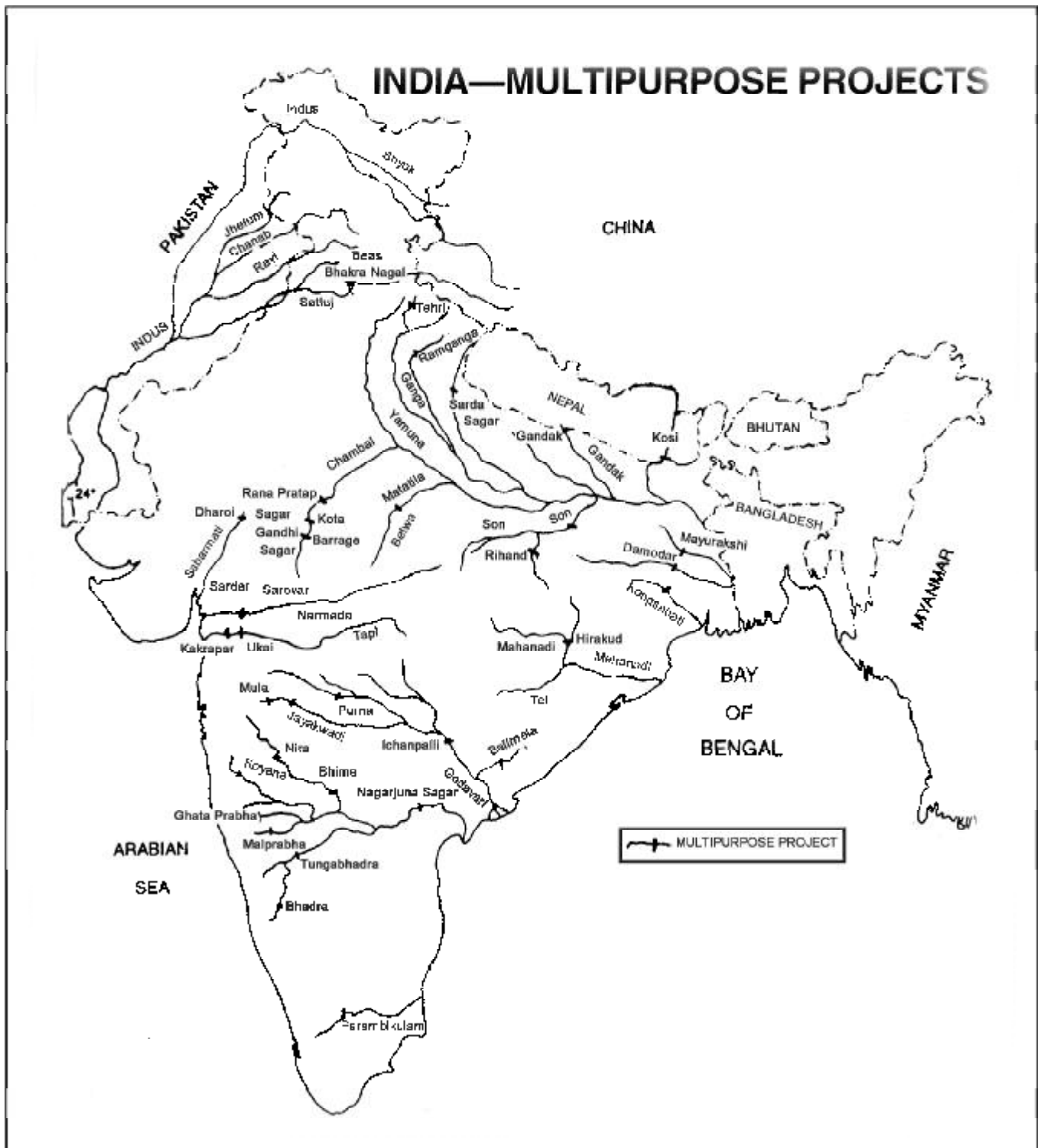


Part -3

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River Valley Projects

PROJECT	RIVER	STATE	PURPOSE
Bhakra Nangal Multipurpose Project. Bhakra dam: One of the highest gravity in the world. Govind Sagar Lake (H.P.) is a reservoir.	Satluj (A tributary of Indus).	Joint venture of Punjab, Haryana and Rajasthan.	Irrigation, hydro electricity.
Thein Dam project	Ravi (A tributary of Indus).	Punjab	Irrigation, hydroelectricity.
Dulhasti project	Chenab (A tributary of Indus).	Jammu and Kashmir	Part of the programme of cascade development for irrigation.
Salal project	Chenab (A tributary of Indus).	Jammu and Kashmir	Irrigation.
Beas Project	Beas (A tributary of Indus).	Joint venture of Punjab, Haryana and Rajasthan.	Hydro electricity
Sharda Sahayak Project	Chuisot stream near Kalabagh	Uttar Pradesh	Irrigation, hydroelectricity.
Banasagar project	Son	M.P., Bihar and U.p.	Irrigation
Rihand Scheme Reservoir: Godind Ballabh Sagar (U.P.)	Rihand	Uttar Pradesh	Hydroelectricity for the development of south eastern industrial region of U.P.
Damodar valley multipurpose project Four dams: Tilaiya and Maithon (on the Barakar River), Konar (Konar River) and Panchet (Damodar River).	Damodar	West Bengal (also shared by Jharkhand).	Flood control, Irrigation, Hdroelectricity.
Mayurakshi project	Mayurakshi	West Bengal	Irrigation, hydroelectricity.
Hirakud, multipurpose Project (world's longest mainstream dam).	Mahanadi	Orissa	Irrigation, hydroelectricity.
Poochampad Project	Godavari	Andhra Pradesh	Irrigation.
Jayakwadi Project	Godavari	Maharashtra	Irrigation.
Nagarjuna Sagar	Krishna	Andhra Pradesh	Irrigation, hydroelectricity.
Upper Krishna Project	Krishna	Karnataka	Irrigation (Almatti dam is being constructed).

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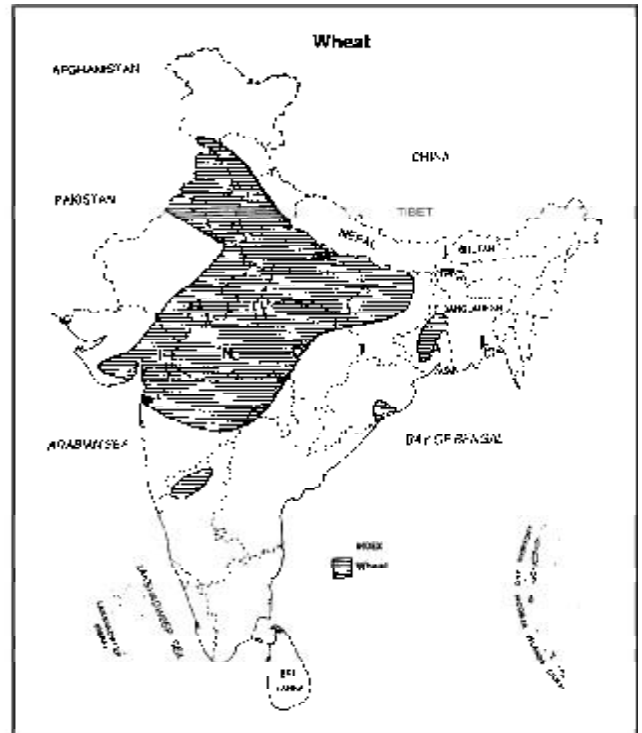
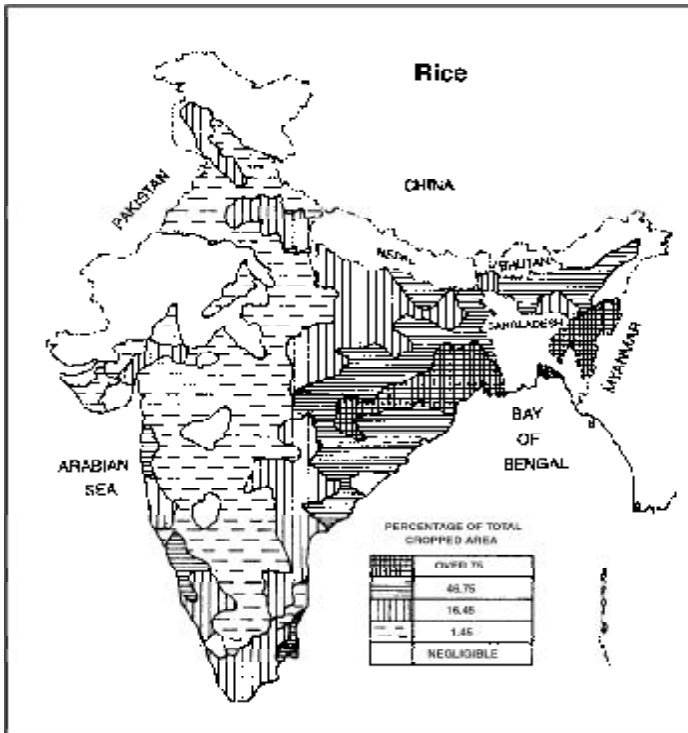
Tungabhadra multipurpose project	Tungbhadra (A tributary Krishna).	Joint venture of Andhra Pradesh and Karnataka.	Irrigation, hydroelectricity.
Ghatprabha project	Ghatprabha (A tributary of Krishna).	Andhra Pradesh and Karnataka.	Irrigation
Malprabha project	Malprabha (A tributary of Krishna).	Karnataka	Irrigation
Bima project	Bhima	Maharashtra	Irrigation
Mettur project	Cauvery	Tamil Nadu	Hydroelectricity
Shivasamudram Scheme	On Cauvery Falls.	Karnataka	Hydroelectricity
Kundah project	Kundah	Tamil Nadu	Hydroelectricity
Sharavati Project	Sharavati (near Jog falls)	Karnataka	Hydroelectricity
Chambal project (Gandhi Sagar Dam (M.P.), Rana Pratap Sagar and Jawahar Sagar Dam or Kota Dam.	Chambal (A tributary of	Rajasthan, Madhya Pradesh	Irrigation, hydroelectricity
Kakrapara Project	Tapi	Gujarat	Irrigation
Ukai Project	Tapi	Gujarat	Irrigation
Sardar Sarovar Project	Narmada	Gujarat, M.P. Rajasthan Maharashtra	Irrigation, hydroelectricity
Tawa project	Tawa (A tributary of Narmada.	Madhya Pradesh	Irrigation
Mahi Project (Jamnalal Bajaj Sagar)	Mahi	Gujarat	Irrigation
Matatila project	Betwa	Uttar Pradesh, Madhya Pradesh	Irrigation, hydroelectricity

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Food Crops Distribution

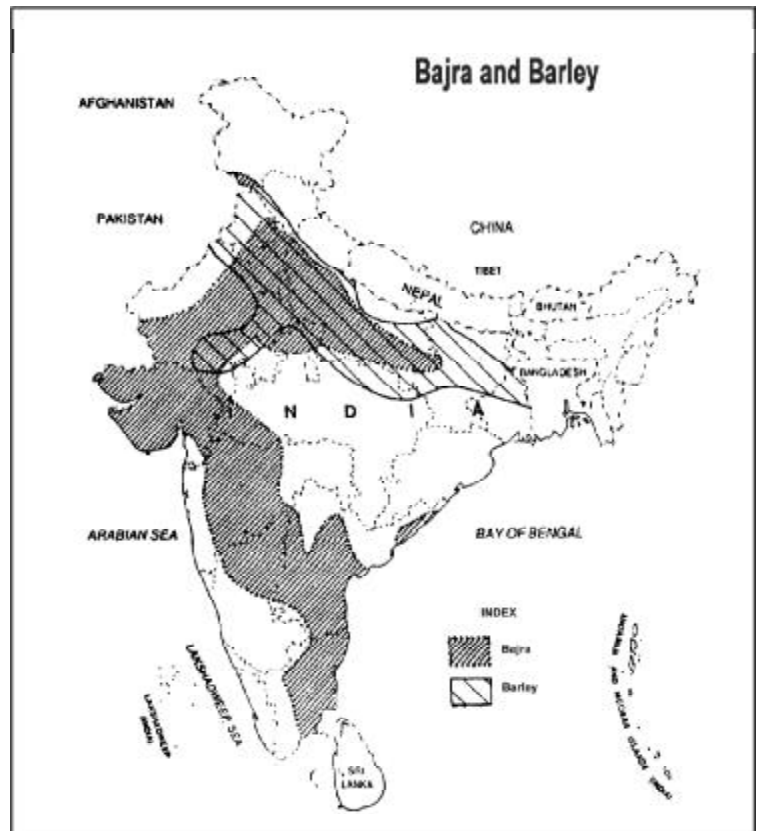


RICE (KHARIF CROP)		WHEAT RABI CROP)	
Conditions Required	Distribution	Conditions Required	Distribution
<p>Temperature : 10° to 21°C during wosing 35° to 37°C during harvest.</p> <p>Rainfall : 100 to 200 cm.</p> <p>Soil: Heavy clay and Clayey loam is best suited.</p>	<ol style="list-style-type: none"> 1. West Bengal 2. U.P. 3. Andhra Pradesh 4. Punjab 5. Tamil Nadu 6. M P 7. Orissa 8. Bihar 9. Assam 10. Karnataka 11. Maharashtra 12. Haryana 13. Kerala 	<p>Temperature : 10-15°C (winter) 21° - 26°C (summer)</p> <p>Rainfall : 15 to 75 cm.</p> <p>Soil: Well drained fertile, friable loams, and clayey laoms.</p>	<ol style="list-style-type: none"> 1. Uttar Pradesh 2. Punjab 3. Haryana 4. Madhya Pradesh 5. Rajasthan 6. Bihar 7. Gujarat 8. Maharashtra

Millets

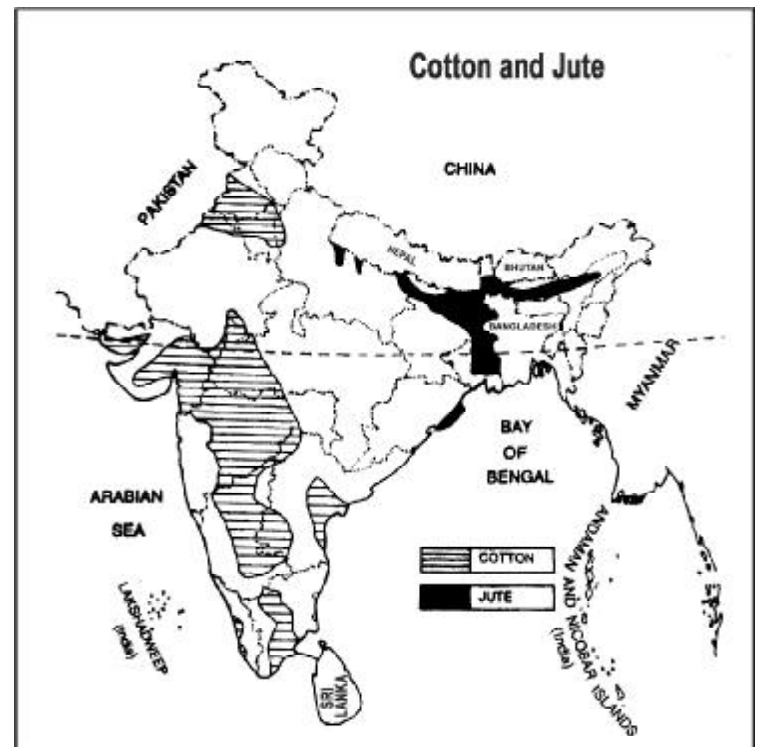
BAJRA	
Condition Required	Distribution
Temp : 25°-35°C	1. Rajasthan
Rainfall : 40-50 cm.	2. Maharashtra
Soil: Poor, light sandy soils, black and red upland soils gravelly.	3. Gujarat
	4. Uttar Pradesh
	5. Haryana

BARLEY	
Temp : 10°-15°C	1. Uttar Pradesh
Rainfall : 75 cm to 100 cm.	2. Rajasthan
Soil: light clay and alluvial soil.	3. Madhya Pradesh
	4. Haryana
	5. Punjab
	6. Bihar
	7. Himachal Pradesh
	8. West Bengal

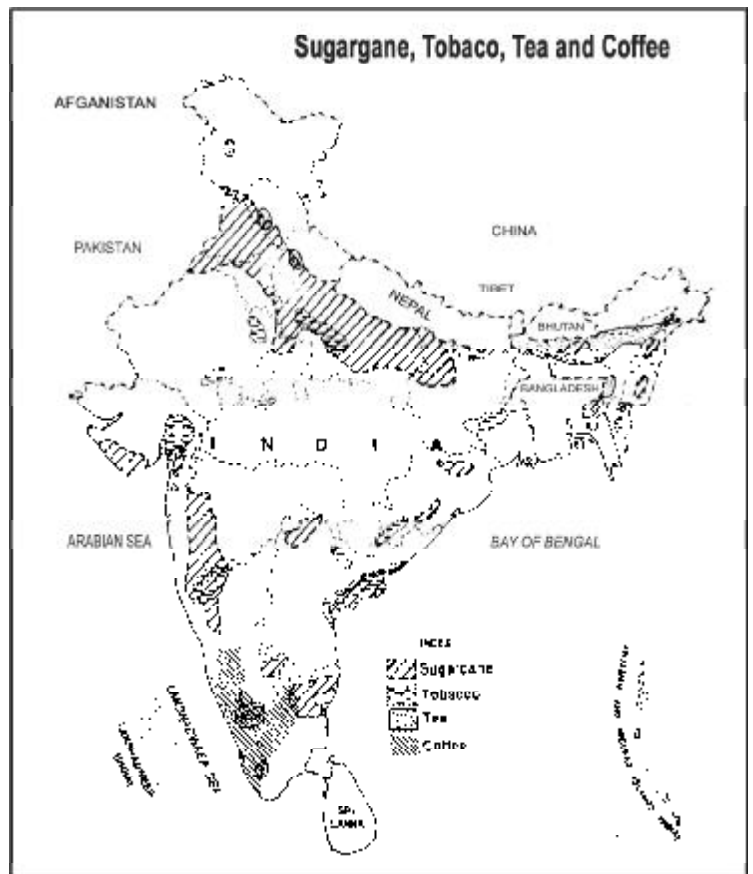


Cash Crops

COTTON	
Condition Required	Distribution
Kharif crops of tropical and subtropical areas.	1. Punjab
Temp. : 21°C-30°C but not below 21°C.	2. Maharashtra
210 frost free days.	3. Gujarat
Rainfall: 50-75 cm of irrigation facility.	4. Haryana
Soil: Deep black soil (regur), even grows in alluvial soils and laterite soils.	5. Andhra Pradesh
	6. Rajasthan
	7. Karnataka
	8. Tamil Nadu
	9. Madhya Pradesh



JUTE	
<p>Second important fibre crop of India, crop of hot and humid climate.</p> <p>Temperature: 24°C-35°C</p> <p>Rainfall: heavy rainfall of above 150cm with 80-90 percent of relative humidity.</p> <p>Soil: Alluvial soil also grown in light sandy or clayey loams.</p>	<ol style="list-style-type: none"> 1. West Bengal (70 percent of the production, over 60 percent of the area. 2. Bihar 3. Assam 4. Orissa 5. U.P. 6. Maharashtra 7. Kerala (Coastal areas)
SUGAR CANE	
<p>Temperature: 20°C - 26°C</p> <p>Rainfall: 150 cm or irrigation facilities with high humidity.</p> <p>Soil: Deep rich, loamy soils are ideal; black soil is also suitable.</p>	<ol style="list-style-type: none"> 1. Uttar Pradesh 2. Maharashtra 3. Tamil Nadu (highest yield / hectare) 4. Karnataka 5. Andhra Pradesh 6. Gujarat 7. Bihar 8. Haryana 9. Punjab
TOBACCO	
<p>Plant of tropical and sub-tropical climates and frost is harmful.</p> <p>Temperature: 16°C-40°C</p> <p>Rainfall: 50 cm or irrigation facilities.</p> <p>Soil: well-drained, friable sandy loam.</p>	<ol style="list-style-type: none"> 1. Gujarat (90 percent of Tobacco from Vadodara and Kheda districts). 2. Andhra Pradesh (West and East Godavari, Prakasham, Kurnool and Nellore are the main producing districts) <p>Other areas of minor production (a) Uttar Pradesh (b) Karnataka (c) West Bengal.</p>



Plantation Crops

TEA		COFFEE	
Conditions Required	Distribution	Conditions Required	Distribution
<p>Tropical and sub-tropical plant, which thrives well in hot and humid climate. Temperature: 24°C-30°C</p> <p>Rainfall: 150-300 cm (well distributed).</p> <p>Soil: forest soil rich in humus and iron content is the best suited well drained deep and friable loam is also suitable.</p>	<p>1. Assam (the Brahmaputra valley, Surma valley). 2. West Bengal (the Dooars, Darjeeling). 3. Tamil Nadu (highest yield per hectare) 4. Kerala (Kottayam, Kollam and Tiruvananthapuram district). Other areas of minor production. (a) Tripura (b) Karnataka (c) Uttar Pradesh (d) Himachal Pradesh (Kangra valley).</p>	<p>Crop of hot and humid climate. Temperature: 15°C-28°C but does not tolerate frost. Rainfall: 150-200cm Soil: well drained rich friable loams with rich in humus, iron and calcium.</p>	<p>1. Karnataka 80 percent of total production). 2. Kerala (13 percent of</p>
RUBBER			
<p>Temperature: 25°C-35°C Rainfall: about 300 cm (well distributed throughout the year). Soil: well drained loamy soil varying from laterite to fire alluvium or clayey loams.</p>	<p>1. Kerala (above 90 percent of total production, Kottayam, Ernakulum, Kozhikode and Kollam are the main producing districts). 2. Tamil Nadu. 3. Karnataka. 4. Assam 5. West Bengal 6. Maharashtra 7. Goa 8. Andaman Nicobar</p>		

Other Crops

MAIZE		JOWAR	
Conditions Required	Distribution	Conditions Required	Distribution
<p>Rainfed Kharif Crops Temperature: 21°-25°C Rainfall: Below 75 cm Soil: well drained alluvial or red loams.</p>	<p>1. Bihar 2. Uttar Pradesh 3. Karnataka 4. Andhra Pradesh 5. Madhya Pradesh 6. Rajasthan 7. Himachal Pradesh</p>	<p>Both Kharif and Rabi crops. Temperature: 27° to 32° C for Kharif crops and not below 16° C for rabi crops. Rainfall: 30 cm to 100cm; rainfed crop in dry farming area. Soil: Variety of soil including clayey, sandy.</p>	<p>1. Maharashtra 2. Karnataka 3. Madhya Pradesh 4. Andhra Pradesh 5. Rajasthan 6. Gujarat</p>
RAGI		GRAM	
<p>Temperature: 20-30°C Rainfall: 50-100 cm Soil: red, light black and sandy loams.</p>	<p>1. Karnataka 2. Tamil Nadu 3. Maharashtra 4. Uttar Pradesh</p>	<p>Most important of all pulses Temperature: 20-25° C Rainfall: 40-50 cm Soil: Grows well in loamy soil.</p>	<p>1. Madhya Pradesh 2. Uttar Pradesh 3. Rajasthan 4. Haryana 5. Maharashtra (These five states produce over 90 % gram of India).</p>

Non Metallic Minerals

NON METALLIC MINERALS	DISTRIBUTION
<p>Mica</p> <p>(Abhrak) Valuable mineral in electrical and electronic industry.</p>	<p>Bihar - Gaya, Jharkhand Hazaribagh, (Largest mica producing state of India).</p> <p>Andhra Pradesh - Nellore.</p> <p>Rajasthan - Ajmer, Bewar, Tonk, Bhilwara, Sikar, Udaipur and Banswara.</p>
<p>Limestone</p> <p>75% used in cement industry;</p> <p>16% in iron and steel industry & 4% in chemical industry.</p>	<p>Madhya Pradesh - Satna, Jabalpur, Betul, Sagar and Reewa.</p> <p>Chhattisgarh - Bilaspur, Raigarh, Raipur and Durg.</p> <p>Andhra Pradesh - Adilabad, Warangal, Nalgonda, Mahboobnagar, Guntur.</p> <p>Karnataka - Bijapur, Gulbarga, Shimoga (cement grade limestone).</p> <p>Rajasthan - Jhunjhunu, Bikaner, Nagaur, Jodhpur, Pali, Sirohi, Udaipur.</p> <p>Chittorgarh, Ajmer, Sawai Madhopur, Bundi, Banswara.</p> <p>Gujarat - Banaskantha, Amreli, Junagarh, Surat, Kachchh, Kheda and Panchmahals.</p>
<p>Dolomite</p>	<p>Bihar - Rohtas.</p> <p>Jharkhand - Chaibasa in Sighbhum district and Palamau district.</p> <p>Orissa (Largest producer) - Sundargarh, Sasmbalpur, and Koraput districts.</p> <p>Madhya Pradesh - Chhindwara, Jhabua, Jabalpur, Balaghat.</p> <p>Chhatisgarh - Bilaspur, Durg and Bastar district.</p> <p>Gujarat - Bhavnagar and Vadodara districts.</p>
<p>Abestos</p> <p>Used for making fire proof rope paper, paints, etc. and cement products like sheets, etc.</p>	<p>Rajasthan - Alwar, Ajmer, Pali, Udaipur and Dungarpur districts.</p> <p>Andhra Pradesh - Cuddapali district.</p> <p>Karnataka - Shimoga, Chikmagalur, Hassan, Mandya and Mysore districts.</p>
<p>Gypsum</p> <p>Mainly used in making of ammonia sulphate fertilizer in cement industry and in making plaster of paris, etc.</p>	<p>Rajasthan - (largest producer of gypsum in India): (Churu, Ganganagar, Bikaner, Jaisalmer, Nagpur and Pali districts produce 95 percent of the total gypsum of India.</p> <p>Jammu and Kashmir - Baramula and Doda districts.</p> <p>Tamil Nadu - Tiruchirapalli.</p>
<p>Diamond</p>	<p>Madhya Pradesh - Panna.</p> <p>Andhra Pradesh - Anantpur, Kurnool.</p> <p>Karnataka - Bellary.</p> <p>Orissa - Sambalpur.</p>
<p>ATOMIC MINERALS - Uranium, Thorium</p>	
<p>Uranium</p>	<p>Bihar - Gaya</p> <p>Jharkhand - Hazaribagh and Singhbhum.</p> <p>Uttar Pradesh - Saharanpur</p>

	Rajasthan - Udaipur. Kerala - Uranium from monzite sands of coastal regions.
Thorium	Bihar (Including Jharkhand), Tamil Nadu, Kerala and Rajasthan.
METALLIC MINERALS	
Gold	Andhra Pradesh - Ramgiri (Anantpur). Karnataka - Hutti (Raichur), Kolar. Kerala - Kozhikode.
Copper	Jharkhand - Hazaribagh, Singhbhum. Madhya Pradesh - Balaghat (Malanjkhand belt). Andhra Pradesh - Khammam, Guntur and Kurnool. Rajasthan - Jhunjhunu, Khetri, Alwar, Bhilwara and Udaipur. Maharashtra - Chandrapur. Karnataka - Chitradurga, Hassan.
Lead and Zinc	Sikkim, Meghalaya, Andhra Pradesh (Cuddapah). Rajasthan - Zawar (Udaipur), Agucha - Rampur (Bhilwara). Gujarat - Banaskantha, Panchmahal, Vadodara, Surat.
Iron	Jharkhand : Singhbhum (Noamundi, Sindurpur, Kiriburu). Orissa - Mayurbhanj (Gurumahisani, Badampahar, Sulaput), Keonjhar. Madhya Pradesh - Jabalpur, Balagha. Chhattishgarh - Durg (Dalli Rajara), Bastar (Bailadila). Andhra Pradesh - Guntur, Kurnool. Tamil Nadu - Salem, Tiruchirappalli. Maharashtra - Surajgarh, Lohra-Piplagaon, Ratnagiri. Goa - Blue dust iron mainly for export. Karnataka - Bellary, Chitradurga, Tumkur, Chikmagalur, Kudremukh. Kerala - Kozhikode.
Bauxite	Jharkhand - Palamau, Ranchi. Madhya Pradesh - Katni, Amarkantak, Maikala Range. Chhattishgarh - Sarguja, Raigarh and Bilaspur. Orissa - Kalahandi (Koraput). Tamil Nadu - Salem, Nilgiri, Coimbatore and Madurai. Gujarat - Sabarkantha, Jamnagar, Surat. Maharashtra - Kolaba, Ratnagiri, Kolhapur. Karnataka - Belgaum.
MINERAL FUELS: Coal, Lignite, Petroleum, Refineries.	
Gondwana Coal fields. (Valley of Son, Damodar, Mahanadi and Godavari)	Jharkhand - Giridih, Jharia, Bokaro. West Bengal - Raniganj. Orissa - Himgir, Talcher. Andhra Pradesh - Kantapalli, Singareni. Madhya Pradesh - Singrauli, Panch Valley.

Lignite Coal	Tamil Nadu - Neyveli. Jammu and Kashmir, Rajasthan (Palana in Bikaner dist). Gujarat - Umrasar)
Teritiary Coals field	Assam - Makum (Sibsagar), Najira, Janji. Meghalaya, Arunachal Pradesh (Namchik, Namphuk).
Oil fields	Assam - Digboi, Naharkatia, Moran and Sibsagar. Gujarat - Mehsana, Dholka, Kalol, Nawagam, Ankaleshwar and Kosamba.
Offshore oil fields	1. Mumbai High 2. Bassein 3. Ravva 4. Aliabet.
Oil Refineries	Assam - Digboi (IOC), Guwahati (IOC), Bongaigaon. Bihar - Barauni (IOC). Uttar Pradesh - Mathura. Gujarat - Koyali, Jamnagar (largest oil refinery). Maharashtra - Mumbai (BPCL). Karnataka - Mangalore (MRPL). Kerala - Kochi (CRI). West Bengal - Haldia (IOC). Andhra Pradesh - Vishakhapatnam (HPCL). Tamil Nadu - Chennai (MRI).