

An aerial photograph of a valley. The foreground and middle ground are filled with numerous small, irregularly shaped green fields, likely agricultural plots, separated by dark lines representing stone walls or fences. The fields are interspersed with some trees and small buildings. The background consists of large, steep hills with a mix of brown and green vegetation, suggesting a transition from a cultivated valley to a more natural, hilly landscape. The sky is a pale, hazy blue.

***IN THE NAME OF ALLAH, THE MOST BENEFICIENT,
THE MOST MERCIFUL***

AGRO-ECOLOGICAL ZONES OF PAKISTAN

PRESENTED BY

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WHAT IS AGRO-ECOLOGICAL ZONING

- **Agro-ecological Zoning (AEZ)** refers to the division of an area of land into smaller units, which have similar characteristics related to land suitability, potential production and environmental impact. Or
- **Agro-ecological zoning (AEZ)** is a method that uses biophysical attributes of the land to cluster land-use types into more homogeneous areas. This exercise facilitates planning for the sustainable use of natural resources.

WHAT IS AGRO-ECOLOGICAL ZONE

- **An agro-ecological zone** is a land resource mapping unit, defined in terms of climate, landform and soils, and/or land cover, and having a specific range of potentials and constraints for land use.

NEED FOR STUDY OF AGRO- ECOLOGICAL ZONING

- Assessment of yield potential
- Formulation of future plan of action
- Dissemination of agricultural research
- Determination of crop suitability for optimization of land use

APPLICATIONS OF AGRO- ECOLOGICAL ZONING

1. Potential land productivity
2. Estimation of arable area
3. Population supporting capacity
4. Land use planning
5. Land degradation risk assessment
6. Livestock forage balance assessment
7. Land management

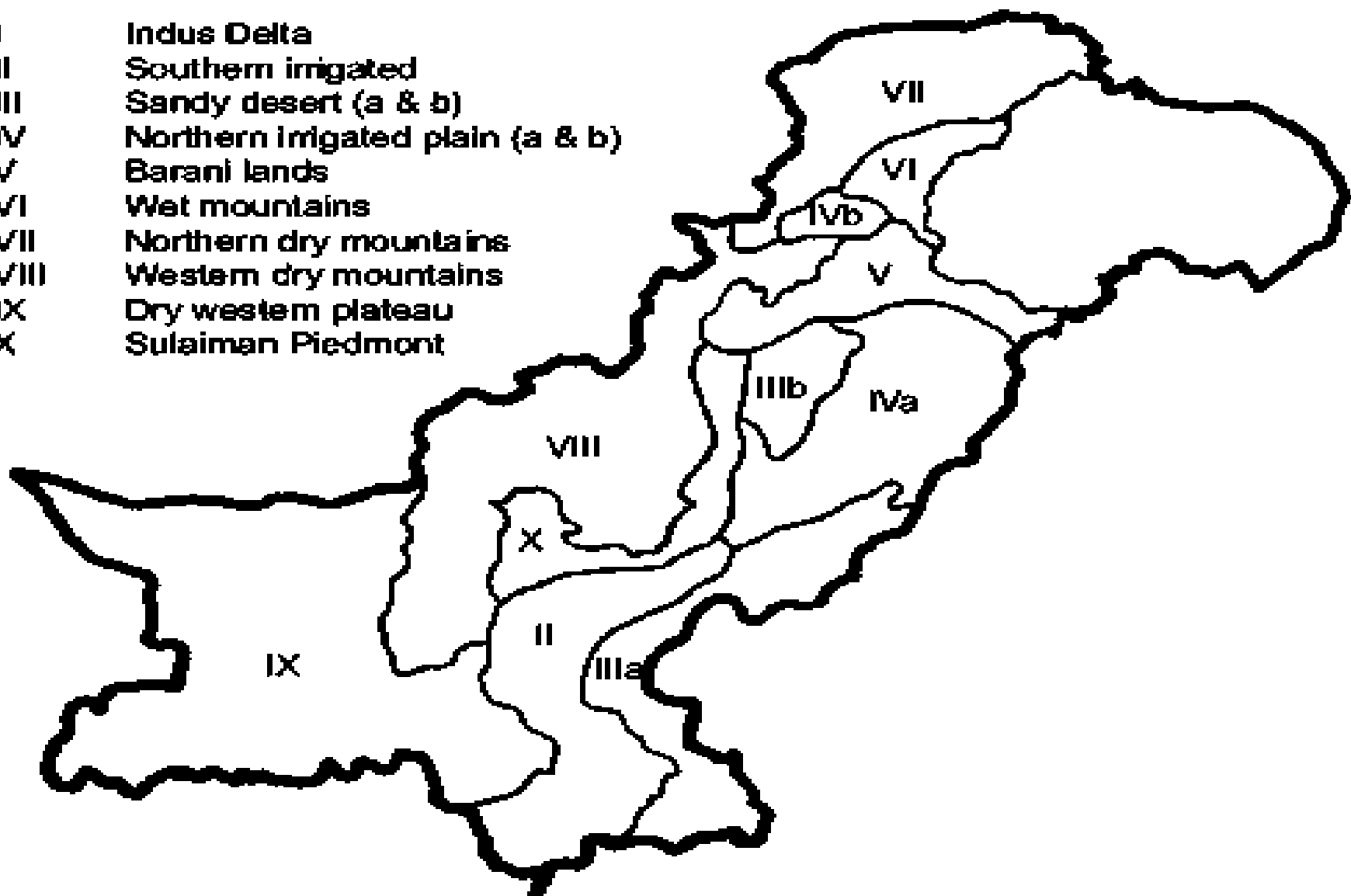
8. Agro-ecological characterization for research planning
- ~~9. Agricultural technology transfer~~
10. Agricultural inputs recommendations
11. Farming system analysis and development
12. Environmental impact assessment
13. Monitoring land resource development
14. Assessment of impact of climatic change

AGRO-ECOLOGICAL ZONES OF PAKSITAN

- I Indus Delta
- II Southern irrigated plain
- IIIA Sandy desert
- IIIB Sandy desert
- IVA Northern irrigated plain
- IVB Northern irrigated plain

- V Barani (rainfed) areas
- VI Wet mountains
- ~~VII Northern dry mountains~~
- VIII Western dry mountains
- IX Dry western plateau
- X Sulaiman Piedmont

- I Indus Delta
- II Southern irrigated
- III Sandy desert (a & b)
- IV Northern irrigated plain (a & b)
- V Barani lands
- VI Wet mountains
- VII Northern dry mountains
- VIII Western dry mountains
- IX Dry western plateau
- X Sulaiman Piedmont



MAIN FEATURES OF AGRO-ECOLOGICAL ZONES OF PAKISTAN

Zone I: Indus Delta

Climate Arid tropical

Temperature(°C)

Summer max 34-45

Winter min 5-20

Rainfall (mm) 75 in summer and 5 in winter

Major crops Rice, pulses, sugarcane, berseem, banana

Animal grazing Summer best grazing season, autumn poorest

Soil type Clayey and silty

Zone II: Southern irrigated plain

Climate Arid subtropical continental

Temperature(°C)

Summer max 30-50

Winter min 0-12

Rainfall (mm) 55 in summer and 0 in winter

Major crops Cotton, wheat, sugarcane, rice, sorghum, berseem

Animal grazing Summer best grazing season

Soil type Silty and sandy loam but calcareous loamy and clayey in upper area of flood plains

Zone III A: Sandy desert

Climate Arid subtropical

Temperature(°C)

Summer max 39-45

Winter min 2-7

Rainfall (mm) 46 in summer and 0 in winter

Major crops Guar, millet, wheat

Animal grazing Land use mainly grazing

Soil type Sandy and loamy fine sand

Zone III B: Sandy desert

Climate Arid to semi-arid, subtropical continental

Temperature(°C)

Summer max 40-46

Winter min 1-5

Rainfall (mm) 71 in summer and 18 in winter

Major crops Gram, wheat, cotton, sugar-cane,
guar

Animal grazing Land use mainly grazing

Soil type Sandy and loamy fine sand

Zone IV A: Northern irrigated plains

Climate Semi-arid (eastern part) to arid (south-west) and subtropical continental

Temperature(°C)

Summer max 39-46

Winter min 2-6

Rainfall (mm) 100 in summer and 22 in winter

Major crops Wheat, sugar-cane, melons, oilseeds, cotton, maize, berseem, citrus, mango

Animal grazing Grazing available

Soil type Sandy, loam-clay and loam

Zone IV B: Northern irrigated plain

Climate Semi-arid and subtropical continental

Temperature(°C)

Summer max 36-44

Winter min 1-5

Rainfall (mm) 32 in summer and 29 in winter

Major crops Sugar-cane, maize, tobacco, wheat, berseem, sugar-beet, gram, groundnut

Animal grazing Grazing available

Soil type Silty clays and clay loams

Zone V: Barani (rainfed) areas

Climate Humid, hot summers and cold winters (in foothills), semi-arid (south-west)

Temperature(°C)

Summer max 38-45

Winter min 0-6

Rainfall (mm) 200 in summer and 36 in winter

Major crops Wheat, millet, maize, rice, oilseeds, pulses, fodder

Animal grazing Good grazing in summer, poor in winter

Zone VI: Wet mountains

Climate Humid, mild summers and cold winters
(east),

Temperature(°C)

Summer max 35-44

Winter min 0-4

Rainfall (mm) 236 in summer and 116 in winter

Major crops Maize, rice, wheat, apples, fodder

Animal grazing Land use mostly forest or grazing

Soil type Silt loams to silty clays

Zone VII: Northern dry mountains

Climate Snow-covered high mountains, mild summers and very cold winters

Temperature(°C)

Summer max 30-35

Winter min -13 to 1

Rainfall (mm) 20 in summer and 75 in winter

Major crops Maize, wheat, rice, fruit orchards

Animal grazing Land use mainly pasture, alpine pastures in summer

Soil type Deep and clayey

Zone VIII: Western dry mountains

Climate Semi-arid highland

Temperature(°C)

Summer max 30-44

Winter min -10 to 8

Rainfall (mm) 95 in summer and 35 in winter

Major crops Wheat, maize, fruit orchards

Animal grazing Land use mainly pasture,
alpine pastures in summer

Soil type Deep and loamy

Zone IX: Dry western plateau

Climate Arid desert

Temperature(°C)

Summer max 33-44

Winter min -4 to 15

Rainfall (mm) 4 in summer and 37 in winter

Major crops Wheat, sorghum, millet, melons,
orchard fruits

Animal grazing Land use mainly grazing, low
carrying capacity pasture

Soil type Deep and calcareous silt loams

Zone X: Sulaiman Piedmont

Climate Arid and hot, subtropical continental

Temperature(°C)

Summer max 40-48

Winter min 1-7

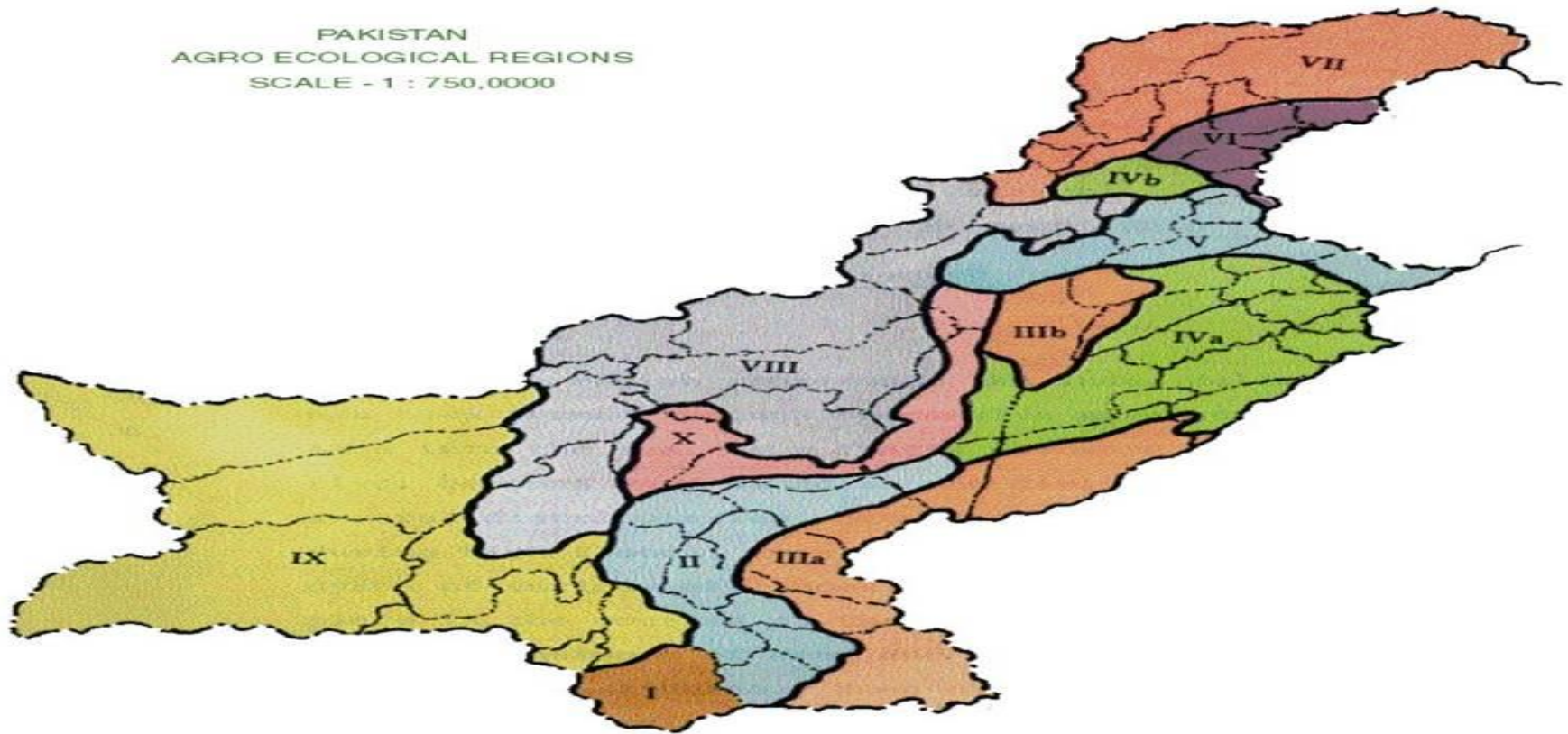
Rainfall (mm) 38 in summer and 1.3 in winter

Major crops Wheat, sorghum, millet, gram

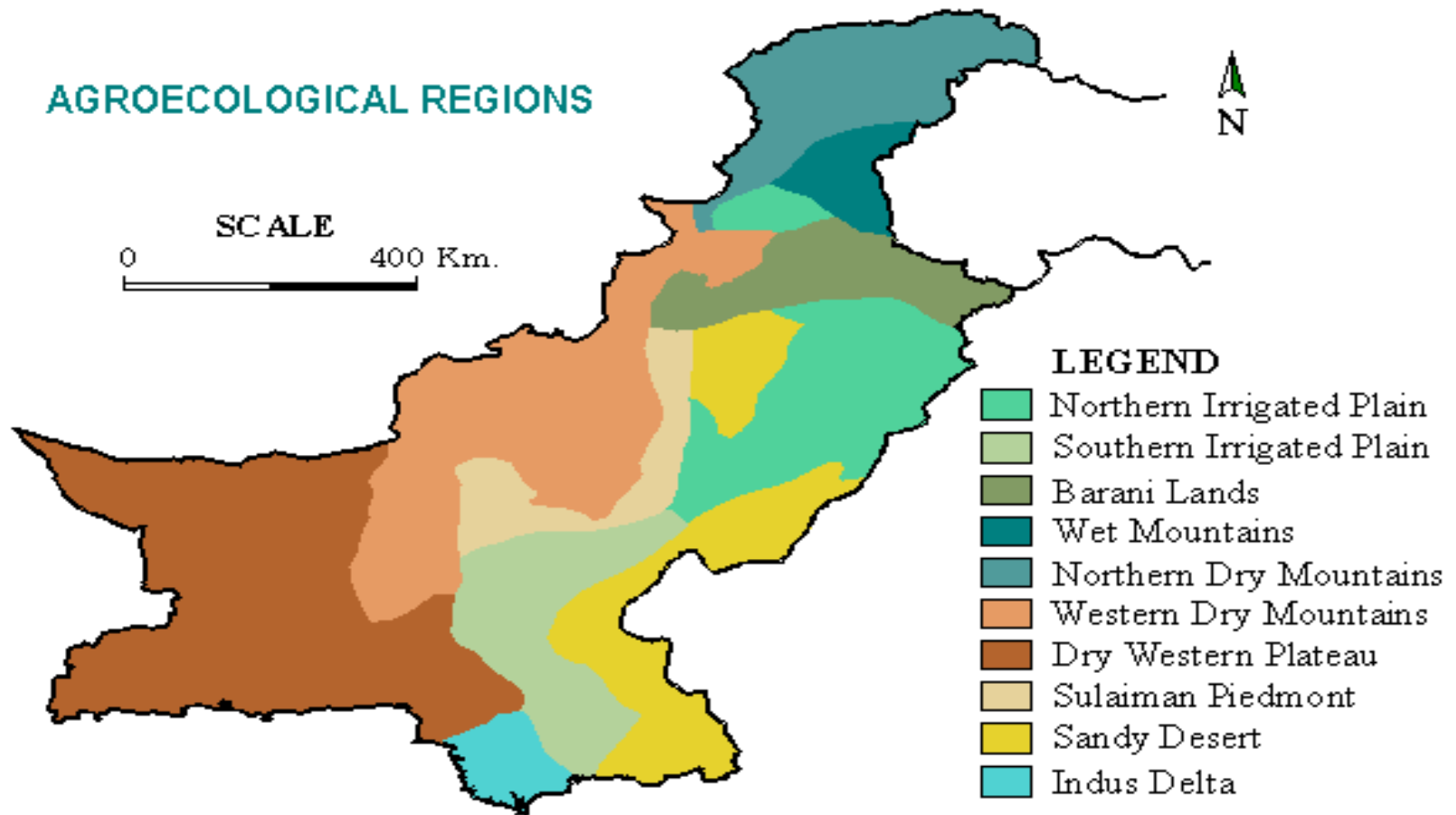
Animal grazing Land use mainly grazing, low carrying capacity pasture

Soil type Loamy on gently sloping areas while clayey away, strongly calcareous

AGRO-ECOLOGICAL ZONES OF PAKISTAN



AGROECOLOGICAL REGIONS



Data Source: PARC, Islamabad, 1980.

A high-angle, panoramic view of a valley. The foreground and middle ground are dominated by vibrant green, patchwork fields separated by stone walls. A river or stream winds through the fields. In the background, steep, rugged mountains rise, their slopes showing a mix of green and brownish-red hues, suggesting a mix of vegetation and rocky terrain. The sky is bright and slightly hazy. The word "Thanks" is overlaid in the center in a large, bold, red, italicized font.

Thanks