

AGROECOLOGICAL ZONES (AEZs)

Mirza Hasanuzzaman
Assistant Professor
Department of Agronomy
Sher-e-Bangla Agricultural University

Agroecological zones

An agroecological zone (AEZ) is a zone or region which has unique combination of physiographic, soil, hydrological and agroclimatic characteristics.

Thirty agroecological regions and 88 subregions and 535 units have been identified by adding successive layers of information on the physical environment which are relevant for land use and for assessing agricultural potential. These layers are:

- ✍ Physiography (Land forms and soil parent materials)
- ✍ Soils
- ✍ Depth and duration of seasonal flooding
- ✍ Length of rainfed kharif and rabi growing periods
- ✍ Length of the pre-kharif period of unreliable rainfall
- ✍ Length of cool winter period
- ✍ Frequency of occurrence of extremely high (>40° C) summer temperatures.

There are five types of land level In Bangladesh such as:

- ❑ **Highland:** Land which is **above the normal flood-level**
- ❑ **Medium highland:** Land which normally is flooded **up to about 90 cm** deep during the flood season
- ❑ **Medium lowland:** Land which normally is flooded **between 90 cm and 180 cm** deep during the flood season
- ❑ **Lowland:** Land which normally is flooded **between 180 cm and 300 cm** deep during the flood season
- ❑ **Very lowland:** Land which normally is flooded **deeper than 300 cm** during the flood season.



. Lists of Agroecological zones

1. Old Himalayan Piedmont Plain
2. Active Tista Floodplain
3. Tista Meander Floodplain
4. Karatoya-Bangali Floodplain
5. Lower Atrai Basin
6. Lower Punarbhaba Floodplain
7. Active Brahmaputra-Jamuna Floodplain
8. Young Brahmaputra and Jamuna Floodplain
9. Old Brahmaputra Floodplain
10. Active Ganges Floodplain
11. High Ganges River Floodplain
12. Lower Ganges River Floodplain
13. Ganges Tidal Floodplain
14. Gopalganj-Khulna Beels
15. Arial Beel
16. Middle Meghna River Floodplain
17. Lower Meghna River Floodplain
18. Young Meghna Estuarine Floodplain
19. Old Meghna Estuarine Floodplain
20. Eastern Surma-Kushiyara 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



Characteristics of different agroecological zones

Name of the AEZs	Location	Extent	Land type	Organic matter content	Fertility level	Suitable crops
1. Old Himalayan Piedmont Plain	Most of Panchagarh and Thakurgaon districts and north-western parts of Dinajpur districts	4008 km ²	<i>High: 58%</i> <i>Medium high: 34%</i> <i>Others: 8%</i>	Low	Low to medium	Kharif: B. Aus, T. Aman, Jute, Summer vegetables, Summer pulse, Sesame Rabi: Pulses, Potato, Vegetables, Wheat, Mustard
2. Active Tista Floodplain	Narrow belts within and adjoining the channels rivers in Nilphamari, Rangpur, Lalmonirhat, Kurigram and Gaibandha district	830 km ²	<i>Medium high: 72%</i> <i>Others: 28%</i>	Low	Medium	Kharif: B. Aus, B. Aman, T. Aman, Jute, Kaon, GM Rabi: Tobacco, Mustard, Boro rice, Wheat, Grasspea, Chilli
3. Tista Meander Floodplain	Most of greater Rangpur, eastern part of Panchagarh and Dinajpur; northern Bogra and part of Jaipurhat, Noagaon and Rajshahi districts.	9468 km ²	<i>High: 35%</i> <i>Medium high: 51%</i> <i>Others: 14%</i>	Medium	Medium	Kharif: B. Aus, T. Aus, Jute, T. Aman, GM, Kaon Rabi: Wheat, Sugarcane, Potato, Mustard, Blackgram, Tobacco
4. Karatoya-Bangali Floodplain	Eastern half of Bogra district and most of Sirajganj district.	2572 km ²	<i>High: 23%</i> <i>Medium high: 44%</i> <i>Medium low: 14%</i> <i>Others: 19%</i>	Medium to high	Medium	Kharif: Jute, B. Aus, T. Aman, Kaon, GM Rabi: Wheat, Vegetables, Pulses, Mustard, Potato, Boro
5. Lower Atrai Basin	Most of this region lies in Noagaon and Narore districts. Small areas extend into Rajshahi, Bogra and Sirajganj districts.	851 km ²	<i>Medium high: 21%</i> <i>Low: 65%</i> <i>Others: 14%</i>	Medium	Low to medium	Kharif: B. Aman, B. Aus Rabi: Grasspea, Boro
6. Lower Punarhaba Floodplain	Extreme western part of Noagaon districts and the extreme northern part of Nawabganj district	129 km ²	<i>Low: 60%</i> <i>Others: 40%</i>	Medium to high	Medium	Kharif: B. Aman Rabi: Boro rice
7. Active Brahmaputra-Jamuna Floodplain	Eastern part of Kurigram, Gaibandha, Bogra, Sirajganj, and Pabna districts. Minor areas also occur in Dhaka, Munshiganj, Narayanganj and Chandpur districts.	3190 km ²	<i>Medium high: 37%</i> <i>Medium low: 20%</i> <i>Others: 43%</i>	Low	Low to medium	Kharif: Jute, B. Aus, B. Aman, T. Aman, Kaon Rabi: Wheat, Mustard, Sweet Potato, Groundnut, Cheena



Name of the AEZs	Location	Extent	Land type	Organic matter content	Fertility level	Suitable crops
8. Young Brahmaputra and Jamuna Floodplain	Western parts of Sherpur, Jamalpur and Tangail districts, parts of Manikganj, Dhaka, Munshiganj and Gazipur districts and a belt of adjoining and old Brahmaputra channel through Mymensingh, Kishoreganj and Narsingdi districts.	5924 km ²	<i>High:</i> 18% <i>Medium high:</i> 42% <i>Medium low:</i> 19% <i>Others:</i> 9%	Low to medium	Low	Kharif: B. Aus, T. Aman, T. Aus, Jute, Green manures, Fox tail millet Rabi: Wheat, Potato, Tobacco, Mustard, Boro
9. Old Brahmaputra Floodplain	Large areas in Sherpur, Jamalpur, Tangail, Mymensingh, Netrokona, Kishoreganj, Narsingdi and Narayanganj districts. Small areas in the east of Dhaka and Gazipur districts.	7230 km ²	<i>High:</i> 28% <i>Medium high:</i> 35% <i>Medium low:</i> 18% <i>Others:</i> 17%	Low to Medium	Low	Kharif: B. Aus, T. Aman, T. Aus, Jute, Green manures Rabi: Mustard, Wheat, Pulses, Onion, Potato, Grasspea
10. Active Ganges Floodplain	The region extends along the Ganges and lower Meghna river Channels from the Indian border Nowabganj and Rajshahi District to the mouth of Meghna estuary in Lakshmipur and Barisal district.	3334 km ²	<i>High:</i> 12% <i>Medium high:</i> 33% <i>Medium low:</i> 18% <i>Others:</i> 37%	Low	Medium	Kharif: B. Aus, B. Aman, T. Aman, Jute Rabi: Boro, Wheat, Onion, Blackgram, Mustard
11. High Ganges River Floodplain	Nowabganj, Rajshahi, southern Pabna, Kushtia, Meherpur, Chuadanga, Jhenaida, Magura, Jessore, Satkhira and Khulna district together with minor areas in Noagaon and Narail district.	13205 km ²	<i>High:</i> 43% <i>Medium high:</i> 32% <i>Medium low:</i> 12% <i>Others:</i> 13%	Low	Low	Kharif: B. Aus, T. Aman, T. Aus, Mungbean, Jute, Cotton Rabi: Wheat, Mustard, Chickpea, Lentil, Boro rice
12. Lower Ganges River Floodplain	Nature, Pabna, Goalanda, Faridpur, Madaripur, Gopalganj and Saradipur, eastern parts of Kushtia, Magura and Narail, north-eastern parts of Khulna and Bagerhat, northern Barisal, and south-western parts of Manikganj, Dhaka and Munshiganj districts.	7968 km ²	<i>High:</i> 13% <i>Medium high:</i> 29% <i>Medium low:</i> 31% <i>Others:</i> 27%	Medium to high	Medium	Kharif: B. Aus, B. Aman, T. Aman, Jute, Kaon, GM Rabi: Pulses, Wheat, Mustard, Linseed, Boro rice
13. Ganges Tidal Floodplain	All or most of Barisal, Jhalkati, Pirojpur, Patuakhali, Bagerhat, Barhuna, Khulna and Satkhira districts. It includes the Khulna and Bagerhat Sundarbans Reserve Forests.	17066 km ²	<i>Medium high:</i> 78% <i>Others:</i> 22%	Medium to high	High	Kharif: B. Aus, T. Aman, Green manures Rabi: Boro rice, Wheat, Mungbean, Grasspea, Cowpea, Chilli
14. Gopalganj-Khulna Beels	A number of separate basin areas in	2247 km ²	<i>Medium high:</i> 13%	Medium	Medium	Kharif: T. Aman, Jute, T. Aus,



Name of the AEZs	Location	Extent	Land type	Organic matter content	Fertility level	Suitable crops
	Madaripur, Gopalganj, Narial, Jessore, Bagerhat and Khulna districts.		<i>Medium low</i> : 41% <i>Low</i> : 28% <i>Others</i> : 18%	to high		Sesame, B. Aman Rabi : Boro rice, Bean, Wheat, Grasspea,
15. <i>Arial Beel</i>	Munshiganj and Dhaka district.	144 km ²	<i>Medium high</i> : 13% <i>Low</i> : 73% <i>Others</i> : 14%	Medium	Medium to high	Kharif : Aus rice, Jute Rabi : Pulses, Mustard, Potato, Boro rice
16. <i>Middle Meghna River Floodplain</i>	Parts of Kishoreganj, Brahmanbaria, Comilla, Chandpur, Narsingdi and Narayanganj	1555 km ²	<i>Medium high</i> : 8% <i>Medium low</i> : 29% <i>Low</i> : 25% <i>Very low</i> : 11% <i>Others</i> : 27%	Low	Medium	Kharif : B. Aus+B. Aman, Jute Rabi : Boro rice, potato, wheat, mustard
17. <i>Lower Meghna River Floodplain</i>	Chandpur, Lakshimpur and Noakhali.	909 km ²	<i>High</i> : 14 <i>Medium high</i> : 28 <i>Medium low</i> : 31 <i>Others</i> : 27	Medium	Medium to high	Kharif : T. aman, jute Rabi : Boro rice, Potato, Wheat, Mustard, Groundnut, Lentil, Chickpea, Soybean, Chilli
18. <i>Young Meghna Estuarine Floodplain</i>	Chittagong, Feni, Noakhali, Lakshimpur, Bhola, Barisal, Patuakhali and Barguna.	9269 km ²	<i>Medium high</i> : 45% <i>Others</i> : 55%	Low	Medium	Kharif : B. Aus, T. Aus, T. Aman Rabi : Boro rice, Wheat, Mustard, Soybean, Mungbean, Grasspea, Cowpea, Lentil, Groundnut, Chilli
19. <i>Old Meghna Estuarine Floodplain</i>	Kishoreganj, Habiganj, Brahmanbaria, Comilla, Chadpur, Feni, Noakhali, Laksmipur, Narsingdi, Narayanganj, Dhaka, Shariatpur, Madaripur, Gopalganj and Barisal.	7740 km ²	<i>Medium high</i> : 24% <i>Medium low</i> : 33% <i>Low</i> : 21% <i>Others</i> : 27%	Medium	Medium	Kharif : B. Aus+B. Aman, T. Aman, Jute Rabi : Boro rice, Wheat, Potato, Mustard, Grasspea, Chickpea, Winter vegetables
20. <i>Eastern Surma-Kushiyara Floodplain</i>	Sylhet, Moulvibazar, Sunamganj and Habiganj.	4622 km ²	<i>Medium high</i> : 25% <i>Medium low</i> : 20% <i>Low</i> : 36% <i>Others</i> : 19%	Medium	Medium	Kharif : B. Aus+B. Aman, T. Aus, T. Aman Rabi : Mustard, Country bean
21. <i>Sylhet Basin</i>	Sunamganj, Habiganj, Netrokona, Kishoreganj and Brahmanbaria.	4573 km ²	<i>Medium low</i> : 19% <i>Low</i> : 43% <i>Very low</i> : 23% <i>Others</i> : 15%	High	Medium to high	Kharif : B. Aus, T. Aus, T. Aman Rabi : Boro rice, Mustard, Grasspea



Name of the AEZs	Location	Extent	Land type	Organic matter content	Fertility level	Suitable crops
22. Northern and Eastern Piedmont Plains	Sherpur, Netrokona, Sunamganj, Sylhet, Moulivibazar, Habiganj, Brahmanbaria and Comilla	4038 km ²	High: 33% Medium high: 31% Medium low: 16% Others: 80%	Medium	Low to medium	Kharif: T. Aus, T. Aman, Jute Rabi: Boro rice, Wheat, Mustard, Potato, Grasspea, Black gram
23. Chittagong Coastal Plains	Feni, Chittagong and Cox's Bazar	3720 km ²	High: 17% Medium high: 43% Medium low: 13% Others: 27%	Low	Medium	Kharif: T. Aus, T. Aman, Taro Rabi: Boro rice, Potato, Mustard, Tomato, Cowpea, Brinjal, Radish, Country bean, Yard long bean
24. St. Martin's Coral Island	St. Martin's Island	8 km ²	High: 33% Medium high: 63% Others: 4%	Medium to low	Low	Kharif: B. Aman, T. Aman Rabi: Grasspea, Onion, Garlic, Cucurbits
25. Level Barind Tract	Dinajpur, Gaibandha, Joypurhat, Bogra, Naogaon, Sirajganj and Natore	5049 km ²	High: 30% Medium high: 55% Others: 15%	Low	Low	Kharif: T. Aman, Sugarcane, Maize Rabi: Sugarcane + Potato, Maize, Mustard, Wheat, Tomato, Onion, Cabbage
26. High Barind Tract	Rajshahi, Nawabganj and Naogaon	1600 km ²	High: 93% Others: 7%	Low	Low	Kharif: T. Aus, T. Aman, Sugarcane, Maize Rabi: Boro rice, Wheat, Sugarcane + Cabbage/Cauliflower, Maize, Mustard, Potato, Chickpea, Black gram, Lentil, Ladies finger
27. North Eastern Barind Tract	Dinajpur, Rangpur, Gaibandha, Joypurhat and Bogra	1079 km ²	High: 36% Medium high: 56% Others: 8%	Low	Low	Kharif: T. Aus, T. Aman, Sugarcane, Jute, Sesame Rabi: Boro rice, Wheat, Sugarcane + Potato, Maize, Mustard, Black gram, Cabbage, Cauliflower
28. Madhupur Tract	Dhaka, Gazipur, Narsingdi, Narayanganj, Tangail, Mymensingh and Kishoreganj	4244 km ²	High: 56% Medium high: 18% Others: 26%	Low	Low	Kharif: B. Aus, T. Aman, Jute, Sugarcane, Green manures Rabi: Boro rice, Sugarcane +



Name of the AEZs	Location	Extent	Land type	Organic matter content	Fertility level	Suitable crops
						Lentil/Mungbean, Mustard, Chickpea
29. Northern and Eastern Hills	Khagrachhari, Chittagong Hill Tracts, Bandarban, Chittagong, Cox's Bazar, Habiganj and Moulivibazar	18172 km ²	<i>High: 92%</i> <i>Others: 8%</i>	Low	Low	Kharif: B. Aus, T. Aman, Jhum cultivation Rabi: Boro rice, Potato, Sweet potato, Cucumber, Sweet gourd, Snake gourd, Bitter gourd, Ridge gourd, Brinjal, Country bean, Coriander
30. Akhaura Terrace	Brahmanbaria district and minor areas in Habiganj district	113 km ²	<i>High: 11%</i> <i>Medium high: 10%</i> <i>Medium low: 15%</i> <i>Others: 64%</i>	Low	Low	Kharif: T. Aus, T. Aman, Jute, Sugarcane + Turmeric Rabi: Boro Rice, Wheat, Mustard, Potato

T. — Transplanting; B. — Broadcasting

Source:

1. FAO/UNDP, Land Resources Appraisal of Bangladesh for Agricultural Development Report 2: Agroecological Regions of Bangladesh, FAO/UNDP, 1988
2. BARC (Bangladesh Agricultural Research Council), 2005. Fertilizer Recommendation Guide. Bangladesh Agricultural Research Council, Dhaka.
৩. বি, এ, আর, সি (১৯৯৭)। মৃত্তিকা ও সার ব্যবহার সুপারিশমালা। বাংলাদেশ কৃষি গবেষণা কাউন্সিল, ফার্মগেট, ঢাকা।

FOR STUDENTS ONLY

