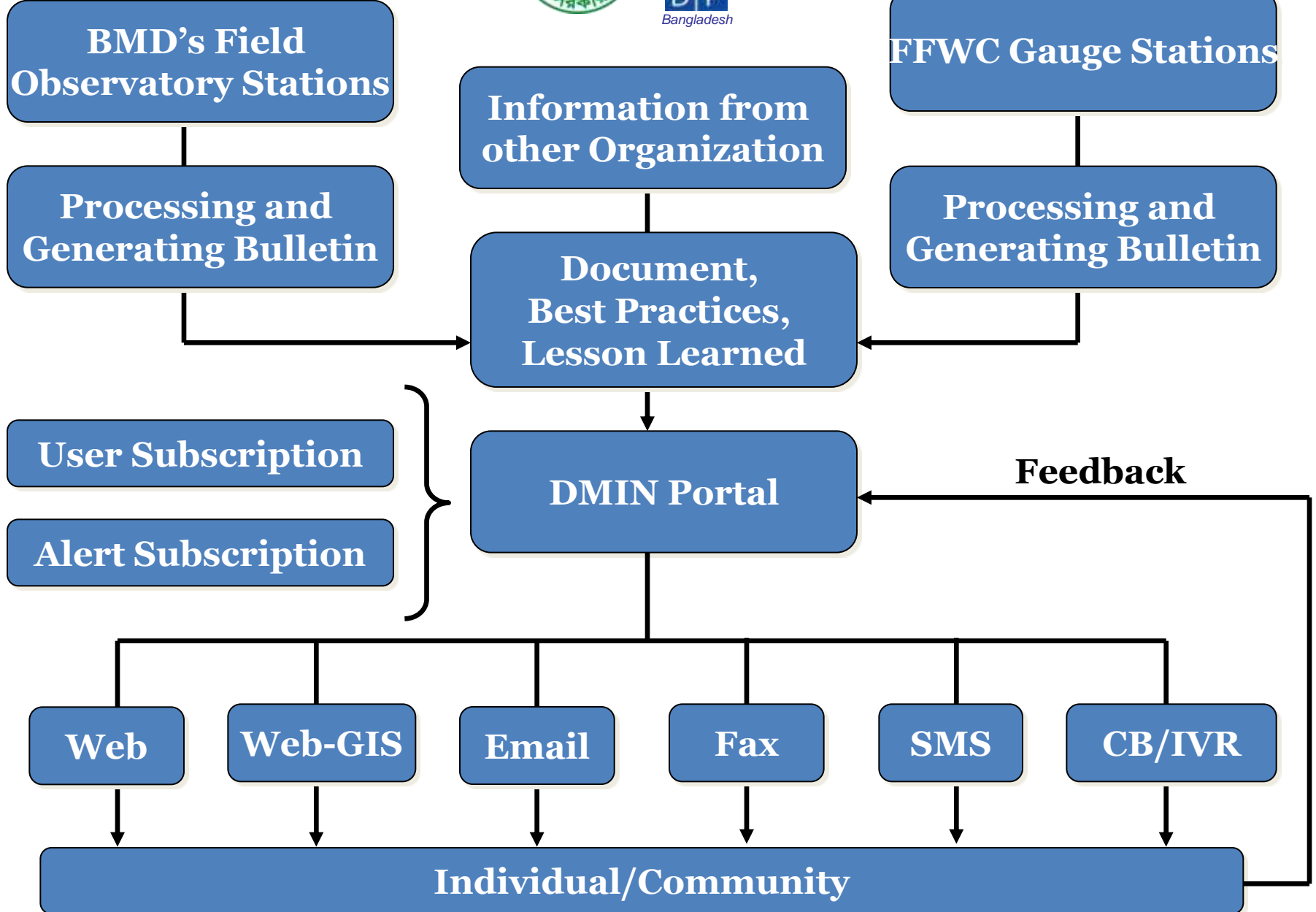




Disaster Management Information Network (DMIN) under DMIC

- 1. To establish field level Disaster Management Information Center (DMIC) and network between central DMIC in Dhaka with all the district and Upazila (Sub-district) DMICs established already or to be established shortly.**
- 2. To develop a web portal to share, coordinate and disseminate disaster management information, programs and guidelines from source down to the last mile. The portal enables DMIC to collect, process, analyze, archive and disseminate information for risk reduction and emergency response purposes.**

DMIN Work Flow





FFWC's Forecast

RIVER SITUATION AS ON 05-10-2010 AT 06:00 HOURS

SL	RIVER	STATION NAME	RHWL (m)	D.L. (m)	W A T E R 04-10-2010	L E V E L 05-10-2010	+ Rise - Fall in cm	Above/Below D.L. in cm
----	-------	--------------	-------------	-------------	-------------------------	-------------------------	---------------------------	------------------------------

BRAHMAPUTRA BASIN

1	DHARLA	KURIGRAM	27.52	26.50	24.50	24.40	-10	-210
2	TEESTA	DALIA	52.97	52.40	51.50	51.45	-5	-95
3	TEESTA	KAUNIA	30.52	30.00	27.90	27.95	+ 5	-205
4	JAMUNESWARI	BADARGANJ	32.92	32.16	28.45	28.41	-4	-375
5	GHAGOT	GAIBANDHA	22.81	21.70	19.73	19.67	-6	-203
6	KARATOA	CHAK RAHIMPUR	21.41	20.15	16.72	16.61	-10	-354
7	KARATOA	BOGRA	17.45	16.32	12.08	11.95	-13	-437
8	BRAHMAPUTRA	NOONKHAWA	28.10	27.25	24.32	24.08	-24	-317
9	BRAHMAPUTRA	CHILMARI	25.06	24.00	22.77	22.58	-19	-142
10	JAMUNA	BAHADURABAD	20.62	19.50	18.54	18.40	-14	-110
11	JAMUNA	SERAJGANJ	15.12	13.35	12.55	12.50	-5	-85



FLOOD FORECASTING & WARNING CENTRE
BANGLADESH WATER DEVELOPMENT BOARD
WAPDA BUILDING, 8TH FLOOR, DHAKA.

E-mail: ffwcbwdb@gmail.com, Website: <http://www.ffwc.gov.bd>, Tel: 9553118 & 9550755, Fax:9557386

RAINFALL AND RIVER SITUATION SUMMARY as on October 05, 2010.

OUTLOOK

- *All the major river systems are in falling trend which is likely to continue during next 24 to 48 hours.*
- *No flood situation prevails over the country.*

WATER LEVEL: (Stations above danger level)
Nil

RAINFALL:

No rainfall recorded during last 24 hours.

GENERAL RIVER CONDITION

Monitored stations	73	Steady	02
Rise	3	Not reported	01
Fall	67	<i>Stations Above danger level</i>	<i>0</i>



FFWC's Forecast

Navigation bar with icons for back, forward, search, and zoom (90%).

24, 48 & 72 Hrs MODEL FORECAST

FLOOD FORECASTING MODEL - FF2007:
Data available up to 05-10-2010

		today	24-hrs	24-hrs	24-hrs	48-hrs	48-hrs	48-hrs	72-hrs	72-hrs	72-hrs	
			fore-	+ rise	+ above	fore-	+ rise	+ above	fore-	+ rise	+ above	
			cast	- fall	- below	cast	- fall	- below	cast	- fall	- below	
					D.L.			D.L.			D.L.	
Water Level in [m]		05-10	06-10	06-10	06-10	07-10	07-10	07-10	08-10	08-10	08-10	
River	Station	D.L. (meter)	0600 (meter)	0600 (meter)	0600 (cm)	0600 (cm)	0600 (meter)	0600 (cm)	0600 (cm)	0600 (meter)	0600 (cm)	0600 (cm)
Atrai	Mohadevpur	18.59	13.90	13.87	-3	-472	13.85	-2	-474	13.83	-2	-476
Atrai	Atrai	13.72	-	9.59	-	-416	9.50	-9	-425	9.42	-8	-433
Little Jamuna	Naogaon	15.24	11.80	11.80	0	-344	11.81	+	-343	11.81	0	-343
Karatoya	Chakrahimpur	20.15	16.61	16.57	-4	-358	16.54	-3	-361	16.50	-4	-365
Karatoya	Bogra	16.32	11.95	11.94	-1	-438	11.95	+	-437	11.97	+	-435
Teesta	Kaunia	30.00	27.95	27.95	0	-205	27.93	-2	-207	27.88	-5	-212
Brahmaputra	Chilmari	24.00	22.58	22.47	-11	-153	22.38	-9	-162	22.29	-9	-171
Jamuna	Bahadurabad	19.50	18.40	18.26	-14	-124	18.17	-9	-133	18.08	-9	-142
Jamuna	Kazipur	14.85	13.66	13.53	-13	-132	13.42	-11	-143	13.32	-10	-153
Jamuna	Saraidani	13.35	12.50	12.38	-12	-97	12.26	-12	-109	12.16	-10	-119



Bangladesh Meteorological Department

Modules

- Home
- News
- About BMD
- Services
- Bangladesh Climate
- Weather Chart
- Radar Image
- Weather Forecast
- Satellite Image
- Contact Us
- Special Weather Bulletin

Administration

- Administration
- Logout

Administration Menu | Bulletin Dissemination Menu

Bulletin Text Entry

Bulletin Text Review

Bulletin Text Distribution

Bulletin Dissemination (Distribution) Form

Bulletin Type: Special Weather Bulletin Warning Message

Send Date: 2008-10-23 11:11:45




Title: Special Weather Warning

Special Weather Warning

Text:

Select Subscriber








Bulletin Dissemination List For Distribution

SL	Title	Bulletin Type	Date	Status	Action
1	Special Weather Warning	Special Weather Bulletin Warning Message	10-23-2008	Send	  



BMD's Bulletin

Bangladesh Meteorological Department

Forecast for Divisional city	Today's maximum temperature (°C)	Today's minimum temperature (°C)
Dhaka 	34.9	27.5
Chittagong 	35.0	26.5
Rajshahi 	35.2	25.4
Rangpur 	32.6	27.0
Khulna 	36.0	27.5
Barisal 	35.3	27.2
Sylhet 	36.0	26.0



DMIN Web Portal

Web-GIS Service

refresh reset_session



Current scale: 1:3'416'208

Outline
Navigation Themes Print

Thematic Map expand tree - close tree
check all - uncheck all

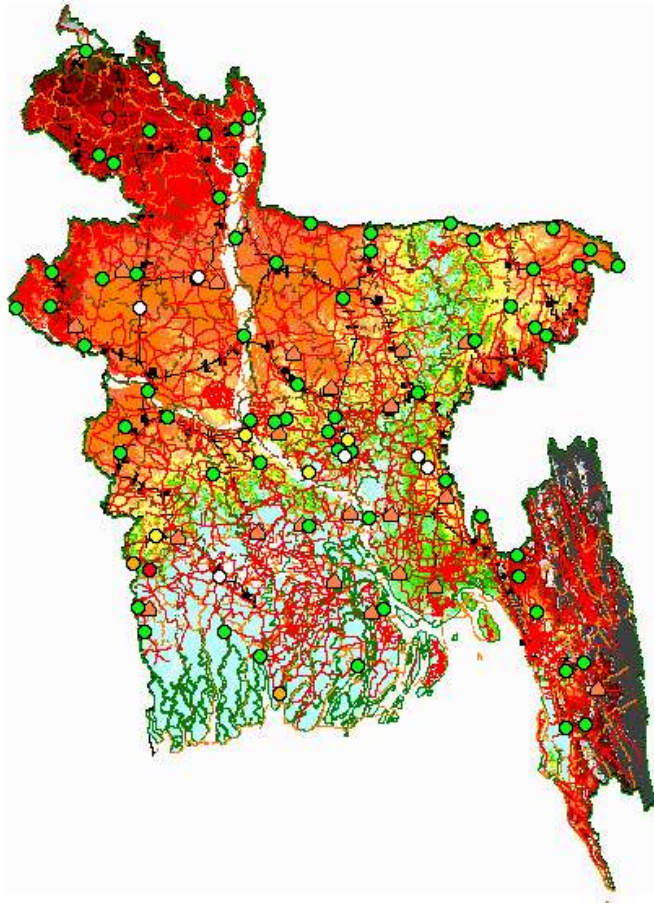
General
 BTM Grid

Background
 None
 Digital Elevation Model (DEM)

Administrative
 District/Thana HQ
 ★ District
 ★ Thana
 Boundary
 International
 Division
 District
 Thana

Communication
 Railway
 Road

Water
 Levels
● Normal
● Warning
● Danger
● Severe
○ No Data
 River [width]
Below 25m
25m - 50m
50m - 100m
Above 100m



Coord (m): 1052309 / 669152



Disaster Damage Database



Home Change Password Help Log out

User: Rezwan

- Incident ▾
- Disaster Data Entry ▾
- BBS Data ▾
- Reports ▾
- ▄ **National Report**
- ▄ District Report
- ▄ Upazila Report
- ▄ Union Report
- ▄ Form Creator
- ▄ Configuration

National Report

Incident : 20080730 ✓

Form : Flood Damager Repor- 2008 ✓

National [Compatibility Mode] - Microsoft Excel

Questions	Bogura	Faridpur	Dhaka	Tangail
No of affected upazilla	3	4	6	
Affected area 552(sq. km.)	239	168	120	3
Affected family	13002	15534	4596	143
Damaged households (partial)	3335	3600	3202	15
Damaged households (full)	335	0	201	8
No of death	0	1	0	
No of livestock death	0	0	0	
Affected Embankment(Partial)(Km)	0	4	3	
Affected Embankment(Full)(Km)	0	0	0	
Affected Institution/Infrastructure(Paritial)(number)	0	0	0	
Affected Institution/Infrastructure(Full)(number)	0	48	10	
Affected Union(Number)	13	18	22	
Damaged Crop (full)(Acre)	0	1420	0	
Damaged Crop (Partial)(Acre)	10609	5231	5242	233
Affected Road (Full)(Km)	0	0	7	
Affected Bridge / Culvert(Number)	0	0	0	
No. of Shelters(Number)	7	0	1	



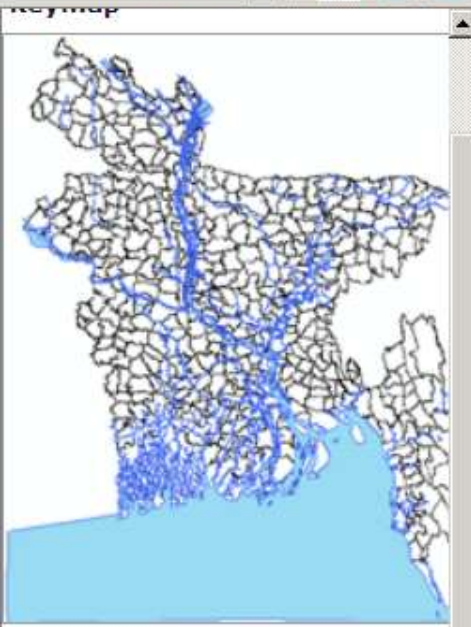
Disaster Damage Database



DISASTER INCIDENCE DATABASE

ADMIN REPORT

Disaster Incidence Dat



Show Disaster Info

Search Criteria:

Date From:
 Date To:
 Disaster:

Show Map	Event ID	Date	Time	Duration	Disaster	Coverage	Damage Info
Show Map	TC-2008-0001	2008-10-26	23:00:00	6 hours	Tropical Cyclone	BAGERHAT	Death:7-Missing:4-affected 92701 famil and 321831 people
Show Map	EQ-2008-0001	2008-09-20	17:16:23	20 Seconds	Earthquake	B.BARIA	Five EQ occurred with 77 km of Dhaka-Magnitude 4.8
Show Map	FL-2008-0001	2008-08-31	00:00:00	18 days	Flood	BOGRA	Death:7-Affected population:975096
Show Map	TC-2007-0002	2007-11-15	12:30:00	18 hours	Tropical Cyclone	BAGERHAT	SIDR-Death:3363-Missing:871-Family affected:2064026-Ho damaged:1522077-Tr destroyed:4065310
Show Map	FL-2007-0002	2007-07-15	00:00:00	75 days	Flood	B.BARIA	Flood 2007-death:10: affected population:1377138



Disaster Management Committee Contacts Database

<http://www.cdmp.org.bd/dmcdlb>

Disaster Management Committee

Disaster Management Committee

CHOOSE DISTRICT

DISTRICT:

- Bagerhat
- Bandabon
- Bangura
- Chittagong**
- Chudanga
- Comilla
- Joypurhat
- Menkigenj

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Disaster Management Committee

Disaster Management Committee

CHOOSE DISTRICT

DISTRICT:

Chittagong Disaster Management Committee Contacts:

Chairman	Contact	Member Secretary	Contact
Feroz Ahmed	01713304332	Rabiul Moin	01711072880

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Many Other Databases

- 1. Building and life line inventory database**
- 2. Central Relief Management Information System (CRMIS)**
- 3. Community Risk Assessment (CRA)**
- 4. Risk Reduction Action Plan (RRAP)**
- 5. Household Risk Reduction Action Plan (HRRAP)**
- 6. Situation Reports**
- 7. Enterprise GIS**



Bangladesh

Government of the People's Republic of Bangladesh

Disaster Management Bureau

Disaster Management & Relief Division
Ministry of Food and Disaster Management

5 October 2010



Admin Login | Links | Sitemap | Feedback Form | Contact DMB

Welcome to Disaster Management Bureau's home page

- Home
- DMB Bangladesh
- DMB DMR
- DMB Contact
- Weather Bulletin
- River Disaste
- Disaster Report
- Leaflet/Map
- DMB Publications
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- DMB Committee
- Disaster Management Training
- Search and Receive Feedback
- LDSP
- DMR
- Disaster
- Form
- Visiting/Representative
- Target
- Photo Gallery
- Telephone Book
- Site

Bangladesh is mainly a low-lying delta plain divided mainly hills, rivers and flood plain based on a hydrographic. The country has an approximate 30.1m. bounded between 20°34' to 26°30' N and 92° 41' E longitude and has 4,035 km. long geographical borders in South Asia forming lower three major rivers, the Padma (Ganges) and the G. Brahmaputra and the Meghna. Bangladesh with country borders predominantly an aquiferous linkage with seasonal weather systems. The land by natural hazards of which floods, cyclones, water, droughts, earthquakes, insect-bait diseases, the most disasters in nature. Bangladesh, with proximity with the Himalayas, have a long history of great earthquakes of magnitude exceeding 1903, 1934, 1938 and another 10 earthquakes took during the last 100 years. The colossal disasters caused by natural disasters with their inevitability make Bangladesh one of the most disaster-prone countries in the world.

DMB is a small dynamic professional staff with several sections for disaster warning in close collaboration with the national weather service and the concerned in the overall disaster of high-level institutions (MADRAC). It is a sub-division in the Ministry of Management (MADRAC) to oversee and coordinate related to disaster management from national level.



ত্রাণ ও পুনর্বাসন অধিদপ্তর

দুর্যোগ ব্যবস্থাপনা ও ত্রাণ বিভাগ

বাদ্য ও দুর্যোগ ব্যবস্থাপনা মন্ত্রণালয়

ENGLISH



search...

SEARCH

ধোম বাংলা

মেইন মেনু

- ধোম
- কার্যক্রম
- অনুবিভাগ
- সচেতনতা
- পেশা উন্নয়ন / নিবেদিত
- প্রশাসনিক কার্যক্রম
- জটিলতা
- বাংলাদেশ প্রোগ্রাম
- সংশোধন
- প্রোগ্রাম বিজ্ঞপ্তি
- অতিরিক্ত ও অনুসন্ধান
- প্রকল্প কার্যক্রম

ত্রাণ ও পুনর্বাসন অধিদপ্তরের ওয়েবসাইটে আপনাকে স্বাগতম

গণপ্রজাতন্ত্রী বাংলাদেশ সরকারের ত্রাণ ও পুনর্বাসন অধিদপ্তরের ওয়েবসাইটে আপনাকে স্বাগতম। আমরা আশা করি এই সাইট আপনাকে আপনার প্রয়োজনীয় তথ্য পেতে সাহায্য করবে অথবা দেশের একজন নাগরিক হিসেবে আপনার জানার কৌতুহল মেটাতে সমর্থ্য হবে। এই সাইট ত্রাণ ও পুনর্বাসন অধিদপ্তরের যাবতীয় কার্যক্রমের তথ্য ধারণ করে এবং বাংলাদেশ সরকারের বিভিন্ন মন্ত্রণালয় ও দপ্তরের ওয়েবসাইট লিংক সংরক্ষণ করে। আপনার সুচিন্তিত মতামতকে আমরা স্বাগত জানাই।



সর্বশেষ হাননামান্দ

Monday 27 September 2010, 07:33

কুইক লিংক

- বাংলাদেশ পত্র পোর্ট
- বাংলাদেশ পত্র কার্য
- বাংলাদেশ পত্র প্রেস

মেইল

- ডি. অ. অ. মেইল
- ই-মেইল
- ইউ-মেইল

ওয়েব মেইল

DMIN Home Page



Bangladesh

Disaster Management Information Network (DMIN) Portal
Ministry of Food and Disaster Management

DFID UNDP

Navigation

- DMID Bulletin
- Disaster Management Publications
- Disaster Management Report
- Event Calendar
- PPWC Report
- Feedback
- Forum
- Image galleries
- Information Exchange
- IRAP
- Situation Reports
- Location Based Document

Home Page

The main objective of the DMIN web portal is to share, coordinate and disseminate disaster management information, experience and guidelines from across down to the local level. The portal enables DMIC to collect, analyze and disseminate information for risk reduction and emergency response. The web portal has established data communication network to link the DMIC with government agencies, NGOs and other organizations concerned with disaster management at the regional, national and local levels through various channels.

DER Group Subscription

For subscription to the Disaster and Emergency Response (DER) Group mailing list, please click here.

[\[Link\]](#)

User login

Username:

Password:

- Create new account.
- Request my password

GIS

[Map Server](#)

Calendar

October

S	M	T	W	T	F	S
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30
31						



BMD Site
BMD site

GIS Services
Map Server

Home » User account

User account

[Create new account](#) [Log in](#) [Request new password](#)

Account information

Username: *

Answer All

Spaces are allowed; punctuation is not allowed except for periods, hyphens, and underscores.

E-mail address: *

anwar@gmail.com

A valid e-mail address. All e-mails from the system will be sent to this address. The e-mail address is not made public and will only be used if you wish to receive a new password or wish to receive certain news or notifications by e-mail.

Contact Information

Name: *

Md. Rezwanur Rahman

Mobile Number: *

01712138157

Landline Number:

Fax Number:

Web page URL:

Want to include contact information in the DMIN contact directory ?

Location

Division:

Dhaka

Select

District:

Dhaka

Select a District

Upazila:

Uttara

Select an Upazila

Union:

Test Union

Select an union

Professional Information

Institution Type:

GOV

Institution Name:

Designation:

[Create new account](#)

User Registration



Anwar Ali

- ▼ Alert Subscription Configuration
 - Alert Subscription Configuration Form
 - Alert Subscription List
- My account
- Log out

BMD Site

BMD site

Home » Alert Subscription Configuration

Alert Subscription Configuration Form

Station Name: *

Panchagarh(Karatoa) ▼
test test(Padma)
Atrai(Atrai)
Mohadevpur(Atrai)
Bahadurabad(Jamuna)
Kazipur(Jamuna)
Naogaon(Jamuna)
Serajganj(Jamuna) ▼

Select Station Name.

Alert Dissemination Type: *

15 cm+ above danger level ▼

Select Alert Dissemination Type.

▼ Dissemination Type

If you want alert dissemination by E-Mail , select this check box.

E-mail Address:

rezwansyl@gmail.com

If you want alert dissemination by SMS , select this check box.

Mobile No:

01712139157

If you want alert dissemination by FAX , select this check box and Fill up the FAX No box.

FAX No:

9890854

Fill up the FAX No box

If you want alert dissemination by Telephone , select this check box and Fill up the Telephone No box.

Telephone No:

9890937

Fill up the Telephone No box

Save

GIS Services

Map Server

FFWC

FFWC Alert Subscription

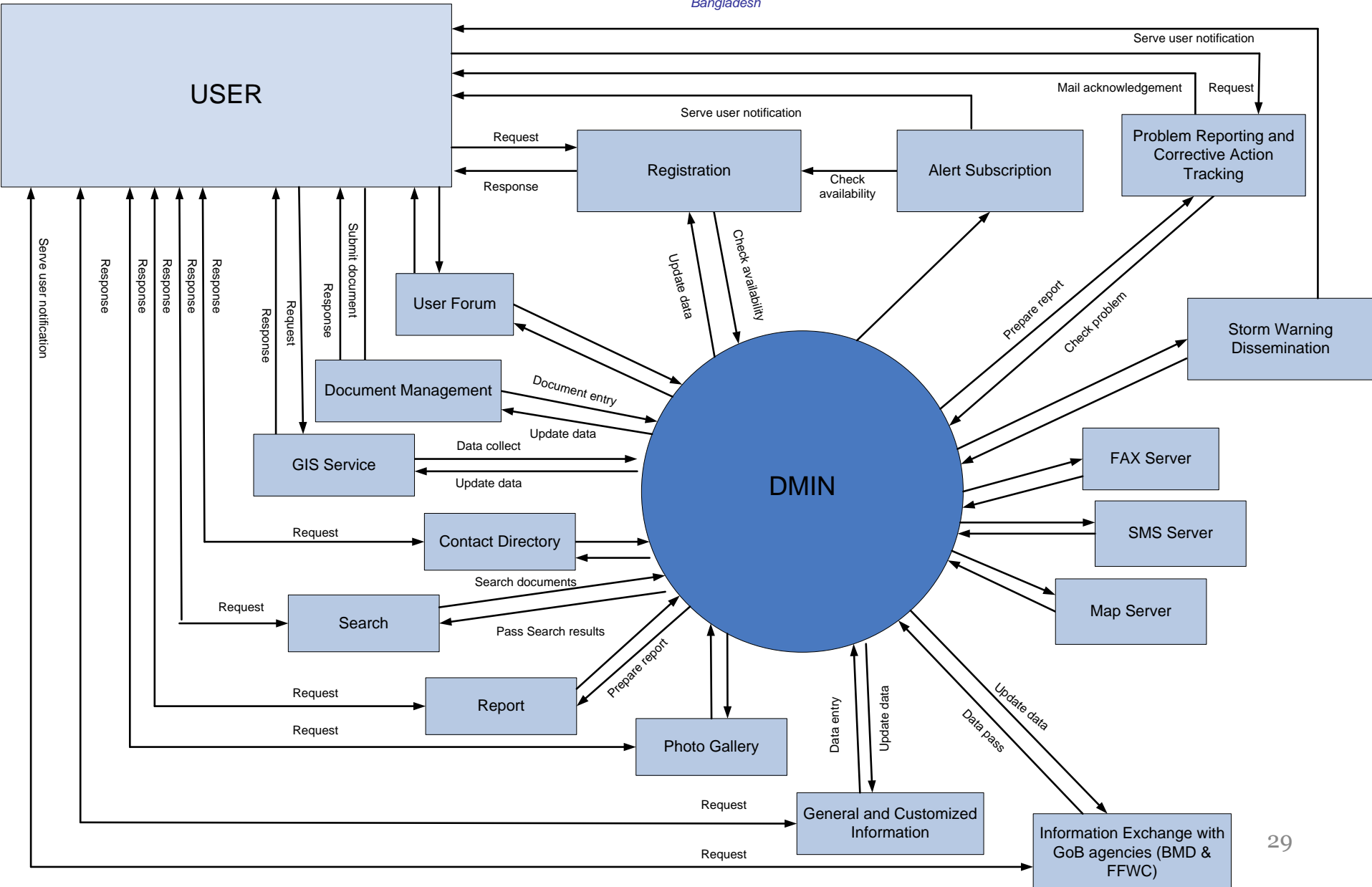
BMD

BMD Subscription

Alert Subscription



DMIN Functionality





Dissemination Services

Major services of DMIN Portal

BMD Bulletin

Contact Directory

Disaster Management Publication

Disaster Management Report

Event Calendar

FFWC Report

Feedback

Forum

Image Gallery

Information Exchange

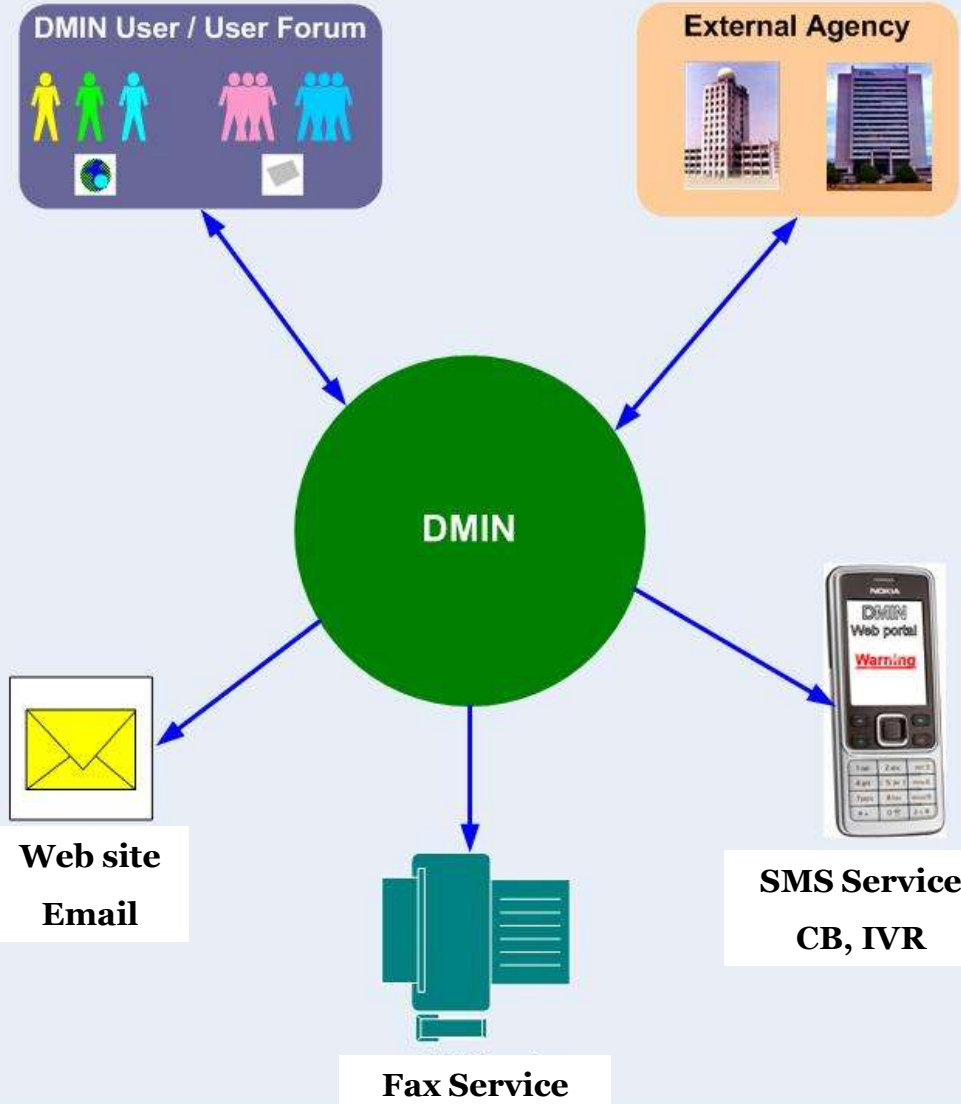
Problem Reporting tool

RRAP

Location Based Document

Map Server etc.

Dissemination Services



Cell Broadcasting



CB is an existing function of mobile phone. It differs from SMS in that, while it does put text messages on the screen of the phone, (like SMS does), it does this to 'all-at-once 'and not one-at-a-time as SMS does.

1. Almost zero transmission time
2. Area specific information
3. User group specific transmission
4. No cost after set-up
5. Easily manageable by the Decision makers



Community people at Sirajganj watching flood forecasting message in their mobile phone





ICT for Weather Bulletin and Early Warning Dissemination

- 1. Improving lead time of flood forecast (72hrs to 10days)**
- 2. Automated Weather Station (Field Server)**
- 3. Satellite based communication /EW system (WorldSpace)**
- 4. Use of community radio**
- 5. Mobile phone based dissemination (SMS, CB, IVR)**
- 6. Increased use of Internet/Email**
- 7. Develop online awareness raising tools like game, quiz, competition**



Challenges

- Own satellite
- Integration of services
- Coordination
- Sustainability

- **Data Standardization**
- **Data Sharing**



Thank you all



Q/A

Monitoring Stations

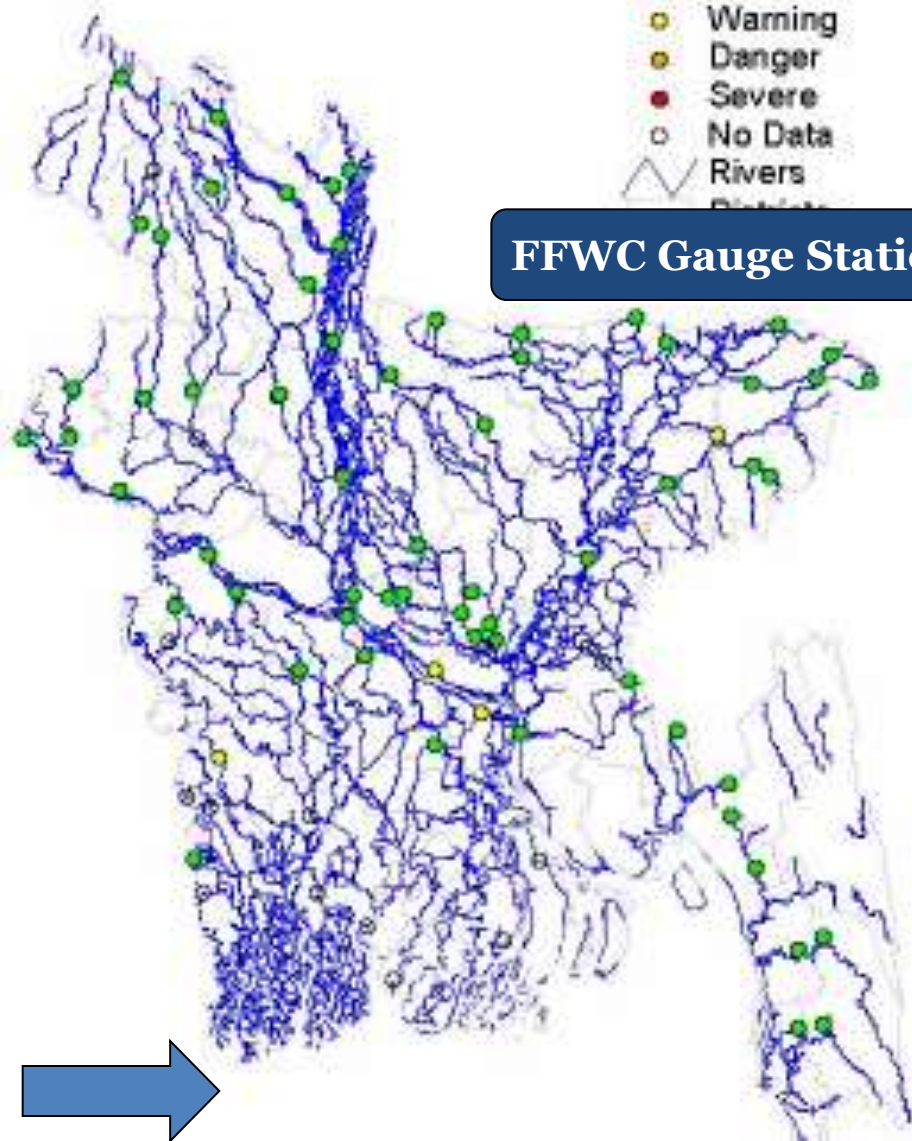


Bangladesh

Level Stations

- High
- Warning
- Danger
- Severe
- No Data
- Rivers
- Districts

FFWC Gauge Stations



Automation of Meteorological Stations, BMD

