CROP REGIONS IN INDIA

Technical Report · March 2014

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CROP REGIONS IN INDIA

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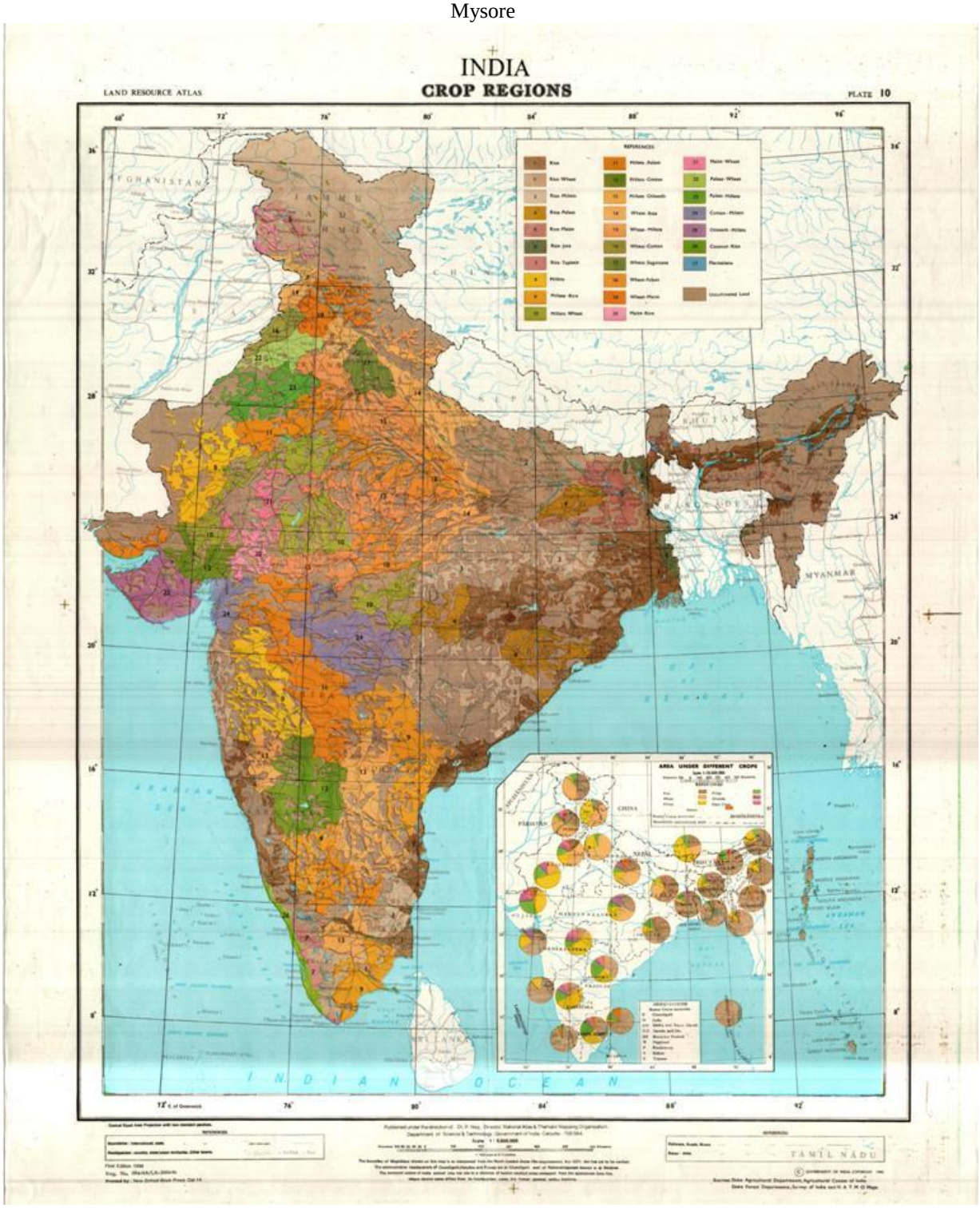


Introduction

India is bestowed with a lot of natural resources. It is a tropical country with great attitudinal variations. In India, the climatic conditions also show much variation from hot deserts to cold deserts. India has a wide range of soil classes; each type is unique with specific properties. It is also a country with more agrarian population.

Agriculture is one of the primary occupation of people in India. Almost 45% of the area is under various crops. The distribution of these crop regions is a major aspect to be studied under the geography of India.

In India, cropping activities are observed all round the year in various intensities. In several places, short term crops are grown side by side with annual crops.

In the northern India, there are two distinct seasons: one is known as *kharif season* (July to October) and the other one is *rabi season* (October to March). Crops grown between March and June are known as *zaid.*

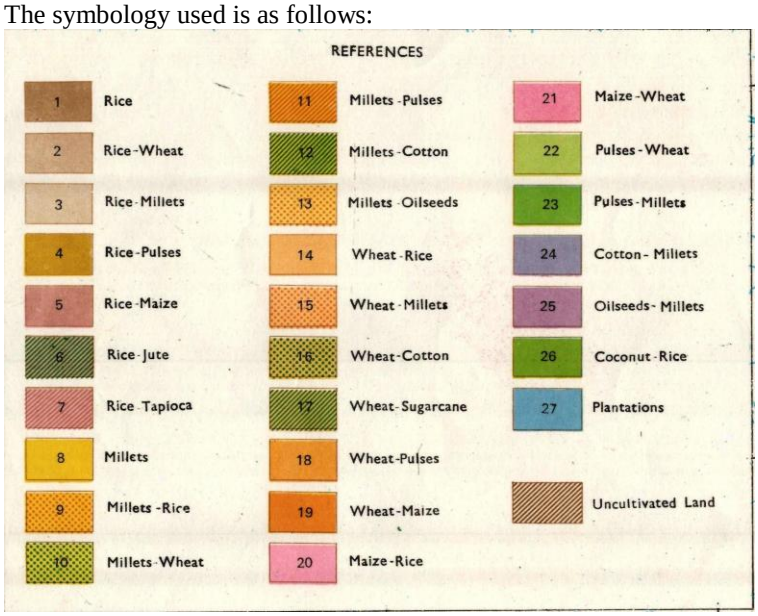
On the basis of statistical distribution of crops, the country is divided into twenty-seven crop regions. It falls within eight broad crop regions, dominated by (a) rice (b) wheat (c) millets (d) cotton (e)oilseeds (f) pulses (g) maize and (h) coconut and other plantation crops.

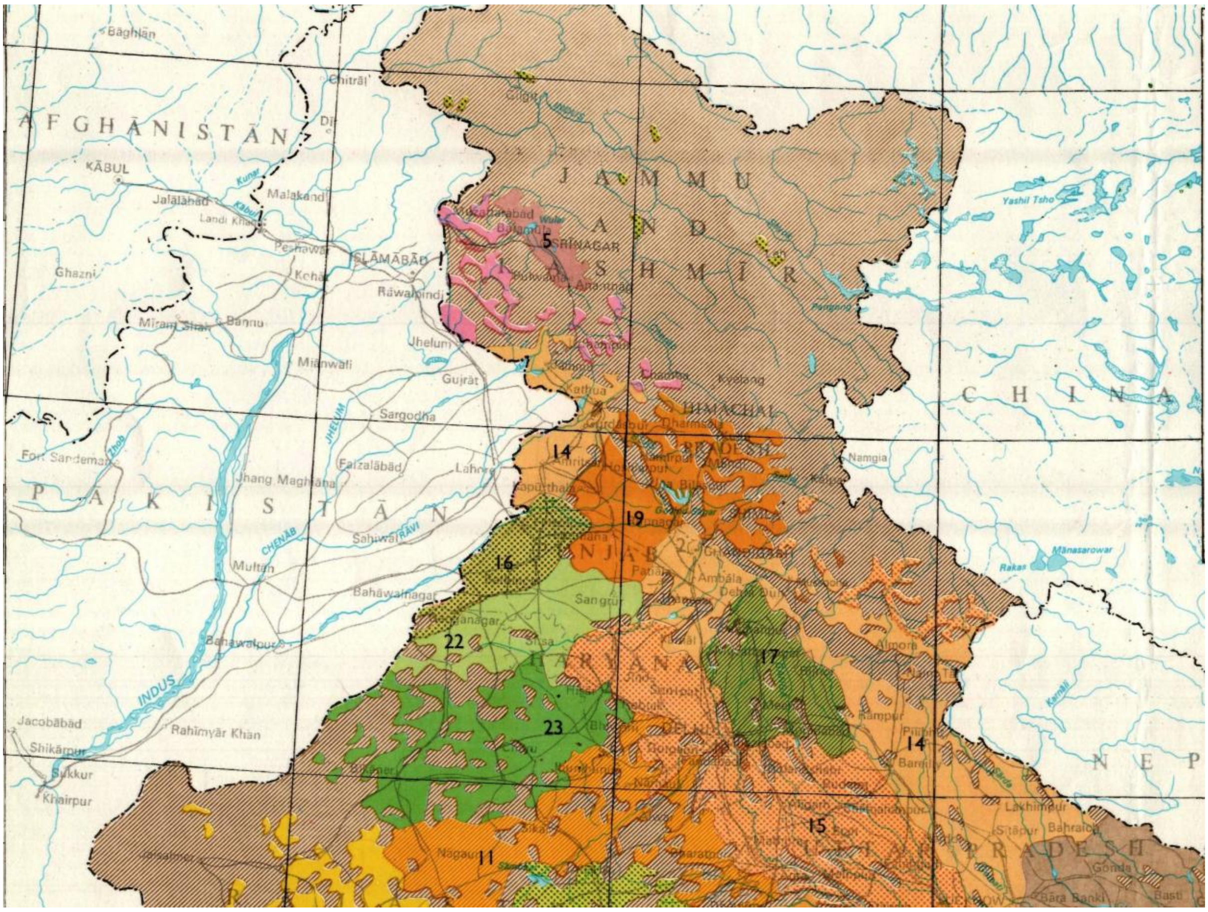
For convenience, they are regrouped into 5 major crop related zones.

The objectives of this lesson are to know about the distribution of

1. Rice dominated crop regions
2. Millets dominated crop regions
3. Wheat dominated crop regions
4. Maize & pulses dominated crop regions
5. Oilseeds, cotton and plantation regions.

The following map of Survey of India gives the spatial distribution of various zones.
The symbology used is as follows:

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Gujrāt
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Bahāwalpur
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Jacobābād
Rahīmyār Khān
Shikārpur
Sukkur
Khairpur
JAMMU AND KASHMIR
SRINAGAR
HIMACHAL PRADESH
PUNJAB
CHINA
Yashil Tsho
Namgia
Mānasarowar
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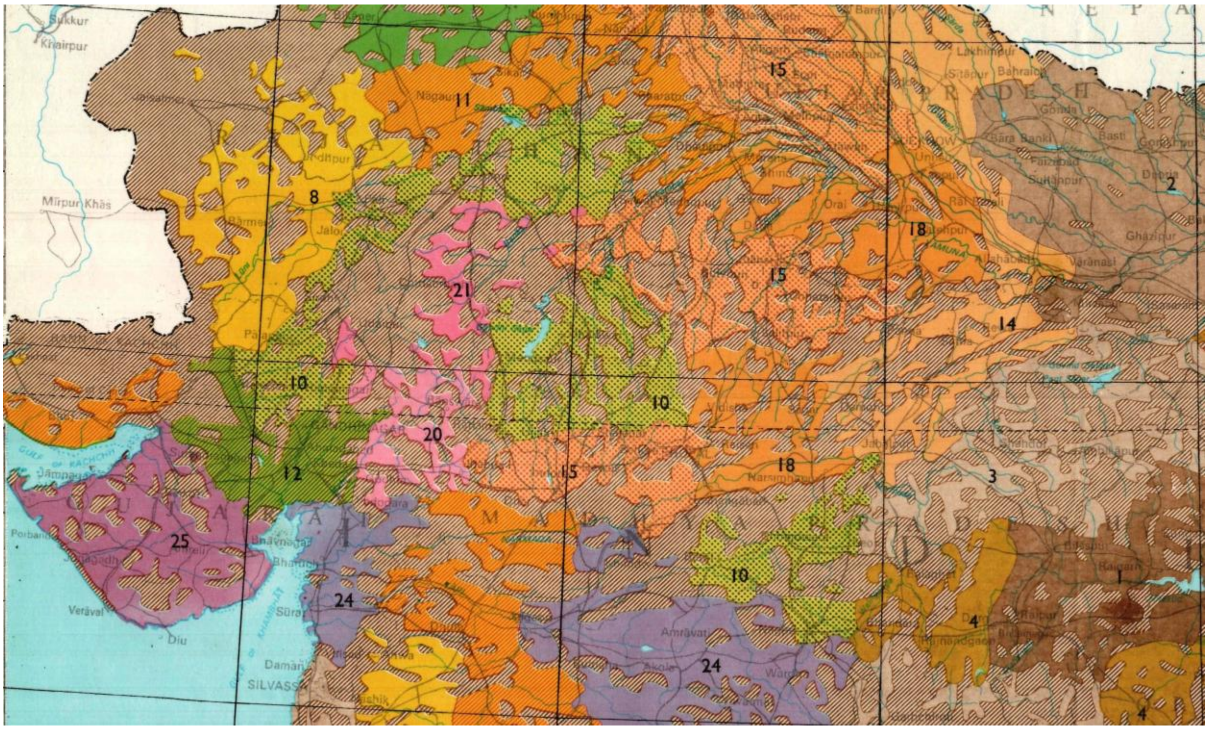
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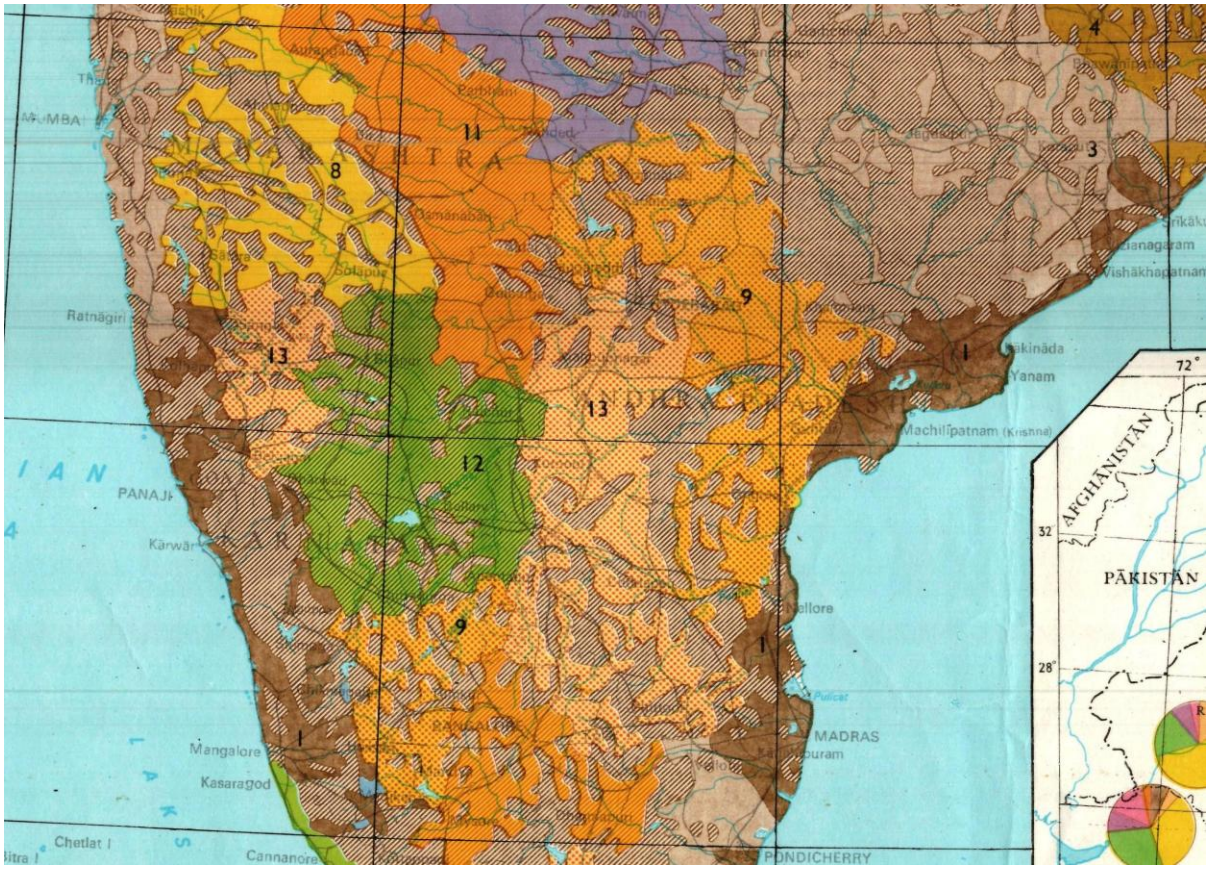
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Quilon
TRIVANDRUM
(Thiruvananthapuram)
Nagercoil
Kanniyakumari
Cuddalore
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Jaffna
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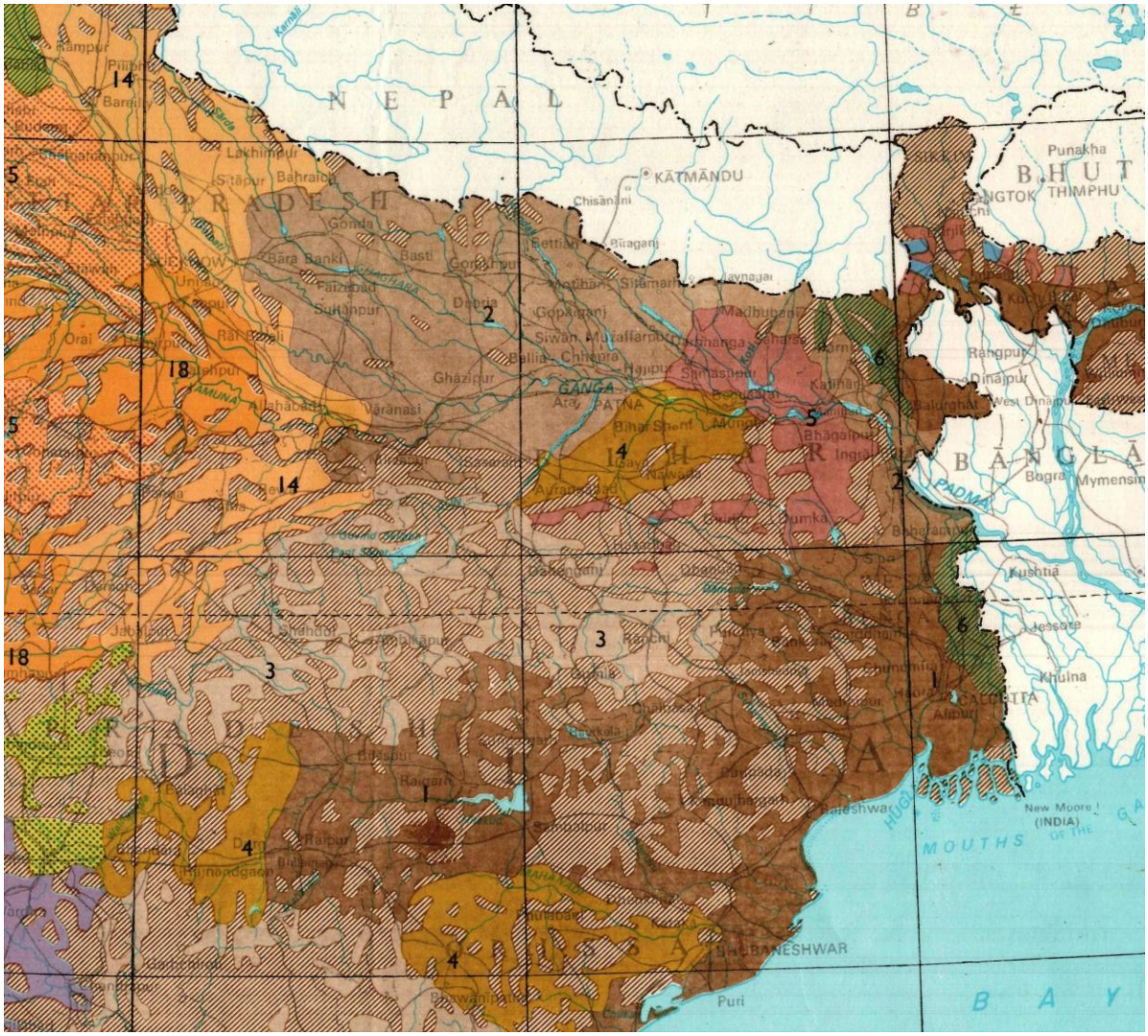
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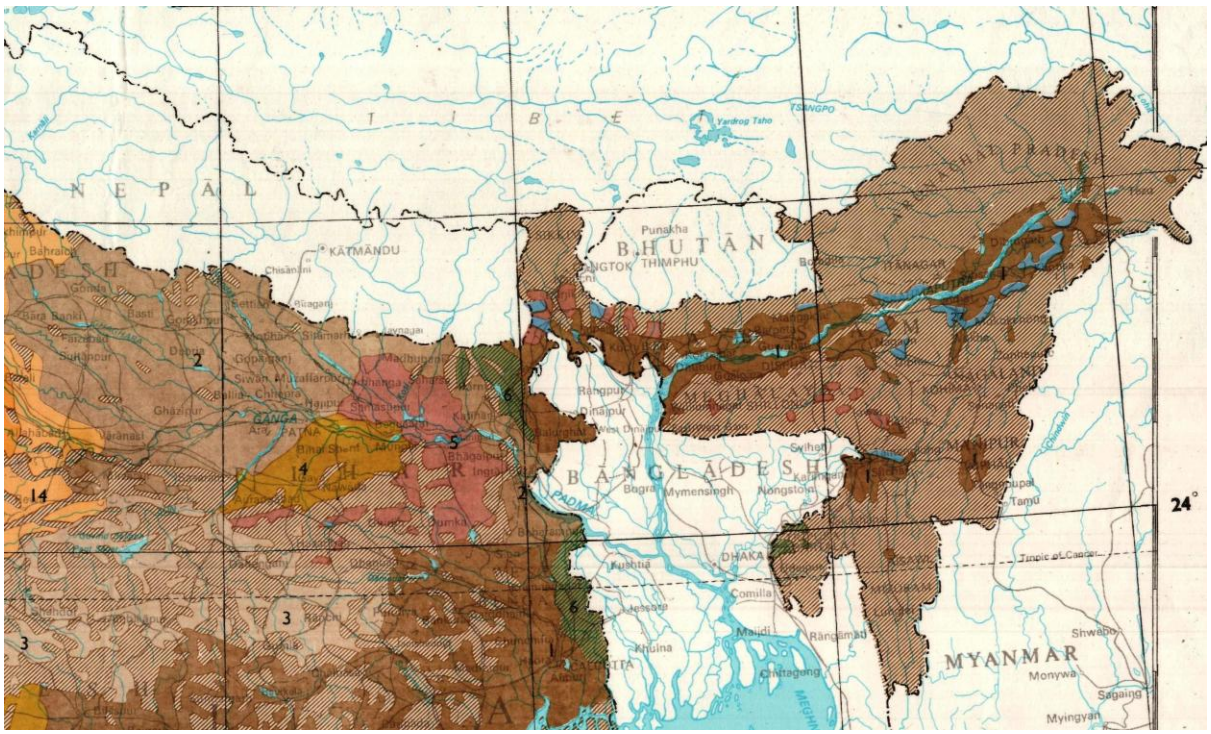
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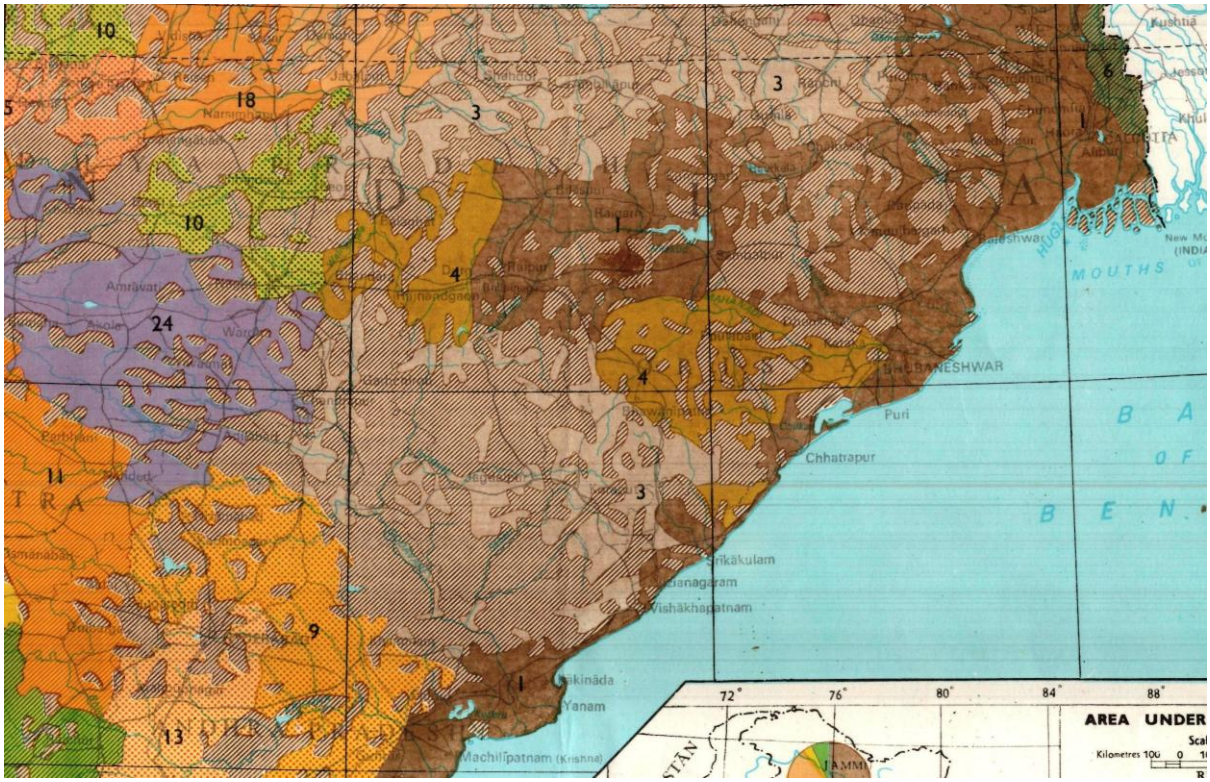

1. Rice dominated crop regions

Rice is cultivated in the high rainfall zones. It is also grown in areas where supplementary irrigation is available.

The major rice growing states are

West Bengal, Bihar, Madhya Pradesh, Uttar Pradesh, Orissa, Andhra Pradesh, Assam, Maharashtra, Kerala, Karnataka, Tamil Nadu and Punjab.

Area under rice covers 44.41 Million ha.

In southern India, rice is grown particularly in coastal and valley regions.

These rice growing regions may also utilized for the production of other crops like wheat, millet and pulses.

In addition, jute and tapioca also form an integral part of rice zone in some places.
Several states have shown high production in *kharif* season.
The average yield of this crop is 1,686 kg/ha, though it varies from region to region.

In Punjab, the yield of rice is maximum, 2,314 kg/hectare, followed by Andhra Pradesh, Karnataka, West Bengal, Uttar Pradesh and Assam.

In some regions, wheat is cultivated after rice as a multi crop zone.

The distribution of rice, pulses and wheat areas are mainly concentrated in the Ganga plains of eastern Uttar Pradesh, Bihar and also parts of West Bengal.

Rice and millets are yet an other combinations.

These crop regions are scattered over the areas of
southern Bihar, Maharashtra, southern Orissa, north-western Andhra Pradesh, east-central Tamil Nadu and parts of western Maharashtra.

Rice and pulses are important combination in the parts of central Bihar, central districts of Orissa, Durg districts of Madhya Pradesh and Bhandara districts of Maharashtra.

Rice and maize cultivation is predominated in two belts, one in eastern Bihar over Chhotanagpur plateau and other in an elongated belt around Sri nagar in Jammu & Kashmir.

In addition, some small pockets also occur in North Bengal and Meghalaya regions.

In parts of West Bengal and Bihar, jute forms the very important commercial crop along with rice. This region also accounts for about 80 per cent of the area under jute in India.

Rice and tapioca are one more combination which is most common in the areas parallel to the coastal plains of Kerala state.

2. Millet dominated crop regions

Millets are drought resistant and short-period crops in India. Millets are grown in regions of erratic and scanty rainfall. There are four kinds of millets grown in India.

They are commonly known as *jowar, bajra, ragi,* and small millets.
They are the most important food and fodder crops.

They are grown in dry lands mostly.
Bajra is the hardiest of millets.
Its greater concentration is seen in Rajasthan where the annual rainfall is below 60 cm.
It is a staple food crop in Rajasthan.

It covers 41 per cent of *bajra* growing lands of the country and contributes only 14 per cent of the total *bajra* production.

Ragi on the other hand needs a moderately high rainfall in the time of early growth.
Major *ragi* growing lands occur in the southern parts of Karnataka state.

Karnataka leads in *ragi* production covering 1,120 M ha or 40 percent of the total area under *ragi i*n India.

Jowar is a crop tolerant both of drought and humid conditions. But it cannot withstand high altitude.

In Deccan Plateau, where the annual rainfall ranges between 60 cm and 140 cm,
Jowar is cultivated over vast areas.

Jowar also grows both in *kharif* and *rabi* seasons.
The *rabi* constitutes 36 to 38 per cent of the area under this crop which is concentrated in the Deccan plateau.

In the states of Maharashtra and Karnataka, the *rabi-jowar* occupies about 55 to 60 per cent of the area of this crop whereas in Andhra Pradesh the distribution is seen in both the seasons.

In other states, the *kharif season* is more important for growing Jowar.

A few areas under this crop are irrigated during summer.

Amongst the states, Maharashtra ranks first, occupying 46 per cent of total area under *jowar* cultivation in India.

Small millets account for about 10 per cent of the total millet grown area of the country.

They are mainly grown in the rugged and hilly tracts of Madhya Pradesh and Andhra Pradesh.

In millet dominated crop region, there are six crop combinations adopted in cultivation. These zones are constituted by rice, wheat, pulses, cotton and oilseeds.

Rice is the second important crop after millets which is cultivated in the
central parts of Andhra Pradesh, southern parts of Tamil Nadu and southern parts of Karnataka.

Millet and wheat region is spread over the districts of
a) Ratlam, Rajgarh, Mandsaur, Ujjain, Betul, Chhindwara of Madhya Pradesh;
b) Pali, Jalor, Jaipur, Kota, Jhalawar and Tonk of Rajasthan;
c) Himaitnagar, Mehesana, Palanpur of Gujarat; and
d) Nagpur of Maharashtra.

A wide area of millet and pulses cultivation is distributed in the central part of Maharashtra through the Gulbarga district of Karnataka.

A second belt of millet-pulses occurs in the districts of Nagaur, Sikar, and Jhunjhunun of Rajasthan and continues through Bhiwaru to Rohtak of Haryana.

A sizeable area is also prevalent in the districts of Tumkur, Bangalore, Mandya, Mysore of Karnataka and the district of Dharmapuri of Tamil Nadu.

A long strip of land falling within this combination occurs in Bhuj area of Gujarat.

In the same state, Surendranagar, Gandhinagar and Kheda are the districts producing cotton as a second important crop.

Millet-oil seeds crop combination is distributed over major parts of Telengana plateau, western part of Karnataka plateau and Tamil Nadu uplands.

3. Wheat dominated crop regions

Wheat is the second important food crop growth in India. Wheat crop grown regions occupy 28.5 Million hectare and covers 14 per cent of the total arable land of the nation.

Wheat is the dominant crop along with the combination of other crops such as, millets, cotton, sugarcane, pulses and maize which are widely prevalent in northern India.

In India, wheat is a major crop grown due to the availability of extensive irrigation facilities; fertilizer and fertile land.

Large scale production of wheat is seen in Punjab and Uttar Pradesh followed by Madhya Pradesh, Haryana, Bihar, Rajasthan.

Wheat is grown in association with other crops also. The average yield of wheat is about 2380 kg/ha in general; the highest yield is observed in Punjab at 3,540 kg/ha.

The wheat growing regions of India can further be sub-divided into six sub-regions.

Wheat and rice combination zone which occupies along the crescent shaped belt starting from Punjab through western Uttar Pradesh to north-eastern Madhya Pradesh.

Wheat and millets combination predominates in western Uttar Pradesh and parts of western Madhya Pradesh.

Wheat and cotton belt is conspicuous in Bhatinda, Faridkot, and Firozpur districts of Punjab.

Sugarcane, which is the second important crop after wheat is produced in the western parts of Uttar Pradesh in the districts of Saharan pur, Muzaffarnagar, Meerut and Moradabad.

The area under sugarcane is fluctuating every year because of demand of prices of sugarcane in the market. It occupies 4.2 Million hectare.

It holds a prominent position as a cash crop in the state of Uttar Pradesh.

Wheat and pulses combination dominates in the Bundelkhand region and its periphery.

Wheat and maize cultivated region occupies a compact belt stretching from Bist doab to Himachal Pradesh.

4 a. Maize dominated crop regions

Maize is one of the most important cereal crops grown in India. It supports a majority of population in the country. The area and production of maize have steadily increased over the last few decades.

The states of Uttar Pradesh, Madhya Pradesh, Bihar, Rajasthan and Punjab account for over 75 per cent of the area of the country under this crop.

Though it is grown largely in different states, maize is the first ranking crop in the state of Gujarat, Rajasthan and in Jammu and Kashmir.

Maize is cultivated with rice as its second crop.

Bhilwara and Chittaurgarh of Rajasthan and parts of south-western Jammu and Kashmir produce wheat as the second crop, after maize.

4b. Pulses dominated crop regions

Pulses form an integral part of Indian food production. Pulses are the major dietary for sources of protein.

At field level, the pulses are most commonly grown as mixed crops. The variety of pulses that are grown in different parts of the country.

They can broad1y be classified into two groups, i.e. (a) *kharif* pulses and (b) *rabi* pulses.
The important K*harif* pulses are *tur* or arhar, *kulthi. Urad, mung* etc.

Arhar is mostly an annual crop for growth.

Among the rabi pulses, the most important crops are gram followed by lentils, *masur,* peas and a few others.

By virtue, the pulses are leguminous.
They are considered as soil builders also.
They enrich the soil by fixing the atmospheric nitrogen.
The pulses have gained an important place in the crop rotation practices in various parts of the country.

Pulses are the first ranking crops in the western part of Haryana and northern part of Rajasthan.

Marusthali is a broad zone in India where pulses grow in the sandy and semi arid conditions specially as short summer crop due to occasional rains during the monsoon.

5 a. Oil seeds dominated crop regions

Oil seeds have been the backbone of agricultural economy of our country. It occupies about 21 Million hectare and a total production of 20m tons in the year.

The major Oilseed crops grown in India, in order of importance, are groundnut, rapeseed, mustard, castorseed, linseed, sesamum, sunflower, safflower and nizer.
Oilseeds with various varieties are grown almost in all the states of the India.

These are grown in association with other crops.
Growth of oilseeds and millet is mainly concentrated in Kathiawar peninsular of Gujarat.

Groundnuts are grown successfully in places receiving a minimum rainfall of 500 mm and a maximum rainfall of 1,250 mm.
However, groundnut cannot withstand frost and severe drought or water logging.

Groundnut grows on a wide variety of soils. They grow well on sandy loam and loamy soils and also in black soils with good drainage. Groundnut grown regions occupy about 5.4 M ha with a production of 8m tonnes.

Seventy per cent of the total area is concentrated in the states of Andhra Pradesh, Tamil Nadu, Karnataka and Gujarat, in descending order.

India occupies the first position, both with regard to area and production of rapeseed and mustard, in the world.

They occupy about 5.5 M ha and produce about 4m tonnes of seeds annually.

The important states producing rapeseeds and mustard are
Rajasthan, Uttar Pradesh, West Bengal, Assam, Haryana, Punjab and Orissa.

In India, the main castor *(arend)* growing states are Andhra Pradesh, Gujarat, Karnataka and Orissa.

Together, these states accounts for 90 per cent of the area of castor production.

Castor is tolerant to drought and grows well in relatively dry, warm regions, having a well distributed rainfall of 50-75 cm.

In heavy rainfall areas, the crop puts on excessive vegetative growth and becomes a perennial plant. It cannot stand frost.

Some annual varieties of castor can grow even at an altitude of 1,200 to 2,100m.

In Nilgiris, perennial varieties of castors are grown well.

This crop comes up well on almost all types of soils but generally grown on red sandy loams in peninsular regions and on light alluvial soils in the northern states.

Linseed are very important oil crops in India.

Linseed *(afi, tisi)* occupies a greater importance among oilseeds owing to its various uses and special qualities. It is extensively grown in the temperate zone as well as in tropical zone.

India has about 2 M ha under this crop.

Madhya Pradesh leads in yield and area of linseed production, followed by Uttar Pradesh, Maharashtra, Bihar, Rajasthan and Karnataka.

West Bengal also grows linseed to some extent. This crop is grown in rabi season.

Linseed can be grown in different kinds of soils, except in the sandy and poorly drained heavy clays. Linseed grows well on clay loams.

Safflower *(carthamus tinctorius)* is yet another important crop grown in India. It is now cultivated primarily for its seeds which yield oil.

The important safflower growing areas are Maharashtra, Karnataka and Andhra Pradesh.

The crop is grown during *rabi* season primarily as a rainfed crop. In some areas it is also grown through irrigation.

Being drought resistant, safflower is cultivated on all types of soils, including sandy soil, but thrives best on water retentive black soil and alluvial loams and is fairly resistant to saline conditions.

Sunflower is an important oil crop in India. The cultivation of sunflower as an oilseed crop began in the former Soviet Union and the majority of the present day varieties grown all over the world can trace back their origin to that country.

Growing sunflower requires a cool climate during germination and seedling growth and warm weather from flowering stage to maturity.

Area under sunflower crop is mainly concentrated in Tamil Nadu and Karnataka.

India is considered to be the chief niger producing country in the world. Niger is grown over with an area of about 5 lakh ha.

It is mainly grown in the states of Madhya Pradesh, Bihar, Maharashtra,Orissa and Tamil Nadu.

Sesamum *(till or gingelli)* is one of the important oilseeds. India occupies a predominant position both in area and production of sesamum.

Cultivation of sesamum is concentrated in the states of Uttar Pradesh, Orissa, Maharashtra, Madhya Pradesh, Rajasthan, West Bengal, Gujarat and Andhra Pradesh.

The sesamum growing soils are
(i) shallow to medium deep in Andhra Pradesh. Orissa, Madhya Pradesh and Tamil Nadu and
(ii) deep in Rajasthan, Gujarat and Maharashtra .

5b. Cotton dominated crop regions

Cotton is grown in India as a commercial crop. Cotton is grown over more than 10.3 M ha. India ranks the first in respect of area of cotton cultivation but fourth in the production of cotton in the world.
There are four cultivated species of cotton in India.

The predominant cotton variety is G. *Litsututn,* which covers about 50 per cent of the area under cotton.

Cotton in India is largely cultivated under rainfed conditions. It is mainly raised during the monsoon season especially in the southern parts of the country.

Cotton is grown on varieties of soils. It requires a soil with a moderate to good drainage. Growth of cotton does not tolerate water logging. It is grown mainly as a dry crop in the black cotton and medium black soils and as an irrigated crop in the alluvial soils as well.

The predominant types of soils on which the crop is grown are
(a) alluvial soils concentrated mostly in the northern states of Punjab, Haryana, Rajasthan and Uttar Pradesh
(b) the black cotton soils
(c) the red sandy-loam to loams preponderant in the states of Gujarat, Maharashtra, Madhya Pradesh, Andhra Pradesh, Karnataka, Tamil Nadu, Assam and Kerala.

Cotton as the first ranking crop is grown in parts of Maharashtra, Gujarat and Punjab.

It is grown as second crop next to wheat, in western part of Punjab, occupying10 per cent of the total cropped area of the state.

Cotton and millets combination is concentrated in the district of
a) Buldhana, Amravati, Akola, Nagpur, Yavatmal, Wardha, Jalgaon, Parbhani, Nanded of Maharashtra and
b) Surat, Vadodara. Broach and Bhavnagar of Gujarat.

5 c. Coconut and other plantation crops dominated regions

The majority of plantation and garden crops are grown along the western coast and also in north and north-eastern hilly regions of the country.

The mountainous, sub-mountainous and coastal tracts are utilized for the cultivation of
tea, coffee, rubber, cocca, cardamom, coconut, areca nut, cashew nut etc, in addition, too many other types of garden crops.

In India, Coconut is the majestic perennial palm, grown in groves.

It is grown extensively in numerous areas and mainly in the islands and coastal tracts of India, especially in Kerala.

It is essentially a crop of humid tropics.

The most congenial climate for coconut palm to grow is the evenly distributed rainfall between 100 and 220 cm per annum and well drained soil, moderate temperature of humid through sub-humid types.

The best and maximum growth of coconut and yield can be obtained if the temperature of a region remains 27^0 C with a diurnal variation of 6°C to 7°C.

In India, coconut plantation is devoted to 1.5 Million ha producing 7,563m nuts (1988-89).

As per crop combination analysis the coconut and rice cultivated region is spread over western coast of Kerala and also found in Andaman and Nicobar Islands.

Tea is a major plantation crop grown in India.

India continues to be the world's largest producer of 1 Million Tonnes, consumer and exporter of tea.

Tea is planted covering about an area of 4,21,000 ha.

Almost 98 per cent of the tea production comes from Assam, West Bengal, Kerala and Tamil Nadu and
2 per cent from other states viz., Tripura, Bihar, Uttar Pradesh, Himachal Pradesh and Sikkim.

It is grown from almost the sea level to above 2,460m.

A well distributed rainfall is essential for its satisfactory cultivation, although it is grown in many marginal areas as well.

The rainfall varies from about 125 to 150 cm in the tea growing areas in our country.

Coffee plantation is mainly confined to the southern states of Karnataka, Kerala and Tamil Nadu.

The non-traditional coffee growing states in India are Andhra Pradesh, Orissa and all the states in the north eastern region.

India is the fifth largest rubber growing country in the world. It ranks fourth in rubber production.

The narrow strip of southern part of peninsular India along the Western Ghats accounts for 90 per cent of the rubber produced in the country and 80 percent of the existing plantations.

Kerala, Tamil Nadu, Karnataka together constitute the traditional rubber growing regions of the country.

In the north-eastern region, Tripura, Assam and Meghalaya are the important rubber growing states. The area under rubber plantation is about 4,60,341 ha in 1989-90.

Almost every state and union territory in India grow one variety of spices or the other. The country grows, in all, about 60 spices on 3.03 M ha and produces 5.73 Million Tonnes of spices per year.

Karnataka, Kerala, Tamil Nadu, Sikkim and West Bengal are the primary producers of spices.

By and large, their production is in the hands of small growers. The backyards of homesteads, particularly black pepper is most common.

Cardamom (both small and large) is grown as plantation crops in the hilly regions of India.

Quiet a lot of agricultural produces are coming from different states of India.

India is a country known for its notable contribution in agricultural production.

India is a major consumer and exporter of agricultural produces.

Only some salient features of the crop regions of India have been discussed so far.

A detailed understanding is necessary with reference to each and every crop grown in India. Let us see them in the next modules.