

Biodiversity and Wildlife Conservation in Rajasthan

- Ecological systems
- Environmental challenges in Rajasthan
- Wildlife / ecological conservation.

Ecological Systems

- Rajasthan is divided into 4 ecological systems:

- 1) Desert Ecosystem
- 2) Aravalli Ecosystem
- 3) Eastern Plains Ecosystem
- 4) Hadoti Ecosystem

1. Desert Ecosystem

- Located in the northwest part of Rajasthan.
- Vegetation: This ecosystem has xerophytes or desert thorny plants, such as cactus, thorny shrubs, danda thor (a type of desert plant).
- Wildlife: Desert fox (Barmer), godawan (Great Indian bustard) (Jaisalmer), chinkara (Ganganagar), Indian gazelle, kurja (Jodhpur), small kinkara (a type of bird), blackbuck (Churu).
- Imp. – less biodiversity is found here due to low rainfall and vegetation density.

2. Aravalli Ecosystem

- This extends from south-west to north-east in Rajasthan.
- Vegetation: Subtropical evergreen, tropical dhok, tropical dry monsoon.
Ex. – Ambartari, Salar/sal, khair, palash.
- Wildlife: Kabr bijju (Palm Civet), wolves (Rajsamand), kharmor (Ajmer), Wild cock (Sirohi), cheetal (Jaipur), sambhar (Alwar), rabbit (Dausa).

Note: This ecosystem has the highest biodiversity due to its dense vegetation.

3. Eastern Plains Ecosystem

- This ecosystem is located to the east of the Aravalli Range.

- This ecosystem has tropical dry monsoon vegetation(Deciduous), such as sal, teak, sisam, Palash, Khair.
- Wildlife: This ecosystem has high avian biodiversity(Ex.- 1. Keoladeo – heaven of birds 2. Bandh Baretha – Nest of birds), such as:
 - Jalpipi (Bronze winged jacana)- Banswara
 - Janghil(Painted stork)- Dungarpur
 - Sarus(Siberian crane) - Bharatpur
 - Peacock - Bhilwara
 - Swan - Tonk
 - Indian Skimmer (Panchida) – Dholpur

4. Hadoti Ecosystem

- This ecosystem is located in the southeastern region of Rajasthan (Plateau region).
- This ecosystem has teak forests.
- Wildlife: This ecosystem has high aquatic biodiversity, such as:
 - Alligator (Karauli), crocodile (Baran), gangetic dolphin, udbilav (Otter) (Kota), Golden Pheasant (Bundi).
- Vegetation: teak, gulhar, mahua, tendu.
- Characteristics :
 - Highest rainfall in this ecosystem that's why the availability of surface water is high

Note : Aquatic biodiversity is mostly found in this ecological system.

Environmental Problems/Challenges in Rajasthan

Challenges (50 words)

- In Rajasthan, there are fewer wildlife species compared to its area.

Reasons:

<i>Human-causes</i>	<i>Climate/Environmental</i>
<i>1. Increasing population and Livestock.</i>	<i>1. Low rainfall in Rajasthan</i>
<i>2. Deforestation</i>	<i>2. Scarcity of surface and groundwater</i>
<i>3. Increasing urbanization and industrialization</i>	<i>3. Less density of natural vegetation</i>
<i>4. Increasing conflict between human & wildlife</i>	<i>4. Increasing desertification</i>
<i>5. Increasing mining in the Aravali region</i>	<i>5. Increasing conflict between wildlife</i>

Wildlife/Ecological Conservation

After Assam, Rajasthan is the second largest state in India for wildlife. Rajasthan was known as the "hunters' paradise" before independence. After independence, due to unregulated cutting of trees and illegal hunting, both the central and state governments have been working together to conserve forests and wildlife.

Wildlife can be conserved in two ways

<i>1) In-situ Conservation: Conserving wildlife in their natural habitat.</i> <i>○ National parks (3 in Raj.)</i> <i>○ Wildlife sanctuaries(27)</i> <i>○ Tiger conservation project(5)</i> <i>○ Ramsar sites(2 in Raj)</i> <i>○ Conservation reserves(37)</i> <i>○ Hunting prohibited areas (33)</i> <i>○ Biosphere reserves</i>	<i>2) Ex-situ Conservation: Conserving wildlife outside their natural habitat.</i> <i>○ Zoological parks</i> <i>○ Botanical gardens</i> <i>○ Animal gene bank and aquarium</i>
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In-situ Conservation

- *National Parks: Rajasthan has three national parks, which are:*
 - a) *Ranthambore National Park (1980)*

b) Keoladeo National Park/Ghana Bird Sanctuary (1981)

c) Mukundra Hills National Park (2012)

a. Ranthambore National Park:(1980)

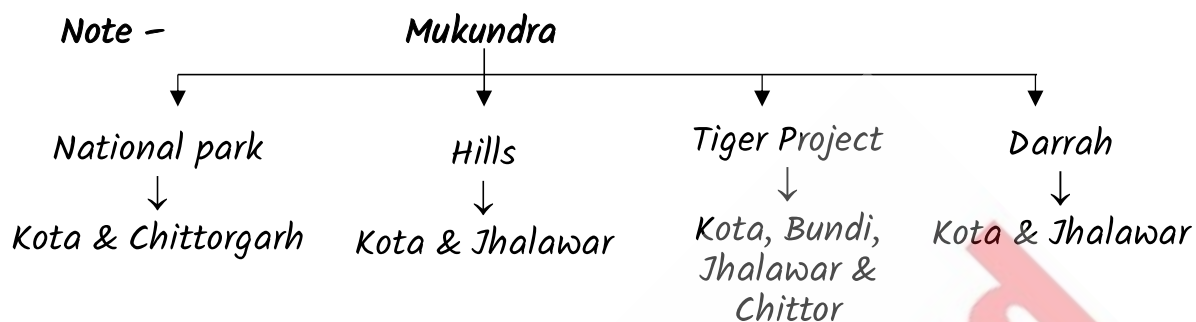
- Located in Sawai Madhopur.
- Area: 282.03 km²
- Rajasthan's first national park, known as the "Land/house of tigers."
- Rajasthan's first tiger project, known for its tigers like Machli/T-16, T-24(Krishna).
- Listed in national tiger project since 1974
- Famous for the Trinetra Ganesh temple, Jogimahal, and Kukkur Ghatti (Dog Valley).
- Dominated by dhok trees.
- Ponds(Situated in Ranthambore): Kala Talab, Jungli Talab, Sukh Talab.

b. Keoladeo National Park/Ghana Bird Sanctuary (1981):

- Located in Bharatpur.
- Area: 28.73 km²
- UNESCO World Heritage Site (1985), the only natural heritage site in Rajasthan.
- Siberian cranes visit here during the winter.
- Known as the "bird's paradise/heaven of birds."
- Included in the Ramsar List in 1981.
- Cultural site : Keoladeo temple (Lord shiva) is located in this national park.
- Dr. Salim Ali's workplace.
- Ajan Dam is located in this sanctuary.
- In this national park "Aincha grass" is found in abundance.

c. Mukundra Hills National Park (2012):

- Extension – Kota & Chittorgarh.
- Rajasthan's latest national park.
- Rajasthan's largest national park, covering 297.62 square kilometers.
- Famous for its gagrani parrots and tigers.
- Rajasthan's third tiger project.
- Vegetation – teak trees.
- Cultural site – Abli-meeni palce



Wildlife Sanctuaries in Rajasthan (26)

Largest

1. National Desert Park- Jaisalmer, Barmer(3162 km²)
2. Kailadevi Sanctuary - S.Madhampur, Karauli(677 km²)
3. Kumbhalgarh Sanctuary - Udaipur, Pali (611 km²)

Smallest

1. Sariska-A (3 km²)
2. Sajjangarh Sanctuary (5 km²)
3. Tal Chappar Sanctuary(7 km²)

Prominent Sanctuaries

Name	Location	Year	Features
Ramsagar	Dholpur	1955	
Van Vihar	Dholpur	1955	
Kesarbagh	Dholpur	1955	
Sariska	Alwar	1955	Second tiger project in Rajasthan-1978. Pandupole, bhritarhari temple, Neelkanth Mahadev & Narayani mata Temple Wildlife-Peacock, Green pigeon
Sariska-A	Alwar	2012	Smallest sanctuary of Raj. Total area- 3 km ²
Sawai Madhopur	Sawai Madhopur	1955	

Name	Location	Year	Features
Jaisamand	Salumbar	1955	"Colony of aquatic animals." – because of great aquatic biodiversity
Darra	Kota, Jhalawar	1955	Gagroni parrots
Tal Chappar	Churu	1962	Known for Black buck and Kurja bird. Historical site : Guru Dronacharya Ashram located here. Vegetation : Mochiya grass.
Kumbhalgarh	Udaipur, Pali and Rajsamand	1971	Known for wolves and the Ranakpur Jain temple.
Jawahar Sagar	Bundi, Kota, Chittorgarh	1975	Famous for alligators. Part of Mukundra tiger project. Chambal river flows through this sanctuary. Garadiya Mahadev Temple and Geparnath temple.
National Chambal Alligator sanctuary	Dholpur, Karauli, Sawai Madhopur, Bundi, Kota	1979	Famous for crocodiles, alligators, and dolphins. Extended in maximum districts
Sitamata Wildlife Sanctuary	Pratapgarh, Chittorgarh, Salumbar	1979	High biodiversity, unique ecosystem, Flying Squirrel, leopards,

Name	Location	Year	Features
			porcupines pangolin, deer, four horned antelope(Land of Cheetals) Vegetation – Teak forest, medicinal plants. Jakham, Karmoi & Naleshwar rivers & Iuv-kush water fall is located.
Nahargarh	Jaipur city, Jaipur Rural	1980	Being developed as an exotic park, lion safari, Developed as biological park Rajasthan's 3rd biological park. Bear rescue centre.
National Desert park	Jaisalmer, Barmer (3162 km ²)	1980	Largest sanctuary in Rajasthan, sevan grass, godawan, chinkara, Xerophyte plants, Akalwood fossil park, Breeding centre of Godawan.
Ramgarh-Vishdhari	Bundi	1982	Kanak Sagar Lake (Dugari Dam), 4th tiger project of state, Pythons are found here, Mej river flows here, sandal wood trees. Also known as : land of pythons, Delivery house of tigress.

Name	Location	Year	Features
Jamwaramgarh	Jaipur Rural	1982	Dhok trees, Jamvay Mata Temple
Todgarh Aravalli Sanctuary	Rajsamand, Pali, Beawar	1983	
Phulwari Ki Nal	Udaipur(Kotra)	1983	Som, Mansi, Wakal rivers.
Bhainsrodgarh	Chittorgarh	1983	Chambal and Brahmani rivers, Famous for alligators.
Shergarh	Baran	1983	Snakes, tigers, Parvan River, Shergarh Fort, also known as shelter land of snakes.
Kailadevi	Karauli, Sawai Madhopur	1983	High density of dhok trees. 2 nd largest sanctuary of Rajasthan. Part of Ranthambore tiger project.
Sawai Man Singh	Sawai Madhopur	1984	
Bandh Baretha	Bharatpur	1985	"Home of birds", Kukund river, Bandh Baretha (dam/Lake) is located here.
Sajjanganrh	Udaipur	1987	First biological park, second smallest sanctuary in Rajasthan, presently Udaipur Zoo is situated here.

Name	Location	Year	Features
Bassi	Chittorgarh	1988	Jaleshwar Mahadev Temple
Mount Abu	Sirohi	2008	Dicliptera abuensis (Ambartari), famous for Wildchicken

Tiger Projects in Rajasthan

Rajasthan has 5 tiger projects:

Name	Location	Year Established	Area (km ²)	Notable Features
Ranthambore	Sawai Madhopur, Karauli, Bundi, Tonk	1974	1530.23	Ranthambore National Park, Sawai Madhopur Sanctuary, Kailadevi National Park, National Chambal Sanctuary
Sariska	Alwar, Jaipur city, Jaipur Rural	1978	1213.34	Sariska Sanctuary, Jamwaramgarh Sanctuary
Mukundra Hills	Kota, Bundi, Jhalawar, Chittorgarh	2013	1135.78	Mukundra Hills National Park, Darra Sanctuary, Chambal Sanctuary, Jawahar Sagar Sanctuary
Ramgarh-Vishadhari	Bundi, Kota, Jhalawar	2021	1496.49	
Dholpur-Karauli	Dholpur-Karauli	2023	599.64	

Ramsar Sites:

- Rajasthan has two Ramsar sites:
 1. Keoladeo (1981) - Siberian cranes
 2. Sambhar (1990) - Kurja and flamingos

Conservation Reserves:

- Rajasthan has a total of 36 conservation reserves:
- Jodbeed Gadhwala → Bikaner
- Jawai Bandh Leopard-I → Pali
- Jawai Bandh Leopard-II → Pali
- Beed → Jhunjhunu
- Bassiyal Khetdi → Neem ka Thana
- Bassiyal - Khetri Bagar → Neem ka Thana
- Mansa Mata → Jhunjhunu, Neem ka Thana
- Bisalpur → Kekdi
- Sundha Mata → Jalore, Sirohi
- Shakambhari → Sikar, Neem ka Thana
- Gogelaav → Nagaur
- Rotu → Nagaur
- Gudha Vishnoiyan → Jodhpur
- Ummedganj Pakshi vihar Conservation reserve → Kota
- Sahabad Conservation reserve → Baran (Largest in the state)
- Beed Ghaas Fuliya Khurd → Shahpura
- Baghdarra Crocodile Conservation reserve → Udaipur
- Rankhar → Santhore
- Shahbad - Talhati → Baran
- Jhalana-Aamagarh → Jaipur
- Vadakheda → Sirohi
- Ramgarh - Kunji - Sunavas → Baran
- Arwar Gaav (Khadmor) → Ajmer (Kekri)
- Khichan (Kurja) → Phalodi
- Hamirgarh → Bhilwara
- Banjh Amli → Baran
- Sorsan - I → Baran

- Sorsan - II → Baran
- Sorsan - III → Baran
- Mahseer → Udaipur
- Beed Fatehpur → Sikar
- Beed Muhana - A → Jaipur
- Beed Muhana - B → Jaipur (Smallest)
- Amrakh Mahadev Leopard Conservation Reserve → Udaipur
- Baleshwar → Sikar and Neem ka Thana (largest)
- Ganga Bhairav Ghati → Ajmer
- Aasop conservation Reserve → Bhilwara

Hunting Prohibited Areas (Total 33 in Rajasthan)

- Largest: Kotsar Samvatsar (Churu, Bikaner)
- Smallest: Kanak Sagar (Bundi)
- Others:
 - Jodhpur: Doli, Guda Vishnoiyan
 - Bikaner: Jodbeed, Mukam, Bajju, Deshnok
 - Ajmer: Sokhaliya, Tilora
 - Jaipur: Santhal, Mahla

II. Ex-situ Conservation:

A. Rajasthan has 5 zoo

i. Jaipur Zoo :

- Rajasthan's first Zoo.
- Established by Ram Singh II (1876) in Ram Niwas Bagh.
- Currently shifted to Nahargarh Sanctuary.
- Alligator breeding centre is located here.

ii. Udaipur Zoo :

- Established in 1878 in Gulab Bagh (Udaipur).
- Rajasthan's second zoo.
- Currently shifted to Sajjangarh Biological Park.

iii. Bikaner Zoo : Established in 1922.

iv. Jodhpur Zoo : Established in 1936.

- Pakshi shala and godawan breeding center located here.

v. Kota Zoo : Established in 1954.

B. Deer Parks: Rajasthan has 7 deer parks.

1. Ashok: Jaipur
2. Sanjay: Jaipur Rural
3. Amrita Devi: Jodhpur
4. Machia Safari: Jodhpur
5. Pushkar: Ajmer
6. Sajjanganrh: Udaipur
7. Durg: Chittorgarh

• **District Mascots of Rajasthan**

<u>District</u>	<u>Mascot</u>
1. Ajmer	- Kharmor Bird
2. Bhilwara	- Peacock
3. Alwar	- Sambar Deer
4. Banswara	- Bronze Winged Jacana(jalpipi)
5. Baran	- Indian Crocodile
6. Barmer	- Fox
7. Bikaner	- Batwad Teetar/Sand grouse
8. Bharatpur	- Siberian Crane
9. Bundi	- Golden Pheasant(Surkhab)
10. Chittorgarh	- Four horned antelope (Chausingha)
11. Churu	- Blackbuck
12. Jhunjhunu	- Black pheasant(Kala teetar)
13. Dausa	- Rabbit
14. Dholpur	- Panchira (Indian Screamer)
15. Dungarpur	- Painted Stork (Jhanghil)
16. Hanumangarh	- Chhota Kilkila (King Fisher)
17. Jaisalmer	- Godawan(great Indian bustard)
18. Jalore	- Bear
19. Jhalawar	- Gagrani Parrot
20. Jodhpur	- Kurja Bird
21. Karauli	- Alligator
22. Kota	- Otters (Udbilao)
23. Nagaur	- Flamingo(Rajhans)
24. Tonk	- Swan (hans)
25. Pali	- Leopard
26. Pratapgarh	- Flying Squirrel
27. Rajsamand	- Wolf
28. Sawai Madhopur	- Tiger
29. Sri Ganganagar	- Chinkara

- | | |
|-------------|--------------------------|
| 30. Sikar | - Shahin (Hawk) |
| 31. Udaipur | - Tomb Brock (Kabir ji) |
| 32. Sirohi | - Wild Chicken |
| 33. Jaipur | - Cheetal (Spotted Deer) |

Main Wildlife:

1. Chinkara:

- Declared as the state animal of Rajasthan in 1981.
- Scientific name: *Gazella Gazella*
- Nahargarh Sanctuary and National Desert Park are known for Chinkara.

2. Godawan:

- Declared as the state bird of Rajasthan in 1981.
- Scientific name: *Ardeotis nigriceps*
- Also known as "Great Indian Bustard" or "Son Chidiya"
- Found mainly in Jaisalmer (Desert Park), Ajmer (Sankhaliya), and Sorsen (Baran).
- Godawan Breeding Centre is located in Jaisalmer (Desert Park), Jodhpur, and Baran (Sorsen).
- Hatching Centre (Artificial breeding centre) - Ramdevra (Jaisalmer).

Economic Geography

Agriculture

- Introduction
- Agro-Climatic Zone
- Types of Agriculture (Indian / World Geo)
- Classification of Agriculture
- Geographical Conditions Suitable for Agricultural Crops
- Efforts for Agricultural Development

Introduction:

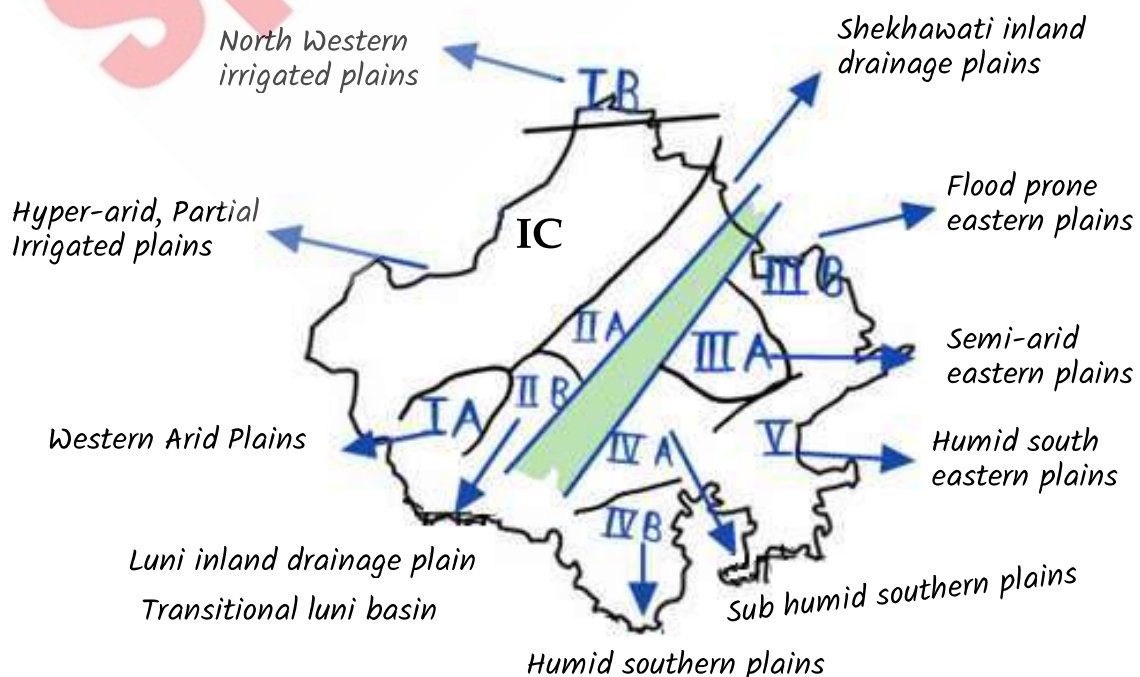
- Agriculture is a part of the primary sector.
- Indian / Rajasthan's agriculture is mainly based on the monsoon, hence it is called "Gamble of Monsoon."
- The eastern plains are called the "heartland of agriculture" because agricultural productivity is high in this region.

Agricultural Regions:

India-15 ,Rajasthan-10

Basis of agricultural regions:

- Crop cycle
- Soil
- Water availability
- Rainfall



1. 1A: Western Arid Plains

- Extent: Jodhpur city, Jodhpur Rural, Phalodi, Barmer, and Balotra
- Rainfall: 20–35 cm
- Crop Pattern:
 - Rabi : Wheat, gram, mustard, Isabgol, cumin, moth
 - Kharif : Bajra, guar

2. 1B: North-Western Irrigated Plains

- Extent: Sri Ganganagar, Hanumangarh, and Anoopgarh
- Rainfall: 10–30 cm
- Crop Pattern:
 - Rabi : Wheat, mustard, gram
 - Kharif : Cotton, sugarcane, rice

3. 1C: Hyper arid and Partially Irrigated Plains

- Extent: Jaisalmer, Bikaner, and parts of Churu (Ratangarh, Sardarshahar, Bidasar, and Sujangarh tehsils)
- Rainfall: 10–30 cm
- Crop Pattern:
 - Rabi : Wheat, gram, mustard
 - Kharif : Bajra, guar, groundnut

4. 1IA: Shekhawati Inland drainage Plains

- Extent: Sikar, Jhunjhunu, Nagaur, parts of Churu (excluding Ratangarh, Sardarshahar, Bidasar, and Sujangarh tehsils), Didwana, and Kuchaman
- Rainfall: 30–50 cm
- Crop Pattern:
 - Rabi : Wheat, mustard, gram
 - Kharif : Bajra, guar, pulses (moong, moth, chawla)

5. 1IB: Luni Inland drainage Plains

- Extent: Pali, Jalore, Sanchore, Sirohi (excluding Pindwara and Abu Road tehsils), Beawar partially (Jaitaran and Raipur tehsils)
- Rainfall: 30–50 cm
- Crop Pattern:
 - Rabi : Wheat, mustard, gram, Isabgol, cumin, castor
 - Kharif : Bajra, guar, til (sesame), castor

6. III A: Semi-Arid Eastern Plains

- Extent: Ajmer, Beawar (excluding Jaitaran and Raipur tehsils), Jaipur city, Jaipur Rural, Dausa, Tonk, Dudu, Kekri, Khairtal-Tijara, Kotputli-Bahror
- Rainfall: 50-70 cm
- Crop Pattern:
 - Rabi : Wheat, mustard, gram, barley
 - Kharif: Bajra, jowar, guar

7. III B: Flood-Prone Eastern Plains

- Extent: Alwar, Deeg, Bharatpur, Karauli, Dholpur, Sawai Madhopur, Gangapur City
- Rainfall: 50-70 cm
- Crop Pattern:
 - Rabi : Wheat, mustard
 - Kharif : Bajra, guar

8. IV A: Sub-Humid Southern Plains

- Extent: Udaipur, Chittorgarh (excluding Badi Sadadi), Rajsamand, Bhilwara, Shahpura, Sirohi (partially including Pindwara and Abu Road tehsils)
- Rainfall: 50-90 cm
- Crop Pattern:
 - Rabi : Wheat, gram, opium
 - Kharif : sugarcane, rice

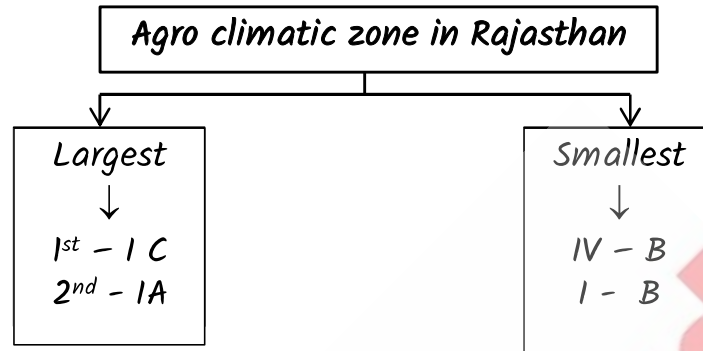
9. IV B: Humid Southern Plains

- Extent: Banswara, Dungarpur, Pratapgarh, Salumbar, and Badi Sadadi tehsil of Chittorgarh
- Rainfall: 50-110 cm
- Crop Pattern:
 - Rabi : Wheat, opium, gram
 - Kharif : Maize, rice, sugarcane

10. V: Humid Eastern Plains

- Extent: Kota, Bundi, Baran, Jhalawar
- Rainfall: 65-110 cm
- Crop Pattern:
 - Rabi : Wheat, gram, mustard, spice crops

- Kharif : Maize, sugarcane, rice, soybean



Types of Agriculture

Scientific Classification

General Classification

1. Scientific Classification

Agriculture

Sericulture
Pisciculture
Apiculture
Viticulture
Horticulture

Pomoculture
Floriculture
Olericulture
Oliviculture
Silviculture
Vermiculture

Production

Rearing of silk worms
Rearing of fishes
Practice of keeping bees
Practice of Growing grapes
Cultivation of Gardens (fruit, Flowers, vegetables)
Cultivation of fruits
Cultivation of flowers
Cultivation of vegetables
Olive
Growing forests
Cultivation of earth worm

2. General Classification

- i. Mixed Agriculture – Agriculture + Animal Husbandry
Note :- In Rajasthan maximum mixed agriculture – Barmer
- ii. Barani Agriculture – Agriculture based on monsoon
Note :- Maximum in Barmer in Rajasthan.
- iii. Arid Agriculture – Agriculture which is based on rainfall less than 75cm rainfall.
Example :- Bajra, Moong, Moth, Gram, Guar.
- iv. Humid Agriculture – Agriculture which is based on more than 75 cm rainfall.
Example :- Sugarcane, Rice, Wheat, Cotton.

Types of Cultivation/Agriculture :-

- I. Monoculture – Cultivation of 1 crops in a field in one agriculture year.
- II. Duo culture – cultivation of 2 crops in a field in one agriculture year.
- III. Oligo culture – Cultivation of 3 crops in a field in one agriculture year.
- IV. Relay culture – Relay agriculture is multiple cropping method, in which another crop is sown along with the existing crop.

Note :- Meaning of agriculture year- 1 July to 30th June.

- v. Khadin Agriculture – The agriculture practised by the paliwal Brahmins in western Rajasthan is called “Khadin Agriculture”.

This agriculture is mainly practiced in Jaisalmer.

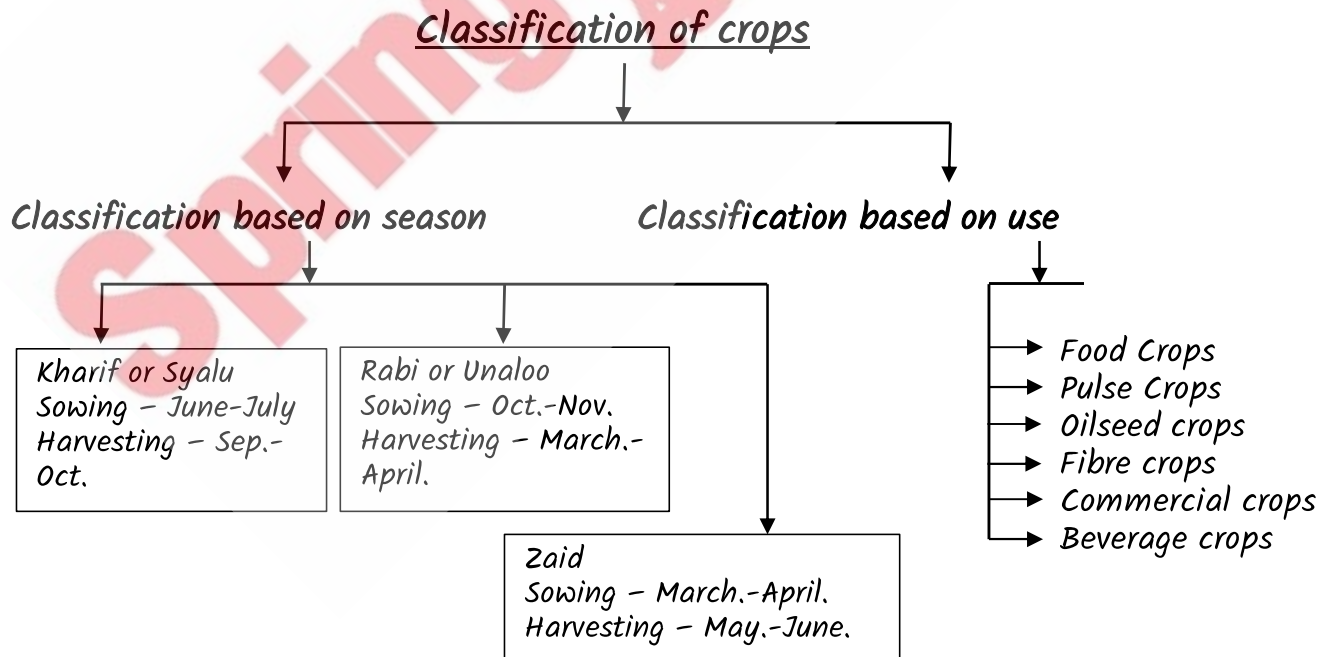
- vi. Shifting cultivation/Agriculture – Agriculture practiced after burning/cutting forests is known as shifting agriculture.

(Other names- Slash/Burn agriculture, In Rajasthan – Walra)

Shifting Agriculture in Rajasthan-

1. Chimata – Aravalli region.
2. Dajiya – Plain region.

Note :- Shifting agriculture is mainly practised in Dungarpur, Banswara and Udaipur in Rajasthan, which is also called “Enemy of environment” and “Agriculture of tribes”.



Crops Classified by Season

Kharif or Rainy Season Crops

- Food Grains: Bajra (Pearl Millet), Jowar (Sorghum), Rice, Maize, Ragi

- **Pulses:** Moong (Green Gram), Moth, Chawla (Cluster Bean), Arhar (Pigeon Pea), Urad (Black Gram)
- **Oilseeds:** Sesame, Soybean, Groundnut, Castor, Sunflower
- **Cash Crops:** Cotton, Sugarcane, Guar, Jute (Golden fibre)

Rabi or Winter Season Crops

- **Grains:** Wheat, Barley
- **Pulses:** Masoor (Lentil), Chana (Chickpea), Matar (Pea)
- **Vegetable Crops:** Mustard, Cumin, Turmeric, Fennel, Garlic, Onion, Ginger, Chili, Coriander, Fenugreek
- **Cash Crops:** Tara Mira, Isabgol (Psyllium Husk), Opium, Tobacco, Flaxseed

Zaid Crops

- Musk melon, Watermelon
- Melons, Vegetables, Cucumber, animal fodder

Classification Based on Use

1. Food/Grain Crops:

- Crops that are used as food are called food/grain crops.
- Examples:
 - Kharif: Bajra, Jowar, Maize, Rice, Ragi
 - Rabi: Wheat, Barley
- Note: Major food crop in India/world: rice
- Major food crop in Rajasthan: Bajra

2. Pulse Crops/Soil Fertilizing Crops:

- Crops that increase soil fertility are called pulse/soil fertilizing crops.
- Examples:
 - Kharif: Moong, moth, chawla, urad
 - Rabi: Gram, masoor, pea

Note: The major pulse crop in Rajasthan is gram. (Chana)

3. Oilseed Crops:

- Crops from which oil is obtained are called oilseed crops.
- Examples:
 - Kharif: Til (sesame), groundnut, soybean, sunflower, castor
 - Rabi: Mustard, rai (rapeseed), linseed, taramira

Note: The major oilseed crop in Rajasthan is mustard.

Other Oilseed Crops:

(i) - Olive

Use : - Food oil, medicine

(ii) - Jojoba (Hohoba)

Use : - Lubricants

(iii) - Ratanjot /Jetropha & Karanj

Use : - Biodiesel

4. Fiber Crops : The crops from which fiber is obtained

- Cotton (white gold)- Major fiber crop
- Jute (golden fiber)
- Bamboo (green gold of tribals/building timber)
- Flax seed(linseed)

5. Cash/Commercial Crops:

- Crops that are widely used in the industrial sector are called cash/commercial crops.
- Examples:
 - Tobacco, opium
 - Cotton, guar, sugarcane, oilseeds
 - The major commercial crop of our country or state is cotton.

6. Beverage Crops:

- Crops that are used as beverages/drinks are called beverage crops.
- Examples:
 - Tea, coffee, tobacco, sugarcane

Geographical Conditions for Major Crops

Crop	Rainfall (cm)	Temperature (°C)	Soil
Bajra	25-50	25-35	Sandy soil
Barley	50-100	15-20	Alluvial soil
Wheat	50-100	15-20	Alluvial soil
Mustard	50-100	15-20	Alluvial soil

Crop	Rainfall (cm)	Temperature (°C)	Soil
Cotton	50-100	Above 25	Black soil
Maize	50-100	21-27	Red loamy
Sugarcane	125-150	21-27°C	Alluvial soil
Rice	150-200	Above 25°C	Alluvial soil

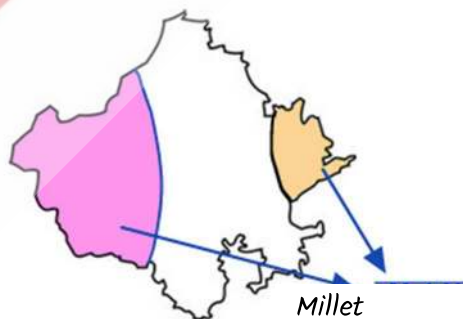
Note: Rabi: 15-20°C, Kharif: 21-28°C

Geographical Conditions and Distribution of Bajra

- Bajra is an example of a kharif crop. Its major geographical conditions are:
 - Rainfall: 25-50 cm of rainfall is required.
 - Temperature: The ideal temperature for bajra is 25-35°C.
 - Soil: Bajra is mainly grown in alluvial and sandy soil.

Distribution:

- Bajra is mainly grown in the northern-western desert region and the eastern plains of Rajasthan.
- Major districts :- Alwar
Barmer
Jaipur
- Major High-Quality Bajra Varieties:
 - Raj 171
 - RCB-2
 - RCB-911
 - RHB-30



Rajasthan Crops and their production areas :-

Crops	Maximum production	Maximum sowing area
(i) Wheat	(1) Sri Ganganagar (2) Hanumangarh (3) Alwar	(1) Hanumangarh (2) Sri Ganganagar
(ii) Bajra	(1) Alwar (2) Jaipur (3) Dausa	(1) Barmer (2) Jodhpur
(iii) Maize	(1) Chittor	(1) Bhilwara

<i>Crops</i>	<i>Maximum production</i>	<i>Maximum sowing area</i>
	(2) Bhilwara (3) Udaipur	(2) Udaipur
(iv) Cotton	(1) Hanumangarh (2) Sri-Ganganagar (3) Jodhpur	(1) Hanumangarh (2) Sri-Ganganagar
(v) Sugarcane	(1) Sri-Ganganagar (2) Chittor (3) Bundi	(1) Sri-Ganganagar (2) Chittor
(vi) Barley	(1) Jaipur (2) Sri-Ganganagar (3) Sikar	(1) Jaipur (2) Sri-Ganganagar
(vii) Rice	(1) Bundi (2) Hanumangarh (3) Kota	(1) Bundi (2) Hanumangarh

High-Yielding Varieties of Major Crops

1. Millet:

- RAJ-171
- RCB-2
- RCB-911
- RHB-30

2. Wheat:

- MG-Nabi (Maru Gehu-Nabi) (Black Wheat)
- Lemi
- Sonalika
- Kalyan Sona (1482)
- Kohinoor
- Durgapura-65
- Malvika
- Chambal-65

3. Cotton:

- Bikaneri Narma
- Narma
- PST-9

- US-81
- US-51
- US-71

4. Rice:

- Basmati
- Mahisugandha
- Padma
- Parmal
- Jamuna
- Chambal

5. Sugarcane:

- CO-419
- CO-449
- CO-1007
- CO-1111

6. Mustard:

- Rajvijay Mustard-II
- Pusa Mustard-25
- Pusa Mustard-21
- Pusa Bold

7. Maize:

- HM-4
- HM-8
- HM-9
- Arun
- Mahi Dhawal
- Mahi Kanchan
- Kiran
- Prabhat

8. Barley:

- Kedar
- Karan

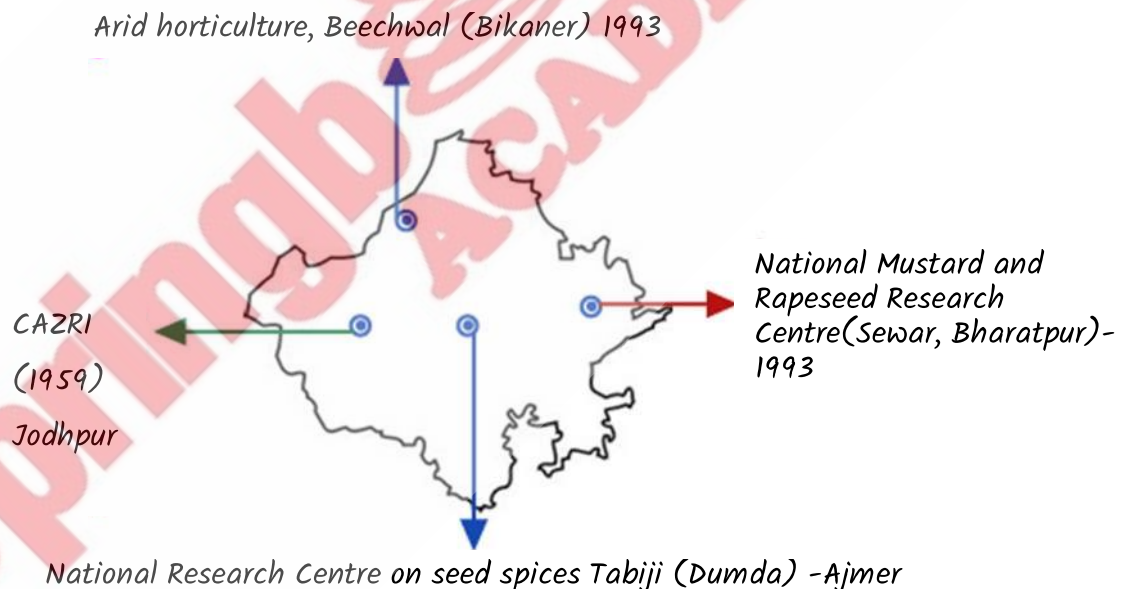
- Kailash
- Jyoti

Agricultural Development

1. Agriculture Research Centre
2. Agriculture Centre of Excellence
3. Agriculture Universities
4. Agriculture Policies
5. K-3 (Krishak Kalyan Kosh)
6. Agriculture Investment Programme (GRAM)

1. Agriculture Research Station :-

(a) Central Government :- ICAR (Indian Council of Agricultural Research)



(b) State Government

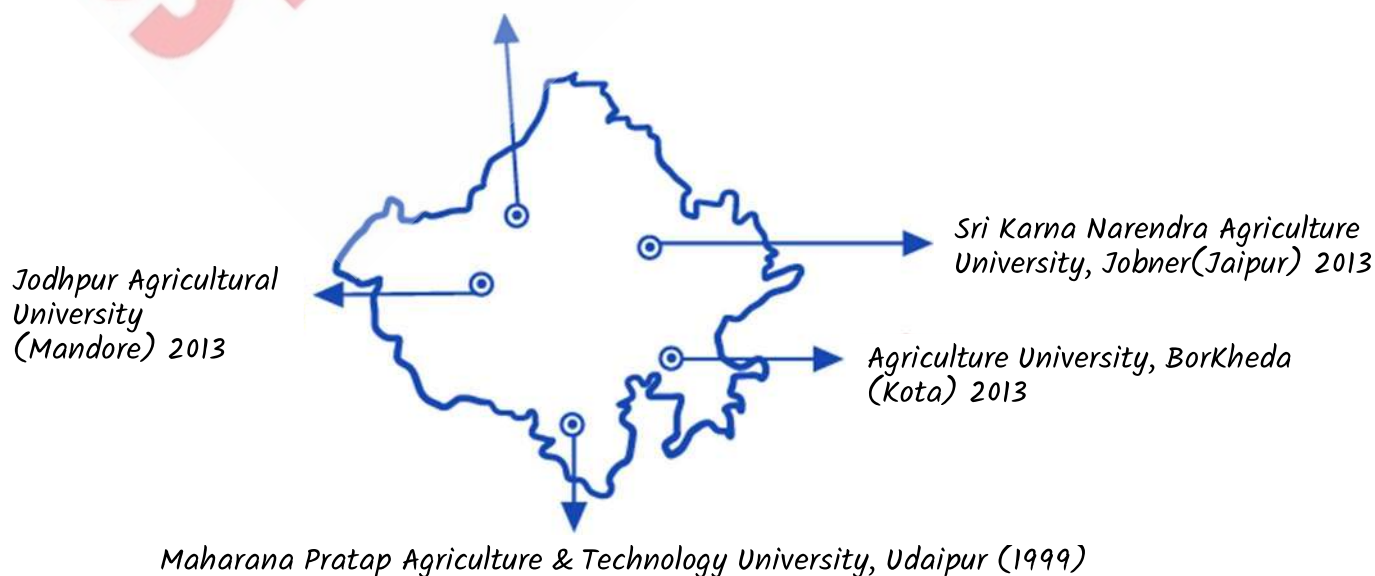
- RARI [Rajasthan Agricultural Research Institute], Durgapura, Jaipur (1943)
- Ber Research Center, Bichawal (Bikaner)
- Date Research Center, Bichawal (Bikaner)
- Bajra Research Center, Jodhpur & Barmer
- Isabgol Research Center, Jodhpur
- Maize Research Center - Banswara
- Rice Research Center - Banswara
- Jowar Research Center - Vallabhnagar (Udaipur)

Agricultural Excellence Centers

Excellence Center	District
1. Date	SagarBhojka (Jaisalmer)
2. Bajra	Jodhpur
3. Fig	Sirohi (Proposed)
4. Citrus plants / Medicinal and Species Plants	Jhalawar
5. Citrus Plants	Kota (Nanta)
6. Vegetables	Bundi
7. Custard apple (Sitafal)	Chittorgarh
8. Guava	1 st - Devdawas - Tonk, 2 nd - Sawai Madhopur
9. Apiculture	Tonk (Proposed)
10. Flowers/Ornamentals	Sawai Madhopur
11. Pomegranate and Dragen fruit	Bassi (Jaipur Rural)
12. Olive	Bassi (Jaipur Rural)
13. Gooseberry(Amla), Mango, Olive	Khemri (Dholpur)

2. Agricultural Universities:

1st → Swami Keshvanand Rajasthan Agricultural University, Bikaner (1987)



4. Agricultural Policies:

- *State Agricultural Policy (26 June 2013)*
- *Organic Agriculture Policy (June 2017)*
- *Rajasthan Agro Processing, Agri Business, and Agri Export Promotion Policy (2019)*

5. K3 (Krishak Kalyan Kosh):

- *Establishment: December 2019*
- *Objective: To provide farmers with fair prices for their agricultural crops/produce.*
- *Total Fund: 7500 crore rupees*

6. GRAM (Global Rajasthan Agritech Meet) Organized in Rajasthan:

- *1st GRAM: Jaipur, November 2016*
- *2nd GRAM: Kota, May 2017*
- *3rd GRAM: Udaipur, November 2017*

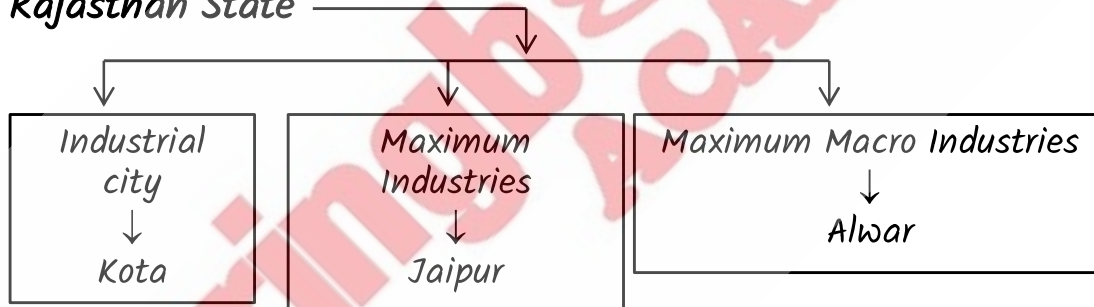
Industries

- *General Introduction*
- *Classification of Industries*
- *Industrial Development*
- *Other Important Facts*

A. General Introduction

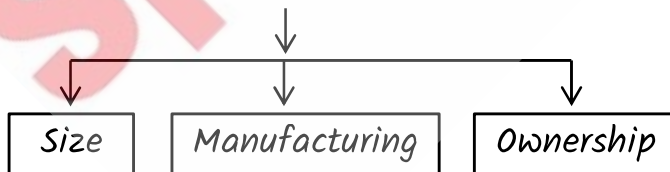
- *Industries are a part of Secondary sector in economy.*
- *Rajasthan is considered a backward state in terms of industrial development due to:*
 - *Harsh climatic conditions in Rajasthan.*
 - *Underdeveloped basic infrastructure.*
 - *Low investment in the industrial sector.*
 - *Lack of skilled workers.*

In Rajasthan State



B. Classification of Industries

Classification of Industries (Based on)



1. Based on Size

- *Industries are classified into three categories based on capital and turnover:*

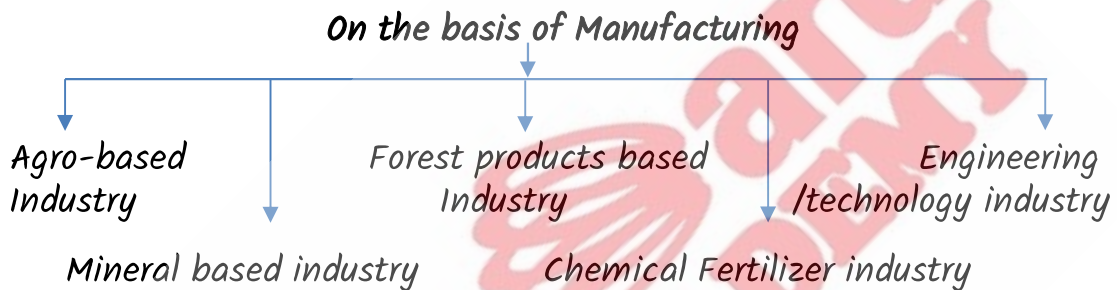
<i>Industry</i>	<i>Capital/Investment</i>	<i>Turnover</i>
<i>Micro</i>	<i>1 crore</i>	<i>5 crore</i>
<i>Small</i>	<i>1-10 crore</i>	<i>5-50 crore</i>
<i>Medium</i>	<i>10-50 crore</i>	<i>50-250 crore</i>

Note : Implemented from 1 July, 2020

- **Cottage Industries:** Low-tech industries whose primary goal is livelihood rather than profit.

2. Based on Manufacturing

- On the basis of manufacturing the industries are divided according to the raw material.



1. Agro-based Industries

1. Cotton Industry
2. Sugar Industry
3. Wool Industry
4. Vegetable Oil and Mustard Oil Industry
5. Dairy Industry
6. Biodiesel
7. Olive Oil Industry

1. Cotton Textile Industry (Raw Material - Cotton)

- First cotton mill in Rajasthan : The Krishna Cotton Mill
 - Established: 1889 (Beawar, Ajmer)
 - Founder: Seth Damodar Das Rathi and Colonel Dixon
- Public sector cotton textile mills**

- 1. Edward (Beawar, 1906)
- 2. Vijayanagar (Beawar)
- 3. Mahalakshmi (Beawar, 1925)

Rajasthan's Cooperative Sector Cotton Mills

- Rajasthan State Co-operative spinning mills, Gulabpura (Bhilwara-1965)
- Gangapur co-operative spinning mill, Bhilwara-1981
- Sri Ganganagar co-operative spinning mill, Hanumangarh - 1978
- Gulabpura spinning & Ginning Co-operative mill - Bhilwara

Note :- Rajasthan State Cooperative Spinning and Ginning Mills Federation Ltd. (SPINFED)

- Established: April 1, 1993
- This is a federation of cooperative cotton textile mills of Rajasthan.

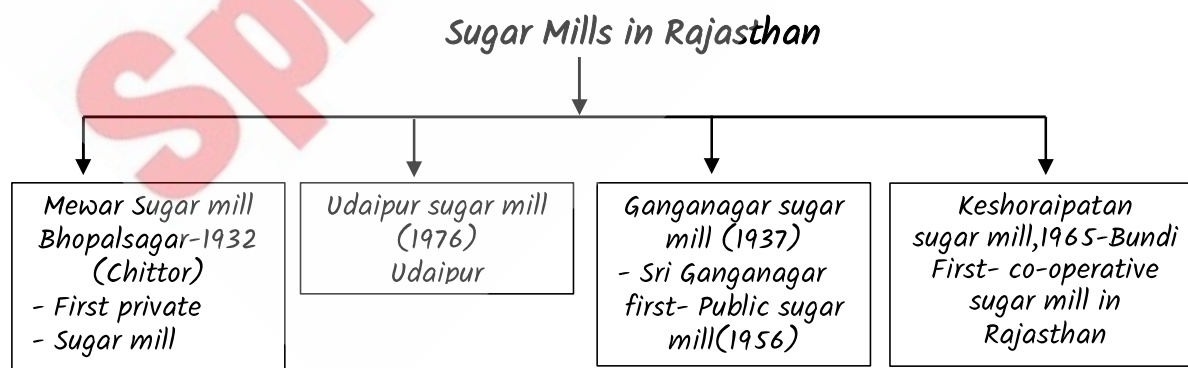
Other Important Facts

- The cotton textile industry is the largest agriculture-based industry.
- It is a traditional industry.
- Women are predominantly employed in this industry.
- **Maharaja Umaid Mills Limited (Pali)**
 - Established: 1939 (Largest textile mill in Rajasthan)

Note: Bhilwara is known as the "Manchester of Rajasthan", "Textile City".

- Rising textile city → Bhiwadi (Khairthal Tijara)

2. Sugar Industry (Raw Material - Sugarcane and Beetroot)



Note: Ganganagar Sugar Mill is the only sugar mill in Rajasthan that produced sugar from both sugarcane and beetroot in 1968. It is currently closed, but its assets are being utilized for other ventures:

- Indigenous liquor manufacturing
- Heritage liquor manufacturing (Jaipur)

- High-tech precision glass factory (Dholpur)
- Sanitizer manufacturing
- Sugar industry is also traditional industry.

3. Wool Industry

- Rajasthan ranks first in wool production in India, accounting for 47.98% of the total production (as of 2022-23).
- Highest wool production in Rajasthan: Jodhpur
- 2nd → Jammu and Kashmir (23%)

Major Wool Industries

1. Central Wool Board – Jodhpur (1987)
2. Largest wool market in Rajasthan: Bikaner
3. Wool Testing Laboratory: Bikaner
4. State Wool Mill: Bikaner
5. Wool Training Center: Jaipur
6. Central Sheep and Wool Research Institute: Avikanagar (Tonk)
7. Worsted Spinning Mills: Ladhun (Didwana-Kuchaman) and Churu

Note : – Wool complex in Rajasthan

(i) Khara – Bikaner

(ii) Beawar

(iii) Narbad Kheda —————> Beawar

(iv) Gohna —————> Beawar

4. Vegetable Ghee and Mustard Oil Industry

- First vegetable ghee factory in Rajasthan: Bhilwara (established 1964)
- Highest vegetable ghee production: Jaipur
- Highest mustard oil production: Jaipur
- Major mustard oil factories:
 - Chambal – Jaipur
 - Veer Balak – Jaipur
 - Netaji – Jaipur
 - Engine Mark – Bharatpur

5. Dairy Industry

- The dairy industry has witnessed significant development in Rajasthan, particularly in Jaipur.
- Rajasthan State Dairy Development Corporation (RSDDC)
 - Established: 1975 (Jaipur)
 - With the assistance of the World Bank
- Three-tier structure for dairy development:
 - State level: RCDF (Rajasthan Cooperative Dairy Federation)- 1977
 - District level: District Cooperative Milk Union – number → 24
 - Village level: Primary Cooperative Milk societies – 18781 (According to economic review 2023-24)
- RCDF (Rajasthan Cooperative Dairy Federation)
 - Replaced RSDDC in 1977 (APEX)
 - HQ – Jaipur

Note: Major dairy units in Rajasthan:

- Rajasthan's first dairy: Padma (Ajmer), 1938
- Warmul (WRMUL): Western Rajasthan Milk Union Ltd. (Jodhpur)
- Urmul (URMUL): Uttari Rajasthan Milk Union Ltd. (Bikaner)
- Gangmul: Ganganagar Milk Union Ltd.
- Camel Milk Dairy:
 - 1st – Bikaner, 2009 (Jodbeed)
 - 11nd – Jaisalmer, 2021 (Pokhran)
- Metro Dairy: Govindgarh (Jaipur Rural) – Capacity: 11 lakh liters
- Camel milk marketing center established in Jaipur. Capacity: 21000 liters/day

6. Biodiesel

- Raw Material: Jatropha, Karanj.
- Biodiesel Refinery: Kaladawas (Udaipur)
- Biodiesel Plant: Jhamar Kotra (Udaipur)

7. Olive Oil

- Raw Material: Olives
- Olive Refinery: Lunkaransar (Bikaner)
- Note: An olive oil plant has been established in Jaipur Rural (Bassi) (Cooperation – Israel).

II. Mineral-based Industries

- Cement Industry
- Glass Industry
- Salt Industry
- Marble Industry
- Granite industry
- Mica industry

I. Cement Industry

- Raw Materials: Limestone, gypsum, and silica
- First cement factory: ACC (Associated Cement Company)
Location: Lakheri (Bundi)
- Established: 1915 (Production: 1917) (Cooperation – Killick Nixon)

White Cement Factories:

- J.K. White Cement Factory: Gotan (Nagaur) 1984
- J.K. White Cement Factory: Mangrol (Chittorgarh)
- Birla White Cement Factory: Khariya Khangar (Jodhpur)

Major Cement Units

- J.K. Cement Factory: Nimbahera (Chittorgarh)
- J.K. Laxmi Cement Factory (Sirohi)
- Grasim Cement Factory : (Kotputli - Behror)
- Bangar Cement Factory : (Pali)
- Associated Cement Factory : Lakheri (Bundi)
- UltraTech Cement Factory: (Chittorgarh)
- Chetak Cement Factory: (Chittorgarh)
- Lafarge Cement Factory: (Chittorgarh)
- Wonder Cement Factory : (Chittorgarh)
- Essar Cement Factory: Lakheri (Bundi)
- Binani Cement Factory: Pindwara (Sirohi)
- Shri Cement Factory: Shri Ganganagar, Jhunjhunu, Beawar
- Shri Ram Cement Factory: Shri Ram Nagar (Kota)
- Mangalam Cement Factory: Modak (Kota)
- Jaipur Cement Factory: Sawai Madhopur

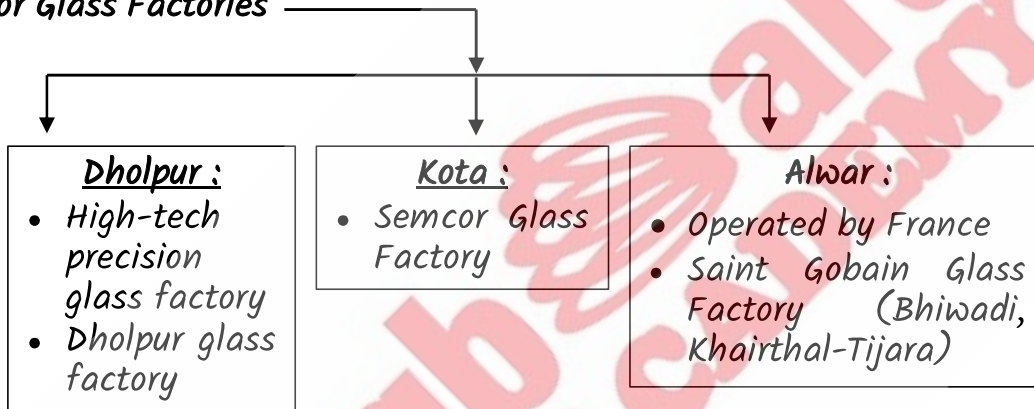
- Ambuja Cement Factory: Rabdiabaas (Beawar) → previously in Pali, Mundwa-Marwar (Nagaur)

Note :- In Rajasthan Cement is mostly produced in Chittorgarh (Nimbahera).

3. Glass Industry

- Raw materials: Silica sand, sodium sulfate, soda ash
- Rajasthan has witnessed significant development in the glass industry, especially in Dholpur and Alwar.

Major Glass Factories



3. Salt Industry

- The salt industry is primarily based on the salt lakes in Rajasthan.

Salt Industries

- Operated by Hindustan Salt Ltd.
- Sambhar (Jaipur Rural) – Maximum salt production
- Pachpadra (Balotra) – best quality salt
- Didwana – Worst quality salt

4. Marble Industry

- Rajasthan ranks first in marble production in India.
- Rajsamand has the highest marble production. (Max. processing units)
- Kishangarh (Ajmer) is the largest marble market center.
- Rajasthan's white marble (Makrana, Didwana, Kuchaman) is famous worldwide.

5. Granite Industry

- Granite production is highest in Jalore, Barmer and Sirohi regions of Rajasthan.
- Jalore is known as the "Granite City" of Rajasthan.

6. Mica Industry

- Maximum production → Bhilwara
- Mica brick factory → Bhilwara
- Bhilwara is also known as the "Mica City".
- Uses of Mica: Mica is used in the production of electronic devices.

III. Forest-based Industries

- Sagwan(Teak) Wood is used
- Carved wooden furniture: Barmer
- Gum production: Chouhtan (Barmer)
- Tassar silk production (program started in 1986): Udaipur, Banswara, Kota

IV. Engineering or Technical Industries

- In Rajasthan it is mainly developed in Jaipur, Alwar and Kota

Industry	Product	Location
National Engineering Company	Ball and bearing	Jaipur
Jaipur Metals	Electricity meters	Jaipur
Capstan Meters	Water meters	Jaipur, Pali
Rajasthan State Electronics Corporation	TV	Jaipur
Man Industries	Iron doors and tower construction	Jaipur
Cable Industries	Cables	Kota
Instrumentation	Instruments/machines	Kota
J&K Electronics	TV	Kota

Industry	Product	Location
Fluorspar Plant	Mixes with iron to make alloys	Dungarpur
Cimmco Wagon Factory (1957)	Railway carriages	Bharatpur
REIL	Renewable energy equipments	Jaipur (Kanakpura)
Hero Corps	Motorcycle	Jaipur (Kukas) Kotputli-Behror (Neemrana)

V. Chemical Fertilizer Industries

- Chambal Fertilizers and Chemicals: Gadhepan (Kota)
- National Chemicals and Fertilizers (DAP - Diammonium Phosphate): Kapasan (Chittorgarh)
- Rajasthan State Chemical Works: Didwana - 1964
- Pyrites-Phosphates and Chemicals Limited: Saladipura (Sikar)

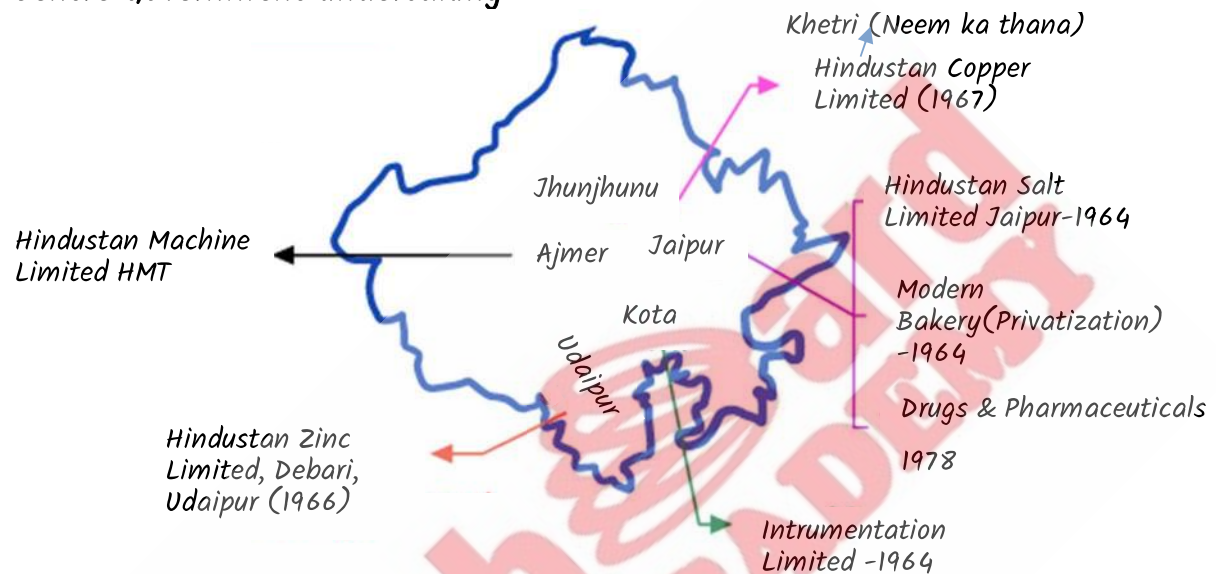
On the basis of ownership :



Public Industry

1. Centre government undertakings - 7
2. State government undertakings - 23
 - Statutory boards-6
 - Companies Act -17

I. Centre Government undertaking-



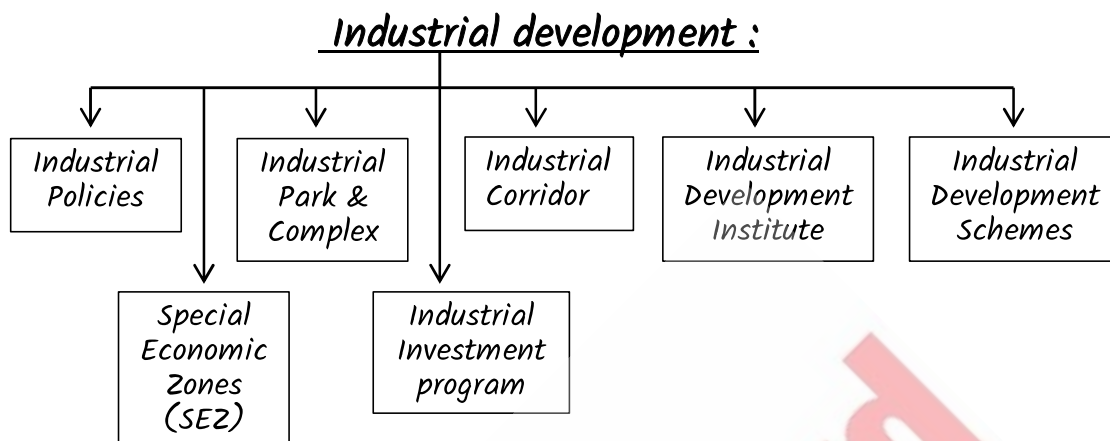
II. Undertakings of the State Government

A. Statutory Boards - 6

- Rajasthan Financial Corporation: 1955
- Rajasthan State Agriculture Warehousing Corporation: 1957
- Rajasthan State Road Transport Corporation (RSRTC): 1 Oct, 1964
- Rajasthan Housing Board: 1970
- Rajasthan State Agricultural Marketing Board: 1974
- Rajasthan State Land Development Corporation: 1975

B. Companies Act - 17

- There are 17 undertakings operating under the Companies Act in Rajasthan, out of which the prominent ones are:
 1. RSMML - Rajasthan State Mines & Minerals Ltd. (30 Oct. 1974) - Udaipur
 2. State Electricity Distribution Corporation - Jodhpur, Ajmer, Jaipur
 3. REIL - Rajasthan Electronics & Instruments Ltd. - Kanakpura, Jaipur
 - REIL develops software and renewable energy plants.



I. Industrial Policies in Rajasthan

General Policies

- 1978
- 1991
- 1994
- 1998
- 2010
- 1 July 2019 (Latest Industrial Policy)

MSME Policy (Micro Small Medium Enterprises Policy)

- 1st - 20 November 2015
- 2nd - 17 September 2022

Handicraft Policy

- 17 September 2022

II. Special Economic Zone (SEZ) - Implementation – RIICO (Rajasthan State Industrial Development and Investment Corporation Ltd.)

- Maximum SEZ in Rajasthan is in Jaipur.

Major SEZs

SEZ	Related Sector	District/Location
Boranada SEZ	Guar Gum, Handicrafts	Jodhpur (Mansarovar)
Sitapura SEZ	Gems & Jewellery	Jaipur
Mahindra SEZ	IT, Automobile, Handicrafts	Jaipur (Kalwara)
Somani SEZ	Hardware & Software	Khairthal-Tijara

SEZ	Related Sector	District/Location
		(Bhiwadi)
RNB SEZ	Textiles	Bikaner
Vatika SEZ (Proposed)	IT	Jaipur

III. Industrial Parks and Complexes

- Japanese Park (JETRO): 1st - Neemrana (Kotputli-Behror),
2nd - Ghiloth (Kotputli-Behror)
 - JETRO - Japan External Trade Organization
- Korean Park (KOTRA): Ghiloth (Kotputli-Behror)
 - KOTRA - Korea Trade Investment Promotion Agency
- Ceramic Zone: Ghiloth (Kotputli - Behror)
- Agro Food Park (State Government): Sri Ganganagar, Jodhpur, Kota, Alwar
- Mega Food Park (Central Government): Rupangarh (Ajmer) 2018
 - Proposed: Mathania (Jodhpur), Palana (Bikaner)
- Information Technology Park (IT Park): Jaipur, Kota, Udaipur, Jodhpur
- Spice Park: Mathania, (Jodhpur), Ramganj Mandi, (Kota)
- Apparel Park / Garment Park: Jagatpura (Mahal Road), Jaipur
- Stone Park: Mandore (Jodhpur), Masalpur (Karauli), Vishnoda (Dholpur), Mandana (Kota)
- Software Park: Kanakpura (Jaipur)
- Floral Park: Khushkhera (Khairthal-Tijara)
- Hosiery Park: Chaupanki (Khairthal-Tijara)
- EPIP - Export Promotion Industrial Park: Sitapura (Jaipur), Boranada (Jodhpur), Neemrana (Kotputli-Behrod)

Note: India's first Export Promotion Industrial Park: Sitapura, Jaipur (1997)

Complexes:

- Woolen Complexes: Khara (Bikaner), Gohana and Narbadkheda (Beawar)
- Ceramic Complexes: Khara (Bikaner)
- Leather Complexes: Manpura Machedi (Jaipur-Rural)
- Petro-chemical Complexes: Balotra (Pachpadra)

IV. Industrial Investment Programs

- Resurgent Rajasthan: 2008 (1st), November 2015 (2nd)
- Invest Rajasthan Summit: 2022 (7-8 Oct, 2022)

3. Rising Rajasthan Global Investment Summit: 2024 (9-10-11 December)

- Among all these programs, the highest investment has been in the energy sector.
- The data for Rising Rajasthan is yet to be released. (Update)

Note: The nodal agency responsible for organizing investment programs is BIP (Bureau of Investment Promotion), established in 1991.

Objective: To attract industrial investments worth more than 10 crores.

V. Delhi Mumbai Industrial Corridor (DMIC)

Western Dedicated Freight Corridor (DFC):

- 1504 km
- Connects Dadri (UP) to JLN Port (Mumbai)
- 38% (approximately 570 km) passes through Rajasthan (Total 6 states and UTs)
- Cooperation :- Japan
- Objective: To boost industrial exports
- On both sides of DMIC, a 150 km wide strip will be developed as DMIC, including 24 industrial areas and 8 industrial investment regions. Out of these, Rajasthan has:

Investment Region

1. Ajmer-Kishangarh
2. Khushkhhera-Bhiwadi-Neemrana :- notified as special investment region on 28 dec. 2020.

Industrial Region

1. Jaipur-Dausa Industrial Region
2. Rajsamand-Bhilwara Industrial Region
3. Jodhpur-Pali-Marwar (RIICO's responsibility) :- notified as special investment region on 12 Oct. 2020.

Rajasthan's First Phase of DMIC

1. Khushkhhera-Bhiwadi-Neemrana (165 sq. km)
 2. Jodhpur-Pali-Marwar (154 sq. km)
- A joint Special Purpose Vehicle Company, "Rajasthan Industrial Development Corporation" (RIDCO), was established on 15 march 2022 for their development.

Note: The first phase includes only government land.

VI. Industrial Institutions

1. RFC (Rajasthan Financial Corporation): 1955 (Jaipur)
2. RAJSICO (Rajasthan Small Industries Corporation Limited): 1961 (Jaipur)
3. RIICO (Rajasthan State Industrial Development and Investment Corporation Limited): 1969 (Jaipur)
4. RUDA (Rajasthan Non-farm/Agriculture Development Agency): 1995 (Jaipur)

A. RFC (Rajasthan Financial Corporation)

- Establishment: January, 1955
- Headquarters: Jaipur
- Objective: To provide short-term loans to micro, small, and medium enterprises (loan amount: ₹20,000-20 crores)

RFC Schemes

1. Flexi Loan Scheme: Provides loans at concessional rates to micro, small, and medium enterprises.
2. Top-up Loan Scheme: Provides loans to micro enterprises for technology and machinery development.
3. Semfex Scheme (Self employment Ex-Serviceman Scheme): Provides assistance to ex-servicemen for establishing their own enterprises.

Note: RFC issues silver, gold, and platinum cards to reliable borrowers.

(b) RAJSICO (Rajasthan Small Industries Corporation Limited)

- Established: June, 1961
- Headquarters: Jaipur
- Objective:
 - To provide training to artisans in tribal areas.
 - To provide raw materials, machinery, and technical assistance to small industries
 - To market products produced by small industries

(c) RIICO (Rajasthan State Industrial Development and Investment Corporation Limited)

- Established: 28 march, 1969 (Reconstituted in 1 Jan., 1980)
- Headquarters: Jaipur
- Objective:
 - To provide medium-term loans to medium and large industries

- To provide land for industries
- To implement SEZ programs
- It is the apex organization for industrial development in Rajasthan.

(d) RUDA (Rural Non-Farm/Agriculture Development Agency)

- Established: 1995
- Headquarters: Jaipur
- Objective: To provide training to rural communities in non-agricultural sectors
- RUDA's training areas include wool and textile industry, leather industry, and small and minor mineral-related industries.

VII. Industrial Development Schemes

(a) Ease of Doing Business Scheme

- Launched in March 2022
- Objective: To improve the ease of doing business in Rajasthan

(b) Mukhyamantri Swavalamban Yojana

- Launched in 2013
- Objective: To provide loans up to ₹10 lakhs to artisans and craftsmen for setting up their own enterprises

(c) Mukhyamantri Yuva Udyamita Yojana

- Launched: 1 April 2013 (Applicable until 31 July 2024 as per March 2023 order)
- Objective: To provide financial assistance and loans to young entrepreneurs with innovative business ideas
- Eligibility: Age 18-35, 10th + ITI or graduate
- Loan Amount: ₹25 lakhs - ₹1 crore (Loan repayment period : 7 years)

(d) Mukhyamantri Laghu Udyog Protsahan Yojana

- Launched: 17 December 2019 (Effective from 31 March 2024)
- Scheme: Interest subsidy scheme for loans to small industries

<i>Loan Amount</i>	<i>Interest Subsidy</i>
₹25 lakhs	8%
₹25 lakhs - ₹5 crores	6%
₹5 crores - ₹10 crores	5%

Other Important Facts

(i) For Industrial Development

- On District Level: District Industrial Centers - 36
- Sub-centers: 8

(ii) Single Window Clearance Act: 2011 (Amended in 2020)

(iii) E-Governance & IT Policy: November 2015

(iv) Special Industrial Institutions of the State

- Computer Aided Carpet (CAP) Design Center: Jaipur
- Computer Aided Textile Design Center: Bhilwara
- Brahmagupt Research and Development Institute: Jodhpur
- Footwear Design Center: Mandore (Jodhpur)
- NIFT (National Institute of Fashion Technology): Jaipur
- Ceramic Research and Development Center: Bikaner

V. Investment Promotion Policy in Rajasthan

- Investment Promotion Policy: 2003
- Rajasthan Industrial and Investment Promotion Policy: 2010
- Rajasthan Investment Promotion Policy: 2014
- Rajasthan Investment Promotion Policy: 17 December 2019
- Rajasthan Investment Promotion Policy: 7 October 2022

Objectives of RIPS 2022

- 15% annual growth in manufacturing and services sector
- Balanced and inclusive regional development
- Creation of 10 lakh employment opportunities by 2027
- Promotion of green hydrogen and alternative energy for environmental protection

Note: Rajasthan's top industrial exports are:

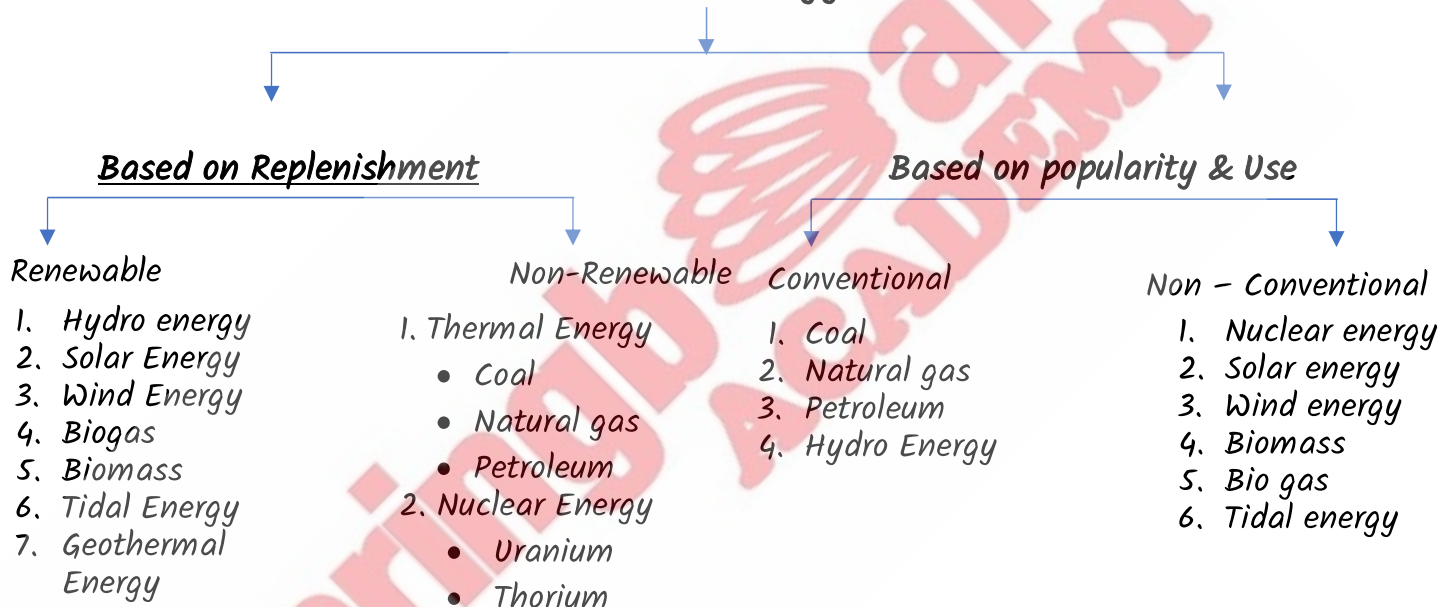
1. Engineering/Machinery
2. Gems and Jewellery
3. Metals
4. Textiles

Springboard
ACADEMY

Energy

- *Classification of Energy*
- *Major Energy Projects in Rajasthan*
- *Energy Institutions*
- *Energy-related Schemes*
- *Other Important Points*

A. Classification of Energy Resources



1. On the basis of popularity & use :-

Conventional Energy Resources:

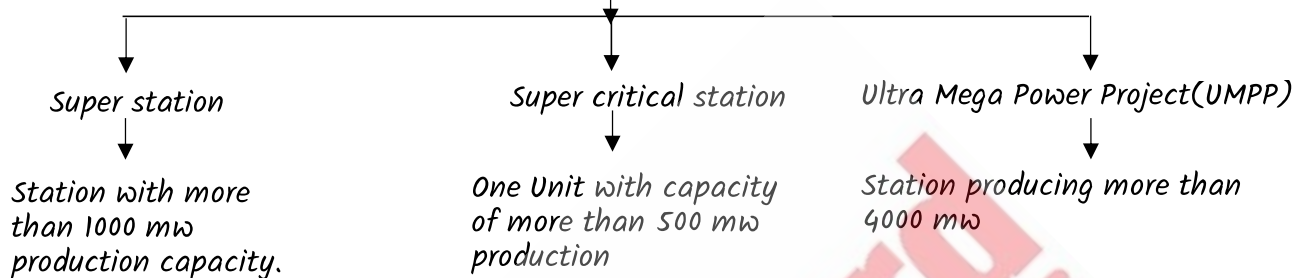
- These are energy resources which are being used for a long time and from which energy is produced using old technology. Examples include hydro energy, thermal energy. (Coal, Gas, Petroleum)

Non-conventional Energy Resources:

- These are energy resources that are not being used conventionally or traditionally and from which energy is produced using new/advanced technology. Examples include nuclear energy, wind energy, solar energy, biogas energy.

Note:

Types of Power Stations Based on Production Capacity



B. Major Energy Projects in Rajasthan

Energy Projects in Rajasthan

I. Conventional Energy

II. Non-Conventional Energy

I. Conventional Energy – Hydro energy & thermal energy

1. State government
2. State : state
3. Centre government

(a) State Government Hydropower Projects:

1. Jakham Small Hydropower Project: Located in Pratapgarh.
 - Production Capacity: 5.4 MW
2. Anas Hydropower Project: Located in Banswara.
 - Production Capacity: 140 MW
3. Indira Gandhi Small Hydropower Project: Located in Sri Ganganagar and Bikaner.
 - Production Capacity: 23.85 MW

(b) State: State-Supported Hydropower Projects:

1. Bhakra-Nangal Hydropower Project:
 - Beneficiary States: Rajasthan, Punjab, Haryana
 - Production Capacity: 1493 MW
 - Rajasthan's Share: 15.2% (227 MW)

2. Beas Hydropower Project: Main Dam : - Pong(H.P.) - 59%, Pandoh (H.P.) - 20%

- States Involved: Rajasthan, Punjab, Haryana
- Rajasthan's Share: 422 MW

3. Mahi-Bajaj Sagar Hydropower Project:

- Beneficiary States: Rajasthan and Gujarat (45:55)
- This project is constructed in two phases:

Year



Phase I :- 1983 :- $2 \times 25 \text{ MW} = 50 \text{ MW}$

Phase II :- 1989 :- $2 \times 45 \text{ MW} = 90 \text{ MW}$

- 100% of the energy produced by this project is distributed to tribal areas in Rajasthan (140 MW).

4. Chambal Hydropower Project:

- A joint project of Rajasthan and Madhya Pradesh.
- Cooperation :- (50 : 50)
- This project generates a total of 386 MW of hydropower from three dams:

Phase -I :- Gandhi Sagar: $23 \text{ MW} \times 5 = 115 \text{ MW}$

Phase -II :- Rana Pratap Sagar: $43 \text{ MW} \times 4 = 172 \text{ MW}$

Phase-III :- Jawahar Sagar: $33 \text{ MW} \times 3 = 99 \text{ MW}$

- Total: 386 MW (Rajasthan - 193 MW, Madhya Pradesh - 193 MW)

5. Rahughat Project: Located in Karauli.

- A project on the Chambal River.
- A joint project of Rajasthan and Madhya Pradesh (50:50).
- Production capacity: 79 MW

(c) Central Government Hydropower Projects:

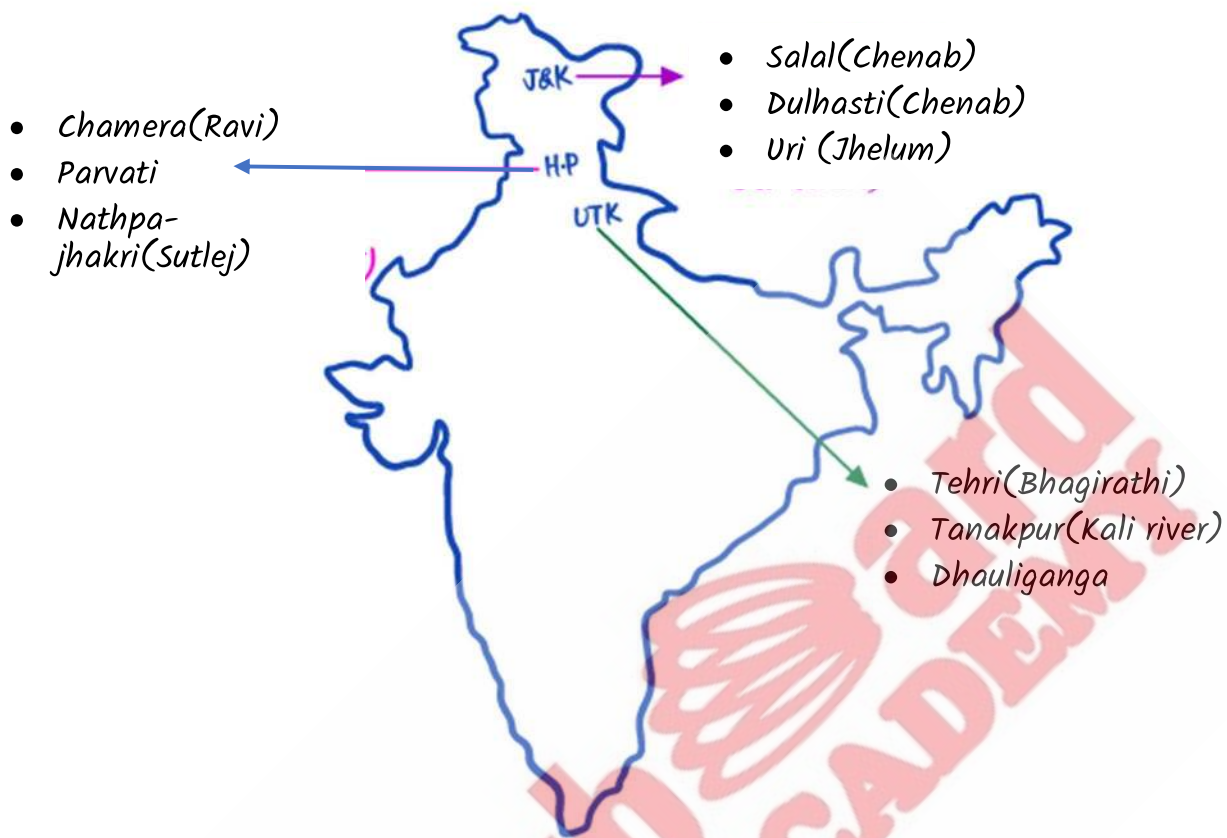
1. Salal Project: Located in Jammu and Kashmir.

- Situated on the Chenab River.
- Operated by NHPC (National Hydropower Corporation).
- Benefits Jammu and Kashmir, Rajasthan, Uttar Pradesh, Punjab, Haryana, Delhi, Himachal Pradesh, and Chandigarh.

2. Dulhasti Project: (Jammu and Kashmir)

- Operated by NHPC.

- *Located on the Chenab River.*
 - *Benefits Jammu and Kashmir, Rajasthan, Uttar Pradesh, Punjab, Haryana, Delhi, Uttarakhand, and Chandigarh.*
3. *Uri Project: (Jammu and Kashmir)*
- *Operated by NHPC.*
 - *Located on the Jhelum River.*
 - *Benefits Jammu and Kashmir, Rajasthan, Uttar Pradesh, Punjab, Haryana, Delhi, Himachal Pradesh, Uttarakhand, and Chandigarh.*
4. *Parvati Project: (Himachal Pradesh)*
- *Located on the Parvati River.*
 - *Operated by NHPC.*
5. *Chamera Project: (Himachal Pradesh)*
- *Located on the Ravi River.*
 - *Operated by NHPC.*
6. *Nathpa Jhakri Project: (Himachal Pradesh)*
- *Located on the Sutlej River.*
 - *Operated by NHPC.*
7. *Tehri Project: (Uttarakhand)*
- *Operated by Tehri Hydropower Development Corporation Limited.*
 - *Located on the Bhagirathi and Bhilangana rivers.*
8. *Tanakpur Project: (Uttarakhand)*
- *Operated by NHPC.*
 - *Located on the Sharda (Kali) River.*
9. *Dhauliganga Project: (Uttarakhand)*
- *Operated by NHPC.*
 - *Located on the Dhauliganga River.*



Conclusion:

- There is a need for more development and planning in hydropower projects to increase energy production and enhance energy security in Rajasthan.

Thermal Energy: (Thermal Power Projects in Rajasthan State)

- The main source of this energy is coal, petroleum, and natural gas. In thermal power projects, coal contributes the most to electricity production.

A. Coal/Lignite-Based Projects:

(a) State Government Projects

(b) State: State Projects

(c) Central Government Projects

a) State Government projects

1. Suratgarh Super Critical Thermal Power Plant: Located in Sri Ganganagar.

- This plant has eight units that produce a total of 2820 MW of electricity. Developed in 5 stage

Phase	Units	Production Capacity
I	Unit 1-2	250 MW each Total : 500 MW
II	Unit 3-4	250 MW each Total : 500 MW
III	Unit 5	250 MW
IV	Unit 6	250 MW
V	Unit 7	660 MW
V	Unit 8	660 MW

Total - 1320 MW

- This is Rajasthan's first super thermal power plant (established in 2002) and is currently (2024) the largest thermal power project in the state.

2. Kota Super Thermal Power Plant: (1983)

- It is Rajasthan's first thermal power project whereas the second super thermal power project.
- This plant has seven units that produce a total of 1240 MW of electricity.

Phase	Units	Production Capacity
I	Unit 1-2	110 MW each Total : 220 MW
II	Unit 3-4	210 MW each Total : 420 MW
III	Unit 5	210 MW
IV	Unit 6	195 MW
V	Unit 7	195 MW

3. Chabra Super Critical thermal Power Plant: Located in Baran.

- Production capacity: 2320 MW
- This is Rajasthan's first critical thermal power project.
- Total Unit → 6, Phases → 3

Phase	Units	Production Capacity
I	Unit 1-2	250 MW each
II	Unit 3-4	250 MW each
III	Unit 5-6	660 MW each

4. Kawai Super Critical Power Plant: Located in Baran.

- Production capacity: 1320 MW
- Partner: Adani Group

Phase	Units	Production Capacity
I	Unit 1-2	660 MW each

5. Kali Sindh Critical Power Plant: Located in Jhalawar.

- Production capacity: 1200 MW
- Proposed: 800 MW (Ultra Power Project)

6. Bhadresh Super Power Plant: Located in Barmer.

- Production capacity: 1080 MW

7. Kapurdi - Jalipa Super Thermal Power Plant: Located in Barmer.

- Production capacity: 1080 MW

8. Giral Thermal Power Plant: Located in Thumbali village, Barmer.

- Production capacity: 250 MW
- Cooperation: Germany

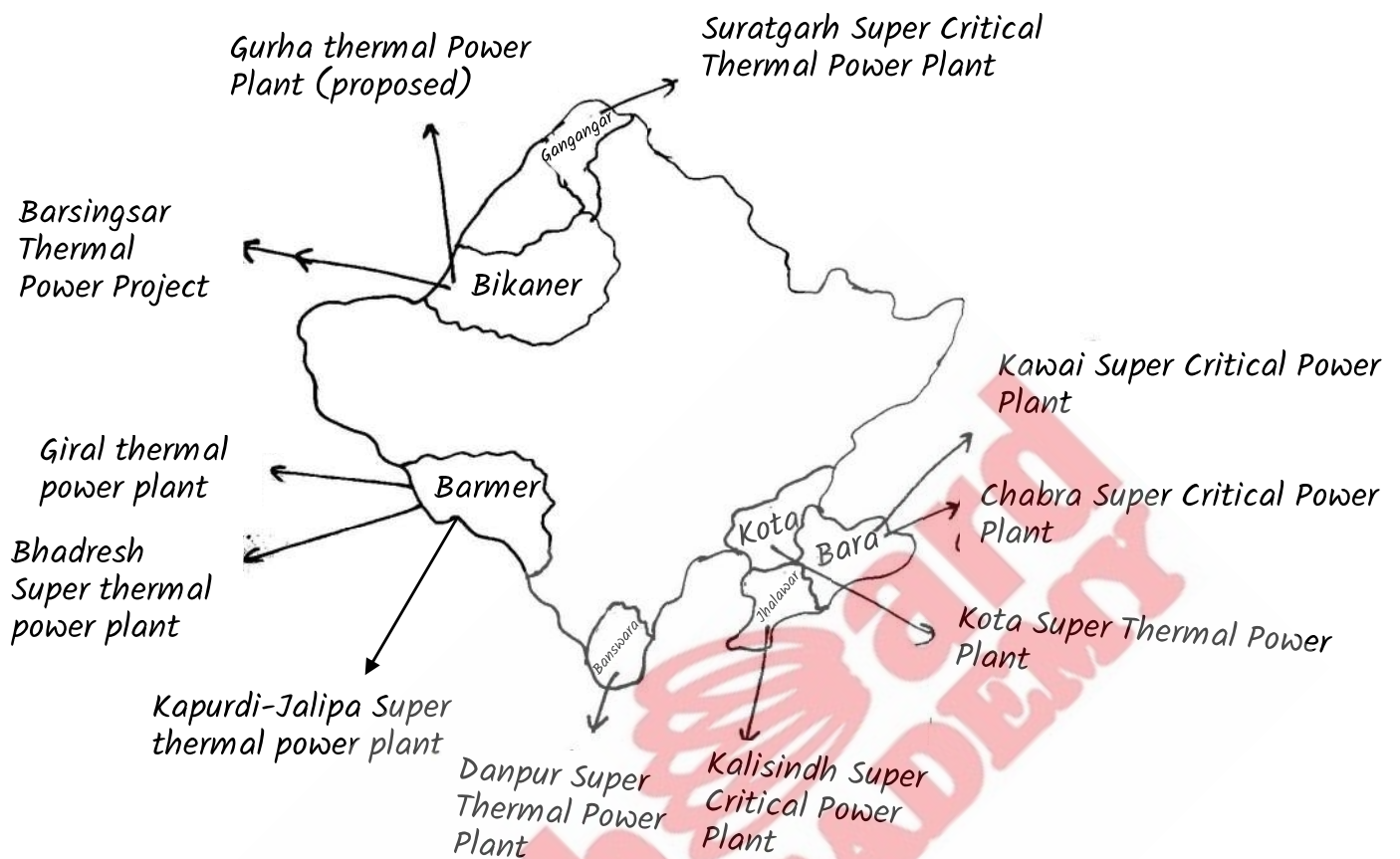
9. Danpur Super Thermal Power Project: Located in Banswara.

- Production capacity: 1600 MW

10. Barsingsar Thermal Power Project: Located in Bikaner.

- Production capacity: 250 MW [125 mw × 2 units]
- Operated by Neyveli Lignite Corporation Limited (Central Government)

11. Gurha Thermal Power Plant(Proposed) : Bikaner



(b) State: State Schemes

A. Satpura Thermal Power Project:

- Location: Betul district, Madhya Pradesh
- Benefiting States: Rajasthan + Madhya Pradesh

c) Central Government Projects: By NTPC

Project	Location	Run by
Singrauli Thermal Plant	U.P	NTPC
Rihand Super Thermal Power Plant	U.P	NTPC
Unchahar Super Thermal Power Plant	U.P	NTPC
Kahal Gaon Super Thermal Power Plant	Bihar	NTPC
Talcher Super Thermal Power Plant	Odisha	NTPC

Natural Gas Power Projects

(a) State Government Projects (b) Central Government Projects

a. State Government Gas Power Projects:

Project	Location	Production Capacity
Ramgarh (1996)	Jaisalmer	270.5 MW
Combined Cycle Gas Power Project	Dholpur	330 MW
Jhamar-Kotra	Udaipur	-

NOTE: The first gas power project of the state government is Ramgarh (1996).

(a) Central Government's (NTPC) Gas Power Project :

Gas Power Project	Location	Production Capacity
1. Anta (HBJ Hazira, Bijeypur, Jagdishpur gas pipe line)	Baran	419.3 MW
2. Dadari	UP	829.78 MW
3. Aureya	UP	652 MW

Note : First(1989) gas power project in Rajasthan operated by NTPC(Central Government) – Anta Gas Power Plant

Naphtha/Liquid Fuel-Based Projects:

1. Dholpur Power Plant:

- Phase I: 330 MW
- Phase II: 372.7 MW
- Total: 702.7 MW

2. Keshoraipatan Thermal Power Plant: Located in Bundi.

B. Non-Conventional Energy

1. Nuclear Energy: (Source -Uranium and Thorium)

- **Rajasthan Atomic or Nuclear Power Station:** Located in Rawatbhata (Chittorgarh)
 - Started: December, 1973 (Cooperation: Canada)
 - Operated by: Nuclear Power Corporation of India Limited (NPCIL)
 - This plant has 6 units with a total installed capacity of 1180 MW.

Unit	Production Capacity
First Unit	100 MW
Second Unit	200 MW
Third Unit	220 MW
Fourth Unit	220 MW
Fifth Unit	220 MW
Sixth Unit	220 MW
Total Capacity	1180 MW

- At present first unit is completely closed.
- Two additional units of 700 MW each are proposed for the Rawatbhata Nuclear Power Plant, in which first unit (700 mw) was established in Sept., 2024
- Rajasthan receives nuclear energy from Rawatbhata (Rajasthan) and Narora (Uttar Pradesh).
- Rajasthan's second nuclear power plant is proposed in Banswara: 700 MW x 4 units = 2800 MW

2. Solar Energy

Highest Potential of solar energy

- In India –Rajasthan
- In Rajasthan –Jodhpur
- India has significant solar energy potential, especially in Rajasthan, particularly Jodhpur.
- Reasons for Rajasthan's High Solar Energy Potential:
 1. High solar radiation intensity
 2. Approximately 325 clear sunny days per year
 3. Investor invests more in Solar energy projects.
 4. High temperatures due to the vast desert area
 5. Extension of vast barren lands in Raj.

Note:

- According to the Ministry of New and Renewable Energy, Government of India, Rajasthan has the potential to generate 142 GW (142,000 MW) of solar energy.

Efforts for Solar Energy Development in Rajasthan:

1. Solar Park Development Scheme:

- Jodhpur, Barmer, Jaisalmer, and Bikaner have been selected for this scheme.
- Under a 2010 agreement between the Clinton Foundation and the Rajasthan government, the Clinton Foundation will provide necessary assistance for the development of solar parks in these areas.

Solar parks established in Rajasthan :

- Bhadla (Jodhpur)
- Nadiya kalan (Jodhpur)
- Dhudsar (Jaisalmer)
- Pokhran solar park (Jaisalmer)
- Phalodi-pokhran solar park (Jodhpur – Jaisalmer)
- Fatehgarh solar park (Jaisalmer)
- Nokh solar park (Jaisalmer)
- Pugal solar park (Bikaner)

Bhadla Solar Park:

- Location: Jodhpur
- This 2245 MW solar park was developed in four phases.

Bhadla Solar Park Phases:

Phase	Production Capacity	Partner
I st	65 MW	Rajasthan Solar Park Development Company Limited
II nd	680 MW	
III rd	1000 MW	IL&FS + State Government
IV th	500 MW	m/s Adani + State Government
Total :	2245 MW	

- Rajasthan's first private sector solar project was initiated by Reliance at Khinvsar (Nagaur).

2. Solar City Development Scheme:-

Cities with the highest solar energy potential will be developed as solar cities. Jaipur, Jodhpur, and Ajmer are included in this plan.

- Proposed districts: Pushkar (Ajmer), Jaisalmer
- 3. SEEZ (Solar Energy Enterprises Zone):**

The region in Rajasthan with the highest solar energy potential is called SEEZ.

- Areas included: Jodhpur, Barmer, Jaisalmer.
- 4. National Solar Mission:**

- To promote the development of solar energy in India, the Jawaharlal Nehru National Solar Mission was launched in January 2010.
- Target: 1 lakh megawatts (100 gigawatts) of solar energy production by 2022.
- Implementation: This mission will be implemented in three phases:
 1. First Phase (2010-13):
 2. Second Phase (2013-17):
 3. Third Phase (2017-22):

6. Solar Energy Policy:

In Rajasthan:

1. First Solar Energy Policy: 2011
2. Second Solar Energy Policy: 2014
3. Latest Solar Energy Policy: 18th December 2019

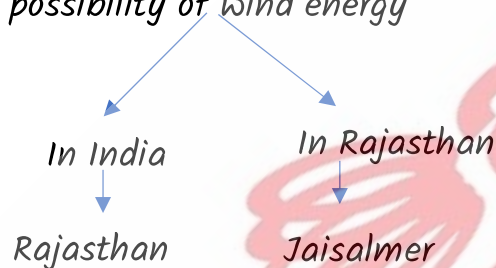
Solar Energy Policy

- **Solar Energy Policy:** This policy is also known as the Solar Energy Policy 2019.
- **Implementation:** 18th December 2019
- **Target:**
 1. Achieving 30,000 MW of solar energy projects by 2024-25.
 - (i) Utility/Grid-scale solar parks: 24,000 MW
 - (ii) Distributed Generation: 4000 MW
 - (iii) Solar Rooftop: 1000 MW
 - (iv) Solar Pumps: 1000 MW
 2. Creating a favourable environment for future investors in the solar energy production sector.
 3. Ensuring energy security at the national level.
 4. Addressing challenges like climate change.

3. Wind Energy:

- According to a study conducted by the National Institute of Wind Energy, under the Ministry of New and Renewable Energy, Government of India, at the height of 150 meters, Rajasthan has the potential to produce approximately 284 gigawatts of wind energy.

Note: According to Ministry of New and Renewable energy maximum possibility of wind energy



Major Wind Energy Plants:

- Amar Sagar: Jaisalmer (Rajasthan's 1st)
- Sodha Bandhan: Jaisalmer
- Pohra: Jaisalmer
- Aakal: Jaisalmer
- Hansua: Jaisalmer
- Devgarh: Pratapgarh (Rajasthan's 2nd)
- Beethdi: Phalodi (Rajasthan's 3rd)
- Harsh Wind Energy: Sikar
- Hybrid Wind Energy Plant: Jaisalmer
- Bada Bagh: Jaisalmer

Note:

- M/s Kalani Industries established the first private sector wind energy project in Bada Bagh (Jaisalmer).

In Rajasthan:

- First Hybrid wind energy station :- Jaisalmer
- Largest wind energy park: Bada Bagh (Jaisalmer)
- First wind energy plant of Railway – Kodiyasar (Jaisalmer)

- Highest contribution to wind energy: Suzlon Energy

Wind Energy Policy :

1. Wind energy policy
2. Target
3. Vision & Objective
4. Nodal agency

Wind Energy

- Policies :- 1st – 2012
11nd – 2019
- This policy is also known as the Rajasthan Wind and Hybrid Energy Policy – 2019.
- Implementation: 18th December 2019
- Target: Achieving 3500 MW of wind and hybrid energy projects by 2024-25.

Objectives:

1. Hybridization of existing wind/solar plants: 200 MW
2. New wind-solar hybrid project: 2000 MW
3. Wind-solar hybrid with storage system: 500 MW
4. Hybridization of existing conventional plants: 800 MW

Vision and Objectives:

- Promote wind energy projects and necessary storage systems.
- Boost wind energy projects.
- Strengthen transmission and distribution networks in the state for better renewable energy integration.
- Promote wind resource assessment.
- Encourage the development of industries related to wind energy equipment manufacturing.
- Hybridization of wind and solar technologies to address grid security and stability challenges while optimizing land resources and transmission systems.
- The RREC will act as the nodal agency for solar and wind energy in Rajasthan and will perform the following functions:
 - Project registration
 - Project approval
 - Development of wind parks/solar parks
 - Facilitation of land allotment for government land

4. Biomass Energy:

- In Rajasthan, the main sources of biomass energy are mustard oil, Vilayati Babool (Julie flora), and rice husk.
- The highest potential for biomass energy lies in the Sri Ganganagar district.

Major Biomass Energy Plants:

1. Padampur: Sri Ganganagar
2. Sangariya: Hanumangarh
3. Khatoli: Uniyara (Tonk)
4. Rangpur: Kota
5. Kachela-Bagasri: Sanchore
6. Chanderiya: Chittorgarh

Note: Rajasthan's first biomass energy plant is located in Padampur (Sri Ganganagar).

5. Biogas Energy:

- Source: Cow dung, mustard Husk
- Highest Potential: Udaipur
- Chemical Composition of Biogas:
 - Methane (CH₄): 65%
 - Carbon Dioxide (CO₂): 30%
 - Hydrogen (H₂): 5%

6. Biofuel/Biodiesel Energy:

- Biofuel/biodiesel is considered an important alternative to diesel fuel.
- The main sources of biodiesel are Jatropha, Ratanjot, and Karanj.
- A biodiesel refinery has been established in Kalaravas (Udaipur) for the development of biodiesel in Rajasthan.
- Rajasthan has one biodiesel plant located in Jhamarkotra (Udaipur).

C. Energy-related Institutions:

1. Rajasthan Renewable Energy Corporation (RREC):

- Objective: To develop and conserve non-conventional energy sources in the state.

- Establishment: 9th August 2002
- Formation: RREC was formed by merging REDA and RSPCL.
 - REDA: Rajasthan Energy Development Agency (Established in 1985)
 - RSPCL: Rajasthan State Power Corporation Limited (Established in 1995)

NOTE: RSDCL (Rajasthan Solarpark Development Company) was established on 2nd November 2011 in Jaipur and is a subsidiary of RREC.

2. Rajasthan Rajya Vidyut Utpadan Nigam Limited: Jaipur

3. Rajasthan Rajya Vidyut Prasaran Nigam, LTD. : Jaipur

4. Ajmer Vidyut Vitran Nigam LTD. : Ajmer

5. Jodhpur Vidyut Vitran Nigam LTD. : Jodhpur

6. Jaipur Vidyut Vitran Nigam LTD. : Jaipur.

7. Important Energy-related Schemes

UDAY (Ujjwal DISCOM Assurance Scheme):

- Launch: 5th November 2015 (by the Ministry of Power, Government of India)
- Implementation: On 27th January 2016, the Government of India signed a tripartite MoU with the State Government and each DISCOM.
- Objective: To improve the financial health of various DISCOMs.

Saubhagya Yojana (PM Sahaj Bijli Har Ghar yojana): 25th September 2017

- Objective: To provide electricity to every household in the country. (Target year: 31st March 2019)

KUSUM Yojana (Kisan Urja Suraksha evam Utthan Mahaabhiyan):

- Launch: 2018-19 (8 March 2019)
- Target Energy: 30,800 MW
- Objectives:

(i) Connect solar pumps to the grid.

(ii) Provide energy security to farmers.

- 3 Components :-

(a) KUSUM Component-A:

- Establishing: Decentralized solar energy plants with a capacity of 0.5 MW to 2 MW.
- Site: Located on barren land of farmers within a 5 km radius of 33/11 KW substations.
- Implemented by : Rajasthan Renewable Energy Corporation

(b) KUSUM Component-B:

- Target: Convert 12,500 agricultural pump sets with a capacity of 7.5 HP to solar power.

(c) KUSUM Component-C: (Feeder Level Solarization)

- Target: Solarize 200,000 pump sets.
- **SKAY portal** : To establish cooperation between land owner, Farmers and Developers.

Portal : [www. Skayrajasthan.org.in](http://www.Skayrajasthan.org.in)

Mukhyamantri Kisan Mitra Urja Yojana –

- Beginning- July 17, 2021
- Objective – Subsidy to agricultural Consumer → 1000 ₹ / month, maximum Grant of 12000 ₹ in one year.
- From June 2023, it has been merged in Mukhyamantri Nishulk Bijali Yojana (Agricultural Grant) under which the Agricultural Consumers get 2000 units per month free electricity
- If electricity consumption more than 2000 units per month than under Mukhyamantri Kisan Mitra Urja Yojana, , 1000 ₹ subsidy is provided in that month.

Mukhyamantri Nishulk Bijli Yojana (Domestic Subsidy) -

- Benefits Commencement - June, 2023

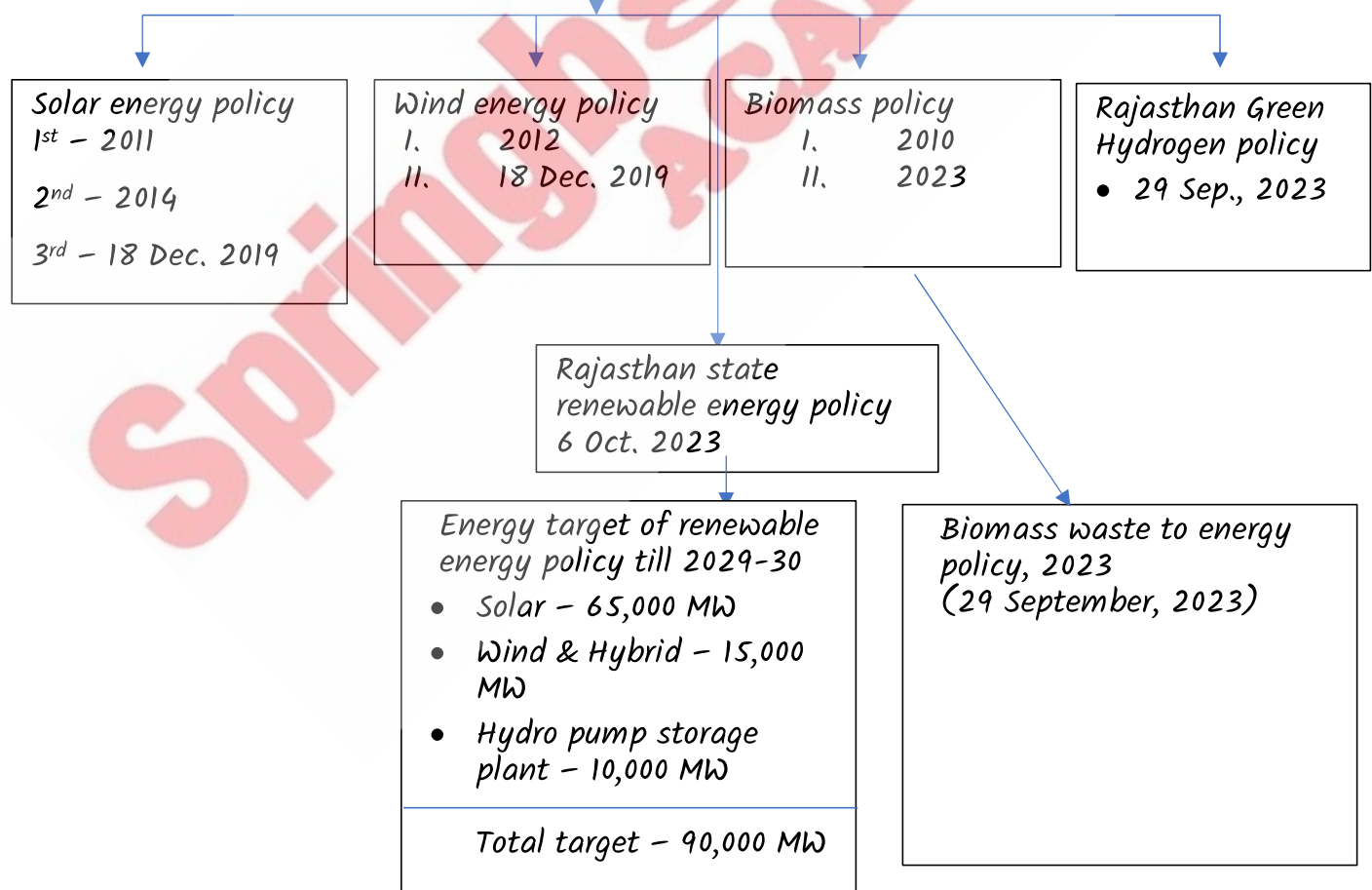
Electricity Consumption	Subsidy
Upto 100 unit	No charge
100-200 unit	100 unit free + exemption in taxes in next 100 units
More than 200 unit	100 unit free + excess units will be charged

PM Surya Ghar Muft Bijli Yojana -

- Start - 13 February 2024
- Budget - 75,000 crore
- Objective - (i) Installation of solar plants on one crore households to provide 300 units of free electricity every month.
(ii) Grants in the scheme -
 - 1 to 2KW ₹30,000 to 60,000
 - 3 KW 78,000 (maximum)
- The Rajasthan government has set a target of installing solar rooftop plants in 5 lakh households.

E. Other Important Points

1. Energy-Related Policies in Rajasthan



Rajasthan Green Hydrogen Policy

- 29 September 2023 to 31 March, 2030
- Target: 2000 KTPA (Kilo Tones Per Annum) by 2030

Note: At the international level, India is committed to achieving a renewable energy production target of 500 GW by 2030.

2. Current Energy Situation in Rajasthan

- Installed Capacity: 24783.64 MW (March 2024)
- Major Production:
 - Thermal Energy: 12,000 MW (approximately) [approx. – 50%]
 - Wind Energy: 4359.63 MW
 - Solar Energy: 4010.50 MW
 - Hydro Energy: 3000 MW (approximately)
 - Nuclear Energy: 456.74 MW
 - Biomass Energy: 109.95 MW

Rajasthan's Total Installed Power Capacity:

- Conventional Energy: 78-79%
- Renewable Energy: 21-22%

Note: Rajasthan has the highest annual growth in renewable energy in India.

3. Important Energy-Related Days

- 20 August: Renewable Energy Day
- 14 December: National Energy Conservation Day

Earth Hour Day:

- This is celebrated on the last Saturday of March from 8:30 PM - 9:30 PM.
- During this time, people are encouraged to turn off all unnecessary appliances except for essential ones.
- This initiative started in Australia to promote environmental protection and energy conservation, and India joined in 2009.

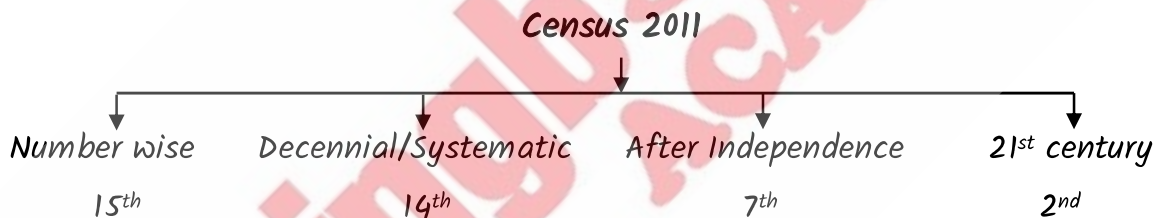
Population

History of Census

- Ancient Period- Arthashastra = Chanakya (Mauryan Period)
- Medieval Period-"Ain-e-Akbari" = Abul Fazl (Mughal Period)
- Modern Period-1872 AD: Modern census initiated by Lord Mayo.

Note:

- In 1881, during the time of Lord Ripon, systematic and decadal census began.
- Census is a subject of the Union List.
- Census is included in the Seventh Schedule of the Constitution.
- Population Census Act – Passed in 1948.
- National Population Commission – 11 May 2000
- Census is conducted by the Census Department of the Ministry of Home Affairs.



- Fifteenth Census Budget: Rs. 2200 crore
- Per Capita Cost: Rs.18.19
- Total Districts Covered in 2011 Census: India- 640 Districts (Rajasthan - 33 districts)
- Census Mascot: Female Enumerator
- Census Slogan: "Our Census, Our Future"

Key Points:

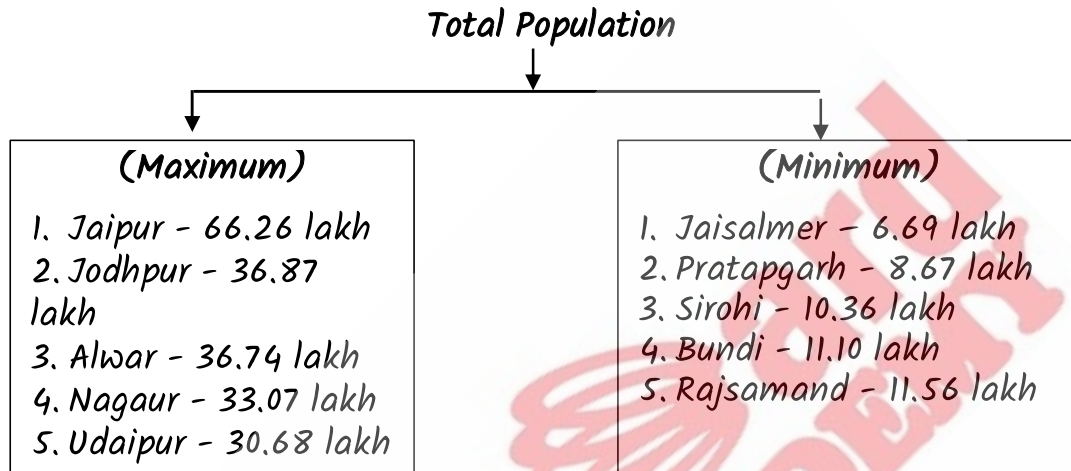
- National Population Register (NPR) was created for the first time.
- First-time enumeration of houses.
- Transgenders were included in this census for the first time.
- First-ever paperless census.
- Socio-economic caste census was conducted for the second time in 2011 (first time in 1931).
- 2011 Census conducted in two phases:
 - First Phase: May 15, 2010 to June 30, 2010
 - Second Phase: February 9 to February 28, 2011

Total Population

India's Total Population: 121.085 crore

Rajasthan's Total Population: 6.85 crore

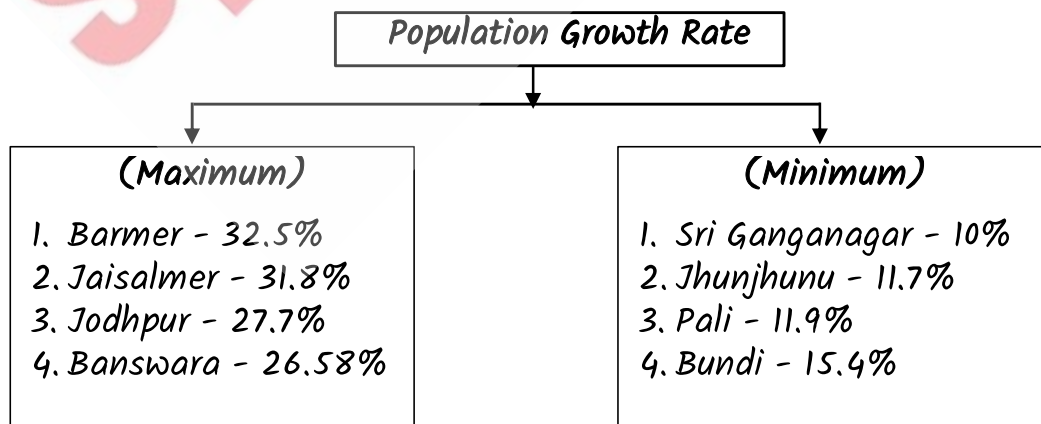
(Male - 51.86% and Female - 48.14%)



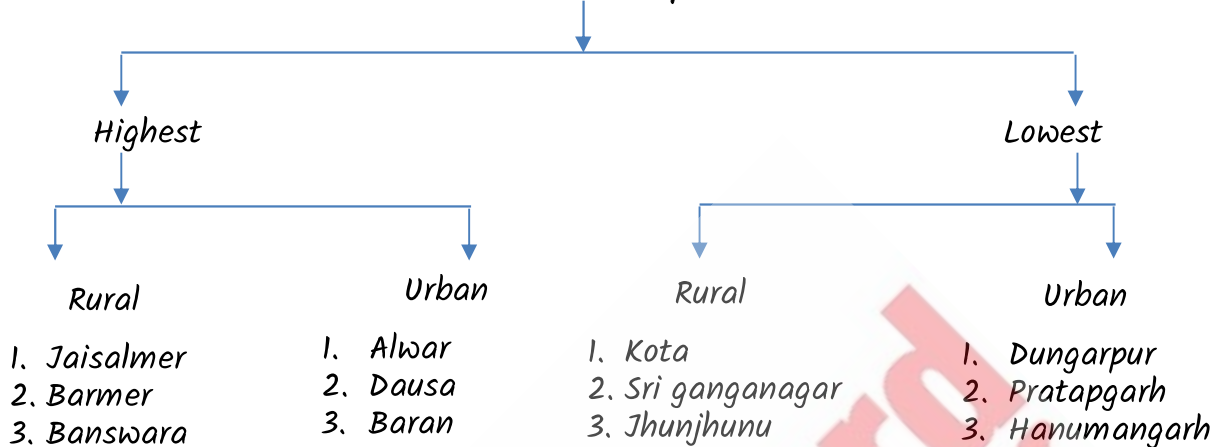
- Rajasthan accounts for 5.67% of India's total population and approximately 1% of the world's total population.
- According to the 2011 census, Rajasthan ranked 8th in terms of population. However, due to the division of Andhra Pradesh, it currently ranks 7th in India.
- Child Population (0-6 years): 15.54% of Rajasthan's total population.

Total Population Growth Rate

- The population growth rate refers to the increase in population per 100 people over a specific period of time (usually 10 years) in a particular place.



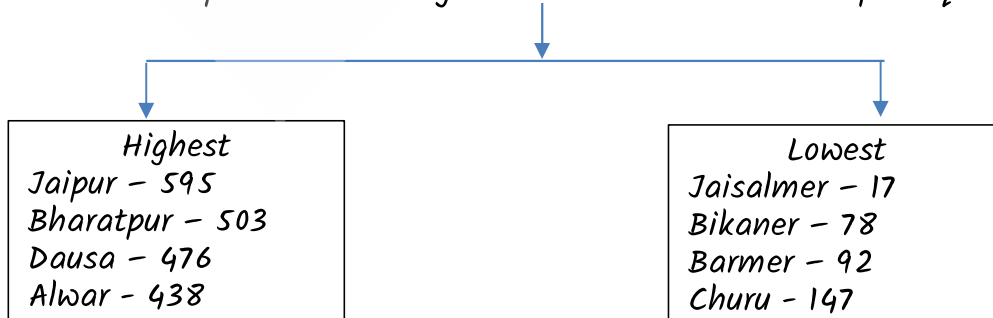
Rural (19%) and Urban (29%) Population Growth Rates



- Rajasthan experienced the highest negative population growth rate (-6.29%) during the 1911-21 decade. This period is also known as the "Decade of Demographic divide."
- **Reasons for Population Decline in Rajasthan (1911-21)**
 1. Plague Epidemic (Main Reason)
 2. World War I
 3. Beginning of National Movements
- The decades from 1951 to 1981 are known as the "Population Explosion Decades" in Rajasthan. During this period, Rajasthan witnessed its highest population growth rate of 32.97% between 1971 and 1981.
- In decade of 1991-2001-Rajasthan recorded its highest population growth.
- Main Factors Contributing to Population Growth: High birth rate, low death rate, and immigration.

Population Density: Refers to population residing in a square km.

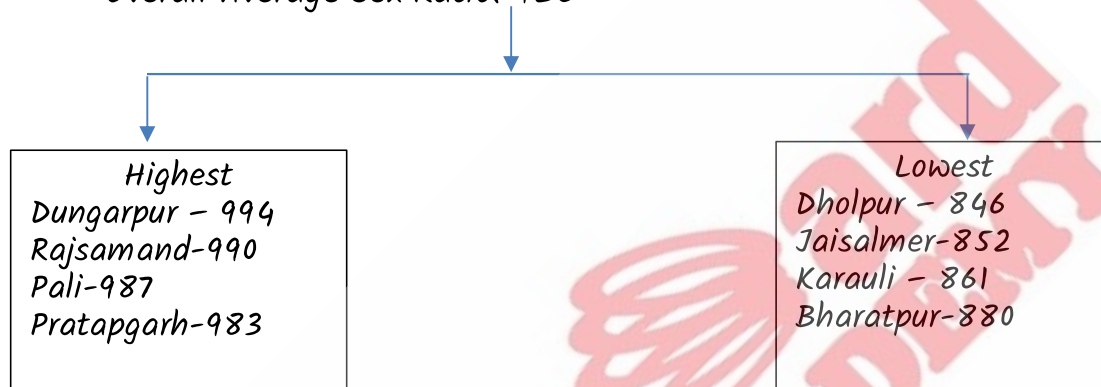
- In 2001: Rajasthan's population density was 165 persons per square kilometer.
- In 2011: Population density increased to 200 Persons per sq. km.



- Districts having population density less than 100 persons per sq. km → Jaisalmer, Bikaner, Barmer.
- * Lowest population density is found in Desert Districts (Western Rajasthan)

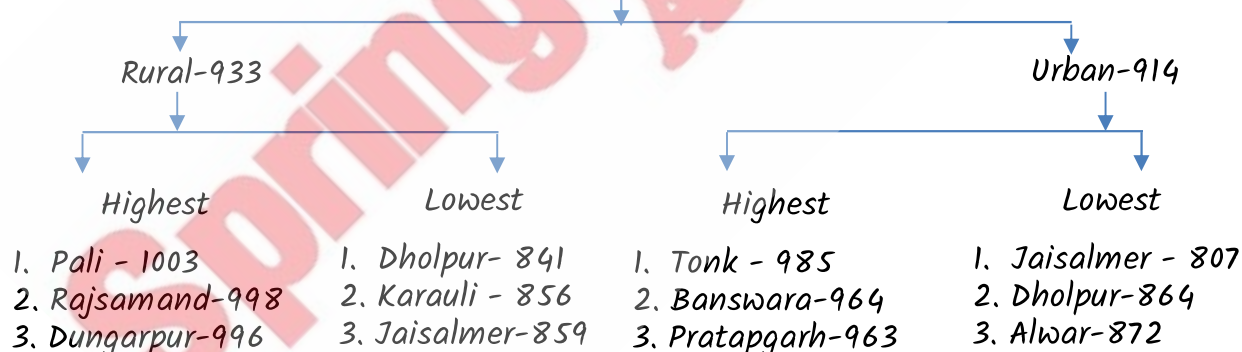
Sex Ratio

- Sex ratio is defined as the number of females per 1,000 males.
- Overall Average Sex Ratio: 928

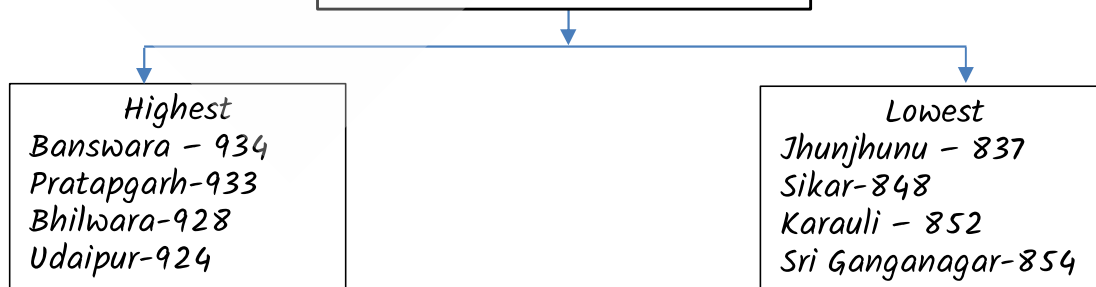


- There has been a significant increase of 7 points in the sex ratio from 2001 (921) to 2011 (928).

Sex Ratio in Rajasthan

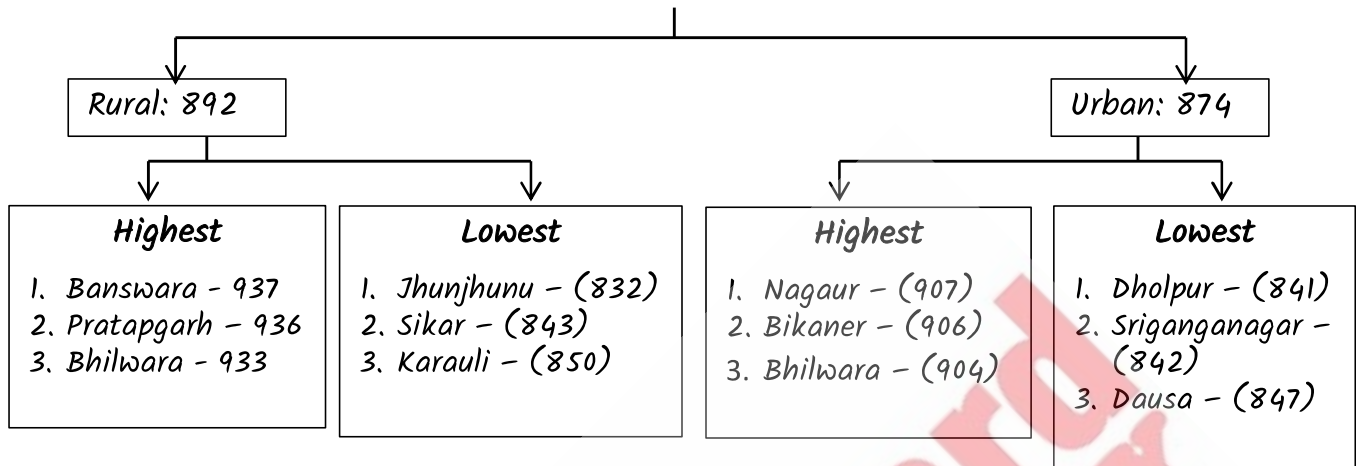


Child sex ratio in 2011 - 888



Note :- There has been decrease of 21 points in child sex ratio from 2001 (909) to 2011 (888).

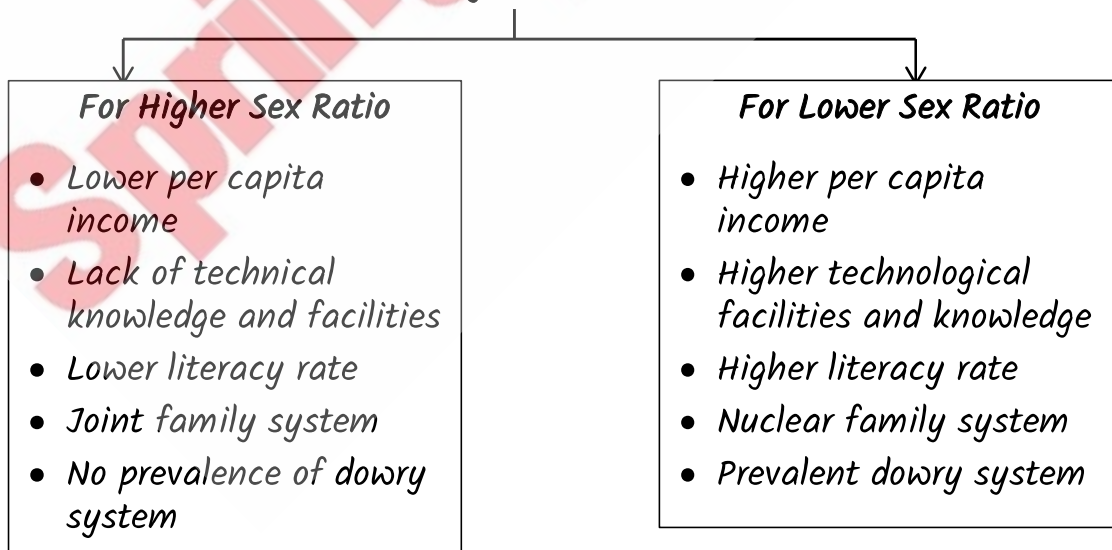
Child Sex Ratio in the State (888)



Note:

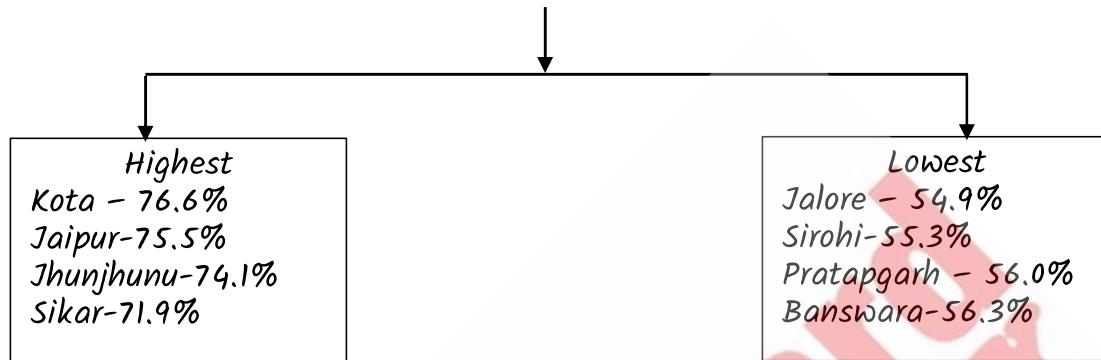
- All districts of Rajasthan have a sex ratio below 1000.
- Rajasthan's overall sex ratio (928) is lower than India's overall sex ratio (943).
- In Rajasthan, 15 districts have sex ratio lower than the state's average sex ratio.
- In Rajasthan, 12 districts have a child sex ratio lower than the state's average, child sex ratio (888).

Factors Behind Higher and Lower Sex Ratios

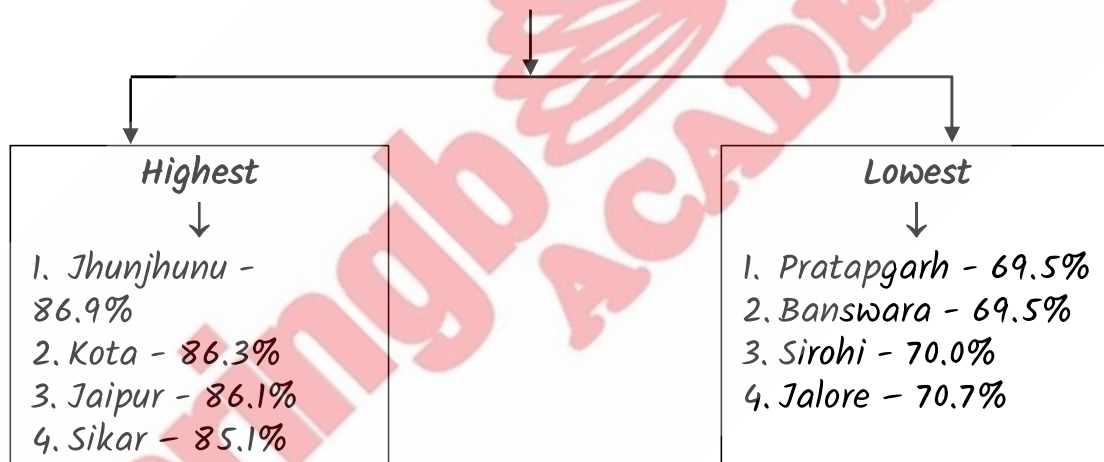


Literacy: A person aged 6 or above who can read or write in any language is considered literate.

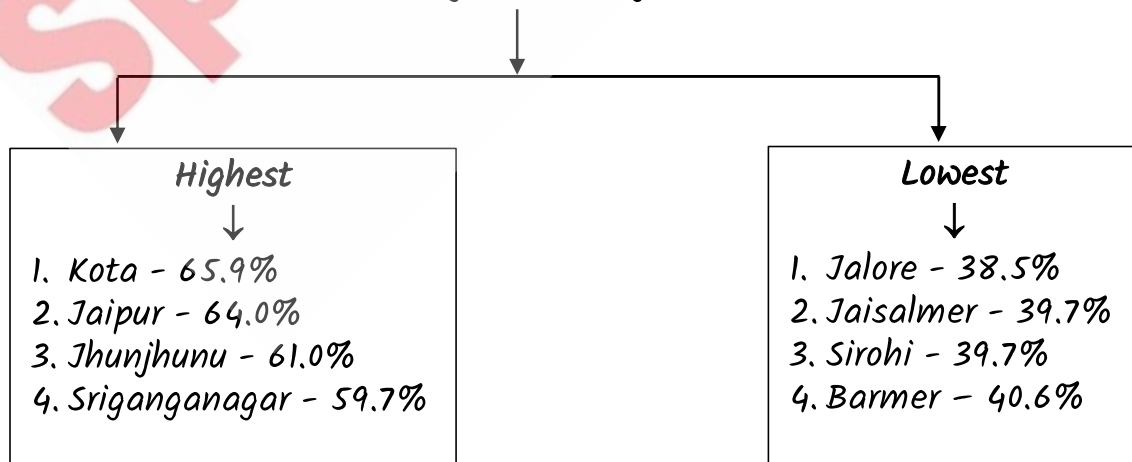
Literacy Rate in 2011: 66.1% (In 2001 → 60.41%)

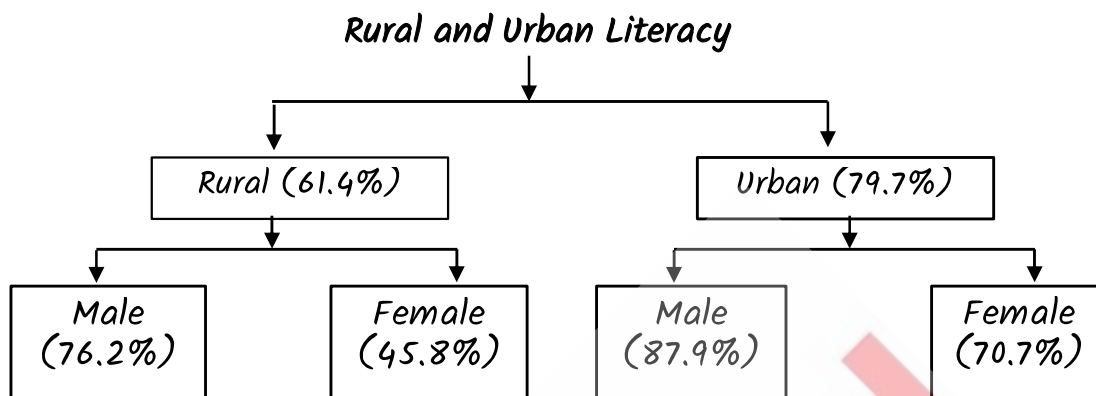


Male Literacy Rate in Rajasthan: (79.2%)



Female Literacy Rate in Rajasthan: 52.1%





	Maximum	Minimum
Rural literacy rate	Jhunjhunu	Sirohi
Rural Literacy (Male)	Jhunjhunu	Sirohi
Rural Literacy (Female)	Jhunjhunu	Sirohi

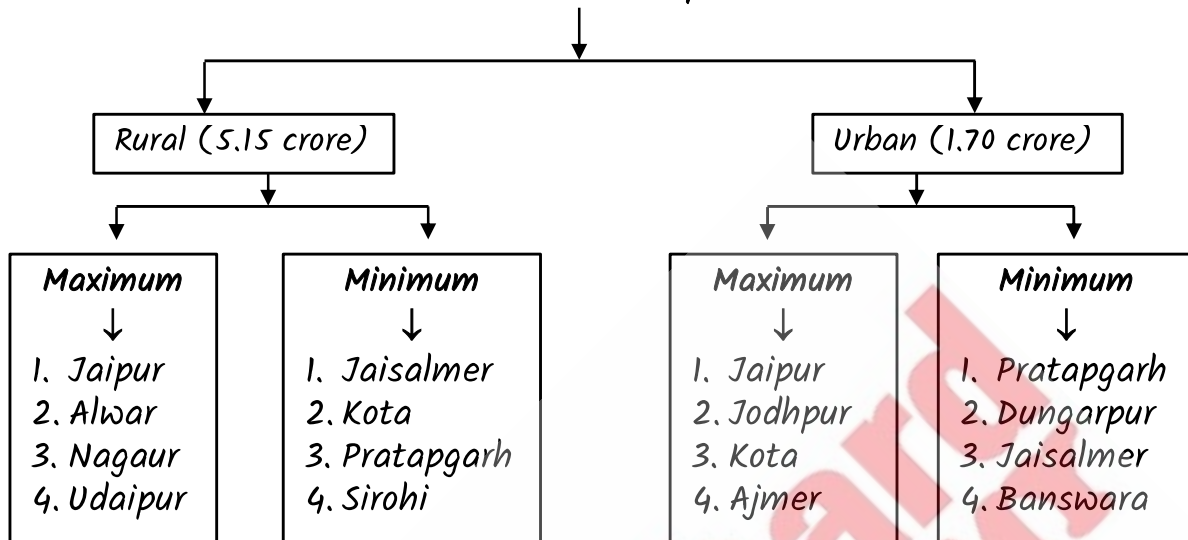
	Maximum	Minimum
Urban literacy rate	Udaipur	Nagaur
Urban Male Literacy Rate	Udaipur	Dholpur
Urban Female Literacy Rate	Udaipur	Jalore

- Literacy rate has decreased in Barmer and Churu district, while Literacy Rate increased in all other districts.
- The gap between male and female literacy rates in Rajasthan is the highest in the country.
- In Rajasthan, 19 districts have a literacy rate lower than the state's average literacy rate (66.1%).

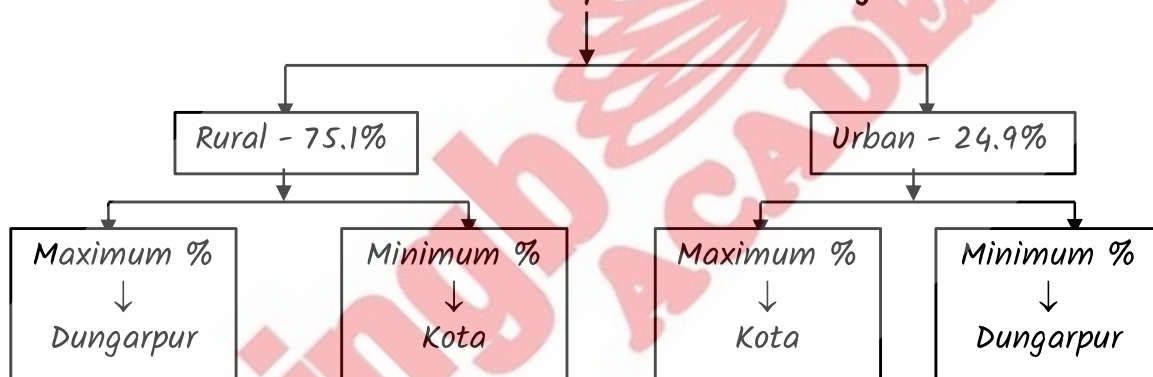
Rural & Urban population :-

- Rural population – 5.15 crore
- Urban population – 1.70 crore

Rural and Urban Population



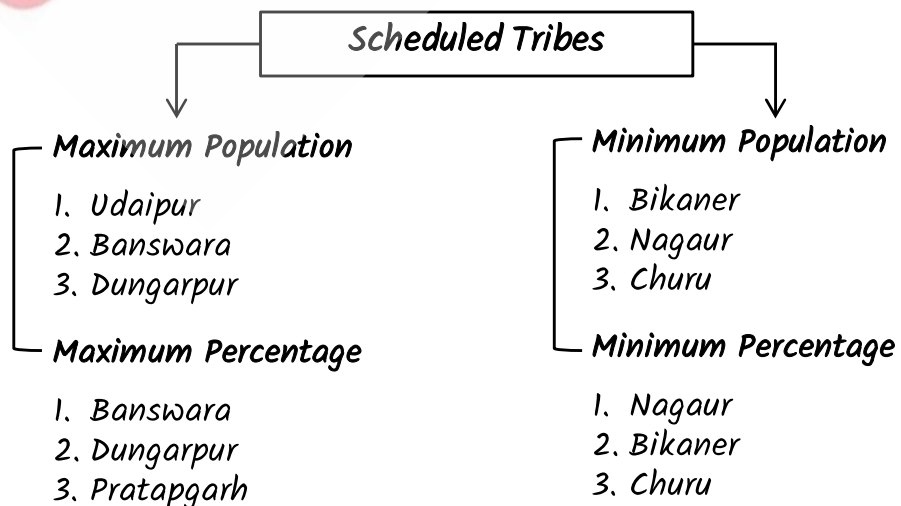
Rural and Urban Population Percentage



Scheduled Castes and Scheduled Tribes in Rajasthan

- ST Sex Ratio - 948

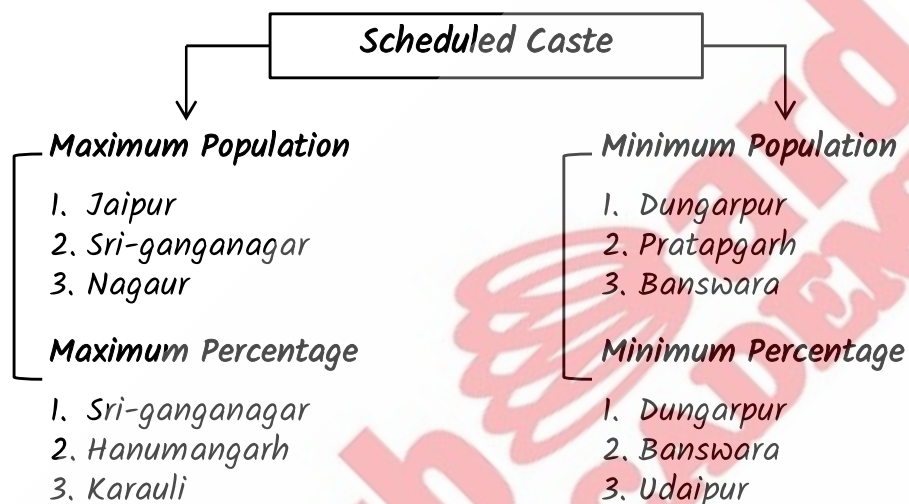
Scheduled Tribes (ST) (13.5%). Total Population: 92.38 lakh



- Districts with ST Population Exceeding 28%: 5 districts (Banswara, Dungarpur, Pratapgarh, Sirohi, Udaipur)
- Districts with ST Population Exceeding 50% or 60%: 3 districts (Banswara, Dungarpur, Pratapgarh)

Scheduled Castes (SC) (17.8%) Total Population: 122.21 lakh

- SC Sex Ratio - 923



- Districts with SC Population Exceeding 25%: 2 districts (Sri Ganganagar, Hanumangarh)
- Districts with SC Population Exceeding 20%: 12 districts

Population of Different Religions in Rajasthan

Religion	Percentage	Highest Population District	Highest Percentage District
Hindu	88.49	Jaipur	Dausa
Muslim	9.07	Jaipur	Jaisalmer
Sikh	1.27	Sri Ganganagar	Sri Ganganagar
Jain	0.91	Jaipur	Udaipur
Christian	0.14	Banswara	Banswara
Buddhist	0.02	Alwar	Alwar

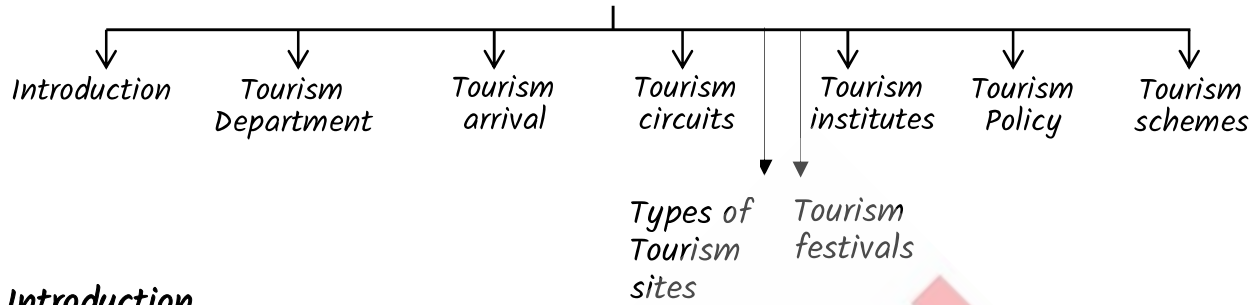
- **Note:** Rajasthan State Population Policy - 20 January, 2000
- **Note:** National Population Policy - 15 February, 2000

- *Objectives of National Population Policy*

<i>Short-Term</i>	<i>Medium-Term</i>	<i>Long-Term</i>
<i>Providing family planning and health facilities</i>	<i>Reducing Total Fertility Rate (TFR) to 2.1 by 2010</i>	<i>Achieving the goal of stabilizing the population by 2045</i>

Springboard Academy

Tourism Circuits and Sites in Rajasthan



Introduction

- Tourism was given the status of an industry on the recommendation of the Mohammad Yunus Committee on 4th March 1989.
- Rajasthan has 4 tourism divisions: [Jodhpur, Udaipur, Ajmer, Kota]

Tourism Department

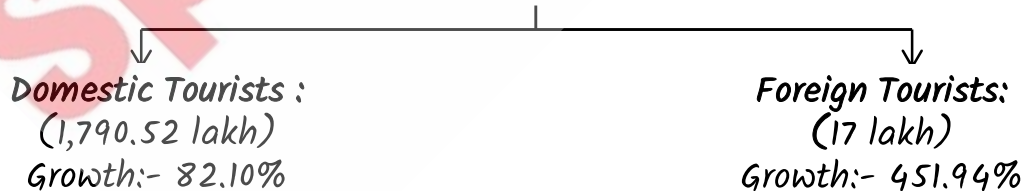


Tourist Arrivals in Rajasthan

Total Tourist Arrivals

- 2022-23: 986.22 lakh
 - Domestic Tourists: 983.24 lakh
 - Foreign Tourists: 3.08 lakh

Total Tourist Arrivals in Rajasthan - 2023-24: 1,807.52 lakh



Peak and Off-Peak Seasons for Tourist Arrivals

Season	Domestic Tourists	Foreign Tourists
Peak	Oct - Dec	Oct - Dec
Off-Peak	Apr - June	Apr - June

Tourist Arrival Destinations

<i>Domestic Tourists</i>	<i>Foreign Tourists</i>
<i>Ajmer</i>	<i>Jaipur</i>
<i>Pushkar</i>	<i>Udaipur</i>
<i>Mount Abu</i>	<i>Jodhpur</i>

Tourism Circuits

1. *Tourism Circuits: 10*
2. *Wildlife Circuits: 7*
3. *Archaeological Circuits: 7*
4. *Eco-Adventure Circuits: 10*
5. *Tribal Circuits: 4*
6. *Spiritual Circuits: 4*

1. Tourism Circuits

1. *Shekhawati Circuit: Jhunjhunu, Churu, Sikar*
2. *Alwar Circuit: Silisedh and Sariska*
3. *Bharatpur Circuit: Bharatpur, Deeg, Dholpur*
4. *Ranthambore Circuit: Sawai Madhopur, Tonk*
5. *Hadoti Circuit: Kota, Bundi, Jhalawar*
6. *Dhundhar Circuit: Jaipur - Amer- Ramgarh, Dausa - Abhaneri*
7. *Maru Triangle Circuit: Jaisalmer, Bikaner, Jodhpur*
8. *Merwara Circuit: Ajmer - Pushkar, Nagaur - Merta*
9. *Mewar Circuit: Udaipur - Chittorgarh, Kumbhalgarh - Nathdwara*
10. *Mount Abu Circuit: Sirohi - Pali (Ranakpur) and Jalore*

➤ Other Tourism Circuits in Rajasthan

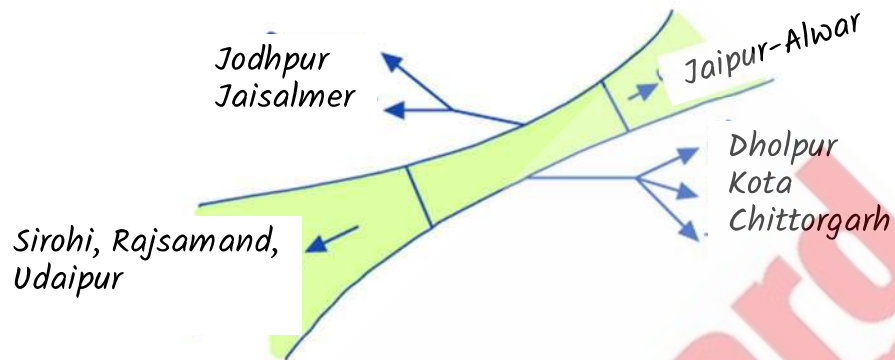
- *Proposed: Godwad Circuit: Pali, Jalore, Barmer, Sirohi*
- *Golden Triangle: Jaipur, Delhi, Agra*

2. Archaeological Circuits

1. *Bikaner Archaeological Circuit*
2. *Jodhpur Archaeological Circuit*
3. *Ajmer Archaeological Circuit*
4. *Jaipur Archaeological Circuit*
5. *Bharatpur Archaeological Circuit*
6. *Udaipur Archaeological Circuit*
7. *Kota Archaeological Circuit*

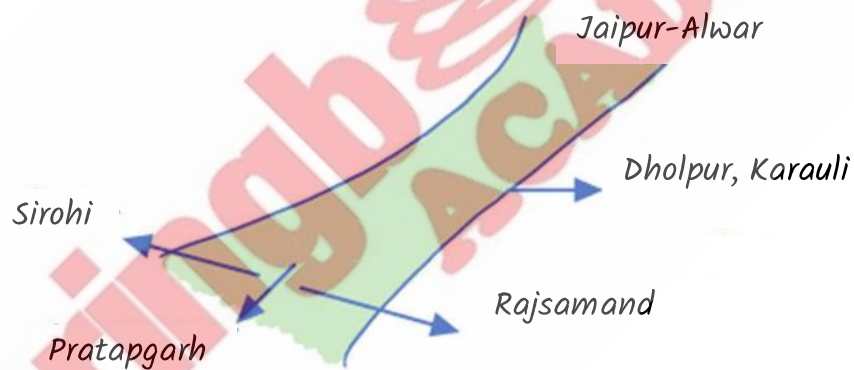
3. Eco Adventure Circuits

Districts included - 10



4. Wild Life Circuits

Districts Included - 7

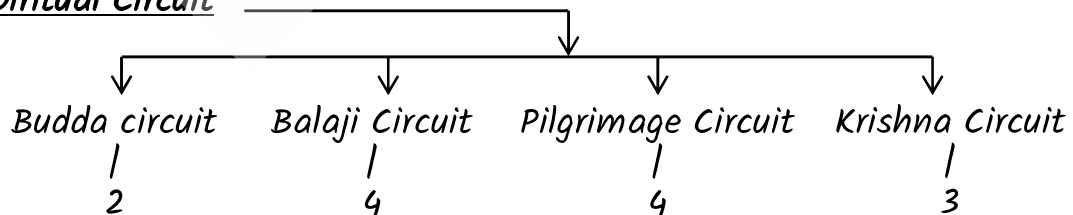


5. Tribal Circuit

- Districts included: 4

1. Dungarpur
2. Banswara
3. Pratapgarh
4. Udaipur

6. Spiritual Circuit



Buddha Circuit: 2

- Jaipur-Bairath
- Jhalawar-Kolvi Caves

Balaji Circuit: 4

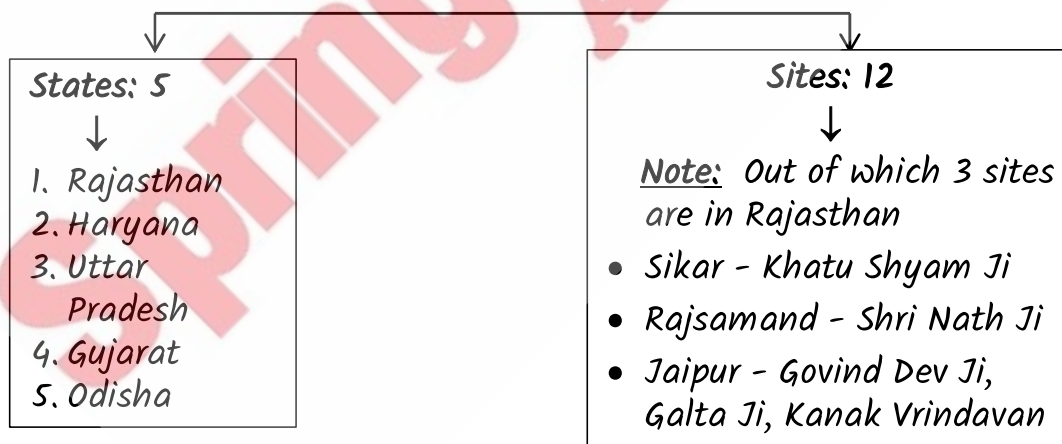
- Churu - Salasar
- Jaipur Rural - Veer Hanuman Ji - Samod
- Dausa - Mehandipur Balaji
- Alwar - Pandupol (Sariska)

Pilgrimage Circuit: 4

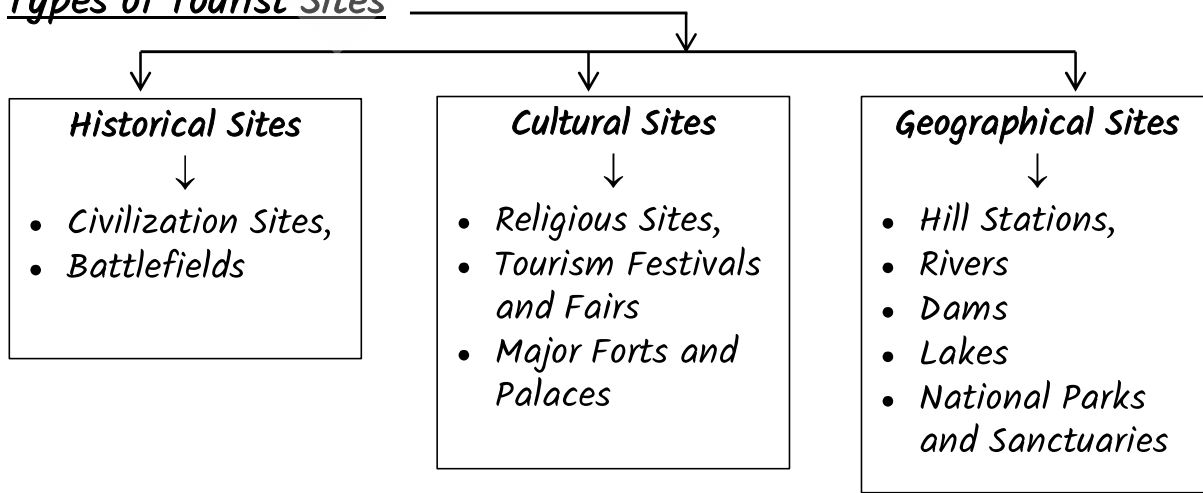
- Ajmer
- Pushkar
- Nathdwara (Rajsamand)
- Mahavir Ji (Karauli)

Krishna Circuit

- States included in the Krishna Circuit under the Swadesh Darshan Scheme (2014-15):



Types of Tourist Sites



Major Tourism Festivals

January

- *Camel Festival: Bikaner*
- *Jaipur Literature Festival: Diggi Palace, Jaipur*

February

- *Beneshwar Fair: Dungarpur*
- *Maru Mahotsav: Jaisalmer*
- *Udaipur World Museum Festival: Udaipur*

March

- *Brij Mahotsav: Bharatpur*
- *Dhulandi Mahotsav: The day after Holi*
- *Rajasthan Mahotsav: 27th - 30th March*

April

- *Gangaur Utsav: famous in Jaipur*
- *Mewar Mahotsav: Udaipur*

May

- *Greeshm Mahotsav (Summer Festival): Mount Abu*

August

- *Teej Festival: Jaipur (Shravan Shukla Tritiya)*
- *Kajali Teej: Bundi (Bhadrapad Krishna Tritiya)*

October

- *Rajasthan Kabir yatra: Bikaner*
- *Abhaneri Utsav: Dausa*
- *Marwar Utsav (Mand Utsav): Jodhpur*

October-November

- *Dussehra Utsav: Kota*
- *Pushkar Utsav: Ajmer*

- Kolayat Mela: Bikaner
- Matsya Mahotsav: Alwar
- Chandrabhaga Mahotsav: Jhalawar
- Bundi Utsav: Bundi

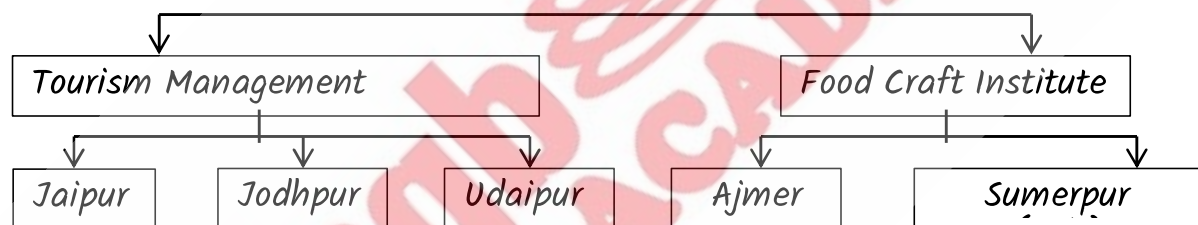
December

- Kumbhalgarh Utsav: Rajsamand (1-3 December)
- Ranakpur Utsav: Pali (21-22 December)
- Shitkalin Utsav(winter festival): Mount Abu (29-30 December)

Tourism Institutions

Tourism Department: Established in 1956

Institutions Operated by the Tourism Department:



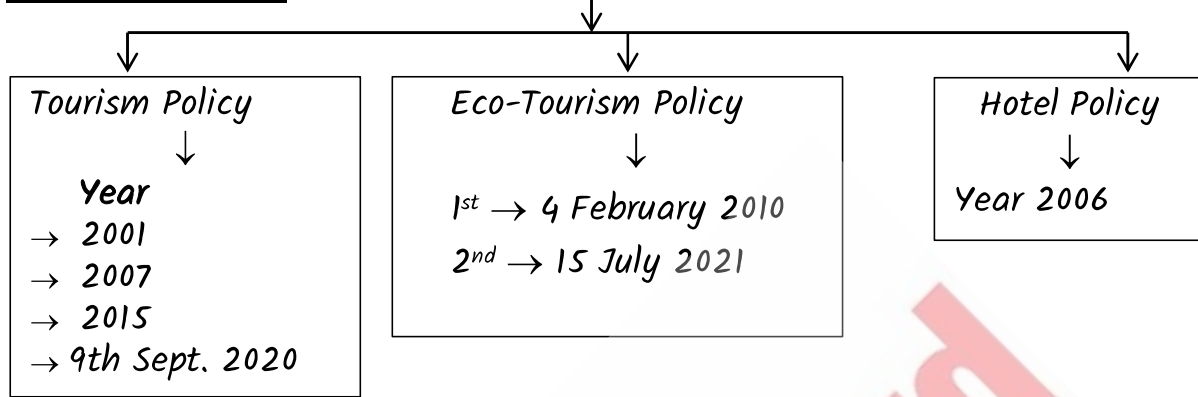
Note: Tourism Department Information/Welcome Centers: 42 in the state, 5 outside the state (Delhi, Mumbai, Chennai, Kolkata, Ahmedabad)

- Institutions Under the Tourism Department: 4
- 1. Rajasthan State Hotel Corporation (RSHC): Established on 7th June 1965 in Jaipur
- 2. RTDC (Rajasthan Tourism Development Corporation):
 - Established: 1st April 1979 (Jaipur)
 - Objective: Provides accommodation, food, and transportation facilities to tourists.
- 3. RITTMAN (Rajasthan Institute of Tourism and Travel Management)
 - Established: 29th April, 1996
- 4. State fairs Authority(Rajya Mela Pradhikaran)
 - Established: 2011 under the Devasthan Department
 - As of December 2019, 42 fairs are registered.

Note:

- National Tourism Day: 25th January
- World Tourism Day: 27th September

Tourism Policies



Other Tourism Policies

Rajasthan Film Tourism Promotion Policy 2022:

- Implementation: 18th April, 2022
- Objective: To promote film destinations and shooting in the state
- Incentive: 15% of the total production cost or a maximum of ₹2 crore

Tourism Schemes

(i) Paying Guest Scheme

- Launch: 27th September, 1991
- Implemented in the entire state in 2012

(ii) Heritage Hotel Scheme

- In 1991, the Indian government recognized a new category of heritage hotels.
- Necessary condition for heritage: Buildings must be at least 50 years old, such as forts, palaces, havelis.
- Categorization: Heritage hotels are classified into three categories based on their services and amenities:
 1. Heritage
 2. Heritage Classic
 3. Heritage Grand

Note: In Rajasthan, "Ajit Bhawan, Jodhpur" was the first hotel to be designated as a heritage hotel.

(iii) Mewar Complex Scheme

- To develop places related to Maharana Pratap's life (Gogunda, Chavand, Diwer, Haldighati) as tourist destinations, launched on his 400th death anniversary (1997).

(iv) Senior Citizen Pilgrimage Scheme

- Launch: 2013 (by the Devasthan Department)

(v) HRIDAY Yojana (Heritage city development & Augmentation Yojana)

- Launch: 2015
- Objective: Development and augmentation of national heritage sites in India
- Ajmer (Rajasthan) was included in this scheme.

(vi) PRASAD Yojana (Pilgrimage Rejuvenation & Heritage spiritual Augmentation Drive)

- Launch: January 2015
- Implementation: By the Ministry of Tourism, Government of India
- Objective: To rejuvenate pilgrimage, spiritual, and heritage sites
- Ajmer-Pushkar in Rajasthan will be developed under this scheme.

(vii) Paying Guest House Scheme

- Launch: 21st October, 2021
- Requirements for Paying Guest Houses:
 1. Minimum 6 and maximum 20 rooms allowed
 2. Home stays in residential areas cannot have more than 23 rooms
 3. Area of the paying guest house must be 167 square meters
 4. Minimum 30 feet road in front of the paying guest house
 5. Flats owned by multiple owners are not allowed
 6. Fire NOC and food license are mandatory

(viii) Guest House Scheme (Home Stay)

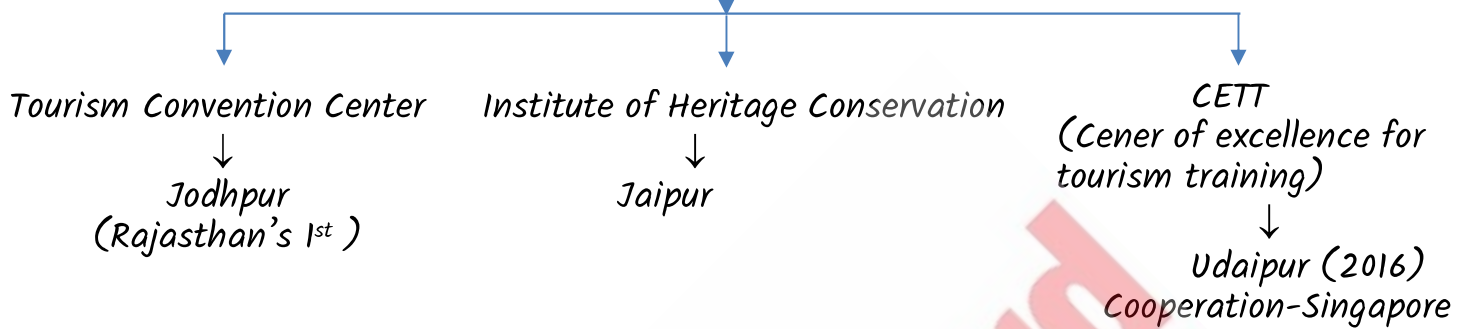
- Launch: 16th April, 2021

(ix) Rajasthan Rural Tourism Scheme, 2022

- Objective: To promote tourism in rural areas
- Implementation: 30th November, 2022
- Incentives:
 1. Loans up to Rs. 25 lakh and 9% interest subsidy
 2. 100% reimbursement of SGST for 10 years for rural tourism units investing at least Rs. 1 crore

Other Important Points

Important centers related to tourism



- Tourism contributes approximately 5.6% to Rajasthan's economy (according to the 2024-25 budget).
- Tourism Development Fund: In the 2020-21 budget, Rs. 500 crore was allocated for the "Tourism Development Fund," which was increased to Rs. 1500 crore in the 2023-24 budget.
- Dhola Maru Tourism Complex: This complex will be established in Jaisalmer.
- Deomali (Beawar) has been selected as the "Best Tourism Village" for 2024.

UNESCO Geo-Parks, Geo-Heritage Sites and World Heritage Sites in Rajasthan

UNESCO

- United Nations Educational, Scientific and Cultural Organization
- Established: 16th November, 1945 (London, Britain)
- Headquarters: Paris, France
- India became a UNESCO member: 1946

Geo-Parks and Geo-Heritage Site Concept

UNESCO's Concept of Geo-Parks and Geo-Heritage Sites

UNESCO :

- Global Geo-Park
- Geoheritage sites

A. Global Geo-Park

What is a Geo-Park?

- Introduced by UNESCO in 2001
- A unified geographical area where geologically significant sites and landscapes managed by UNESCO for protection, education, and sustainable development.
- Involves local communities, land owners, tourism & service providers in the sustainable development and conservation of these sites through a bottom to top approach.

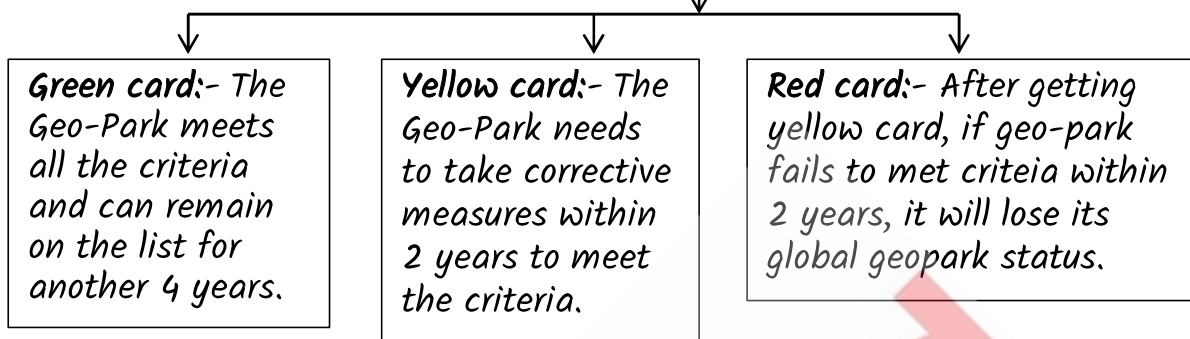
Current Geo-Parks

- UNESCO has recognized 213 sites in 48 countries as Global Geoparks.
- The first proposed Global Geopark in India is Lamheta Ghat, located in Madhya Pradesh, known for its dinosaur fossils and ancient rocks.

Is the status of a Geo-Park permanent?

- UNESCO grants Global Geopark status for 4 years.
- In every 4 years, the performance and quality of the Geo-Park are re-evaluated.
- UNESCO's evaluation process for Global Geoparks:
- Two evaluators conduct a field mission to assess the quality of the Global Geopark.
- Based on the field mission, the evaluators prepare a progress report and issue a card, which can be green, yellow, or red.

Color of the card and its implications:



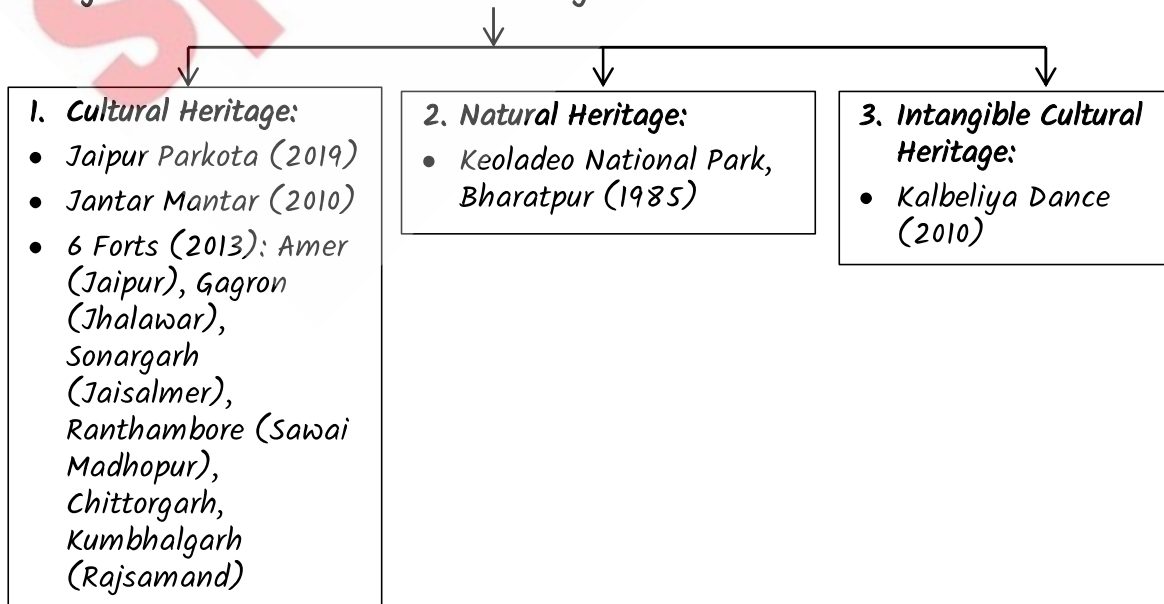
Four Fundamental Characteristics of UNESCO Global Geoparks

1. **Global Geological heritage Site:** A region must have international geological significance to be considered for a Geo-Park.
2. **Management:** Local statutory organizations should manage the Geo-Park.
3. **Visibility:** Promote sustainable local economic development through geo-tourism.
4. **Networking:** Exchange information about natural and cultural sites at local and global levels.

Geo-Heritage Sites

- **UNESCO World Heritage Site Concept:** Adopted by UNESCO in 1972
- Promotes the conservation of natural, cultural, and intangible heritage sites
- At Present, 40 sites of India are included in the UNESCO 'Geo heritage sites'.

Rajasthan's UNESCO World Heritage Sites



Potential Geo-Heritage Sites in Rajasthan

- Geological Survey of India, Kolkata 1851 (GSI) has identified 12 potential geo-heritage sites in Rajasthan.
 1. Zawar :- Udaipur
 2. Stromatolite (formed by blue-green algae) :- Jhamar Kotra (Udaipur)
 3. Stromatolite :- Chittorgarh
 4. Great Boundary Fault :- Bundi
 5. Ramgarh Meteorite Crater :- Ramgarh (Baran)
 6. Jodhpur Malani Group Igneous Rocks :- Jodhpur
 7. Welded Tuff :- Jodhpur
 8. Sendra Granite :- Pali
 9. Bar Conglomerate (sedimentary rock) :- Pali
 10. Akal Wood Fossil Park (fossils of Jurassic-era wood) :- Jaisalmer
 11. Gosan Rajpura Dariba :- Rajsamand
 12. Nepheline Syenite :- Kishangarh

Conclusion

- In collaboration with UNESCO and local communities, it is essential to preserve natural, cultural, and intangible heritage sites.
- This will not only promote economic development and tourism but also create opportunities for sustainable livelihoods.

INTACH

- Indian National Trust for Art and Cultural Heritage
- Established: 27th January, 1984 (New Delhi)

Objective: To promote heritage conservation and awareness.

Livestock

A. Introduction

- Livestock is a part of the primary sector in the economy, which is a significant component of mixed and dry agriculture.
- The livestock sector contributes 48.58% to the economy in agriculture and related sectors.
- Livestock contributes approximately 10.99% to the state's Gross Domestic Product.

Agriculture-related sector:

1. Agriculture crops = 44.53%
2. Livestock = 48.58%
3. Forestry sector = 6.40%
4. Fisheries sector = 0.49%

Livestock Census

- Livestock census is conducted by the Department of Animal Husbandry, Jaipur (1958).
- Frequency of livestock census is once in 5 years (first livestock census was in 1919).
- According to the latest 20th livestock census (2019), the total livestock population in Rajasthan is:

Year	Total Livestock Population
2012	577.32 lakh
2019	568.01 lakh
Decrease	-1.61% (9.31 lakh)

- According to the 20th livestock census, Rajasthan's livestock population constitutes 10.60% of the country's total livestock population.
- As per the 20th livestock census, the most common livestock in Rajasthan are:

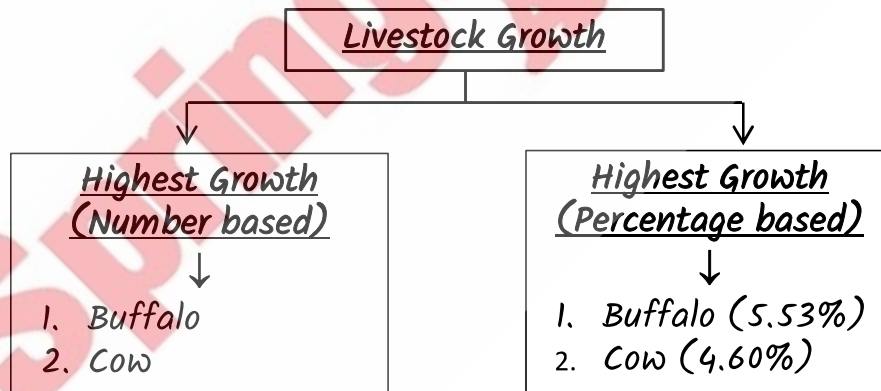
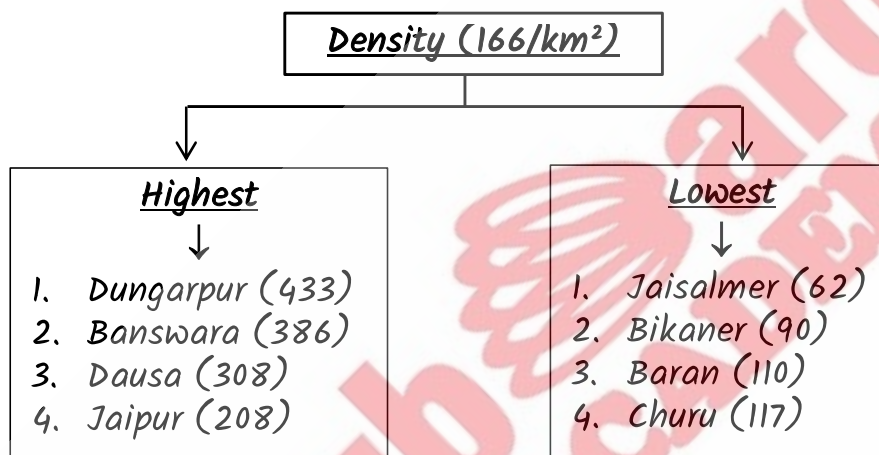
Rank	Livestock	Percentage
1	Goat	36.70%
2	Cow	24.47%
3	Buffalo	24.10%
4	Sheep	13.91%

- The livestock species that are most commonly found in Rajasthan but not in the rest of the country are camel, donkey, and goat.

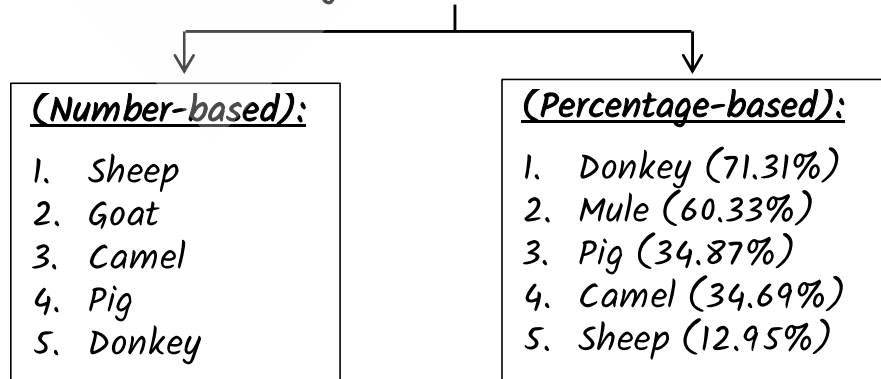
Livestock	Contribution
Camel	84.43%
Donkey	18.91%
Goat	10.64%

Livestock Density:

- According to the 20th livestock census, Rajasthan's livestock density is -166/km².



- Highest Decline according to the 20th livestock census :-



Livestock Breeds of Rajasthan

- The 18th livestock census (2007) was the first census conducted based on livestock breeds.

1. Goat Breeds (highest- Barmer, Lowest- Dholpur)

Breed	Region	Speciality/facts
1. Marwari / Lohi	North-western Rajasthan (Jodhpur, Pali, Jalore)	• Famous for Meat production
2. Jakhrana / Alwari	Alwar, Behror	• Maximum milk yield
3. Shekhawati	Sikar, Jhunjhunu	• Hornless goat breed developed by CAZRI
4. Parbatsari	Nagore, Ajmer, Tonk	• Known for yield of nutritious milk.
5. Barbari	Eastern Rajasthan (Alwar, Bharatpur, Karauli, Dholpur)	• Known for their beauty
6. Sirohi	Sirohi, Jalore	• Meat production
7. Jamnapari	Hadoti (Kota, Bundi, Jhalawar)	• Meat and milk

Note:

- The goats of Varun village (Nagore) are considered the best breed.
- Goats are often called the "poor man's cow" or the "walking fridge."
- The meat of goat is called "chevan."

2. Cattle Breeds: (max. -Bikaner, Min.- Dholpur)

<i>Breed</i>	<i>Region</i>	<i>Features</i>
1. <i>Rathi</i>	<i>Bikaner, Jaisalmer, Sri-ganganagar</i>	• <i>Maximum milk yield</i> • <i>Known as Kamdhenu</i> • <i>Hybrid of Lal Sindhi and Sahiwal breed.</i>
2. <i>Tharparkar</i>	<i>Jaisalmer, Barmer, Jodhpur</i>	• <i>Origin → Sindh (Pak) and Malani (Barmer)</i>
3. <i>Gir</i>	<i>Ajmer, Bhilwara, Chittor</i>	• <i>Origin from Gujarat (Gir)</i>
4. <i>Nagori</i>	<i>Nagore</i>	• <i>Nagori bulls are known for their running speed, load carrying capacity and agricultural works ability.</i>
5. <i>Kankrej</i>	<i>Barmer and Jalore</i>	• <i>origin place – Gujarat</i>
6. <i>Mewati</i>	<i>Alwar and Bharatpur</i>	• <i>Used for carrying load</i>
7. <i>Haryanavi</i>	<i>Sikar & Jhunjhunu</i>	• <i>Origin place – Haryana</i>
8. <i>Malavi</i>	<i>South-Eastern Rajasthan</i>	• <i>Origin place – Malwa (MP)</i>
9. <i>Sanchori</i>	<i>Jalore, Sirohi</i>	• <i>Famous for Dairy Industry.</i>

Foreign Breeds of Cattle

1. *Jersey: Origin - USA*
2. *Red Dane: Origin - Denmark*
3. *Holstein Friesian: Origin - Holland + USA*
 - *Black and white patches on their body.*
 - *Highest milk-yielding cow breed.*

3. Buffalo Breeds : (max. -Jaipur, Min.- Jaisalmer)

Breed	Region	Features
1. Murrah (Khundi)	Eastern Rajasthan	Most common and highest milk yielding buffalo breed in Rajasthan
2. Surati	Udaipur, Jalore, Sirohi	Origin place – Gujarat
3. Jafarabadi	South-western Rajasthan	Origin place – Gujarat
4. Mehsana	South-western Rajasthan	Origin place – Gujarat
5. Bhadavari	Eastern Rajasthan	Origin –Uttar Pradesh known for high fat milk

Other Buffalo Breeds:

1. Nagpuri
2. Rath
3. Raath

4. Sheep Breeds: (max. -Barmer, Min.- Banswara)

Breed	Region	Features
1. Malpuri	Jaipur, Tonk, Sawai Madhopur	due to thick wool, suitable for making carpets.
2. Chokla	Jhunjhunu, Sikar, Bikaner	Best quality of wool is produced from this breed, also known as “Merino of India”.
3. Sonadi/Chanother	Udaipur, Dungarpur, Chittor	Long-eared sheep
4. Nali	Hanumangarh, Sri-ganganagar	Found in ghaggar basin area.
5. Pugal	Bikaner	
6. Mogra	Bikaner	Also known as

Breed	Region	Features
		"Bikaneri Chokla"
7. Marwari	Jodhpur, Barmer, Nagaur, Pali	- Most common sheep breed of Rajasthan - known for its immunity against diseases.
8. Jaisalmeri	Jaisalmer, Jodhpur	Maximum wool yield
9. Khairi	Jodhpur, Pali, Nagaur	Its wool is suitable for carpet making.

Foreign Sheep Breeds:

1. Russian Merino: Found in Tonk, Jaipur, Sikar.
2. Rambouillet: Found in Tonk.
3. Dorset: Found in Tonk.
4. Corriedale: Found in Chittorgarh.

Camel Breeds: (max. -Jaisalmer, Min.- Pratapgarh)

• State Animals of Rajasthan

- in wildlife category – Chinkara (1981)
- in livestock category – Camel (Sept. 2014)

1. Bikaneri: Found in Bikaner. Used for carrying loads, riding, and milk production, hair found on eyes and ears.
2. Nachna: Found in Jaisalmer. Known for their beauty and speed.
3. Gomath: Found in Jodhpur. Used for camel rides.

Other Camel Breeds:

- Sindhi
- Kacchi
- Mewati
- Mewadi

Horse Breeds (max. -Bikaner, Min.- Dungarpur)

1. Malani: Found in Barmer (Gudha Malani) and Balotra (Siwana). Considered the best horse breed in Rajasthan.
2. Marwari: Found in western Rajasthan.
3. Kathiawari: Found in Barmer and Jalore. Its head is similar to an Arabian horse.

Other Livestock:

- Donkey: Highest in Barmer
- Poultry: Highest in Ajmer, Udaipur.
- Pig: Highest in Jaipur, Bharatpur.
- Mule: Highest in Alwar.

Livestock Breeding and Research Centers in Rajasthan

1. National Camel Research Center: Johadbeed (Bikaner)
2. Central Livestock Research Center: Suratgarh (Sri Ganganagar)
3. Sheep and Wool Research Center: Avikanagar (Tonk)
4. Sheep Breeding Center: Fatehpur (Sikar). One unit of this center is located in Bankaliya (Didwana Kuchaman).
5. Buffalo Research Center: Vallabhnagar (Udaipur)
6. Buffalo Breeding Center: Dag (Jhalawar), Kumher (Deeg)
7. Bull Mother Farm: Chandan Village (Jaisalmer)
8. Goat Breeding Center: Ramsar (Ajmer)
9. Pig Breeding Center: Alwar
10. Horse Breeding and Research Center: Keru (Jodhpur)

Livestock Diseases

Disease	Affected Animals
Sheep Pox	Sheep, Goats
Blue tongue	Sheep
Swine Flu (H1N1)	Pigs
Rabies	Dogs
Bird Flu (H5N1)	Poultry
Sarra (Tivarsa)	Camels
Ranikhet	Poultry

<i>Disease</i>	<i>Affected Animals</i>
<i>Foot-and-Mouth Disease</i>	<i>Cows and Bulls</i>

Major Livestock Fairs in Rajasthan

<i>Fair</i>	<i>Location</i>	<i>Cattle Breed</i>
<i>Shri Baldev Cattle Fair</i>	<i>Medta (Nagaur)</i>	<i>Nagauri</i>
<i>Shri Tejaji Cattle Fair</i>	<i>Parbatsar (Nagaur)</i>	<i>Nagauri</i>
<i>Shri Ramdev Cattle Fair</i>	<i>Manasar (Nagaur)</i>	<i>Nagauri</i>
<i>Shri Mallinath Cattle Fair</i>	<i>Tilwara (Barmer)</i>	<i>Tharparkar, Kankrej</i>
<i>Chandrabhaga Cattle Fair</i>	<i>Jhalarpatan (Jhalawar)</i>	<i>Malvi</i>
<i>Shri Gomtisagar Cattle Fair</i>	<i>Jhalrapatan (Jhalawar)</i>	<i>Malvi</i>
<i>Shri Jaswant Cattle Fair</i>	<i>Bharatpur</i>	<i>Haryanvi</i>
<i>Gogamedi Cattle Fair</i>	<i>Hanumangarh</i>	<i>Haryanvi</i>
<i>Mahashivratri Cattle Fair</i>	<i>Karauli</i>	<i>Haryanvi</i>
<i>Kartik Cattle Fair</i>	<i>Pushkar (Ajmer)</i>	<i>Gir</i>

Note: All the above livestock fairs are organized by the Department of Animal Husbandry, Jaipur.

Livestock Development Schemes

1. Gopal Yojana:

- *Launch: October 2, 1990 (Southeastern Rajasthan, 10 districts)*
- *Objective: To improve livestock breeds in rural areas and provide employment opportunities to youth.*

2. Kamdhenu Yojana:

- *Launch: 1997-98*
- *Objective: To establish breeding centers for high-yielding cattle breeds.*

3. ADMAS Scheme (Animal Diseases Monitoring and Surveillance):

- *Launch: 1999*
- *Objective: To eradicate diseases in cattle and buffalo breeds through the Indian Council of Agricultural Research (ICAR).*

4. Rajiv Gandhi Krishi and Pashupalan Vikas Mission:

- *Launch: January 19, 2010*
- *Objective: To achieve the objectives of the livestock development policy.*

5. Chief Minister Livestock Free Medicine Scheme:

- Start: 15 Aug. 2012
- Objective: To provide essential medicines for livestock development free of cost by the state government.

6. Avika Kavach Yojana:

- Launch: 2004, renewed in 2009 and 2018
- It is an insurance scheme for sheep and goats.
- Subsidies:
 - SC/ST and BPL: 80%
 - Other livestock owners: 70%

7. Bhama Shah Pashu Beema Yojana:

- Launch: July 23, 2016
- Objective: To provide insurance subsidies to livestock owners who have Bhama Shah cards.
- Subsidies:
 - SC/ST/BPL: 70%
 - General category: 50%
- Insurance amount:
 - Cow: ₹40,000
 - Buffalo: ₹50,000
 - Sheep/Goat/Pig (10 units): ₹50,000
- One family can insure a maximum of 5 large or 50 small animals.

8. Kamdhenu Beema Yojana:

- Launch: September 6, 2023
- For dairy animals (cows, buffaloes)
- Free insurance: ₹40,000 per animal (maximum 2 animals per family)
- If a cattle owner has more than two cows or buffaloes, then the relatively more milk yielding and healthy animal will be insured.

9. Goshalas Biogas Participation Scheme:

- Launch: April 1, 2018
- Objective: To make goshalas (cow shelters) self-reliant.
- One biogas plant will be installed in each goshala.
- Government subsidy: 50% of the cost, up to a maximum of ₹40 lakh.

10. Chief Minister Milk Producers Support Scheme:

- Launch: 1 February, 2019

- Subsidy: ₹2/liter to ₹5/liter (for milk sold to Saras Dairy)

11. Nandi Goshalas Public Participation Scheme:

- Launch: August 29, 2019
- Government subsidy: 90:10
- 16 Nandi Goshalas have been established.

12. Chief Minister Mangala Livestock Insurance Scheme:

- Insurance amount:
 - ₹5 lakh for cows, buffaloes, sheep, and goats.
 - ₹1 lakh for camels.
- Insurance amount Increased from 50% to 75%.

Note :- One animal from each family will be insured free of cost.

Other Important Points

1. Livestock Development Fund: ₹250 crore
2. Camel →
 - Camel Conservation and Development Mission (Budget July, 2024)
 - Amount for rearing newborn camels increased: ₹10,000 to ₹20,000