



Arunachal Pradesh

CHSL

Arunachal Pradesh Staff Selection Board (APSSB)

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Arunachal Pradesh GK



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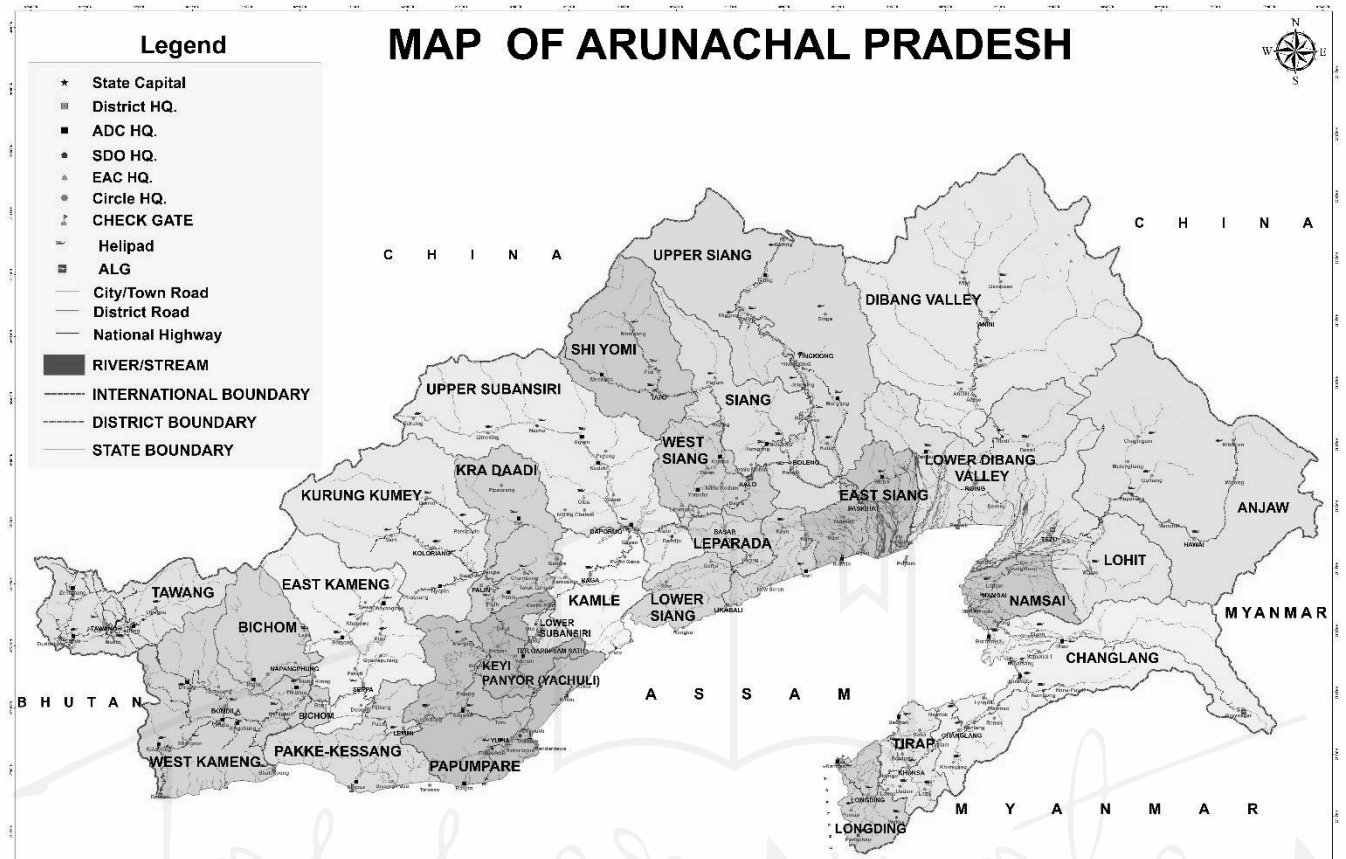
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CHAPTER

General Introduction of Arunachal Pradesh



Arunachal Pradesh is located in the extreme northeastern part of India and shares borders with Bhutan, Myanmar, Tibet, Assam, and Nagaland, with Itanagar as its capital. It is popularly known as the “**Land of the Rising Sun**” because it receives the first sunlight in India and is rich in forests, biodiversity, and tribal culture.

Arunachal Pradesh has been mentioned in ancient Hindu texts such as the **Mahabharata**, **Ramayana**, and **Kalika Purana**, which show that the region has long been an important part of Indian history and culture.

Geographical Scenario:

- **Latitude:** 26°30' N to 29°30' N
- **Longitude:** 91°30' E to 97°30' E
- **Area:** 83743 sq km
- **Neighbor Country or States:**
 - ✓ **North:** China
 - ✓ **South:** Assam
 - ✓ **West:** Bhutan
 - ✓ **East:** Myanmar

Administration Scenario:

During British rule, the area was known as the **North East Frontier Agency (NEFA)** and was administered as part of Assam. It became a Union Territory on **20 January 1972**, and later achieved full statehood on **20 February 1987**.

- **Capital:** Itanagar
- **Number of Districts:** 28
- **Number of Villages:** 5589
- **Number of Lok Sabha:** 2
- **Number of Rajya Sabha:** 1
- **Number of Vidhan Sabha:** 60
- **Language:** English, Monpa, Miji, Nyishi, and Aka

Demographic Scenario: (2011)

- **Total Population:** 13,83,727
- **Males:** 7,13,912

- **Females:** 6,69,815
- **Percentage of Scheduled Tribes:** 68.81% (2011)
- **Decadal Growth (2001-2011):** 26.0%
- **Percentage of Urban Population:** 22.93%

- **Literacy Rate:** 65.4%
 - ✓ **Male Literacy Rate:** 72.6%
 - ✓ **Female Literacy Rate:** 57.7%
- **Density:** 17 per Sq km
- **Sex Ratio:** 938

State Symbol:

State Emblem	The state emblem represents the natural beauty of Arunachal Pradesh by showing the rising sun between the Komdi and Daphabum mountain peaks, with a Mithun below and two hornbills on the sides, symbolizing the land of dawn-lit mountains and the state's wildlife heritage.	
State Animal – Mithun	The Mithun, also called gayal, is the state animal of Arunachal Pradesh and is considered a symbol of wealth, prosperity, and social status among tribal communities, where it is used in rituals, festivals, and marriage customs.	
State Bird – Great Indian Hornbill	The Great Indian Hornbill is the state bird and holds cultural importance for many tribes, living mainly in rainforest canopies, but its population is declining due to hunting and deforestation, so it is protected in reserves like Pakke Tiger Reserve and Namdapha National Park .	
State Flower – Foxtail Orchid	The Foxtail Orchid, locally known as Kopou Phool, is the state flower and is admired for its clusters of pink-spotted white flowers, symbolizes joy and fertility, and is valued for both medicinal uses and ornamental beauty.	
State Tree – Hollong	The Hollong tree is the state tree and is a tall hardwood species found in dense forests, known for its medicinal oleoresin and timber value, although excessive logging has made it vulnerable.	

Geographical Overview of Arunachal Pradesh

- The term “Arunachal” means the “Land of the Rising Sun” or the “Land of Dawn-lit Mountains,” where “Arun” signifies dawn or rising sun and “Pradesh” means region.
- Arunachal Pradesh is situated in the extreme north-eastern corner of India.

Latitudinal and Longitudinal Extent

- It lies between 26°30' N to 29°30' N latitudes.
- It lies between 91°30' E to 97°30' E longitudes.

Boundaries

- Bounded by Bhutan in the west.
- Bounded by China (Tibet region) in the north and northeast.
- Bounded by Myanmar in the east and southeast.
- Shares internal boundaries with Assam and Nagaland in the south.

General Relief

- The state is predominantly mountainous and hilly.
- It forms part of the Eastern Himalayan mountain system.
- The terrain is highly rugged and uneven.

Elevation

- Elevation ranges from about 60 metres to over 7,300 metres.
- The highest peak is Gorichen in West Kameng district.

Geological Features

- The region includes the Eastern Himalayas and Patkai hill ranges.
- The southern foothills show typical Siwalik-type formations.
- The hills gradually merge into the Patkai ranges towards Myanmar.

Surface Characteristics

- Hill ridges are irregular and discontinuous.
- Valleys occur between ridges, forming broad and narrow depressions.

- Numerous rivers and streams dissect the land.
- Sediment deposition in valleys and foothills creates varied landscapes.
- Many areas remain geographically isolated due to mountains and rivers.

Topography of Arunachal Pradesh

The topography of Arunachal Pradesh is highly varied and can be broadly divided into four major physiographic divisions, namely the Himalayan Ranges, the Mishmi Hills, the Naga–Patkai Ranges, and the Brahmaputra Plains. Each of these divisions possesses distinct physical features and geological characteristics that contribute to the state's diverse landscape.

Himalayan Structure

Arunachal Pradesh forms the eastern extension of the Himalayan mountain system. All the three principal divisions of the Himalayas are well represented in this region. The elevation gradually rises from about 100 metres in the Brahmaputra plains to more than 7,000 metres in the higher mountain ranges, creating a sharp contrast between lowlands and highlands.

Physiographic Zones of the Himalayas

Sub-Himalayan Zone	The Sub-Himalayan Zone lies along the foothills adjoining the Brahmaputra plains. It has been formed along a tectonic line known as the Foothill Fault. This zone generally extends for about 10 to 20 kilometres in width, but it becomes narrower, reducing to nearly 1 or 2 kilometres in the Dibang Valley.
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Lesser (Lower) Himalayas	The Lesser or Lower Himalayas occur at elevations ranging between 2,500 and 4,000 metres and spread over a width of approximately 80 to 90 kilometres. This region gradually bends southeastward and merges with the Mishmi Hills. The southern boundary of this zone is marked by the Main Boundary Thrust.	(Tibetan) Zone	northernmost part of Arunachal Pradesh. This region has comparatively lower relief with elevations ranging between 3,000 and 6,000 metres. It contains several important mountain passes that connect India with Tibet and is strategically significant.
Greater (Higher) Himalayas	The Greater or Higher Himalayas constitute the loftiest part of the region, with elevations exceeding 6,000 metres. This zone is characterized by steep slopes, deep gorges, and rugged terrain. Due to the extreme altitude, vegetation is sparse and limited. The southern limit of this zone is defined by the Main Central Thrust.	Eastern Himalayas (Siang Region)	The Eastern Himalayas, especially in the Siang region, cover large parts of the East and West Siang districts. This area is marked by rugged mountains, steep slopes, and highly dissected terrain. Deep valleys, rocky hills, and dense forests dominate the landscape. Numerous rivers and streams drain the region, creating fertile valleys. Snow-covered peaks along with lush green valleys present a striking and picturesque natural scenery.
Trans-Himalayan	The Trans-Himalayan or Tibetan Zone forms the		

Key Mountain Ranges of Arunachal Pradesh

Mountain Range	Location	Important Peaks / Features	Significance
Eastern Himalayan Ranges	Form the northern boundary along China (Tibet)	Kangto (7,090 m – highest peak), Nyegi Kangsang, Gorichen; presence of glaciers; source of rivers like Subansiri and Siang	Dominant mountain system of the state; major water source and high-altitude glacial region
Dapha Bum Range	Easternmost part of the state, mainly in Changlang district and Namdapha National Park	Dense forests and varied wildlife	Part of Indo-Burma biodiversity hotspot; habitat of red panda, clouded leopard, and other rare species
Patkai Hills	Along the border with Myanmar	Rugged hills with dense tropical rainforests	Rich biodiversity; home to species like hoolock gibbon and hornbill; southern extension of the Himalayas
Mishmi Hills	Northeastern Arunachal Pradesh	Steep slopes and ancient rock formations	Inhabited by Mishmi tribe; cultural and ecological importance; transition zone between Himalayan and Indo-Burmese flora and fauna

Siang Valley Ranges	Surround the Siang Valley in central districts	Numerous minor ranges; drained by the Siang River (tributary of Brahmaputra River)	Known for scenic beauty, fertile valleys, and biodiversity; important for eco-tourism
Kameng Hills	Western part of the state	Subtropical forests and snow-covered peaks; includes Sela Pass	Major tourist area; offers alpine meadows and panoramic Himalayan views

Valleys and Plateaus of Arunachal Pradesh

Arunachal Pradesh, known as the “Land of Dawn-lit Mountains,” possesses a highly varied terrain consisting of valleys, plateaus, rivers, hills, and dense forests. These landforms influence the state’s climate, biodiversity, agriculture, culture, and human settlements. Most valleys are formed by rivers descending from the Himalayas, while plateaus occur mainly in foothill and hill regions.

Major Valleys of Arunachal Pradesh

Valley	Location	Physical Features	Significance
Siang Valley	Central Arunachal Pradesh	Formed by the Siang River; fertile plains and lush greenery	Major agricultural zone growing rice, maize, and millet; cultural centre of Adi and Galo tribes
Tawang Valley	Western Arunachal Pradesh	Surrounded by snow-covered Eastern Himalayan peaks	Famous for Tawang Monastery; important tourist destination; limited farming due to cold climate
Ziro Valley	Lower Subansiri district	Located at about 1,500 m altitude; terraced fields	Known for Apatani wet rice cultivation; sustainable farming system; proposed UNESCO heritage site
Dibang Valley	Northeastern region	Formed by the Dibang River; rugged and mountainous	Sparse population; rich wildlife; habitat of Mishmi takin and rare species
Kameng Valley	Western region	Formed by the Kameng River; dense forests	Known for Sessa Orchid Sanctuary; hydropower potential and rich biodiversity

Major Plateaus of Arunachal Pradesh

Plateau	Location	Physical Features	Significance
Likabali Plateau	Foothills near Assam border	Low-lying plateau with fertile alluvial soil	Suitable for tea, rice, and mustard cultivation; gateway to western Arunachal
Daphla Hills Plateau	Along Assam–Arunachal border	Undulating terrain with moderate height	Supports horticulture and shifting (jhum) cultivation; inhabited by Nyishi tribe
Anini Plateau	Upper Dibang Valley	High-altitude plateau with cold climate	Sparse population; scenic landscapes; trekking and eco-tourism potential
Changlang Plateau	Southeastern Arunachal Pradesh	Part of the Patkai hill system	Rich in coal and forest resources; supports biodiversity and traditional tribal life

Major River Systems of Arunachal Pradesh

Arunachal Pradesh possesses a dense and dynamic river network formed by glaciers, mountain springs, and heavy monsoon rainfall. Most rivers originate in the Eastern Himalayas and flow southward to join the mighty Brahmaputra River. The state is broadly divided into five major river basins, namely Kameng, Subansiri, Siang, Dibang, and Lohit.

Major River Basins

River System	Source	Course	Important Tributaries	Key Features / Importance
Kameng River System	Glacial lakes near Nyegi Kangsang and Gorichen peaks in the Eastern Himalayas	Flows through Tawang, West Kameng, and East Kameng districts before joining the Brahmaputra	Tenga, Bichom	Fast-flowing river with rapids; suitable for rafting; supports agriculture, fisheries, and local livelihoods
Subansiri River System	Originates in Tibet as Chayul Chu	Enters India near Taksing and flows south to Assam to meet the Brahmaputra	Kamla, Sipu, Dikrong	Largest tributary of Brahmaputra; major hydropower potential; supports irrigation and biodiversity
Siang River System	Originates from Angsi Glacier in Tibet (called Tsangpo)	Enters Upper Siang and flows southward as Siang	Siyom, Yamne, Simang	Main channel of Brahmaputra; deep gorges and scenic valleys; culturally significant; vital for fishing and farming
Dibang River System	Mishmi Hills in northeastern Himalayas	Flows through Upper and Lower Dibang valleys before merging with Brahmaputra	Ithun, Ahi, Emra	Clear waters and steep gradient; site of Dibang Multipurpose Project; rich aquatic life
Lohit River System	Zayul Pass in Tibet	Enters India near Kibithu and flows through Lohit district to join Brahmaputra	Digar, Dalai	Strong and turbulent flow; high sediment load; important for irrigation, farming, and fisheries

Major Rivers of Arunachal Pradesh

Arunachal Pradesh possesses a dense and extensive river network formed by melting Himalayan glaciers and heavy monsoon rainfall. These rivers flow through deep gorges, valleys, and plains, shaping the physical landscape of the state.

River	Origin	Course / Flow	Key Features and Importance
Brahmaputra River (Siang/Tsangpo)	Originates in Tibet as Tsangpo	Enters Arunachal near Tuting and flows southwest through deep valleys	Lifeline of the state; forms fertile plains; important for irrigation, transport, fisheries, and hydropower
Subansiri River	Himalayas in Tibet	Flows through Upper and Lower Subansiri regions before joining Brahmaputra in Assam	Largest tributary; strong current; ideal for rafting; major hydropower projects
Lohit River	Tibet	Flows through eastern Arunachal and joins Brahmaputra near Sadiya	Turbulent river; rich biodiversity; supports farming and fisheries

Dibang River	Mishmi Hills / Tibet region	Flows through Upper Dibang Valley before merging with Brahmaputra	Known for scenic beauty and clear waters; tourism potential; hydropower development
Kameng River (Bhareli)	Eastern Himalayas	Flows through West Kameng district and joins Brahmaputra	Clear waters; supports fishing and agriculture; popular for adventure sports

Key Tributaries of Major Rivers of Arunachal Pradesh

Tributaries of Siang River

Tributary	Origin	Course	Importance
Siyom (Yomgo)	Western Arunachal Pradesh	Flows through Aalo (Along) and joins the Siang	Supports irrigation and has hydropower potential
Tirap	Tirap district	Joins the Siang downstream	Provides water for local use and sustains tribal settlements
Simang	Eastern Himalayas	Flows through the Siang Valley and merges with Siang	Helps agriculture and maintains biodiversity

Tributaries of Subansiri River

Tributary	Origin	Course	Importance
Kamla	Lower Subansiri district	Joins Subansiri near Ziro	Supports Apatani wet-rice cultivation system
Ranganadi	Eastern Himalayas	Flows through Papum Pare and meets Subansiri	Site of major hydropower project
Pare	Papum Pare district	Flows southward to Subansiri	Provides drinking water and irrigation

Tributaries of Lohit River

Tributary	Origin	Course	Importance
Digar	Eastern Arunachal Pradesh	Meets Lohit near Tezu	Supports agriculture in Lohit Valley
Noa-Dihing	Namdapha region	Flows through Changlang and joins Lohit	Important for biodiversity and irrigation
Kamlang	Kamlang Wildlife Sanctuary	Flows through forest areas into Lohit	Sustains wildlife and local communities

Tributaries of Dibang River

Tributary	Origin	Course	Importance
Mathun	Eastern Arunachal Pradesh	Joins Dibang in Lower Dibang Valley	Enriches biodiversity of the basin
Talon	Mishmi Hills	Flows through rugged terrain to Dibang	Supports farming and ecosystems
Eme	Dibang Valley	Joins middle course of Dibang	Used for small-scale irrigation

Other Important Tributaries

River	Origin	Course	Importance
Tizu	Indo-Myanmar border	Flows through Changlang district	Supports fishing and agriculture
Namphuk	Eastern Arunachal Pradesh	Drains into Assam plains	Supplies water to tea gardens and villages

Climate of Arunachal Pradesh

Arunachal Pradesh, located in the eastern Himalayas, experiences a highly varied and dramatic climate due to its diverse relief and wide range of altitudes. The state shows sharp climatic contrasts, ranging from hot and humid conditions in the foothills to extremely cold alpine weather in the higher mountains. Thus, climate changes rapidly from south to north with increasing elevation.

Factors Influencing the Climate

1. **Altitude:** Altitude is the most important factor controlling the climate of the state. The

lower valleys remain warm and humid, while temperatures gradually decrease with height, making the higher regions cool and cold.

2. **Monsoon:** The southwest monsoon, active from June to September, brings heavy rainfall to Arunachal Pradesh. The state receives one of the highest rainfalls in India, which supports dense forests and numerous rivers.
3. **Himalayan Influence:** The lofty Himalayan ranges strongly influence the climate by blocking cold winds from Central Asia and forcing the moisture-laden winds from the Bay of Bengal to rise, resulting in heavy precipitation.

Regional Climatic Zones of Arunachal Pradesh

Climatic Zone	Altitude Range	Location/Area	Temperature Conditions	Rainfall/Snowfall	Key Characteristics
Tropical & Subtropical Zone	Up to 1,000 m	Foothills and lower valleys	Summers hot and humid (up to 40°C); winters mild (15–21°C)	Heavy monsoon rainfall	Dense forests, fertile lands, suitable for agriculture
Sub-Temperate Zone	1,000–2,000 m	Hills and valleys	Warm summers and cool winters	High rainfall, but less than lower zone	Moderate climate, mixed vegetation
Temperate Zone	2,000–3,500 m	Mountainous and forest regions	Cool summers and cold winters	Moderate rainfall with occasional snowfall	Thick forests, pleasant summers
Alpine Zone	Above 3,500 m	High mountains and glacier areas	Very cold climate; long severe winters; short cool summers	Heavy snowfall	Sparse vegetation, glaciers, harsh environment

Soils

- The soils of Arunachal Pradesh have been formed from different type of Parent material.
- The soils of Arunachal Pradesh vary according to altitude, rainfall, vegetation, and topography.
- Due to heavy rainfall and intense weathering, most soils are young and acidic.

Soil Type	Nature of Soil	Distribution/Location	Key Characteristics	% of Total Geographical Area (TGA)
Inceptisols	Young soils with weak profile development	Warm, per-humid Eastern Himalayan regions	Moderately developed, acidic, suitable for forests and shifting cultivation	≈ 37%
Entisols	Very young soils with little or no horizon development	Siwalik hills and plains/foothill areas	Sandy to loamy, highly acidic, prone to erosion	≈ 35%

Ultisols	Highly weathered old soils	Older landscapes of Eastern Himalayas	Clay-rich, strongly leached, low fertility without fertilizers	≈ 14%
Alfisols	Comparatively mature and fertile soils	Small patches in lower valleys	Rich in organic matter, better agricultural productivity	≈ 0.5%

Major Dams and Hydroelectric Project

- 1. Ranganadi Dam:** Located on Ranganadi river, near Yazali in Lower Subansiri District. It is hydroelectric dam that generates electricity for the region.
- 2. Dikrong Dam:** Located on the Dikrong river, near Kimin in Papum-Pare District. It is small dam used for irrigation and water Supply.
- 3. Panidihing Dam:** Situated on the Panidihing river, near wakro in Lohit district. It is a multipurpose dam used for irrigation, drinking water supply, and flood control.
- 4. Pare Hydroelectric Project:** Situated on the River, near Doimukh in Papum -Pare district. It is a run of the river hydroelectric project.
- 5. Kameng Hydroelectric Plant:** Situated on the Kameng river, near Seppa in East Kameng district. It is a hydroelectric project that harnesses the power of the river for electricity generation.
- 6. Pangsu Passang Dam:** Located on the Pangsu Passang river, near Seppa in East Kameng District. It is a small dam used for irrigation and water supply.
- 7. Dibbin Hydroelectric Project:** Situated on the Dibbin river, near Roing in lower Dibang Valley district. It is a run of the river hydroelectric Project.
- 8. Tawang Hydroelectric Project:** Situated on the Tawang River, near Tawang in Tawang district. It is a hydroelectric project that harnesses the power of the river for electricity generation.
- 9. Poma Hydroelectric Plant:** Located on the Poma River, near Itanagar in Papum-Pare district. It is a small hydroelectric plant that contributes to the state's power generation.
- 10. Pongging Dam:** Located on the Pongging River, near Roing in Lower Dibang Valley district. It is a small dam used for irrigation and water supply.

- 11. Pakhui Hydropower Plant:** Situated on the Pakhui River, near Seijosa in east Kameng district. It is a hydroelectric power plant that generates electricity for the region.

Waterfalls

- 1. Nuranang Falls (Jang Falls):** Located near jang village in tawang district.
- 2. Rukhmininagar Waterfall:** Located near Namsai district.
- 3. Bap Teng Kang Waterfalls:** Situated near Bomdila in West Kameng district.
- 4. Dibang Waterfall:** Found near Roing in Lower Dibang Valley district.
- 5. Bhimakali Waterfall:** Located near Mechuka in Shi-Yomi district.
- 6. Korchilangso Waterfall:** Situated near Tawang in Tawang district.
- 7. Chongkham Waterfall:** Found near Namsai in Namsai district.
- 8. Raja Dirchi Waterfall:** Located near Daporijo in Upper Subansiri district.
- 9. Pamakhe Waterfall:** Pamakhe Waterfall is located near Tezu in Lohit district.
- 10. Pangchena Waterfall:** Pangchena Waterfall lies near Namsai in Namsai district.
- 11. Kamlang Waterfall:** Situated near Miao in Changlang district.
- 12. Kaiyan Waterfall:** Kaiyan Waterfall is located near Khonsa in Tirap district.
- 13. Rikor Waterfall:** Rikor Waterfall, near Rikor in Lower Dibang Valley district.
- 14. Lampung Waterfall** Lampung Waterfall is found near Walong in Anjaw district.
- 15. Sizen Waterfall:** Located near Bomdila in West Kameng district.
- 16. Bana Waterfall:** Bana Waterfall is situated near Anini in Dibang Valley district.
- 17. Melo Waterfall:** Melo Waterfall lies near Roing in Lower Dibang Valley district.
- 18. Bordumsa Waterfall:** Bordumsa Waterfall is located near Bordumsa in Tinsukia district (Assam), close to the Arunachal Pradesh border. Formed by the Tirap River, it is a captivating natural attraction.

Ancient History of Arunachal Pradesh

Rural Economy and Agricultural Base

- Arunachal Pradesh has a predominantly rural economy, with over 70% of the population living in about 3,863 villages.
- **Agriculture and animal husbandry are the main occupations of the people.**
- As per Statistical Abstract of Arunachal Pradesh (2008), 58.44% are cultivators, 3.85% agricultural labourers, 0.86% workers in household industries, and 36.85% other workers.
- Tribal communities follow both shifting cultivation (Jhum Cultivation) and sedentary (permanent) agriculture. **About 53% of the total cultivated area is under Jhum (shifting cultivation) and the remaining is under permanent cultivation.**
- The state receives around 500 cm rainfall annually, resulting in many rivers and lakes, along with extensive forests.
- The **principal crop** of this area is **rice**, and other **important crops** include **maize, millets, wheat, pulses, potato, sugarcane and oilseeds.**
- The **ecological conditions** are suitable for **horticulture and fruits** like **pineapple, orange, lemon, papaya, plum, pear, guava, cherries, walnut and peach** thrive here.
- The Government of Arunachal Pradesh formulated the **agriculture policy 2001** with the need of achieving higher economic growth and creating job opportunities for the rural unemployed through agriculture and allied service.

- Per Capita availability of land for cultivation in the hill areas of the state is lowest in India – only 0.12 ha.
- Out of the net cropped area of 2.34 lakh ha, 60% falls under Jhuming and rest under upland terraces, wetland terraces, valley lands and plains etc.
- Rice accounts for a major share of 62.5% area followed by maize (16.2%) and millets (12.4%).

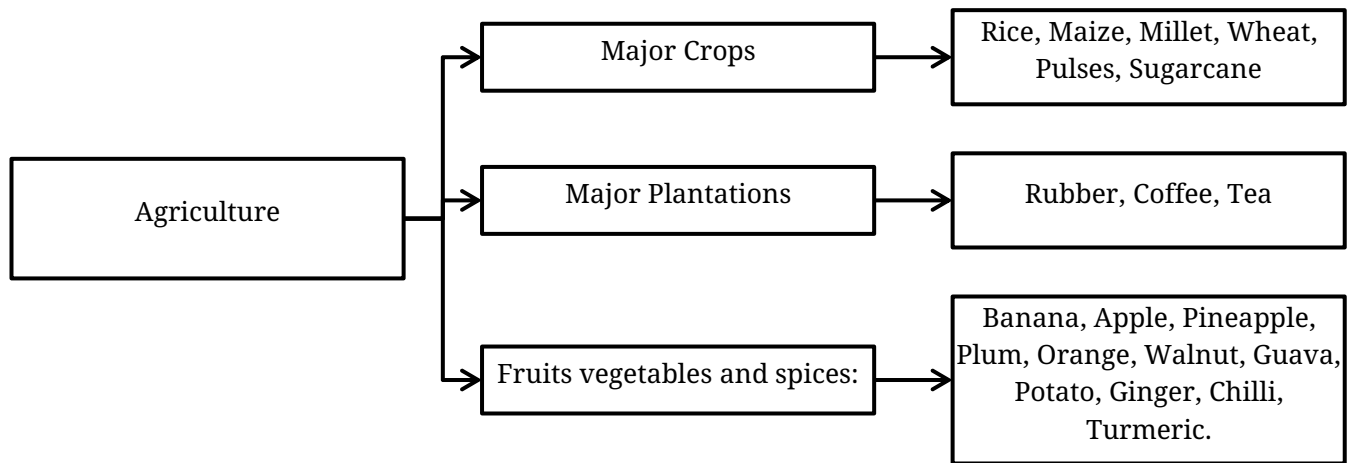
Shifting Cultivation (Jhum):

Meaning, Process and Impact

- **Shifting cultivation (Jhum)** is an age-old practice widely adopted by hill tribes.
- In this system, a forest area is selected, cleared, and the dried vegetation is burnt to prepare the field.
- Cultivation is carried out for a few years and then the plot is left fallow to regain fertility while the community moves to another plot.
- They return after a few years; earlier, the cycle was longer (10–20 years), which allowed vegetation regrowth and maintained ecological balance.
- **Main crops cultivated on Jhum lands include food grains, vegetables, root crops and fruit species.**
- However, with population pressure, shortening of the Jhum cycle has increased ecological damage.

Ill-effects / Challenges linked to Jhum

- Jhum causes loss of forest cover, biodiversity loss, soil erosion, enhanced run-off, depletion of groundwater, siltation of water harvesting structures, drying of natural streams, and shortage of fuelwood and fodder.



Agro – Climatic Zones

According to altitude, rainfall pattern, temperature variation, topography and soil characteristics, Arunachal Pradesh has been divided into five agro-climatic zones.

Agro-Climate Zones	Area Covered	Characteristic
Alpine Zone	Includes Gorichen, Upper Tawang, Tulungla, Bumla, Shela Pass, Jidu and adjoining areas of northern Siang districts.	Characterized by very high altitude, cold climate and alpine vegetation
Temperate and Sub-Alpine Zone	Includes Tawang, Dirang, Bomdila, Shergaon area, Dibang Valley, northern part of East Siang district, Upper Subansiri district, part of West Siang around Aini and north-eastern part of Lohit district.	Characterized by cool climate and temperate horticulture crops
Sub-Tropical Hill Zone	Includes Changlang, Naga and Khonsa areas and Basar region.	Characterized by moderate temperature and hill agriculture

Mid-Tropical Hill Zone	Includes the southern part of Lower Subansiri district.	Characterized by warm climate suitable for mixed farming and horticulture
Mid-Tropical Plain Zone	Includes Pasighat area and lower parts of Lohit district.	Characterized by plains, higher temperature and intensive cultivation

Land use Patterns and Land Tenure Systems

- In many cases, estimates of land use are inferred from forest cover data provided by official surveys.
- According to the Forest Survey of India, about 79.33% of the total geographical area (66,431 sq. km out of 83,743 sq. km) is covered with forests.
- Most parts of Arunachal Pradesh consist of steep hills, deep terrain, and dense forests, making it one of the most forest-rich states in India. **The high forest cover is considered the greatest natural endowment of the state.**
- The remaining land is used for various purposes. **About 16% of the land includes private lands reserved for hunting, fishing, and residential uses.**
- Only about 4% of the total land is presently available for agricultural purposes.

Land Utilisation Statistics of Arunachal Pradesh (2020–21)

The land use pattern of Arunachal Pradesh shows that only a small portion of land is available for cultivation due to extensive forest cover, hilly terrain, and wastelands.

Land Classification (Area in hectares)

- Net Area Sown – **23,480 ha**
- Current Fallow Land – **3,296 ha**
- Uncultivated Land (excluding fallow land) – **5,189 ha**
- Fallow Land other than Current Fallow – **6,157 ha**
- Culturable Waste Land – **6,107 ha**
- Land Not Available for Cultivation – **6,159 ha**

Gross Cropped Area

- Irrigated Area – **5,687 ha**
- Un-irrigated Area – **26,417 ha**
- Net Irrigated Area – **5,587 ha**

New Agricultural Policy – 2001 (Arunachal Pradesh)

- Main aim of the policy is to increase farmers' income and improve quality of life through sustainable agricultural development.
- Introduced to overcome low productivity, poor infrastructure, inadequate capital and technological backwardness.
- Major constraints: low productivity, lack of irrigation, high production cost, unfavorable terrain, weak market and poor price realization.
- Absence of storage, preservation and processing facilities leads to post-harvest losses and rural–urban migration.
- Top priority is given to income generation through cash crops, floriculture, fruit culture, fishery, pig rearing and agro-processing.
- Special focus on reducing shifting cultivation (Jhum) and promoting permanent scientific farming.
- Improved land management through agro-forestry, horticulture and slope-land cultivation.
- Adoption of location-specific strategies based on local climate, soil, and socio-economic conditions.

- Promotion of HYV seeds, improved planting materials, modern technology and agricultural mechanization.
- Shift from 'commodity approach' to 'system approach' by integrating agriculture with horticulture, livestock, fisheries and allied sectors.
- Strengthening agricultural extension services through technology transfer, capacity building and skill development of farmers.
- Timely supply of quality inputs such as seeds, fertilizers, pesticides, tools and affordable credit.
- Promotion of organic manure, soil health management and efficient water use.
- Development of marketing infrastructure, storage, transport and agro-processing to ensure better prices to farmers.
- Encouragement of private investment, Self Help Groups (SHGs), village committees and people's participation in agricultural development.

Main Crops of Arunachal Pradesh

- Rice is the staple food and the largest produced food crop. **Rice is the major crop due to high rainfall.** Other important crops include maize, millet, wheat, pulses, potato, oilseeds, and sugarcane.

District-wise highlights (Food crops and Rice)

- **Major districts for rice production:** Changlang, West Siang, East Siang, Lohit and Papum Pare.
- **Major districts for overall food crop production:** Changlang, West Siang, East Siang, Lohit and Lower Dibang Valley.

Commercial Crops (Cash Crops) and District Leaders

Commercial crops like oilseeds, potato, ginger and chilli are produced in all districts in varying quantities.

- **Oilseeds:** Lohit is the highest producer, followed by Lower Dibang Valley, East Siang, Changlang and West Siang.

- **Potato:** Lohit is highest, followed by East Siang, Lower Subansiri, Tawang and Lower Dibang Valley.
- **Ginger:** Lower Dibang Valley is highest, followed by Lohit, East Siang, Changlang and Upper Subansiri.
- **Chilli:** Changlang is highest, followed by Upper Subansiri, Lower Subansiri, Anjaw and West Siang.

Other important commercial crops:

- **Sugarcane** is highest in East Siang (7280 MT), followed by Changlang (4899 MT), Papum Pare (2888 MT), West Siang (2663 MT) and Lower Subansiri (1450 MT).
- **Turmeric** is highest in Lower Dibang Valley (616 MT), followed by Lohit (387 MT), East Siang (369 MT), West Siang (234 MT) and Papum Pare (116 MT).

Horticulture in Arunachal Pradesh:

- **Horticulture is the backbone and future of Arunachal Pradesh's rural economy.**
- Due to varied agro-climatic conditions and undulating topography, the state has high potential for tropical, sub-tropical and temperate fruits, vegetables (including off-season), spices, flowers, mushrooms, and medicinal/aromatic plants.
- Horticulture helps reduce erosion because many fruit crops are perennial and provide green cover.
- Replacing abandoned Jhums with perennial fruit trees/plantation crops helps control soil erosion and improves ecology.

Horticulture Zones (Altitude-wise)

- **Foothills & Valleys (170–915 m):** citrus, guava, banana, mango, litchi, pineapple, sapota, jackfruit, papaya, plum, pear + seasonal vegetables.
- **Mid Hills (915–1803 m):** apple, plum, apricot, pear, almond, low-chilling apple, pomegranate, olive, grapes + vegetable seed production/truck gardening.
- **High Hills (>1830 m):** apple, cherry, walnut, chestnut, peanut, pomegranate + off-season vegetables and temperate vegetable seeds.
- **Rain shadow areas (<40" rainfall):** apple, pear, plum, peach, apricot, almond, walnut, pomegranate + off-season vegetables.

Major support projects and training

- Important initiatives include the Regional Seed Foundation Potato Farm (Tawang), Regional Apple Nursery (Dirang), and State Horticulture Farm (Sheragaon).
- Gramsevak and Farmers Training Centres provide training in scientific agriculture and rural development.

Irrigation in Arunachal Pradesh

- Irrigation was little known until 1950. Because cultivable flat/mild slope land is limited, every acre of irrigable land must be planned carefully to raise productivity and discourage Jhum through permanent cultivation.

Irrigation Potential

- Ultimate irrigation potential is 3.60 lakh ha (surface water) and 0.18 lakh ha (groundwater) at irrigation intensity of 200%.
- Net potential area available for irrigated cultivation is about 1.80 lakh ha (derived from 3.60 lakh ha at 200% intensity).

Minor Irrigation

- **Schemes with CCA up to 2,000 ha are classified as Minor Irrigation.**
- Groundwater development is largely through individual/cooperative farmer efforts with finance and savings, while surface minor irrigation is generally publicly funded.
- Because of Himalayan fragility and high rainfall intensity, irrigation structures often get damaged.
- About 30% of created potential (0.36 lakh ha) is reportedly defunct due to water-related damages.

Utilization Gap

- Against 1.20 lakh ha potential created, only 0.48 lakh ha is utilized (40%), leaving a 60% utilization gap.

Major and Medium Irrigation

1. Deopani Multipurpose Project

- ✓ Located in Lower Dibang Valley District
- ✓ Irrigation potential: 5,000 hectares CCA
- ✓ Power generation: 4 MW
- ✓ Estimated cost (2004 price): ₹ 77.03 crore
- ✓ Cost sharing: Irrigation – 57% | Power – 43%

2. **Pappu Valley Medium Irrigation Project**
 - ✓ Located in East Kameng District
 - ✓ Irrigation potential: 2,000 hectares CCA
 - ✓ Power generation: 750 kW
 - ✓ Estimated cost (2003 price): ₹ 26.00 crore
3. **Sunpura Circle Medium Irrigation Project (Paya, Hatiduba, Yealiang & Zeko Villages)**
 - ✓ Located in Lohit District under Sunpura administrative circle
 - ✓ Irrigation potential: 2,170 hectares Culturable Command Area (CCA)
 - ✓ Estimated cost (2001 price): ₹ 13.30 crore
4. **Sille Remi Medium Irrigation Project**
 - ✓ Located in East Siang District
 - ✓ Under survey and investigation in collaboration with NERIWALM, Tezpur
 - ✓ Proposed irrigation potential: 2,700 hectares CCA

Command Area Development (CAD)

CAD brings created potential into utilization through:

- **Hardware:** field channels, drains, reclamation, system correction
- **Software:** warabandi (regulated distribution), formation of registered Water User Associations (WUAs), and training.
- The objective is farmer-department partnership and eventual transfer of irrigation management to farmers.

Fisheries in Arunachal Pradesh

Because altitude ranges from about 100 m to 7000 m above mean sea level, fish habitats vary widely. **Fishery activities are grouped into three ecological zones.**

Ecological Zones

- **Lower altitude/tropical zone (10% area):** up to 300 m msl; warm water resources in foothills/plains bordering Assam and Nagaland.
- **Middle altitude/subtropical zone (70% area):** 300–1200 m msl; maximum fish diversity; both cold and warm water resources.
- **High altitude/alpine zone (20% area):** above 1200 m msl; ideal for cold-water fishery.

Fisheries Resources

- Fisheries resources include rivers (2000 km), reservoirs (160 ha), beels/lakes/swamps (2500 ha), ponds/mini-barrages (250 ha), and low-lying areas (575 ha).

Current Contribution to Production

- 48% fish production comes from ponds/tanks, 41% from paddy fields, 6% from beels/lakes, and 5% from rivers/streams.

Development Schemes

- The Government of Arunachal Pradesh has introduced several schemes to promote fisheries development and enhance fish production across the state. **Under the Rural Aquaculture scheme, new ponds are excavated with people's participation and government subsidy to encourage fish farming at the village level.** This programme has helped farmers adopt scientific aquaculture and increase their income.
- **The Paddy-cum-Fish Culture scheme provides subsidy and technical support for raising fish along with paddy cultivation.** In this system, common carp is cultured in paddy fields, allowing farmers to obtain both rice and fish from the same land. This practice is particularly popular in the Apatani Plateau of Ziro in Lower Subansiri district.
- **Another important initiative is the reclamation of beels and lakes for both capture and culture fisheries.** These water bodies are developed under private as well as government sectors, and fish seeds are supplied to farmers to improve production.
- **For the high-altitude regions, cold-water fishery development has been promoted through the introduction of trout in snow-fed streams and the establishment of trout farms and hatcheries.** This has expanded fish production as well as recreational and tourism opportunities in the state.

Special Fisheries Notes

- Mahaseer is a premier sport fish and has supported International Angling Festivals, creating tourism potential.
- Trout fishery (Brown and Rainbow) is popular for stocking cold-water resources and recreation, especially in West Kameng and Tawang.
- Fish breeding via eco-hatcheries for Indian major carps and exotic carps is reported at Emchi (Papum Pare) and Lathao (Lohit), while trout breeding is in West Kameng and Tawang.

Animal Husbandry (Tribal Context)

- **Animal husbandry is central to the socio-economic life of tribal communities.**
- High-altitude cold conditions encourage a fat- and protein-rich diet; hunting exists but not regularly, so livestock rearing supports continuous meat supply.
- Common domesticated animals include cows, pigs, goats, ducks and hens, and they are also used as ritual offerings.

Pig Rearing

- Pig husbandry is closely integrated with agricultural systems and pigs are both economically and ritually important.

- Pork is a major fat/protein source and is valued socially. Pigs are used for wedding feasts, settling disputes, paying fines, and as prestige goods/medium of exchange.
- Pigs are productive due to high reproductive rate, disease resistance, and manure production useful for farming.

Chicken and Fowls

- Chickens/fowls and eggs are regularly used in rituals and are kept as common domesticated animals.

Mithun (Bos frontalis)

- **Mithun is a rare and important semi-domesticated livestock species indigenous to North-East India.**
- It has potential for quality meat, milk and leather.
- Mithun represents wealth, status and political prestige, and it is essential for major rituals and bride-wealth exchanges.
- Mithun is not herded like cattle; they roam forests and are identified by marks.
- Skulls of sacrificed mithun are displayed on house walls as symbols of wealth.

4

CHAPTER

Industries of Arunachal Pradesh

- Arunachal Pradesh has a developing industrial base mainly dominated by small and medium-scale industries that depend largely on forest resources and traditional skills.
- Most industries are based on forest produce, handicrafts, handloom, cane & bamboo, horticulture and tourism.
- The state has established industrial infrastructure to support growth.
- There are 12 industrial estates along with Integrated Infrastructure Development Centres, Industrial Growth Centres and notified Industrial Areas across different districts.
- The Arunachal Pradesh Mineral Development and Trading Corporation manages the exploration, transportation and commercial use of mineral resources.

Major Types of Industries

Arts & Crafts / Handicrafts

- Arunachal Pradesh has a rich tribal tradition of handicrafts.
- **Handloom and handicrafts form an integral part of the socio-economic life of the people, especially women.**
- Products include weaving, basketry, pottery, smithy work, wood carving and painting.
- The Department of Textiles & Handicrafts promotes this sector through training and self-employment schemes.

Cane & Bamboo Industry

- **Cane and bamboo crafts are among the most important traditional cottage industries of the state.**
- **Common products:** baskets, chairs, tables, racks, cradles, trays, headgear, caps.
- **Major districts:** East Kameng, Papum Pare, Changlang, Subansiri, Siang, Lohit, Dibang Valley.

Weaving Industry

- Weaving is one of the most important traditional cottage industries of Arunachal Pradesh.
- It is mainly practiced by women throughout the state.
- Women weavers have a strong sense of colour combination and design aesthetics.
- Common colours used are black, yellow, dark blue, green, scarlet and madder.
- **Products:** Sherdukpen Shawls, Apatani jackets and Scarves, adi skirts, and bags, Mishmi Shawls, Blouses and jackets and Wancho Bags.

Wood Carving

- Wood carving is one of the oldest traditional art forms of Arunachal Pradesh.
- Unique indigenous wood carving is practiced mainly in Tirap, Upper Siang, West Siang, Lohit and Tawang.
- Items include wooden masks, idols, warrior figures and decorative pieces.
- Traditionally used to decorate Morang (youth dormitories).
- Monpa wood carvers make cups, dishes, fruit bowls and ceremonial masks.
- Khambas and Membas of West Siang also carve wooden masks.
- The Khamtis carve religious images, dancer figures, toys and decorative objects.
- The Wancho tribe of Tirap is considered the chief centre of wood carving.

Traditional Ornaments

- Bead and grass ornaments are culturally significant and mainly produced by women.
- Products: necklaces, wrist bands, waist bands, headgear and earrings.
- Major areas: Tirap and Changlang.

Carpet Industry

- Carpet weaving is an important occupation in Tawang, West Kameng, Changlang and Upper Siang.
- Products include floor coverings, wall hangings and cushion pads.
- Recognized nationally and internationally for quality.

Tourism Industry

- **Tourism has huge potential due to cultural diversity, wildlife, natural beauty and adventure opportunities.**
- **Types:** cultural, eco, wildlife, historical and adventure tourism.
- However, poor connectivity, lack of infrastructure and permit systems (ILP/RAP/PAP) limit growth.

Industrial Policy of the State

- The State Government encourages industrialization through private and cooperative participation.

Key provisions:

- Promotion of industrial units for sustainable development
- Priority to employment and self-employment for local people
- Encouragement of outside investors
- 100% equity allowed initially for 30 years, later reduced to 49% with 51% local ownership
- Land can be leased to entrepreneurs for 30 years (renewable)

Priority Industries

- Industries based on local raw materials, textiles & handicrafts, electronics, non-timber forest products, infrastructure, tourism, medical and educational services are given priority.



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