Land Resources Information and Maps of Bangladesh

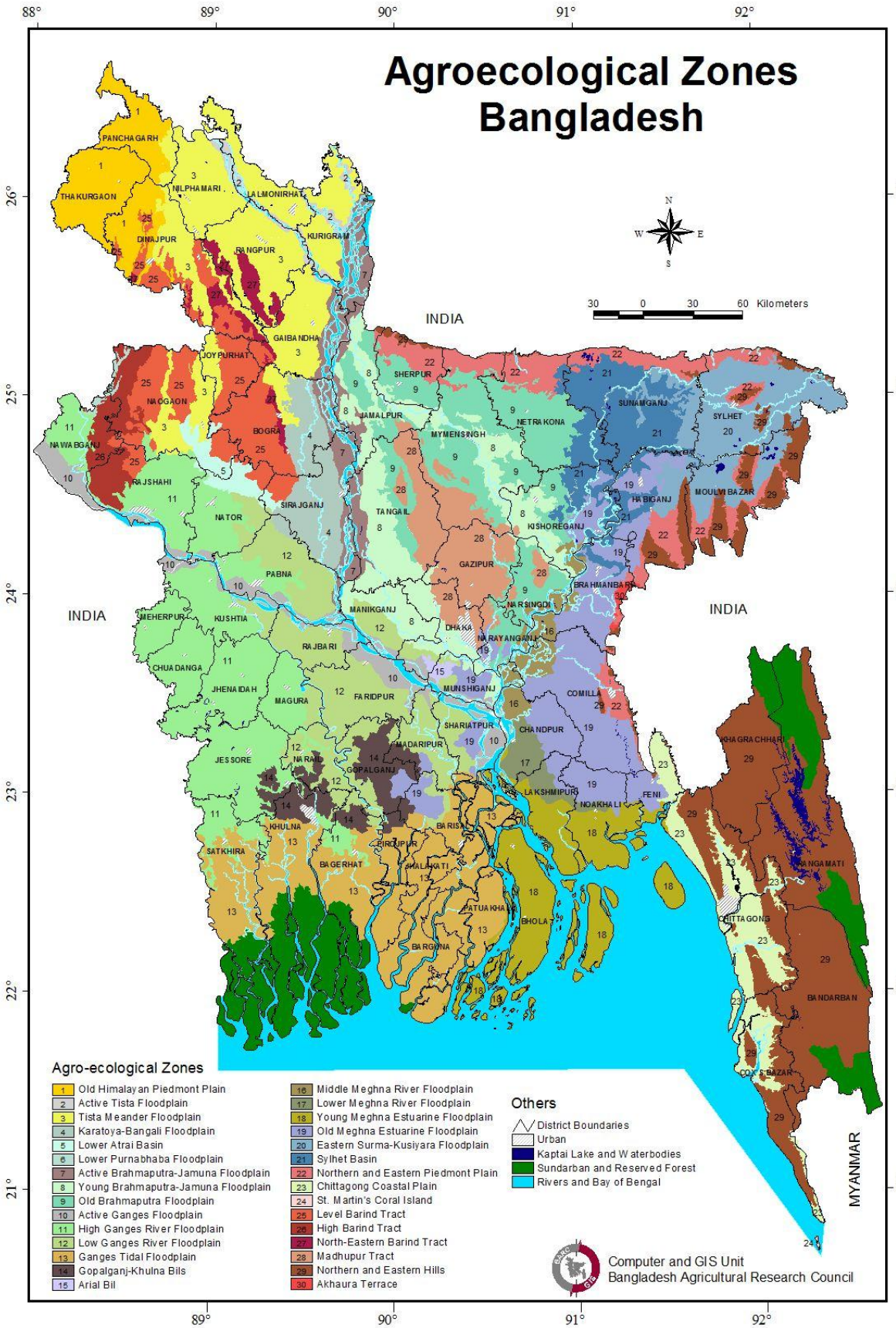
Agro-ecological Zone

An agro-ecological zone represents an area with unique combination of physiographic, soil, hydrological and agro-climatic characteristics. Overlay of successive layers of this information eventually figures in the agro-ecological zones. Altogether, 30 agro-ecological zones (Regions) were identified in Bangladesh. These regions again, due to differences in soils and/or land levels in relation to flooding were sub-divided into 88 sub regions.

Agro ecosystem characterization provides a unique basis for the rational planning of agricultural research, extension and development.

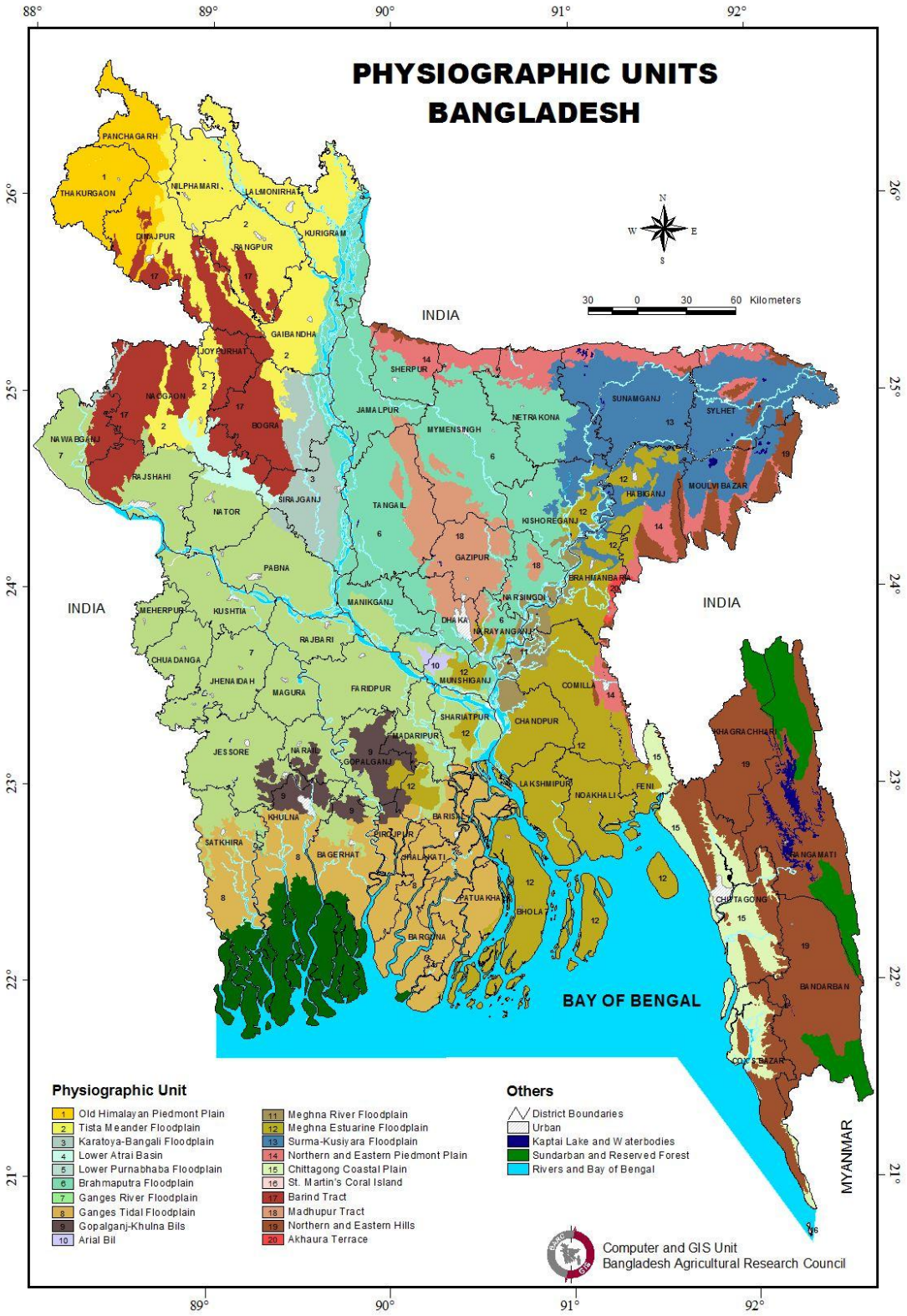
AEZ	Area (ha)	Percentage
Old Himalayan Piedmont Plain	400797	2.77%
Active Tista Floodplain	83644	0.58%
Tista Meander Floodplain	946804	6.54%
Karatoya-Bangali Floodplain	257158	1.78%
Lower Atrai Basin	85105	0.59%
Lower Purnabhaba Floodplain	12896	0.09%
Active Brahmaputra-Jamuna Floodplain	319001	2.20%
Young Brahmaputra-Jamuna Floodplain	592394	4.09%
Old Brahmaputra Floodplain	723037	4.99%
Active Ganges Floodplain	333447	2.30%
High Ganges River Floodplain	1320548	9.12%
Low Ganges River Floodplain	796751	5.50%
Ganges Tidal Floodplain	1706573	11.78%
Gopalganj-Khulna Bils	224700	1.55%
Arial Bil	14436	0.10%
Middle Meghna River Floodplain	155464	1.07%
Lower Meghna River Floodplain	90934	0.63%
Young Meghna Estuarine Floodplain	926885	6.40%
Old Meghna Estuarine Floodplain	774026	5.34%
Eastern Surma-Kusiyara Floodplain	462159	3.19%
Sylhet Basin	457345	3.16%
Northern and Eastern Piedmont Plain	403758	2.79%
Chittagong Coastal Plain	372016	2.57%
St. Martin's Coral Island	804	0.01%
Level Barind Tract	504851	3.49%
High Barind Tract	159964	1.10%
North-Eastern Barind Tract	107926	0.75%
Madhupur Tract	424359	2.93%
Northern and Eastern Hills	1817172	12.54%
Akhaura Terrace	11324	0.08%
Total Area	**14486278**	**100.00%**

Source: Land Resources Appraisal of Bangladesh for Agricultural Development, 1988 (BGD/81/035)


Agroecological Zones
Bangladesh
88°
89°
90°
91°
92°
26°
25°
24°
23°
22°
21°
N
W
E
S
30 0 30 60 Kilometers
INDIA
INDIA
INDIA
MYANMAR
PANCHAGARH
THAKURGAON
NILPHAMARI
LALMONIRHAT
KURIGRAM
DINAJPUR
RANGPUR
GAIBANDHA
JOYPURHAT
NAOGAON
BOGRA
NAWABGANJ
RAJSHAHI
SIRAJGANJ
NATOR
PABNA
SHERPUR
JAMALPUR
MYMENSINGH
NETRAKONA
SUNAMGANJ
SYLHET
MOULVIBAZAR
HABIGANJ
TANGAIL
KISHOREGANJ
GAZIPUR
BRAHMANBARIA
NARSINGDI
DHAKA
NARAYANGANJ
MANIKGANJ
MEHERPUR
KUSHTIA
RAJBARI
CHUADANGA
JHENAIDAH
MAGURA
FARIDPUR
MUNSHIGANJ
COMILLA
SHARIATPUR
CHANDPUR
MADARIPUR
JESSORE
NARAIL
GOPALGANJ
LAKSHMIPUR
NOAKHALI
FENI
KHAGRACHHARI
KHULNA
BARISAL
SATKHIRA
BAGERHAT
PIROJPUR
JHALAKATI
PATUAKHALI
BHOLA
BARGUNA
RANGAMATI
CHITTAGONG
BANDARBAN
COX'S BAZAR
Agro-ecological Zones
1 Old Himalayan Piedmont Plain
2 Active Tista Floodplain
3 Tista Meander Floodplain
4 Karatoya-Bangali Floodplain
5 Lower Atrai Basin
6 Lower Purnabhaba Floodplain
7 Active Brahmaputra-Jamuna Floodplain
8 Young Brahmaputra-Jamuna Floodplain
9 Old Brahmaputra Floodplain
10 Active Ganges Floodplain
11 High Ganges River Floodplain
12 Low Ganges River Floodplain
13 Ganges Tidal Floodplain
14 Gopalganj-Khulna Bils
15 Arial Bil
16 Middle Meghna River Floodplain
17 Lower Meghna River Floodplain
18 Young Meghna Estuarine Floodplain
19 Old Meghna Estuarine Floodplain
20 Eastern Surma-Kusiyara Floodplain
21 Sylhet Basin
22 Northern and Eastern Piedmont Plain
23 Chittagong Coastal Plain
24 St. Martin's Coral Island
25 Level Barind Tract
26 High Barind Tract
27 North-Eastern Barind Tract
28 Madhupur Tract
29 Northern and Eastern Hills
30 Akhaura Terrace
Others
District Boundaries
Urban
Kaptai Lake and Waterbodies
Sundarban and Reserved Forest
Rivers and Bay of Bengal
Computer and GIS Unit
Bangladesh Agricultural Research Council

Physiography

Physiography is the combination of geological material in which particular kinds of soil have formed and the landscape on which they occur. It is the primary element in defining and delineating the Agro-ecological Regions of Bangladesh. Altogether, 34 physiographic units and subunits have been recognized. These units have been grouped into 30 AEZ regions.

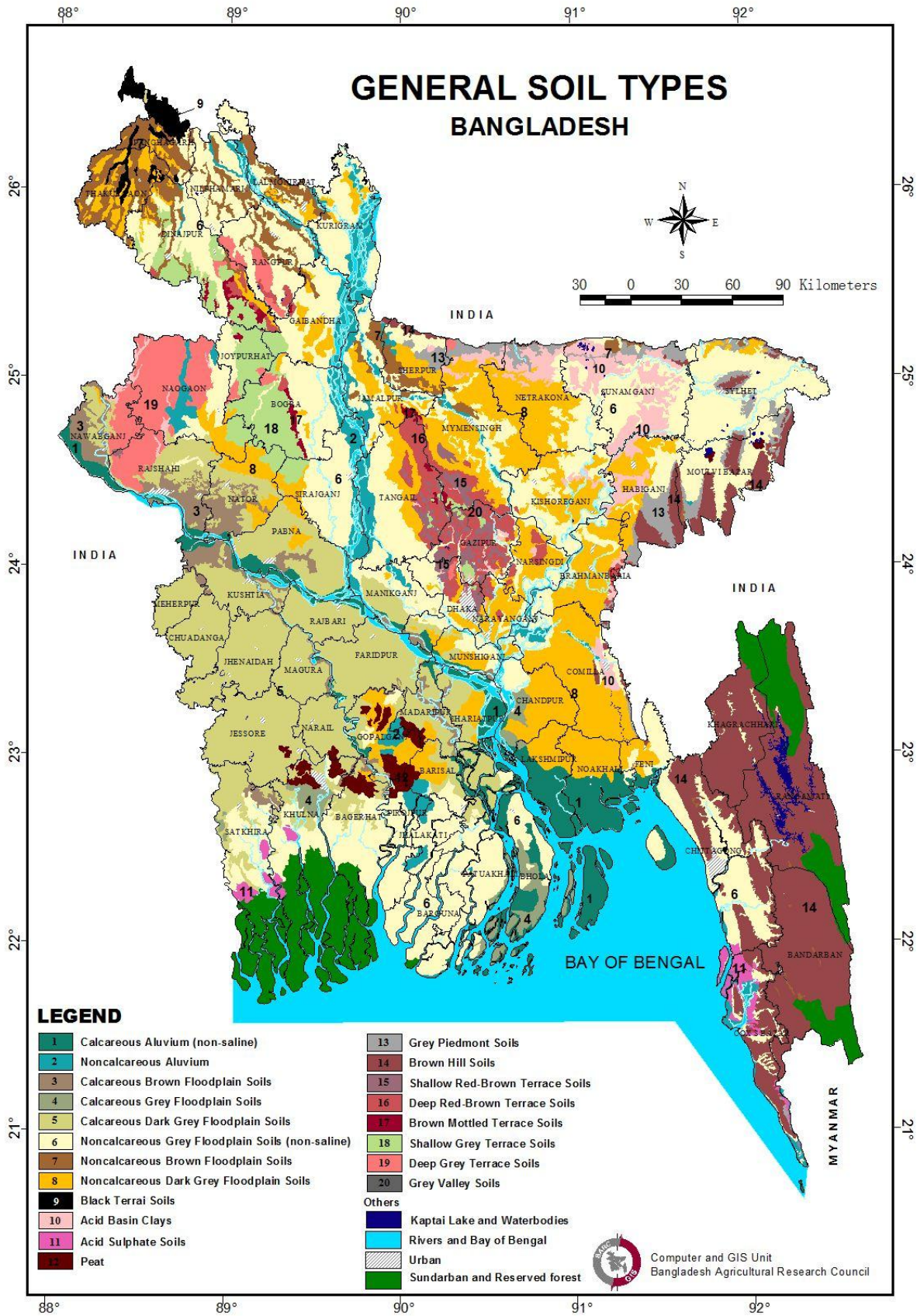


General Soil Types

A General Soil Type is a group of soils which are broadly similar in appearance and characteristics because they have developed in response to similar environmental factors such as climate, physiography and drainage. Soils form the second element in defining and differentiating agro-ecological regions and sub-regions. Soil conditions determine such important properties for plant growth as moisture supply and root aeration as well as nutrient supply.

General Soil Type	Area (ha)	Percentage
Calcareous Alluvium	589983	4.07%
Noncalcareous Alluvium	568824	3.93%
Calcareous Brown Floodplain Soil	478076	3.30%
Calcareous Grey Floodplain Soil	163027	1.13%
Calcareous Dark Grey Floodplain Soil	1388152	9.58%
Noncalcareous Grey Floodplain Soil	3159858	21.81%
Noncalcareous Brown Floodplain Soil	377720	2.61%
Noncalcareous Dark Grey Floodplain Soil	1595950	11.02%
Black Terai Soil	83408	0.58%
Acid Basin Clay	348994	2.41%
Acid Sulphate Soil	75830	0.52%
Peat	118064	0.82%
Grey Piedmont Soil	215279	1.49%
Brown Hill Soil	1264476	8.73%
Shallow Red-Brown Terrace Soil	72549	0.50%
Deep Red-Brown Terrace Soil	189380	1.31%
Brown Mottled Terrace Soil	34235	0.24%
Shallow Grey Terrace Soil	265427	1.83%
Deep Grey Terrace Soil	352152	2.43%
Grey Valley Soil	114287	0.79%
Made-Land	106286	0.73%
Miscellaneous Land (Urban, Water, Reserve Forest, Sundarban)	2924321	20.19%
Total Area	**14486278**	**100.00%**

Source: Land Resources Appraisal of Bangladesh for Agricultural Development, 1988 (BGD/81/035)


GENERAL SOIL TYPES
BANGLADESH
N
W
E
S
30 0 30 60 90 Kilometers
INDIA
INDIA
INDIA
MYANMAR
BAY OF BENGAL
88°
89°
90°
91°
92°
26°
25°
24°
23°
22°
21°
LEGEND
1 Calcareous Aluvium (non-saline)
2 Noncalcareous Aluvium
3 Calcareous Brown Floodplain Soils
4 Calcareous Grey Floodplain Soils
5 Calcareous Dark Grey Floodplain Soils
6 Noncalcareous Grey Floodplain Soils (non-saline)
7 Noncalcareous Brown Floodplain Soils
8 Noncalcareous Dark Grey Floodplain Soils
9 Black Terrai Soils
10 Acid Basin Clays
11 Acid Sulphate Soils
12 Peat
13 Grey Piedmont Soils
14 Brown Hill Soils
15 Shallow Red-Brown Terrace Soils
16 Deep Red-Brown Terrace Soils
17 Brown Mottled Terrace Soils
18 Shallow Grey Terrace Soils
19 Deep Grey Terrace Soils
20 Grey Valley Soils
Others
Kaptai Lake and Waterbodies
Rivers and Bay of Bengal
Urban
Sundarban and Reserved forest
Computer and GIS Unit
Bangladesh Agricultural Research Council

Inundation Land Type

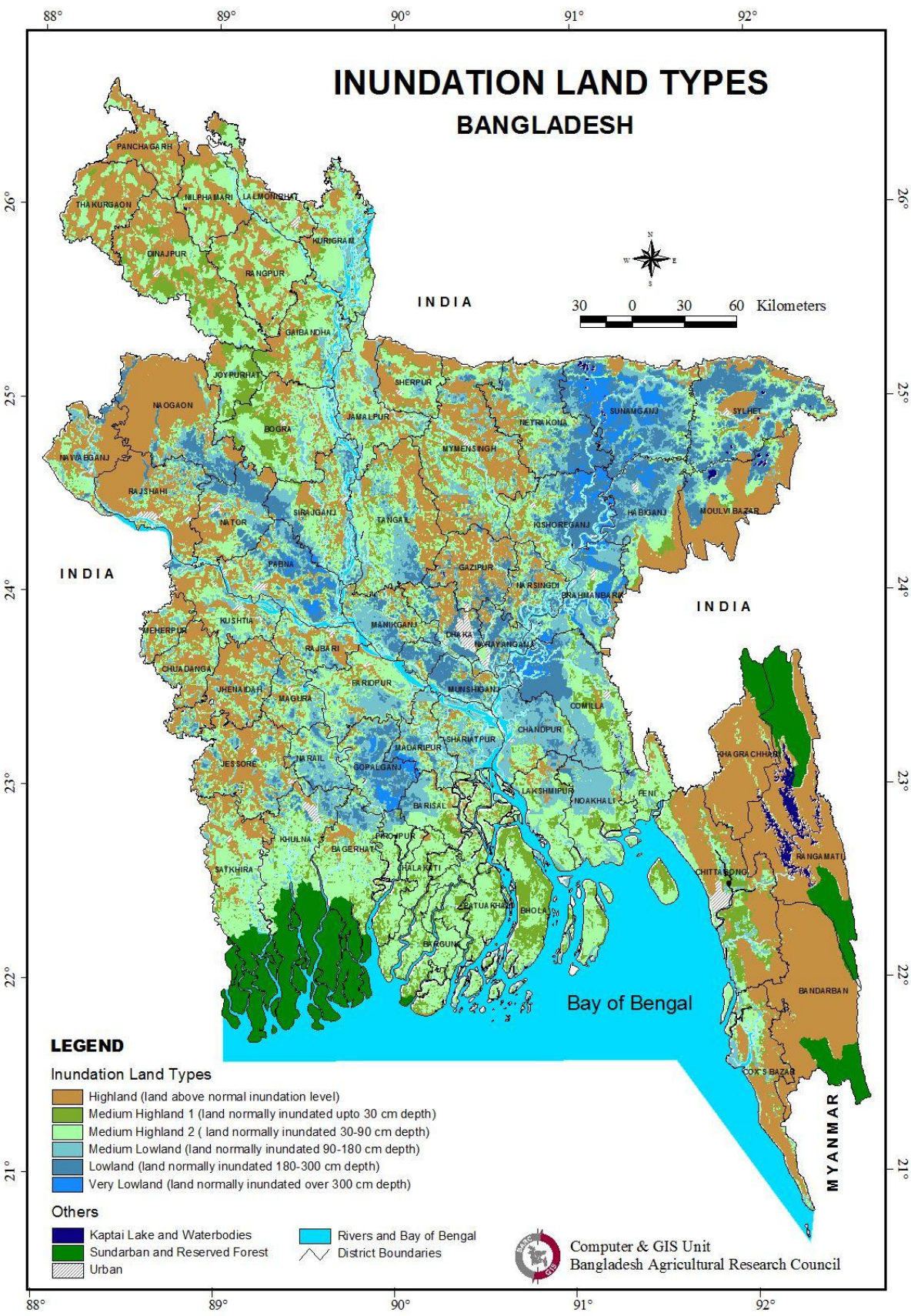
Under rainfed condition, besides all other factors, the depth and duration of inundation of land in the monsoon season and residual moisture status of soils in the dry season largely govern the crops and cropping patterns of the country. Land that stay above normal inundation level and hold good residual soil moisture in the winter, are extensively used for wide range of both seasonal and perennial crops. While those, which are subject to inundation in the rainy season, are restricted to seasonal crops only. The prospects for rabi crops on those land however, depend on the residual soil moisture status.

On most floodplain and valley land, cropping patterns are primarily determined by the seasonal flooding regime, i.e. the dates when inundation begins and ends, the depth of inundation at peak levels and the risk of damage to crops by early, high or late floods. Farmers' traditional cropping patterns and practices are adapted to flooding regimes on a micro-topographical scale: differences of only a few centimetres between neighbouring fields may influence choice of crop varieties or management practices.

Six land classes and their percent coverage are shown below based on flood depth.

Land Type	**Description**	**(%) Area**
Highland (H)	land which is above normal flood level	33.50
Medium Highland (MH1)	Land which normally is flooded up to 30 cm deep during flood season	9.30
Medium Highland (MH2)	land which normally is flooded up to between 30 cm to 90 cm deep during the flood season	30.90
Medium Lowland (ML)	land which normally is flooded up to between 90 cm to 180 cm deep during the flood season	15.10
Lowland (L)	land which normally is flooded up to between 180 cm to 300 cm deep during the flood season	9.50
Very Lowland (VL)	land which normally is flooded over 300 cm deep during the flood season	1.70

Source: Land Resources Appraisal of Bangladesh for Agricultural Development, 1988 (BGD/81/035)


INUNDATION LAND TYPES
BANGLADESH
88°
89°
90°
91°
92°
26°
25°
24°
23°
22°
21°
INDIA
INDIA
INDIA
MYANMAR
Bay of Bengal
30 0 30 60 Kilometers
PANCHAGARH
THAKURGAON
NILPHAMARI
LALMONIRHAT
KURIGRAM
DINAJPUR
RANGPUR
GAIBANDHA
JOYPURHAT
NAOGAON
BOGRA
SHERPUR
JAMALPUR
NETRAKONA
SUNAMGANJ
SYLHET
MYMENSINGH
NAWABGANJ
RAJSHAHI
SIRAJGANJ
NATOR
TANGAIL
KISHOREGANJ
HABIGANJ
MOULVI BAZAR
PABNA
GAZIPUR
NARSINGDI
BRAHMANBARIA
KUSHTIA
MANIKGANJ
DHAKA
NARAYANGANJ
MEHERPUR
RAJBARI
CHUADANGA
FARIDPUR
MUNSHIGANJ
JHENAIDAH
MAGURA
COMILLA
CHANDPUR
SHARIATPUR
MADARIPUR
JESSORE
NARAIL
GOPALGANJ
LAKSHMIPUR
NOAKHALI
FENI
KHAGRACHHARI
BARISAL
KHULNA
BAGERHAT
PIROJPUR
RANGAMATI
SATKHIRA
JHALAKATI
CHITTAGONG
PATUAKHALI
BHOLA
BARGUNA
BANDARBAN
COX'S BAZAR
LEGEND
Inundation Land Types
Highland (land above normal inundation level)
Medium Highland 1 (land normally inundated upto 30 cm depth)
Medium Highland 2 (land normally inundated 30-90 cm depth)
Medium Lowland (land normally inundated 90-180 cm depth)
Lowland (land normally inundated 180-300 cm depth)
Very Lowland (land normally inundated over 300 cm depth)
Others
Kaptai Lake and Waterbodies
Sundarban and Reserved Forest
Urban
Rivers and Bay of Bengal
District Boundaries
Computer & GIS Unit
Bangladesh Agricultural Research Council

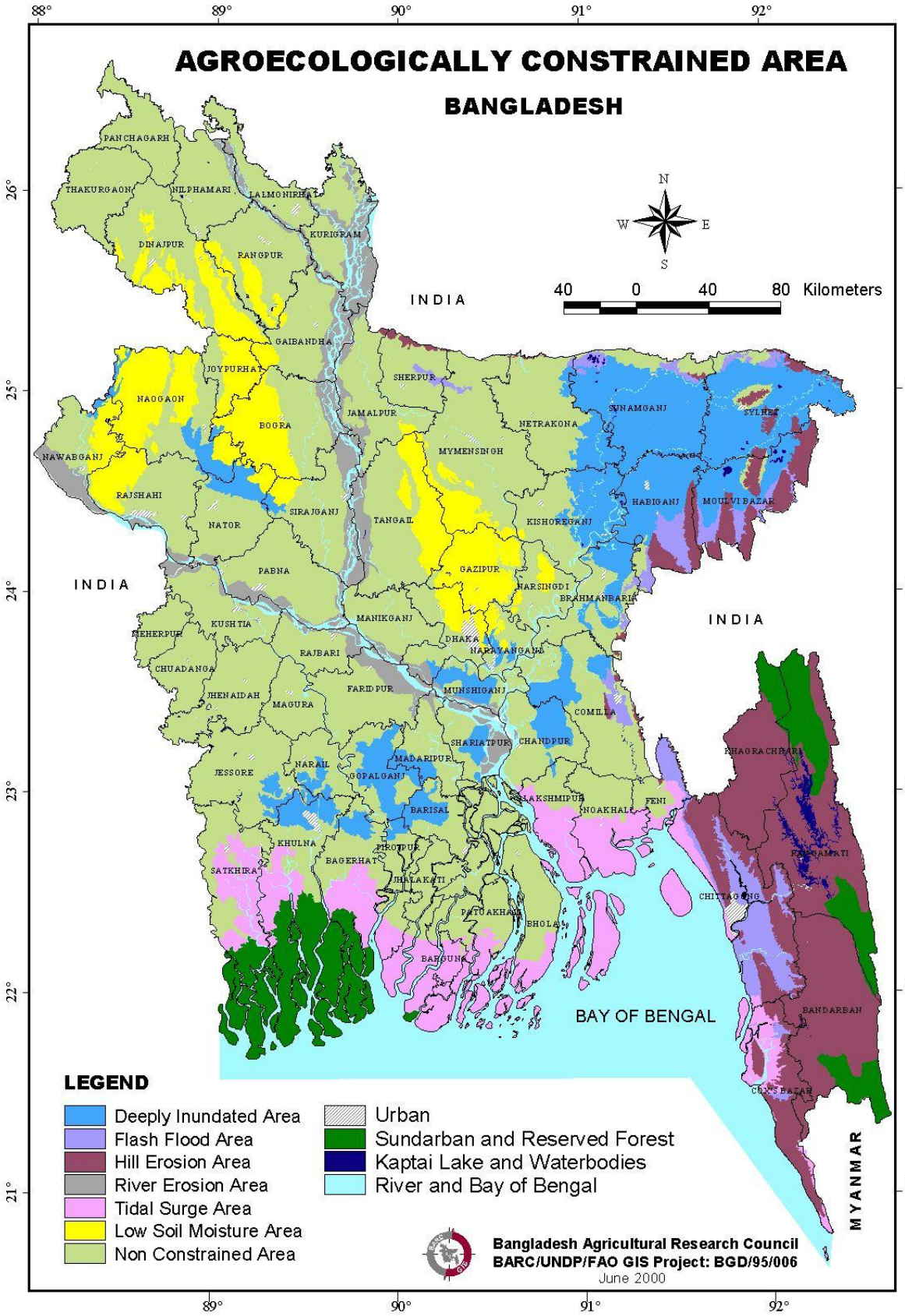
Agro-ecologically Constrained Area

This map is produced to provide some insight in characterizing areas with different levels of both biophysical and socioeconomic limitations so that due considerations are given in local development interventions. The methodology actually involved in characterizing and delineating areas with unique combination of factors constraining especially agricultural development. The selection criteria for delineating mapping unit boundaries for this purpose include:

- Areas susceptible to deep inundation.
- Areas susceptible to Flash Flood Hazard.
- Areas susceptible to Topsoil erosion, Landslide, Landslip.
- Areas susceptible to River bank erosion, siltation.
- Areas exposed to the hazards of salinity, cyclonic storm-surges.
- Areas with low soil moisture status.

Seven constrained classes shown on the map are:

- Deeply inundated Area
- Flash Flood Area
- Hill Erosion Area
- River Erosion Area
- Tidal Surge Area
- Low Soil Moisture Area
- Non constrained Area


AGROECOLOGICALLY CONSTRAINED AREA
BANGLADESH
88°
89°
90°
91°
92°
26°
25°
24°
23°
22°
21°
N
W
E
S
40 0 40 80 Kilometers
INDIA
INDIA
INDIA
MYANMAR
BAY OF BENGAL
PANCHAGARH
THAKURGAON
NILPHAMARI
LALMONIRHAT
KURIGRAM
DINAJPUR
RANGPUR
GAIBANDHA
JOYPURHAT
NAOGAON
BOGRA
SHERPUR
JAMALPUR
NETRAKONA
SUNAMGANJ
SYLHET
NAWABGANJ
MYMENSINGH
RAJSHAHI
SIRAJGANJ
TANGAIL
HABIGANJ
MOULVI BAZAR
NATOR
KISHOREGANJ
PABNA
GAZIPUR
HARSINGDI
BRAHMANBARIA
KUSHTIA
MANIKGANJ
DHAKA
NARAYANGANJ
MEHERPUR
RAJBARI
CHUADANGA
FARIDPUR
MUNSHIGANJ
JHENAIDAH
MAGURA
COMILLA
SHARIATPUR
CHANDPUR
KHAGRACHHARI
MADARIPUR
NARAIL
JESSORE
GOPALGANJ
LAKSHMIPUR
FENI
NOAKHALI
BARISAL
KHULNA
PIROJPUR
RANGAMATI
BAGERHAT
SATKHIRA
JHALAKATI
CHITTAGONG
PATUAKHALI
BHOLA
BARGUNA
BANDARBAN
COX'S BAZAR
LEGEND
Deeply Inundated Area
Flash Flood Area
Hill Erosion Area
River Erosion Area
Tidal Surge Area
Low Soil Moisture Area
Non Constrained Area
Urban
Sundarban and Reserved Forest
Kaptai Lake and Waterbodies
River and Bay of Bengal
Bangladesh Agricultural Research Council
BARC/UNDP/FAO GIS Project: BGD/95/006
June 2000

Flood Prone Area

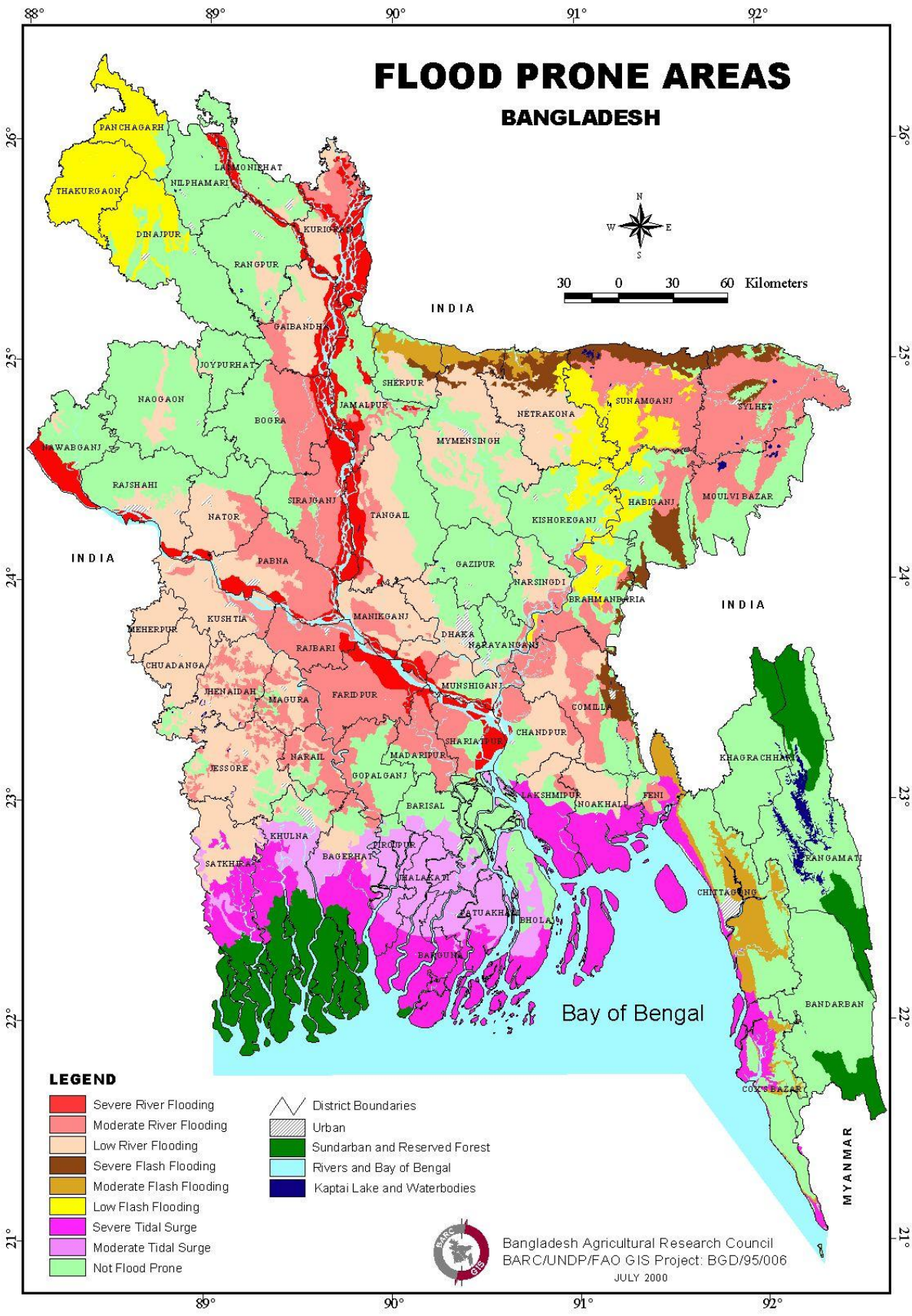
Flood prone areas are frequently subject to flood hazard. Again, flood in Bangladesh occurs mainly due to two reasons: one-by overtopping of the riverbanks; and the other due to heavy run-off from the higher sites due to torrential rainfall. Based on these reasons, flood has been broadly classified into two groups (i) River Flood Hazard and (ii) Flash Flood Hazard.

Severe : Occurs 5 times or more in 10 years with considerable loss/damage of standing crops.
Moderate : Occurs 3-4 times in 10 years with significant loss/damage of standing crops.
Slight : Occurs atleast twice in 10 years with loss/damage of standing crops.
Not affected : None in 10 years.

Nine classes shown on the map are:

- Severe River Flooding
- Moderate River Flooding
- Low River Flooding
- Severe Flash Flooding
- Moderate Flash Flooding
- Low Flash Flooding
- Severe Tidal Surge
- Moderate Tidal Surge
- Non Flood Prone

Flood Class	**Area (Mha)**
Severe River Flooding	0.57
Moderate River Flodding	2.45
Low River Flooding	2.60
Severe Flash Flooding	0.29
Moderate Flash Flooding	0.31
Low Flash Flooding	0.87
Severe Tidal Surge	1.54
Moderate Tidal Surge	0.64
Not Flood Prone	5.64


FLOOD PRONE AREAS
BANGLADESH
88°
89°
90°
91°
92°
26°
25°
24°
23°
22°
21°
N
W
E
S
30 0 30 60 Kilometers
INDIA
INDIA
INDIA
MYANMAR
Bay of Bengal
PANCHAGARH
LALMONIRHAT
NILPHAMARI
THAKURGAON
DINAJPUR
KURIGRAM
RANGPUR
GAIBANDHA
JOYPURHAT
NAOGAON
BOGRA
SHERPUR
JAMALPUR
NETRAKONA
SUNAMGANJ
SYLHET
MYMENSINGH
NAWABGANJ
RAJSHAHI
SIRAJGANJ
NATOR
TANGAIL
KISHOREGANJ
HABIGANJ
MOULVI BAZAR
PABNA
GAZIPUR
NARSINGDI
BRAHMANBARIA
KUSHTIA
MEHERPUR
MANIKGANJ
DHAKA
NARAYANGANJ
RAJBARI
CHUADANGA
JHENAIDAH
MAGURA
FARIDPUR
MUNSHIGANJ
COMILLA
CHANDPUR
SHARIATPUR
NARAIL
JESSORE
MADARIPUR
GOPALGANJ
KHAGRACHHARI
LAKSHMIPUR
NOAKHALI
FENI
BARISAL
KHULNA
JHALAKATI
RANGAMATI
SATKHIRA
BAGERHAT
PIROJPUR
CHITTAGONG
PATUAKHALI
BHOLA
BARGUNA
BANDARBAN
COX'S BAZAR
LEGEND
Severe River Flooding
Moderate River Flooding
Low River Flooding
Severe Flash Flooding
Moderate Flash Flooding
Low Flash Flooding
Severe Tidal Surge
Moderate Tidal Surge
Not Flood Prone
District Boundaries
Urban
Sundarban and Reserved Forest
Rivers and Bay of Bengal
Kaptai Lake and Waterbodies
Bangladesh Agricultural Research Council
BARC/UNDP/FAO GIS Project: BGD/95/006
JULY 2000

Drought Prone Area Map

Drought in general sense refers to an agro-ecological condition when precipitations together with residual soil moisture fail to meet the water requirements of standing agricultural crops. From this fact it is apparent that drought is the result of adverse climatic condition together with unfavourable soil and hydrological characteristics.

Kharif drought:

This kind of drought occurs intermittently between June/July-October and affect mostly T.aman on Highland and Medium Highland–1 areas of the country. The situation results from the dominance of dry sub-humid (P<0.5 PET) and dry decades (P=0) with the kharif humid period.

Percentages of dry sub-humid and dry decades were taken into consideration for delineating the kharif drought prone areas. Total numbers of dry days present were derived from the percent of decades within each kharif humid period. Drought severity classes were determined by combining other relevant factors such as soil texture, permeability, drainage, landtype and available moisture holding capacity with the frequency of those decades.

Rabi and Pre-kharif drought:

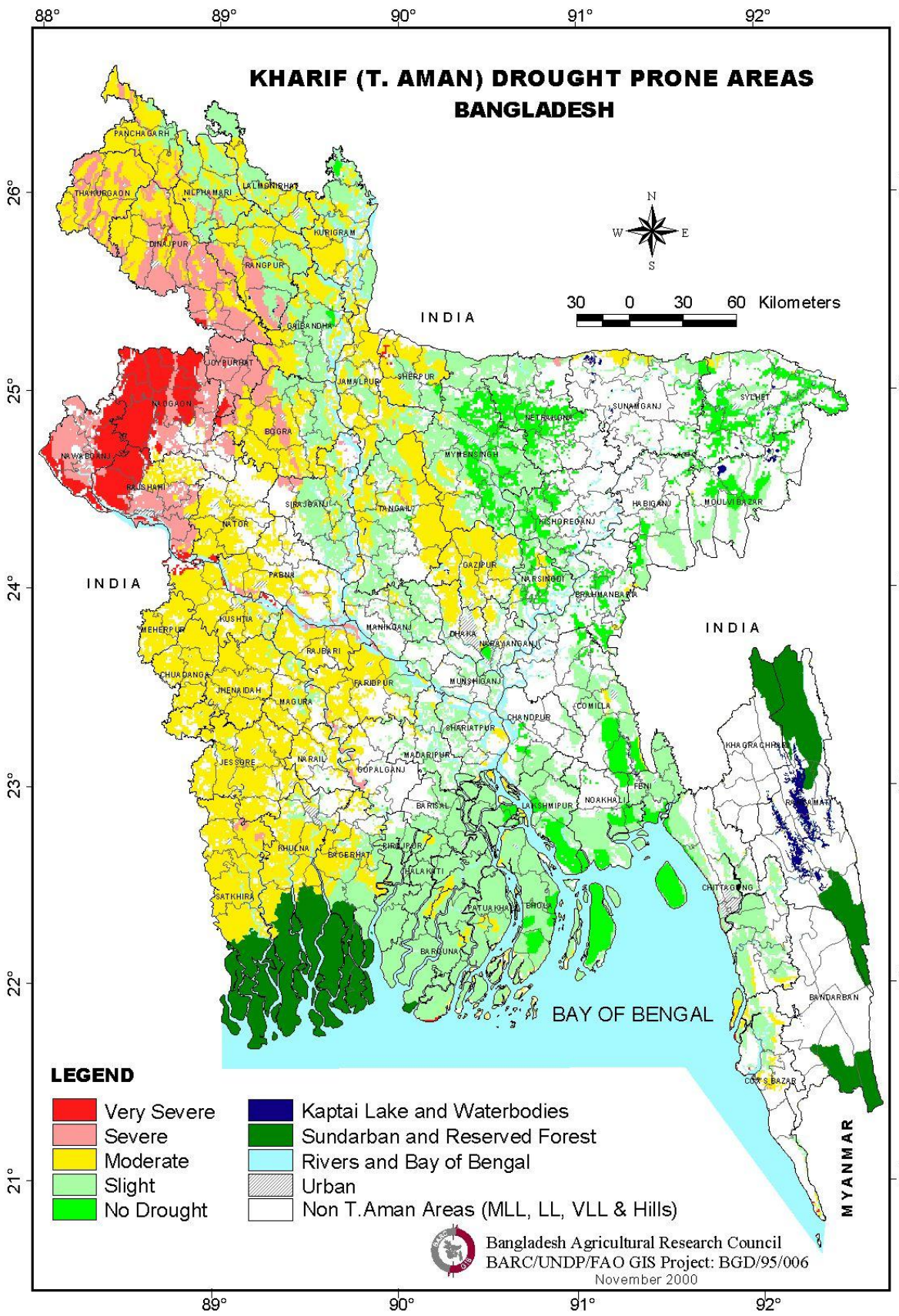
Drought during this period is caused mainly due to the combined effect of dry day, extremely high temperature (>40^0C), very high rate of evapotranspiration accentuated by unfavourable soil properties related to soil moisture storage capacity. Dry days within the Rabi season as well as Pre-kharif transition period and number of days with maximum temperature exceeding 40^0C between March-May were considered as climatic parameters. These were combined with the soil and hydrological parameters to arrive at the severity rating categories where residual soul moisture storage is one of the most important components.

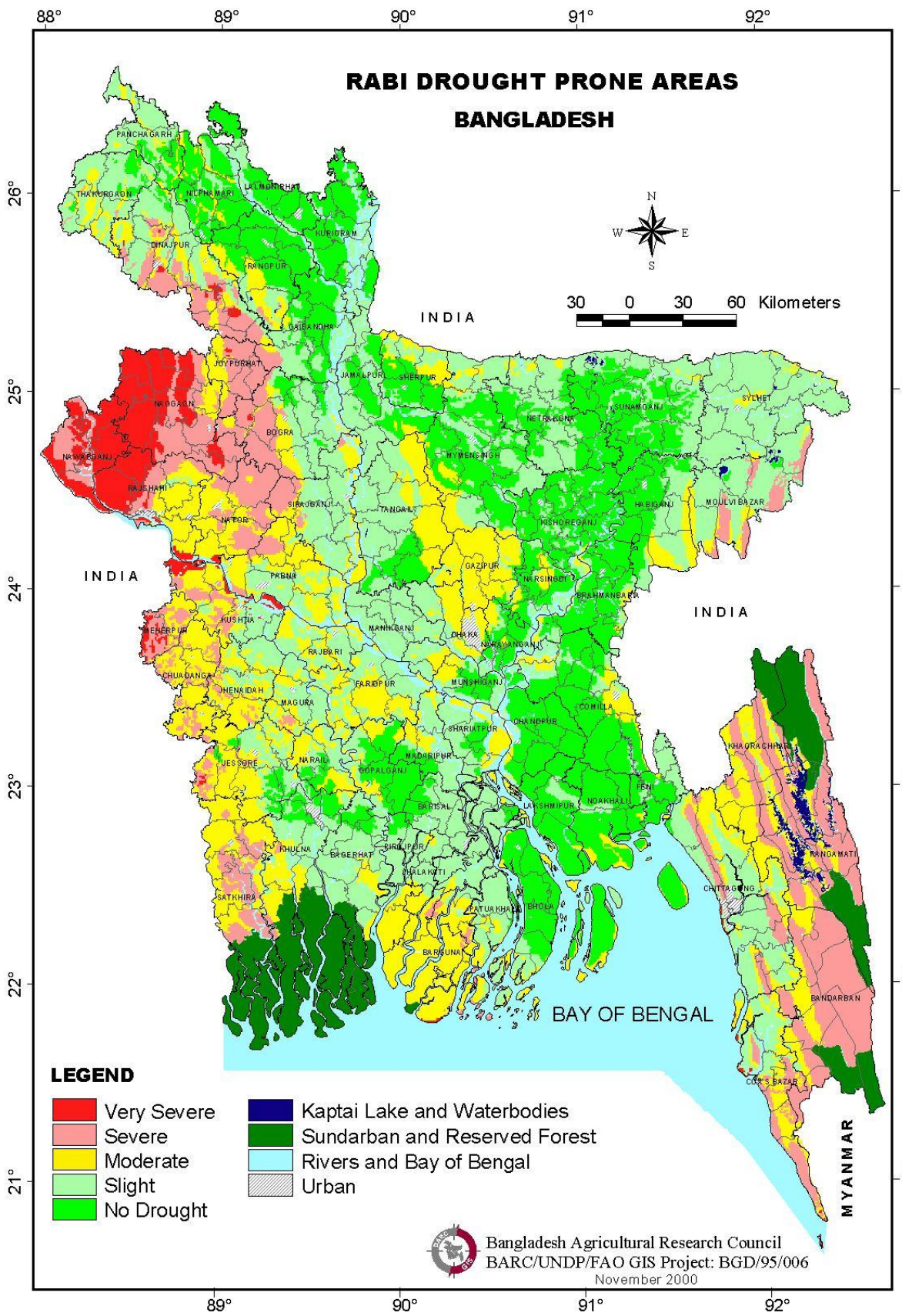
The major categories are:

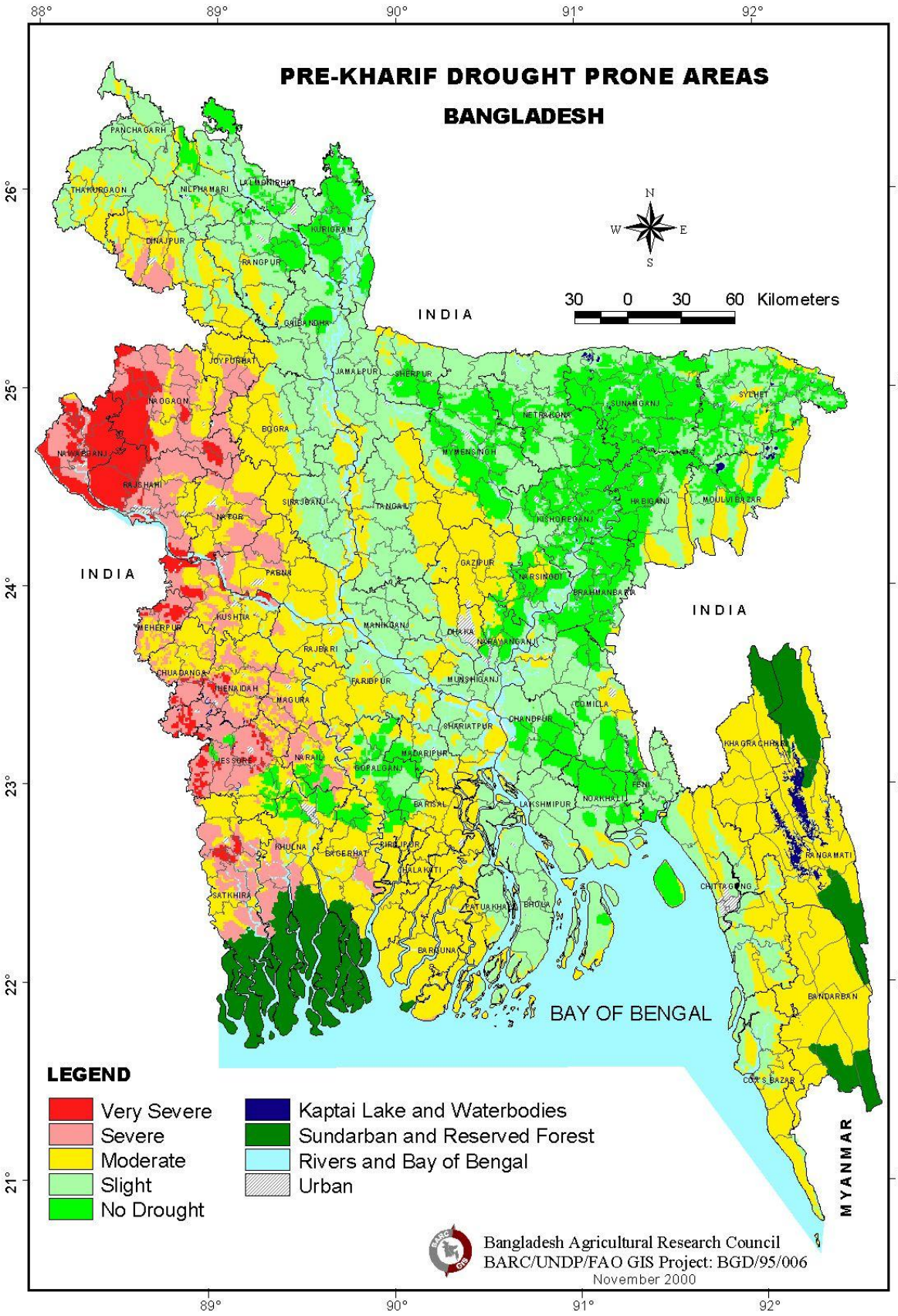
1. Very severe: Yield reduction may be >50 percent from normal.
2. Severe: Yield reduction ranges between 30-50 percent.
3. Moderate: Yield reduction ranges between 15-30 percent.
4. Slight: Yield reduction ranges between <15 percent.

Drought Severity Areas by Crop Seasons (in Mha)

Drought Class	Rabi	Pre-Kharif	Kharif (T.Aman)
Very Severe	0.45	0.40	0.34
Severe	1.71	1.15	0.74
Moderate	2.95	4.76	3.17
Slight	4.21	4.09	2.90
No Drought	3.17	2.09	0.68
Non T.Aman	-	-	4.71

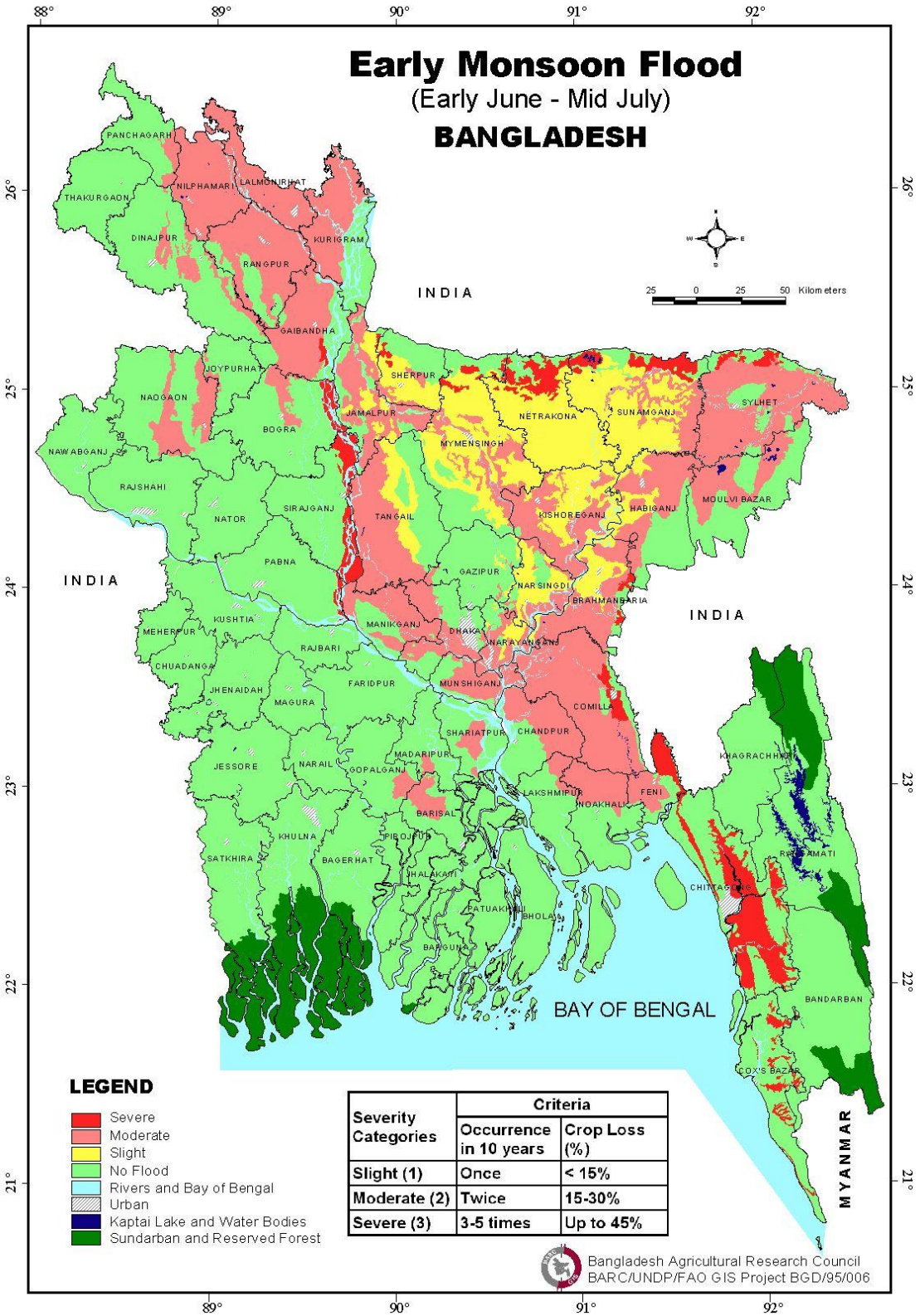

KHARIF (T. AMAN) DROUGHT PRONE AREAS
BANGLADESH
88°
89°
90°
91°
92°
26°
25°
24°
23°
22°
21°
N
W
E
S
30 0 30 60 Kilometers
INDIA
INDIA
INDIA
MYANMAR
BAY OF BENGAL
PANCHAGARH
THAKURGAON
NILPHAMARI
LALMONIRHAT
KURIGRAM
DINAJPUR
RANGPUR
GAIBANDHA
JOYPURHAT
JAMALPUR
SHERPUR
NETRAKONA
SUNAMGANJ
SYLHET
NAOGAON
BOGRA
NAWABGANJ
MYMENSINGH
RAJSHAHI
SIRAJGANJ
TANGAIL
HABIGANJ
MOULVIBAZAR
NATOR
SHORESHONJ
PABNA
GAZIPUR
NARSINGDI
BRAHMANBARIA
KUSHTIA
MEHERPUR
MANIKGANJ
DHAKA
NARAYANGANJ
RAJBARI
CHUADANGA
FARIDPUR
MUNSHIGANJ
JHENAIDAH
MAGURA
COMILLA
CHANDPUR
SHARIATPUR
KHAGRACHHARI
JESSORE
NARAIL
MADARIPUR
GOPALGANJ
FENI
NOAKHALI
RAMGARH
BARISAL
LAKSHMIPUR
KHULNA
BAGERHAT
PIROJPUR
JHALAKATI
CHITTAGONG
SATKHIRA
PATUAKHALI
BHOLA
BARGUNA
BANDARBAN
COX'S BAZAR
LEGEND
Very Severe
Severe
Moderate
Slight
No Drought
Kaptai Lake and Waterbodies
Sundarban and Reserved Forest
Rivers and Bay of Bengal
Urban
Non T.Aman Areas (MLL, LL, VLL & Hills)
Bangladesh Agricultural Research Council
BARC/UNDP/FAO GIS Project: BGD/95/006
November 2000


RABI DROUGHT PRONE AREAS
BANGLADESH
88°
89°
90°
91°
92°
26°
25°
24°
23°
22°
21°
N
W
E
S
30 0 30 60 Kilometers
INDIA
INDIA
INDIA
MYANMAR
BAY OF BENGAL
PANCHAGARH
THAKURGAON
NILPHAMARI
LALMONIRHAT
KURIGRAM
DINAJPUR
RANGPUR
GAIBANDHA
JOYPURHAT
JAMALPUR
SHERPUR
NAOGAON
BOGRA
SYLHET
SUNAMGANJ
NETRAKONA
NAWABGANJ
MYMENSINGH
RAJSHAHI
SIRAJGANJ
TANGAIL
HABIGANJ
MOULVIBAZAR
NATOR
MISHORGANJ
PABNA
GAZIPUR
NARSINGDI
BRAHMANBARIA
KUSHTIA
MANIKGANJ
DHAKA
MEHERPUR
NARAYANGANJ
RAJBARI
CHUADANGA
FARIDPUR
MUNSHIGANJ
JHENAIDAH
MAGURA
COMILLA
CHANDPUR
SHARIATPUR
KHAGRACHHARI
JESSORE
NARAIL
MADARIPUR
GOPALGANJ
FENI
BARISAL
LAKSHMIPUR
NOAKHALI
KHULNA
BAGERHAT
PIROJPUR
RANGAMATI
JHALAKATI
CHITTAGONG
SATKHIRA
PATUAKHALI
BHOLA
BARGUNA
BANDARBAN
COX'S BAZAR
LEGEND
Very Severe
Severe
Moderate
Slight
No Drought
Kaptai Lake and Waterbodies
Sundarban and Reserved Forest
Rivers and Bay of Bengal
Urban
Bangladesh Agricultural Research Council
BARC/UNDP/FAO GIS Project: BGD/95/006
November 2000


PRE-KHARIF DROUGHT PRONE AREAS
BANGLADESH
88°
89°
90°
91°
92°
26°
25°
24°
23°
22°
21°
N
W
E
S
30 0 30 60 Kilometers
INDIA
INDIA
INDIA
MYANMAR
BAY OF BENGAL
PANCHAGARH
THAKURGAON
NILPHAMARI
LALMONIRHAT
KURIGRAM
DINAJPUR
RANGPUR
GAIBANDHA
JOYPURHAT
JAMALPUR
SHERPUR
NETRAKONA
SUNAMGANJ
SYLHET
NAOGAON
BOGRA
NAWABGANJ
MYMENSINGH
RAJSHAHI
SIRAJGANJ
TANGAIL
HABIGANJ
MOULVIBAZAR
NATOR
KISHOREGANJ
PABNA
GAZIPUR
NARSINGDI
BRAHMANBARIA
KUSHTIA
MEHERPUR
MANIKGANJ
DHAKA
NARAYANGANJ
RAJBARI
CHUADANGA
FARIDPUR
MUNSHIGANJ
JHENAIDAH
MAGURA
COMILLA
CHANDPUR
SHARIATPUR
KHAGRACHHARI
JESSORE
NARAIL
MADARIPUR
GOPALGANJ
FENI
NOAKHALI
BARISAL
LAKSHMIPUR
KHULNA
BAGERHAT
PIROJPUR
RANGAMATI
JHALAKATI
CHITTAGONG
SATKHIRA
PATUAKHALI
BHOLA
BARGUNA
BANDARBAN
COX'S BAZAR
LEGEND
Very Severe
Severe
Moderate
Slight
No Drought
Kaptai Lake and Waterbodies
Sundarban and Reserved Forest
Rivers and Bay of Bengal
Urban
Bangladesh Agricultural Research Council
BARC/UNDP/FAO GIS Project: BGD/95/006
November 2000

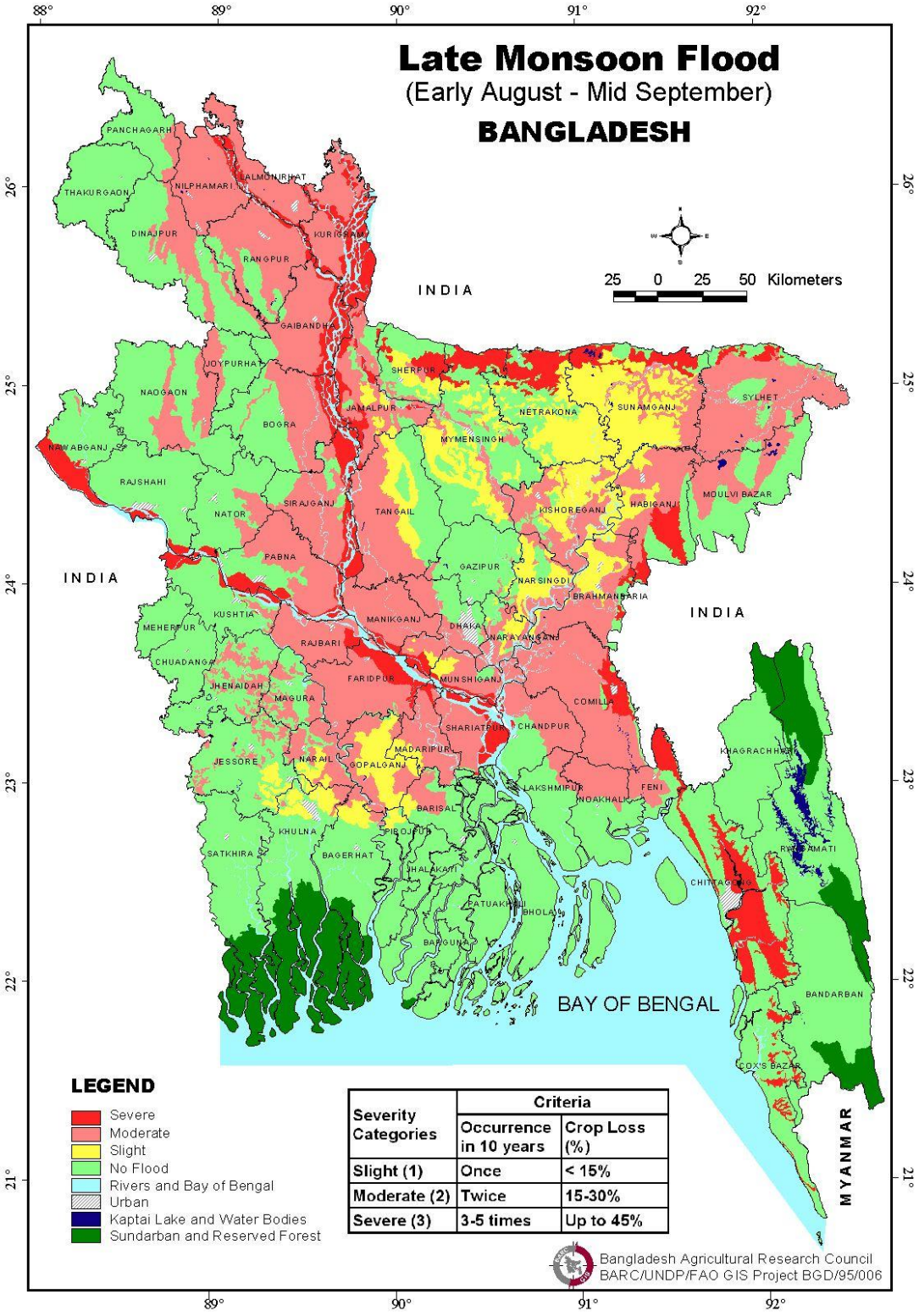
Early Monsoon Map

Early Monsoon Flood in Bangladesh usually occurs between early June to mid July and affects mostly Aus rice, Jute and sometimes T.aman rice crops at varying degrees depending upon the severity of flood and the growth stages of the affected crops. According to the degree of damage, three categories were recognized, such as – *Severe, Moderate and Slight*.



Late Monsoon Map

Late monsoon Floods in Bangladesh occurs generally between early August and mid-September which coincides with the harvesting time of Kharif-I (Aus rice and Jute) crops and transplanting of Aman rice and also already transplanted Aman rice at the early to active vegetative growth stages.

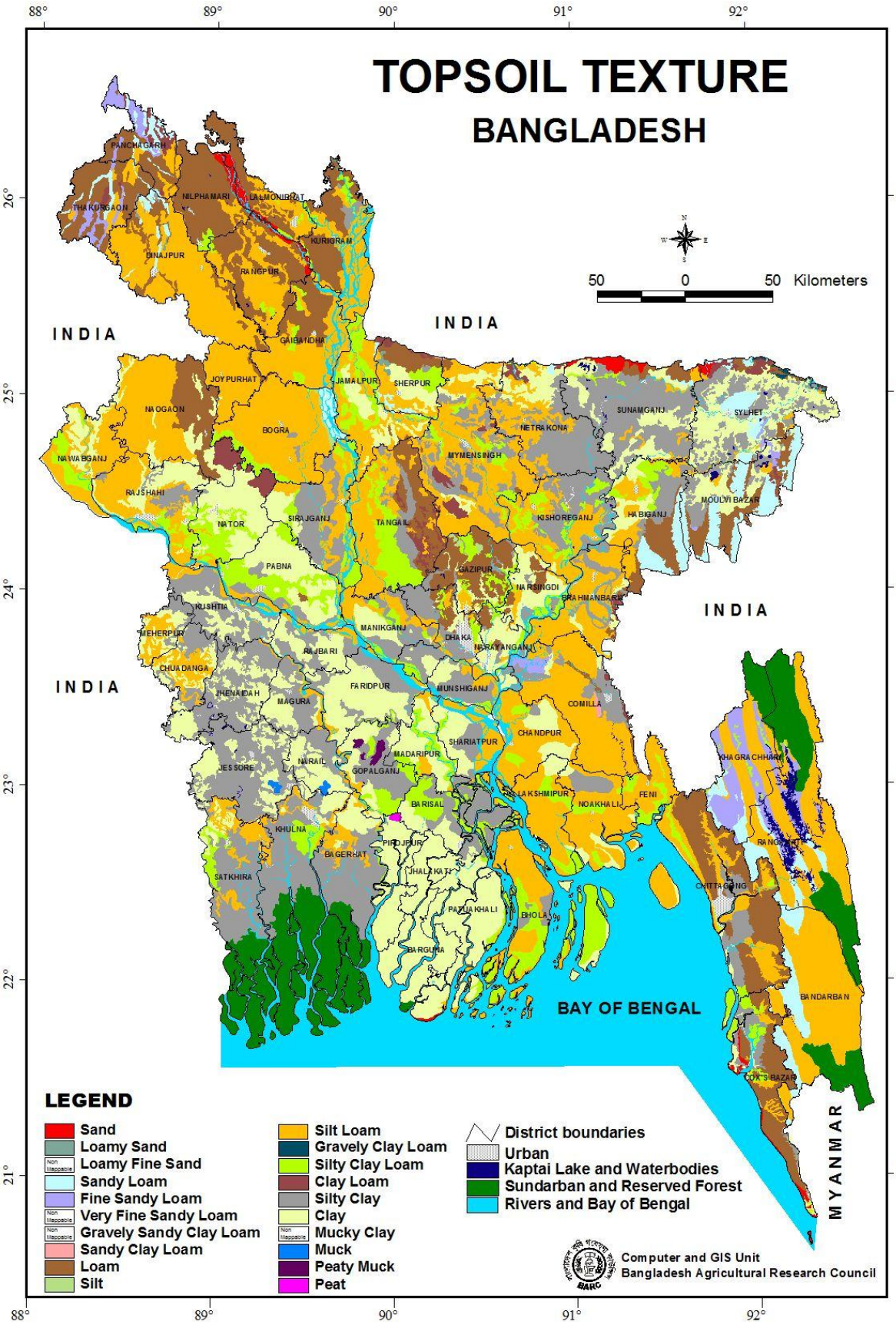


Topsoil Texture Map

Internationally recognized 20 individual soil textural classes were considered to prepare the topsoil texture map of Bangladesh. Except a few, most of these textures occur in the country. Due to large diversity and complexity of soil texture at short distance, in most cases it was not possible to map individual textural class basis, in that case most often more than one textural class had to be taken together to formulate a mapping unit.

Topsoil Texture	Area (ha)	Percentage
Sand	90579	0.80%
Loamy Sand	36205	0.31%
Loamy Fine Sand	35533	0.31%
Sandy Loam	559725	4.80%
Fine Sandy Loam	202892	1.80%
Very Fine Sandy Loam	9657	0.10%
Gravely Sandy Clay Loam	199	0.002%
Sandy Clay Loam	24616	0.20%
Loam	1214578	10.50%
Silt	25863	0.20%
Silt Loam	3617433	31.30%
Gravely Clay Loam	4740	0.04%
Silty Clay Loam	1365183	11.80%
Clay Loam	196064	1.70%
Silty Clay	2131260	18.40%
Clay	2013795	17.40%
Mucky Clay	4930	0.04%
Muck	10316	0.10%
Peaty Muck	11479	0.10%
Peat	6910	0.06%
Total Cultivable Area	**11561957**	**100.00%**
Miscellaneous Land (Urban, Water, Reserve Forest, Sundarban)	2924321	
Total Area	**14486278**	

Source: Land Resources Appraisal of Bangladesh for Agricultural Development, 1988 (BGD/81/035)


TOPSOIL TEXTURE
BANGLADESH
88°
89°
90°
91°
92°
26°
25°
24°
23°
22°
21°
50 0 50 Kilometers
INDIA
INDIA
INDIA
INDIA
MYANMAR
BAY OF BENGAL
PANCHAGARH
THAKURGAON
NILPHAMARI
LALMONIRHAT
KURIGRAM
DINAJPUR
RANGPUR
GAIBANDHA
JOYPURHAT
JAMALPUR
SHERPUR
NAOGAON
BOGRA
SUNAMGANJ
SYLHET
NETRAKONA
NAWABGANJ
MYMENSINGH
RAJSHAHI
MOULVI BAZAR
NATOR
SIRAJGANJ
TANGAIL
KISHOREGANJ
HABIGANJ
PABNA
GAZIPUR
NARSINGDI
BRAHMANBARIA
KUSHTIA
MEHERPUR
MANIKGANJ
DHAKA
NARAYANGANJ
RAJBARI
CHUADANGA
FARIDPUR
MUNSHIGANJ
JHENAIDAH
MAGURA
COMILLA
CHANDPUR
SHARIATPUR
MADARIPUR
KHAGRACHHARI
JESSORE
NARAIL
GOPALGANJ
LAKSHMIPUR
NOAKHALI
FENI
BARISAL
KHULNA
PIROJPUR
RANGAMATI
BAGERHAT
JHALAKATI
SATKHIRA
CHITTAGONG
PATUAKHALI
BHOLA
BARGUNA
BANDARBAN
COX'S BAZAR
LEGEND
Sand
Loamy Sand
Loamy Fine Sand
Sandy Loam
Fine Sandy Loam
Very Fine Sandy Loam
Gravely Sandy Clay Loam
Sandy Clay Loam
Loam
Silt
Silt Loam
Gravely Clay Loam
Silty Clay Loam
Clay Loam
Silty Clay
Clay
Mucky Clay
Muck
Peaty Muck
Peat
District boundaries
Urban
Kaptai Lake and Waterbodies
Sundarban and Reserved Forest
Rivers and Bay of Bengal
Computer and GIS Unit
Bangladesh Agricultural Research Council