

AGRICULTURE

GEOGRAPHY X

# What is Agriculture

- ▣ the science or practice of farming, including cultivation of the soil for the growing of crops and the rearing of animals to provide food, wool, and other products.

# IMPORTANCE OF AGRICULTURE

## ▣ **Contributes to national income:-**

This is arguably the most important contribution of agriculture to the national economy. In many developed and developing countries worldwide, agriculture contributes a huge percentage of the national income. In fact, most developing countries' annual revenue is over 50% dependent on agriculture. Taxes collected from industries, workers, as well as those imposed on agricultural products are very important towards the effective development of the national economy.

- ▣ **The basic source of food:-**
- ▣ Now, this seems pretty straight forward, isn't it? Well, whether developed, developing or underdeveloped country, having a stable source of the food supply is very important. Heavy population pressure especially in developing and underdeveloped countries leads to increased demand for food.

- ▣ **Source of employment:-**
- ▣ Creating employment to the masses is also another important role that agriculture plays in any economy. Many laborers depend on agriculture to get their wages. They can include, grass cutters, tractor drivers, farming apparatus technicians, or anyone who is directly involved in farming activities. That said, agriculture allows manpower to be shifted between the agricultural and non-agricultural sectors.

- ▣ **Provide raw materials for industries:-**
- ▣ In developing countries, industries play a very important role in developing their economies. Apart from being a great source of employment, industries also need to buy raw materials for producing finished goods. A huge chunk of these raw materials is directly from agriculture. Materials such as cotton are use in textile industries as raw materials. In addition, products like tea, coffee, sugar, tobacco, and dairy products provide raw materials for various important industries like leather and sports industries.

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- ▣ **Infrastructural development:-**

- ▣ Almost every country in the world is constantly trying to improve its infrastructure with agriculture playing an integral part. With well-organized infrastructure, the country will also experience rapid economic development. This is because good infrastructure enables quick means of transport and communication for agricultural goods – both raw and finished.



- ▣ **Source of foreign exchange:-**
- ▣ Especially in developing countries, agricultural goods are mainly for export. Products such as tea, coffee, sugar, and many more are predominantly meant for export. That being said, if a country is able to export a lot of agricultural products as a result of increased productivity, the foreign exchange earnings will also increase.



- ▣ **Development of the banking sector:-**
- ▣ As agriculture becomes more and more commercialized, the banking sector has in turn experienced tremendous growth. As most governments realize how important agriculture is, measures have to be taken to ensure farmers' earnings are safely kept. Additionally, farmers require credits at low interest rates, thus formation of lots of financial institutions with credit facilities. This way, the banking sector is quickly developed.

# Facts of Indian Agriculture

- ❑ Over **263 millions** of farmers and farm labourers engaged in agriculture in India. It is the country's biggest private enterprise.
- ❑ India stands 8th place in agriculture exports worldwide according to 2017 stats which is about **35 billion dollars**. Whereas the entire European union stands at the top which includes 28 countries and as individual United States of America stands at the top position.
- ❑ India acquires the world's largest irrigation land which occupies about **96 million hectores** of the land area. Horticulture and livestock production engage a large share of small and marginal farmers, and thus plays a critical role in rural economy.
- ❑ About 98 percent of India's agricultural commodities comply with legal upper limits for pesticide residues, making Indian food products among the world's safest.
- ❑ India ranks 2nd in the world in agriculture production. India's world rank in services and industry sector is 9th and 5th respectively. Indian agricultural production has increased from **87 USD bn to 394 USD bn** in the last 13 years (12.3% annual growth).
- ❑ Indian agriculture is multifaceted, with horticulture and animal husbandry contributing to over 60% of India's agricultural GDP.

# Facts of Indian Agriculture

- ❑ In India, there are mainly three seasons for agriculture – **Kharif (July – October)**, **Rabi (October to March)**, **Zaid (March to June)** The main food grain of India is rice. India ranks second worldwide in rice production. West Bengal is the top state in rice production followed by Uttar Pradesh, Andhra Pradesh, Punjab, and Bihar. Yield wise, Tamilnadu ranks first in rice production. Central rice research institute is located in Cuttack, Odisha.
- ❑ India is the second most tea producing country and in India, Assam is the most tea producing state. Karnataka is the highest coffee producing state.
- ❑ Indian agriculture is no longer an underdog. Our agricultural production is far above that of the United States, which once supplied food grains to India to tide over our domestic food shortage.
- ❑ The Indian food and grocery market is the world's sixth-largest. It is expected to reach **\$925 billion by 2020**. India has over 12 million Kirana (Grocery) shops- roughly 10 shops per 1000 Indians. The maximum in the world. They employ 35 million – about 7.3% of India's workforce (Economic Survey 2013).

# TYPES OF FARMING

Agriculture is an age-old economic activity in our country. Over these years, cultivation methods have changed significantly depending upon the characteristics of physical environment, technological know-how and socio-cultural practices. Farming varies from subsistence to commercial type. At present, in different parts of India, the following farming systems are practised.

# Types Of Farming

Depending upon the geographical conditions, demand of produce, labour and level of technology, farming is divided into TWO main types:

- **SUBSISTENCE FARMING**
- **COMMERCIAL FARMING**

# Subsistence Farming

1. Practised to meet the needs of the farmer's family
2. Low levels of technology and small amount of labor is used
3. Output of subsistence farming is used for the existence of the farmer's family



# PRIMITIVE SUBSISTANCE FARMING

- ▣ This type of farming is still practised in few pockets of India. Primitive subsistence agriculture is practised on small patches of land with the help of primitive tools like hoe, dao and digging sticks, and family/community labour. This type of farming depends upon monsoon, natural fertility of the soil and suitability of other environmental conditions to the crops grown. It is a 'slash and burn' agriculture. Farmers clear a patch of land and produce cereals and other food crops to sustain their family. When the soil fertility decreases, the farmers shift and clear a fresh patch of land for cultivation. This type of shifting allows Nature to replenish the fertility of the soil.

- ▣ through natural processes; land productivity in this type of agriculture is low as the farmer does not use fertilisers or other modern inputs. It is known by different names in different parts of the country.



Shifting Cultivation  
is otherwise called  
“Slash and Burn  
Agriculture”



**JHUMMING**

# SLASH AND BURN FARMING

- ▣ **Slash and burn farming** is a form of **shifting agriculture** where the natural vegetation is cut down and **burned** as a method of clearing the land for **cultivation**, and then, when the plot becomes infertile, the **farmer** moves to a new fresh plot and does the same again.



# NOMADIC HERDING

- ▣ Nomads are known as a group of communities who travel from place to place for their livelihood.. Some anthropologists have identified about 8 nomadic groups in India, numbering perhaps 1 million people – around 1.2 percent of the country's population of India



# ***NOMADIC HERDING***

- Herders move from one place to another with their animals for fodder and water.
- Sheep, camel, yak and goats are most commonly reared.
- Practised in the semi arid and arid regions of Sahara. Examples are the nomadic Bhotiyas and Gujjars of the



# INTENSIVE SUBSISTENCE FARMING

- ▣ This type of farming is practised in areas of high population pressure on land. It is labourintensive farming, where high doses of biochemical inputs and irrigation are used for obtaining higher production. Though the 'right of inheritance' leading to the division of land among successive generations has rendered land-holding size uneconomical, the farmers continue to take maximum output from the limited land in the absence of alternative source of livelihood. Thus, there is enormous pressure on agricultural land.

# COMMERCIAL FARMING

- ▣ Commercial Farming The main characteristic of this type of farming is the use of higher doses of modern inputs, e.g. high yielding variety (HYV) seeds, chemical fertilisers, insecticides and pesticides in order to obtain higher productivity. The degree of commercialisation of agriculture varies from one region to another. For example, rice is a commercial crop in Haryana and Punjab, but in Orissa, it is a subsistence crop.



# COMMERCIAL FARMING

Crops are grown, animals are reared for sale in

market. The area of cultivation is very large.

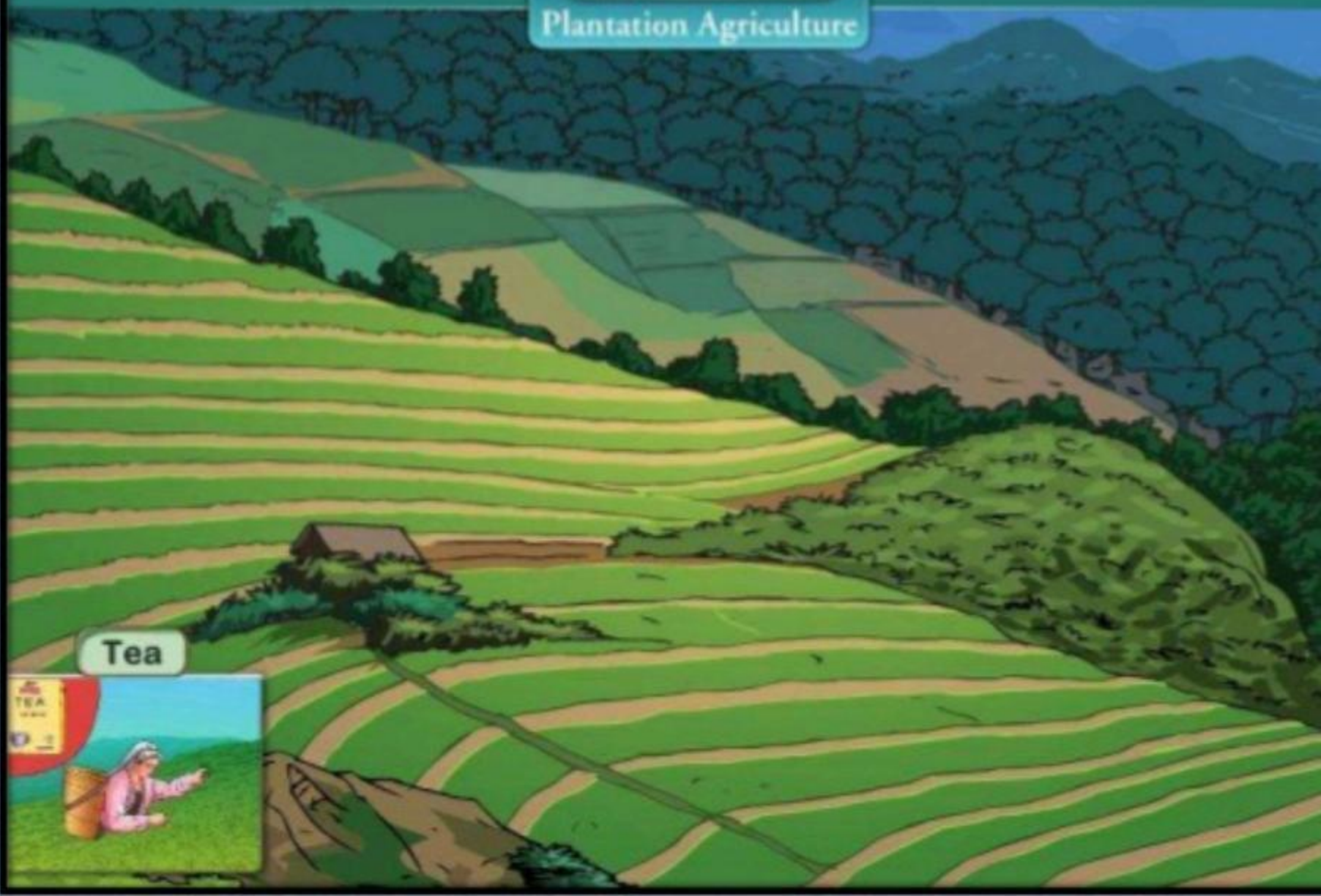
Amount of human labour is very less.

Most of the work is done by machines.



# Agriculture

## Plantation Agriculture



Tea



# Plantations

- Single crop of tea, coffee, sugarcane, cashew, rubber, banana, cotton are grown



# TEA PLANTATION

Features of Plantation Agriculture



The success of plantations depends on the exploitation of cheap labour.

# BANANA PLANTATION



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- *Plantations require large amount of labour and capital.*
- *Product of a plantation is processed in the farm itself or in the nearby factories.*
- *A well developed transport system is essential for plantation type of farming.*
- *Major plantations of the world are found in the tropical region of the world.*

*Examples are-: Rubber in Malaysia, Coffee in Brazil*

# Cropping Pattern

India has three cropping seasons. They are:



# Rabi Crops

- ❖ Sown in winter from October to December and harvested in summer from April to June.
- ❖ Important crops are wheat, barley, peas, gram and mustard.
- ❖ States such as Punjab, Haryana, Himachal Pradesh, Jammu and Kashmir, Uttarakhand and western Uttar Pradesh are main rabi crop ( mainly wheat ) producing states.
- ❖ Availability of precipitation during winter months due to the western temperate cyclones help in the success of these crops.
- ❖ The success of green revolution in Punjab, Haryana, western Uttar Pradesh and parts of Rajasthan has also been an important factor in the growth of rabi crops.

Wheat



Mustard



Peas





# Kharif Crops

- ❖ Sown with the onset of monsoon in different parts of the country and harvested in September – October.
- ❖ Important crops are paddy, maize, jowar, bajra, tur (arhar), moong, urad, cotton, jute, groundnut and soyabean.
- ❖ Some of the most important rice-growing regions are Assam, West Bengal, coastal regions of Orissa, Andhra Pradesh, Tamil Nadu, Kerala and Maharashtra, particularly the Konkan coast along with Uttar Pradesh and Bihar.
- ❖ Recently, paddy has also become an important crop of Punjab and Haryana.
- ❖ In states like Assam, West Bengal and Orissa, three crops of paddy are grown in a year known as Aman and Boro.



# Zaid Crops

- ❖ Zaid season is a short season between the Rabi and Kharif seasons, during the summer months.
- ❖ Crops produced are watermelon, muskmelon, cucumber, vegetables and fodder crops.



▣ 1. Who is known as father of green revolution in India?

▣ A. MS Swaminathan

▣ B. Vikram Sarabhai

▣ C. Somnath Desai

▣ D. S. Radhakrishnan

▣ Ans: A

▣

- ▣ 2. In which year Indian Council of Agricultural Research institution was established in India?
- ▣ A. 1919
- ▣ B. 1929
- ▣ C. 1939
- ▣ D. 1949
- ▣ **Ans: B**

- ▣ **3. What was Tinkathia system during British rule in India?**
- ▣ A. To cultivate Indigo on 3/20th of land
- ▣ B. To cultivate Tea on 3/20th of land
- ▣ C. To cultivate Indigo on half of land
- ▣ D. None of the above
- ▣ **Ans: A**

- ▣ **4. The scientific study of soil is known as?**
- ▣ A. Soilology
- ▣ B. Pedology
- ▣ C. Soil Science
- ▣ D. Soil culture
- ▣ **Ans: B**

- ▣ 5. Which is the largest cotton growing State in India?
- ▣ A. Gujarat
- ▣ B. Bihar
- ▣ C. Tamilnadu
- ▣ D. Karnataka
- ▣ **Ans: A**

- ▣ 7. The Minimum Support Price (MSP) for Food Grains was introduced in the year?
- ▣ A. 1954
- ▣ B. 1964
- ▣ C. 1974
- ▣ D. 1984
- ▣ **Ans: B**



- ▣ . Under which plan did the Government introduce an agricultural strategy which gave rise to Green Revolution?
- ▣ A. First five year plan
- ▣ B. Second five year plan
- ▣ C. Third five year plan
- ▣ D. Fourth five year plan
- ▣ **Ans: C**

- ▣ **9. National Horticulture Mission (NHM) promoted by Government of India was launched under which five-year plan?**
- ▣ A. 9th five-year plan
- ▣ B. 10th five-year plan
- ▣ C. 5th five-year plan
- ▣ D. 6th five-year plan
- ▣ **Ans: B**
- ▣ Who is the agriculture Minister of India?

▣ **Shri Narendra Singh Tomar Hon'ble Minister  
of Agriculture & Farmers Welfare**

# Major Crops

A variety of food and non-food crops are grown in different parts of the country depending on the variations in soil, climate and cultivation practices.

Major crops grown in India are:

- ❖ Rice
- ❖ Wheat
- ❖ Millets
- ❖ Maize
- ❖ Pulses

Grains

- ❖ Sugarcane
- ❖ Oil seeds
- ❖ Tea
- ❖ Coffee
- ❖ Horticulture crops

Food crops other than grains

- ❖ Rubber
- ❖ Fibre crops

**Did you know**

India produces 5 major crops.

# Rice

- ❖ Staple food crop of a majority of the people in India.
- ❖ India is the second largest producer in the world after China.
- ❖ Kharif crop which requires high temperature, (above 25 degree Celsius) and high humidity with annual rainfall above 100 cm.
- ❖ Grown in the plains of North and North-Eastern India, coastal areas and the deltaic regions.
- ❖ Development of dense network of canal irrigation and tube wells have made it possible to grow rice in areas of less rainfall such as Punjab, Haryana and Western Uttar Pradesh and parts of Rajasthan.



# Rice (India)



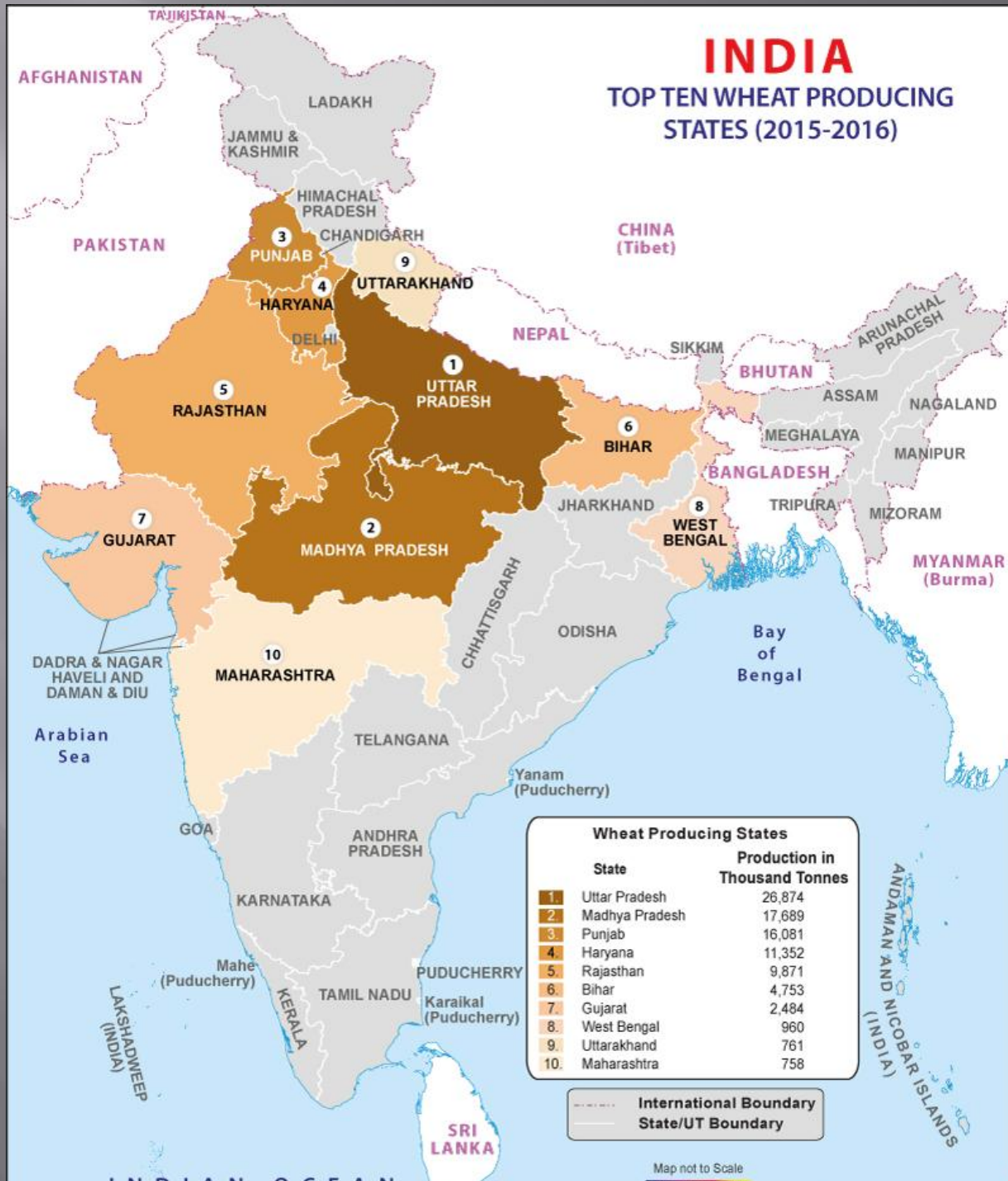
# Wheat

- ❖ Second most important cereal crop.
- ❖ Main food crop in North and North-Western part of the country.
- ❖ Requires cool growing season and bright sunshine at ripening time.
- ❖ Requires 50 to 75 cm of annual rainfall evenly distributed over the growing season.
- ❖ Important wheat growing zones – Ganga-Sutlej Plains & Black soil region in Deccan.
- ❖ Major wheat producing states – Punjab, Haryana, Uttar Pradesh, Bihar, Rajasthan and Madhya Pradesh.



# INDIA

## TOP TEN WHEAT PRODUCING STATES (2015-2016)





# Millets

- ❖ Jowar, Bajra and Ragi are the important millets grown in India.
- ❖ Though, these are known as coarse grains, they have high nutritional value.
- ❖ Ragi is rich in iron, calcium, other micro nutrients and roughage. It is a crop of dry region and grows well on red, black, sandy, loamy and shallow soils. Karnataka is the largest producer of ragi followed by Tamil Nadu. Himachal Pradesh, Uttarakhand, Sikkim, Jharkhand and Arunachal Pradesh are also important ragi producing states.
- ❖ Jowar is the third most important food crop with respect to area and production. It is a kharif crop grown in moist areas. Maharashtra is the largest producer of jowar followed by Karnataka, Andhra Pradesh and Madhya Pradesh.
- ❖ Bajra grows well on sandy soils and shallow black soil. Rajasthan is the largest producer of bajra followed by Uttar Pradesh, Maharashtra, Gujarat and Haryana.

Ragi

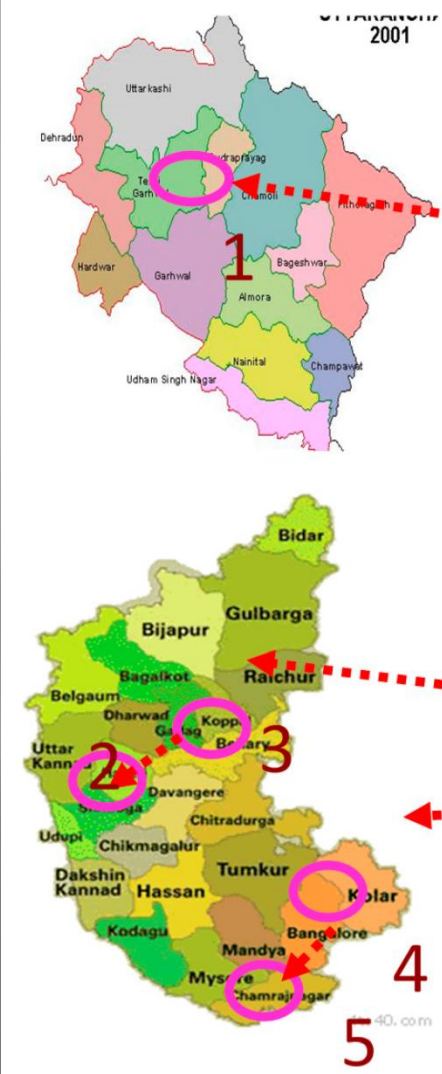


Jowar



Bajra

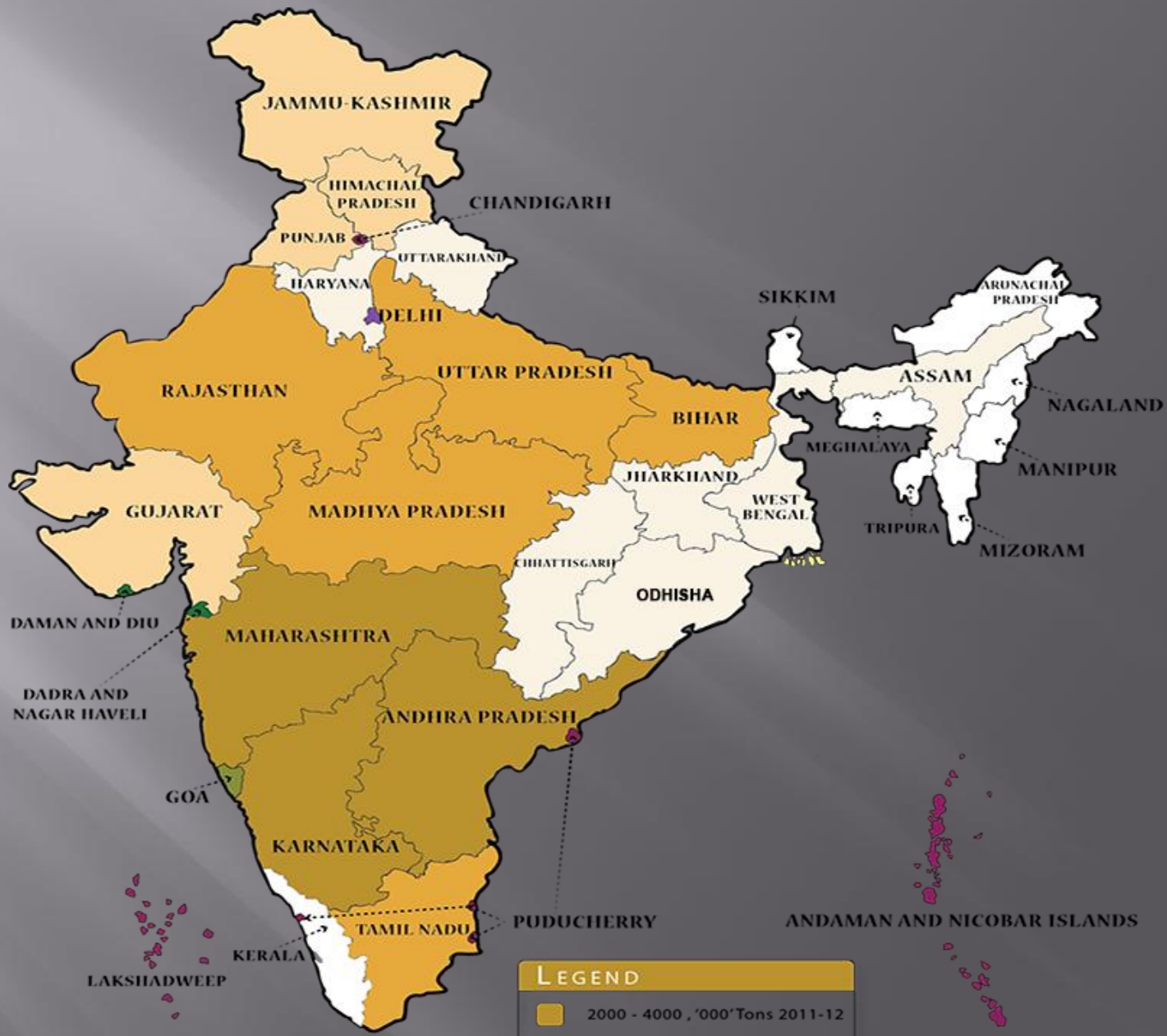




# Maize

- ❖ Used as both food and fodder.
- ❖ Kharif crop which requires temperature between 21-27 degree Celsius. And grows well in alluvial soil.
- ❖ In states like Bihar, it is grown as rabi crop also.
- ❖ Use of modern inputs like HYV seeds, fertilisers and irrigation have contributed to the increasing production of maize.
- ❖ Major maize producing states are Karnataka, Uttar Pradesh, Bihar, Andhra Pradesh and Madhya Pradesh.





LEGEND	
<span style="display:inline-block; width:15px; height:15px; background-color:#C85130; border:1px solid black;"></span>	2000 - 4000 , '000' Tons 2011-12
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<span style="display:inline-block; width:15px; height:15px; background-color:#F4C080; border:1px solid black;"></span>	500 - 1000 , '000' Tons 2011-12

# Pulses

India is the largest producer as well as consumer of pulses in the world

These are the major source of protein in a vegetarian diet.

Major pulses grown in India are – Tur(arhar), Urad, Moong, Masur, Peas and Gram.

Pulses need less moisture and survive even in dry conditions.

All these crops except arhar help in restoring soil fertility by fixing nitrogen from the air, because of which it is grown in rotation with other crops.

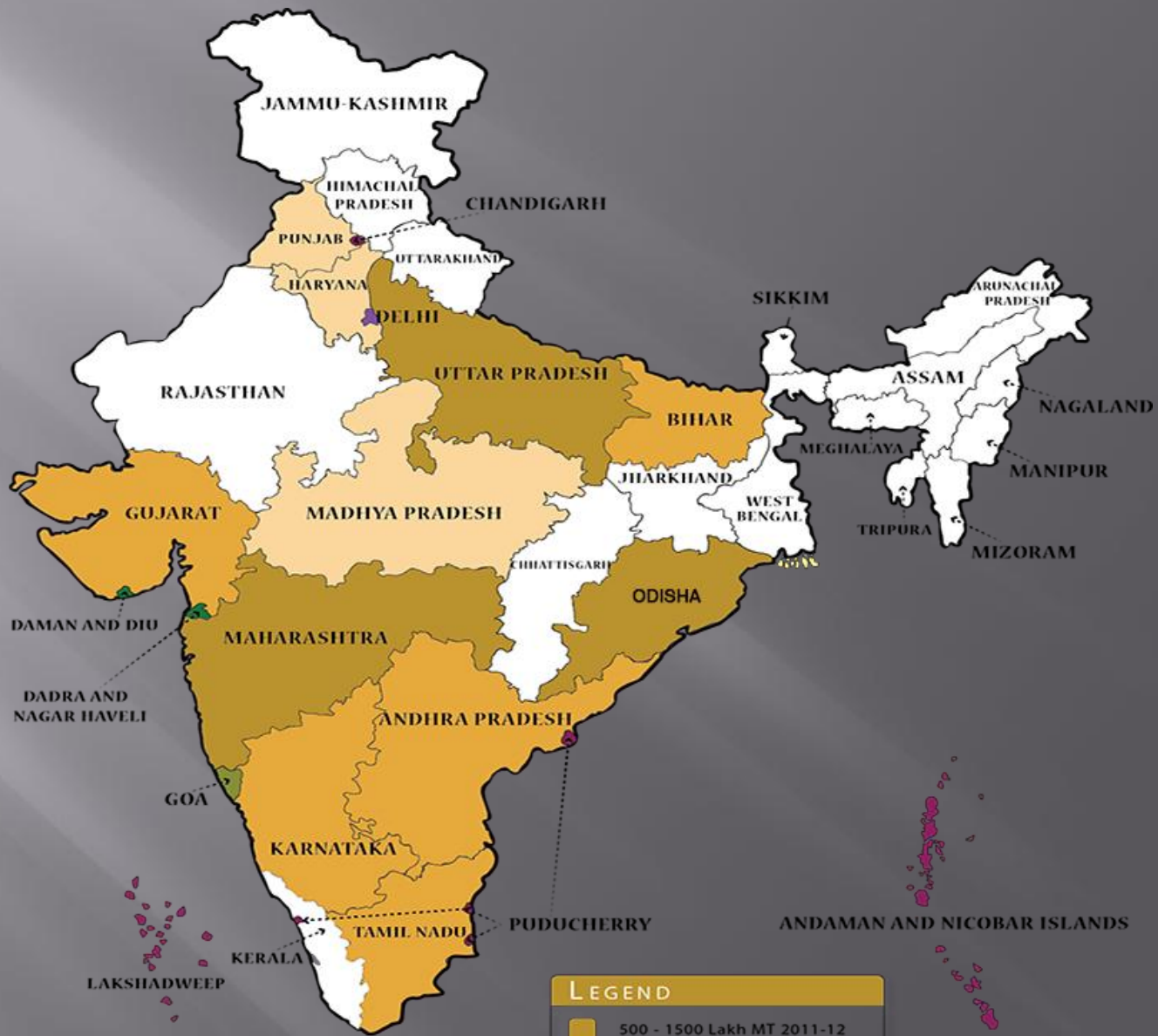
Major pulse producing states in India are Madhya Pradesh, Uttar Pradesh, Rajasthan, Madharaashtra and Karnataka.



# Sugarcane

- ❖ It is a tropical as well as sub-tropical crop.
- ❖ It grows well in hot and humid climate with a temperature of 21 to 27 degree Celsius and annual rainfall between 75 cm and 100 cm.
- ❖ Can be grown on variety of soils and needs manual labour from sowing to harvesting.
- ❖ India is the second largest producer after Brazil.
- ❖ Main source of sugar, jaggery, khandsari and molasses.
- ❖ Major sugar producing states are Uttar Pradesh, Maharashtra, Karnataka, Tamil Nadu, West Bengal, Bihar, Punjab and Haryana.





LEGEND	
	500 - 1500 Lakh MT 2011-12
	100 - 500 Lakh MT 2011-12
	Below 100 Lakh MT 2011-12

# JAGGEREY





# KHANDSARI



# MOLASSES



# Tea

- ❖ Example of plantation crop.
- ❖ Important beverage crop introduced in India by British.
- ❖ Tea plant grows well in Tropical and sub-tropical climates endowed with deep and well drained soil, rich in humus and organic matter.
- ❖ Tea bushes require warm and moist free climate throughout the year.
- ❖ Tea requires abundant, cheap and skilled labour.
- ❖ Tea is processed within the tea garden to restore its freshness.
- ❖ Major tea producing states are Assam, hills of Darjeeling and Jalpaiguri districts, West Bengal, Tamil Nadu and Kerala.
- ❖ India is the leading producer as well as exporter of tea in the world.

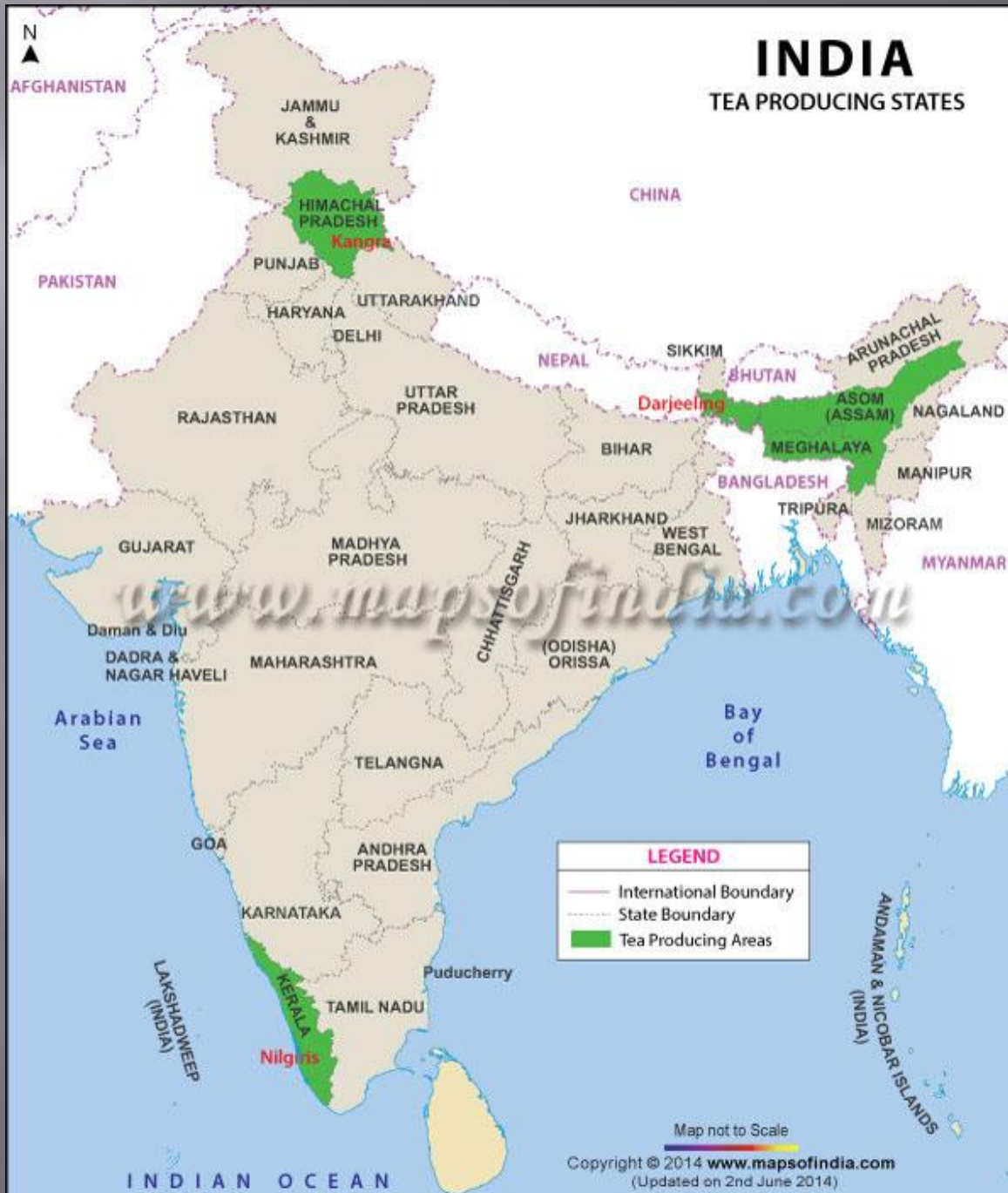


# CLIMATIC CONDITION

- ▣ Temperature: 21°C to 29°C is ideal for the production of tea. High temperature is required in summer. ...
- ▣ Rainfall: 150-250 cm of rainfall is required for tea cultivation.
- ▣ Soil: Tea shrubs require fertile mountain soil mixed with lime and iron. ...
- ▣ Land: Tea cultivation needs well drained land.

# INDIA

## TEA PRODUCING STATES



LEGEND	
	International Boundary
	State Boundary
	Tea Producing Areas

# Coffee

- ❖ India produces about 4% of the world's coffee.
- ❖ Indian coffee is known in the world for its good quality.
- ❖ The Arabica variety initially brought from Yemen is produced in India.
- ❖ This variety is of great demand in the world.
- ❖ Its cultivation was initially introduced on the Baba Budan Hills and even today its cultivation is confined to the Nilgiri in Karnataka, Kerala and Tamil Nadu.



- ▣ **Coffee** requires an average temperature between 20°-27°C. Although it grows in day temperature over 32°C in the Arabian Peninsula. **Growth** is most rapid during hot rainy season and during cool dry season berries ripen and ready for picking. Bright sunshine and warm **weather** are necessary for the harvesting.







# Horticulture Crops

- ❖ India is the largest producer of fruits and vegetables in the world.
- ❖ India is a producer of tropical as well as temperate fruits.

Fruits in great demand :

- ❖ Mangoes of Maharashtra, Andhra Pradesh, Uttar Pradesh and West Bengal.
- ❖ Oranges of Nagpur and Cherapunjee.
- ❖ Bananas of Kerala, Mizoram, Maharashtra and Tamil Nadu.
- ❖ Lichi and Guava of Uttar Pradesh and Bihar.
- ❖ Pineapples of Meghalaya
- ❖ Grapes of Andhra Pradesh and Maharashtra.
- ❖ Apples, Pears, Apricots and Walnuts of Jammu and Kashmir and Himachal Pradesh.

❖ India produces 13% of the world's vegetables.

❖ It is an important producer of peaches, cauliflower, onion, cabbage, tomato, brinjal and potato.

## Did you know

India accounts to 10% of the world's fruit production.



# CLIMATIC CONDITION

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# Rubber

- ❖ It is an equatorial crop, but under special conditions it is also grown in tropical and subtropical areas.
- ❖ Requires moist and humid climate with rainfall of more than 200 cm and temperature above 25 degree Celsius.
- ❖ It is an important industrial raw material.
- ❖ It is mainly grown in Kerala, Tamil Nadu, Karnataka and Andaman and Nicobar Islands and Garo hills of Meghalaya.
- ❖ India ranks fifth among the world's natural rubber producers.



- ▣ **Climate:** Cotton grows well in warm and moist climate where summer is long and where there is salinity in the soil.  
Temperature: Cotton grown well in a temperature of 24°C.
- ▣ But cotton bursts out, high temperature is injurious.
- ▣ Rainfall: 60-100 cm rainfall is essential for the cultivation of cotton.

# Fibre Crops

- ❖ Cotton, jute, hemp and natural silk are the four major fibre crops grown in India.
- ❖ The first three are derived from the crops grown in the soil, silk is obtained from coc silkworms fed on green leaves specially mulberry.
- ❖ Rearing of silk worms for the production of silk fibre is known as sericulture.



Silk production



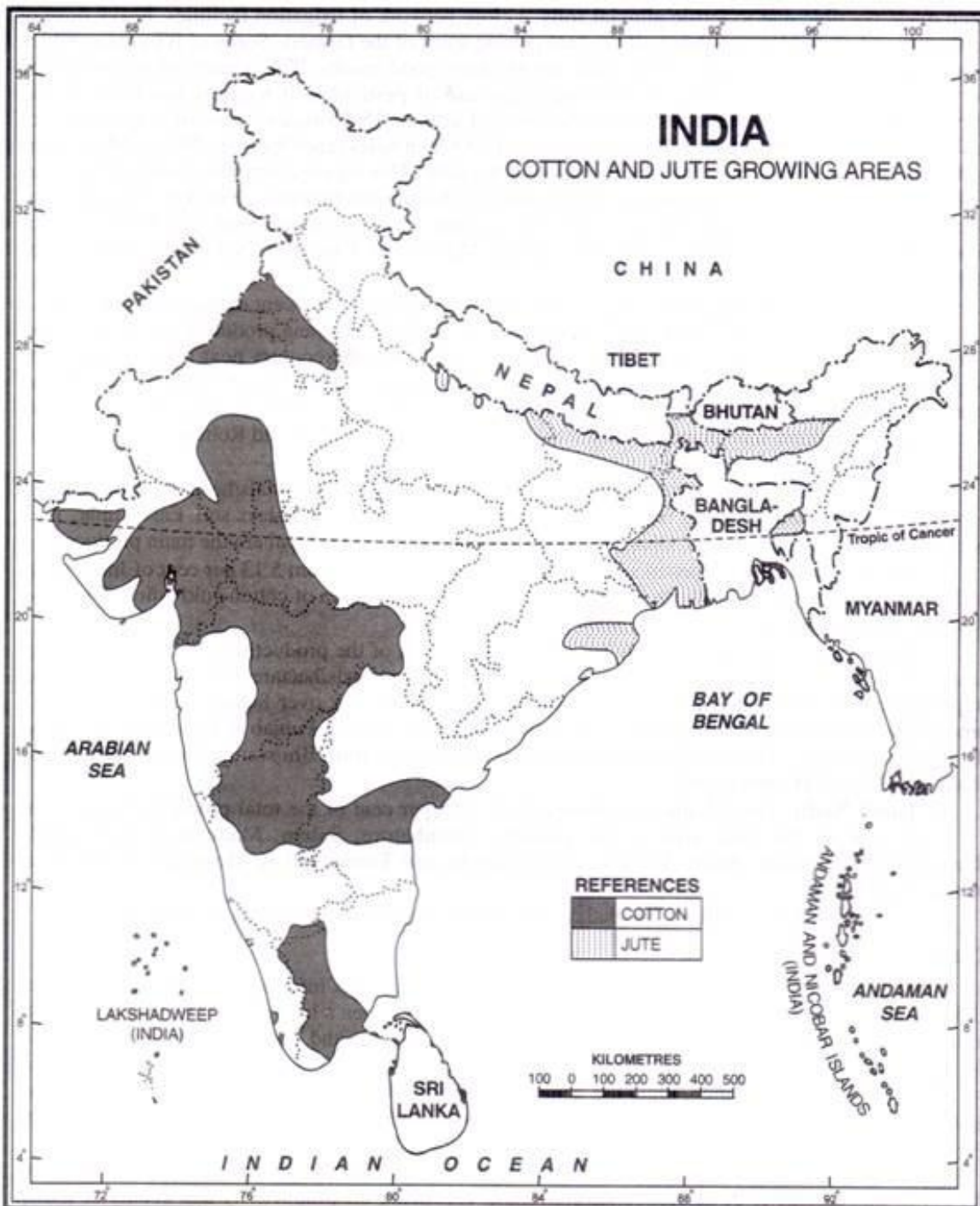
# Cotton

- ❖ India is believed to be the original home of cotton plant.
- ❖ One of the main raw material for cotton textile industry.
- ❖ India is the 3<sup>rd</sup> largest producer of cotton in the world.
- ❖ Cotton grows well in drier parts of black soil of Deccan plateau.
- ❖ Requires high temperature, light rainfall, 210 frost-free days and bright sunshine for
- ❖ Kharif crop, requires 8-10 months to mature.
- ❖ Maharashtra, Gujarat, Madhya Pradesh, Karnataka, Andhra Pradesh, Punjab, Haryana, Tamil Nadu, and Uttar Pradesh are major cotton producing states.



# CLIMATIC CONDITION

- ▣ Long vegetation periods (175 to 225 days) without frost.
- ▣ Constant temperatures between 18 and 30°.
- ▣ Ample sunshine and fairly dry conditions.
- ▣ A minimum of 500 mm of water between germination and boll formation.
- ▣ Deep, well-drained soils with a good nutrient content.

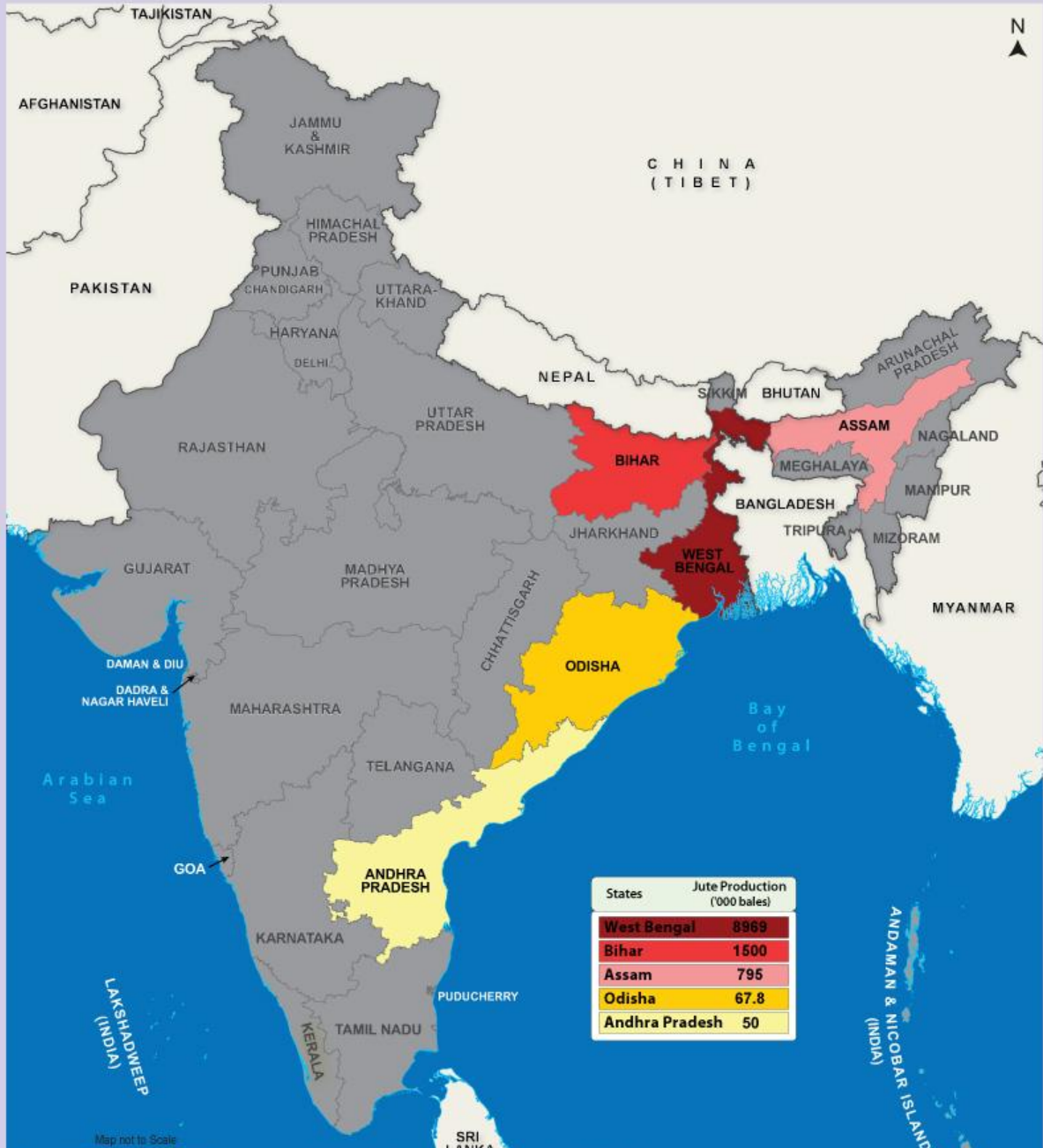




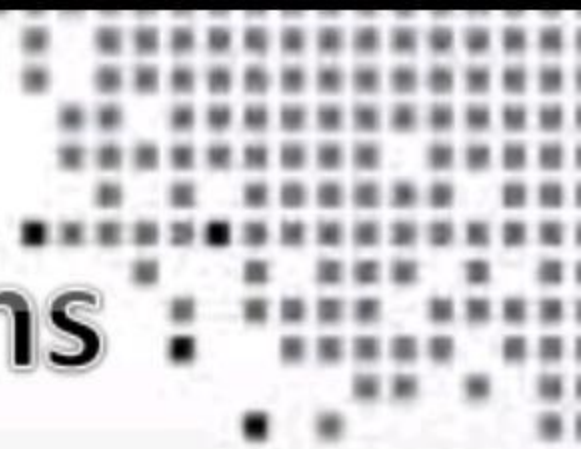
# JUTE

- ▣ It is known as golden fiber.
- ▣ Mainly grown in well drain fertile soil in the flood plain where soil are renewed every year.
- ▣ High temperature is required at the time of growth.
- ▣ High rainfall is required for its better growth.

**WHICH STATE IS THE LARGEST JUTE PRODUCER?**



# Technology and Institutional Reforms



❖ Agriculture has been practised in India for thousands of years. Sustained uses of land without compatible techno-institutional changes have hindered the pace of agricultural development.

**Why has India not improved in technical and institutional reforms in agriculture ?**

❖ In spite of development of sources of irrigation most of the farmers in large parts of the country, still depend upon monsoon and natural fertility in order to carry on their agriculture.

❖ Agriculture needs serious technical and institutional reforms.

❖ Collectivisation, consolidation of holdings, cooperation and abolition of zamindari etc. were given priority to bring reforms in country after independence.



# TECHNOLOGICAL AND INSTITUTIONAL REFORM

- ❑ Collectivization and consolidation of land holdings to make them economically viable.
- ❑ The green revolution based on the use of package technology and the white revolution to increase milk production are important strategies which were initiated to improve agriculture.
- ❑ Cooperation with farmers and Abolition of Zamindari system.
- ❑ Provision of crop insurance to protect the farmers against losses caused by natural calamities i.e. drought, flood, cyclone, fire and disease.
- ❑ Establishment of 'Gramin Banks' cooperative societies and Banks for providing loan facilities to the farmers at lower rates of interest.
- ❑ Kissan Credit Card (KCC), Persona) Accident Insurance Scheme (PAIS) are some other schemes introduced by the government for the benefit of farmers.
- ❑ Special weather bulletins and agricultural programmes for farmers were introduced the radio and TV.

# Bhoodan - Gramdan

**Mahatma Gandhi** declared **Vinoba Bhave** as his spiritual heir. He also participated in Satyagraha as one of the foremost satyagrahis. He supported Gandhiji's concept of **gram swarajya**. After Gandhiji's martyrdom, Vinoba Bhave undertook **Padyatra** to spread this message throughout the country.

Once, when he was at Andhra Pradesh, some landless farmers demanded land for their economic wellbeing. He assured them to talk to the Indian Government for provision of land to them if they undertook cooperative farming.

Shri Ram Chandra Reddy stood up and offered 80 acres of land to 80 land less farmers. This was known as Bhoodan. Later he introduced his ideas throughout India.

Some Zamindars offered to distribute villages among the landless farmers. This was known as **Gramdan**. However, many land owners were reluctant to provide some part of their land to the poor farmers due to their fear of land ceiling act.

This Bhoodan – Gramdan movement initiated by Vinoba Bhave is also known as **Blood-less Revolution**.



- ▣ LAND DEVELOPMENT PROGRAMME OF 1980-90:-
- ▣ Provision of crop insurance against drought, flood, cyclone fire and diseases.
- ▣ Establishment of Gramin Bank.
- ▣ Cooperative Bank for providing loan facilities with subsidy.
- ▣ KCC(kisan Credit Card)
- ▣ Awareness programme in Radio and Television.
- ▣ MSP(minimum Support Price)

- ❖ Land focus was the main focus of the First Five Year plan.
- ❖ Right of inheritance had lead to fragmentation of land holdings.
- ❖ Laws of land reforms were enacted but laws of implementation were lacking.

### **What were the steps taken by government in agricultural reforms?**

- ❖ Government of India embarked upon introducing agriculture reforms to improve Indian agriculture in the 1960s and 1970s.
- ❖ Green Revolution based on use of package technology and White Revolution(Operational Flood) were some of the strategies initiated to improve Indian agriculture.
- ❖ But this led to the concentration of development in few selected areas.
- ❖ Therefore, in the 1980s and 1990s, a comprehensive land development program was which included both institutional and technical reforms.
- ❖ Provisions for crop insurance against calamities, establishment of Grameen banks, co societies and bank for providing loan facilities to he farmers at lower rates of interest were steps taken.



## Other steps taken :

- ❖ Kissan Credit Card(KCC), Personal Accident Insurance Scheme(PAIS) are some other schemes introduced by the Government of India for the benefit of the farmers.
- ❖ Moreover, special weather bulletins and agriculture programmes for farmers were introduced on the radio and television.
- ❖ The Government also announces minimum support price, remunerative and procurement prices for important crop to check the exploitation of farmers by speculators and middlemen.



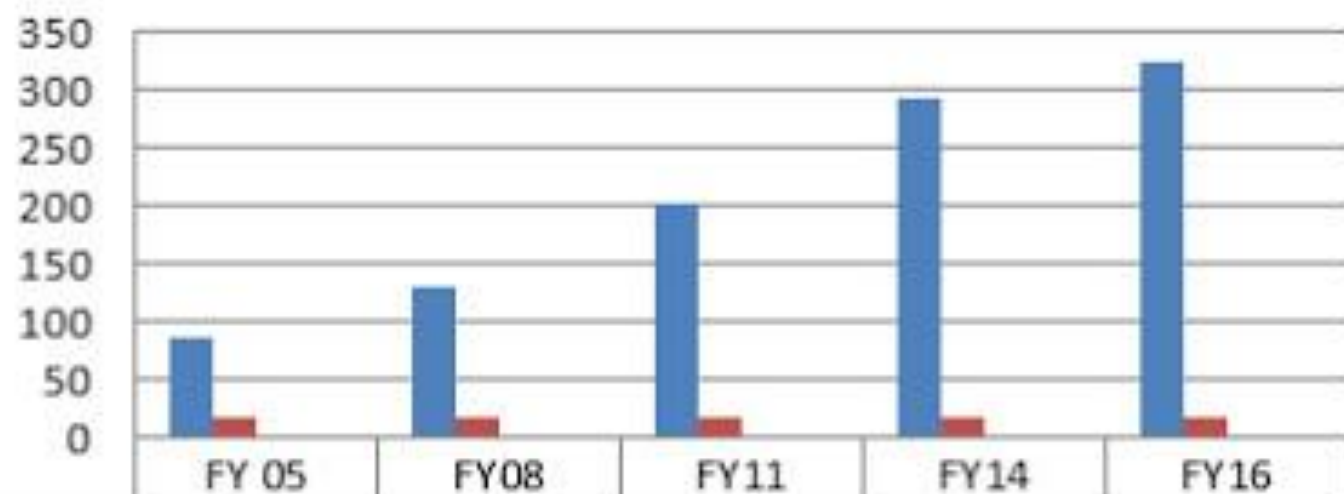


▣ **What is the main contribution of agriculture to the national economy?**

**Ans.** The main contribution of agriculture to the national economy is stated in the points below

- i. Employment in agriculture (% of total employment) in India** was reported at 42.38 % in 2019, according to the World Bank collection of development indicators, compiled from officially recognized sources.
- (ii) It is the largest employment providing sector.**
  - (iii) It has provided a food surplus to our expanding population.**
  - (iv) It is providing raw material to industries.**
  - (v) It is providing the majority of exports from India.**

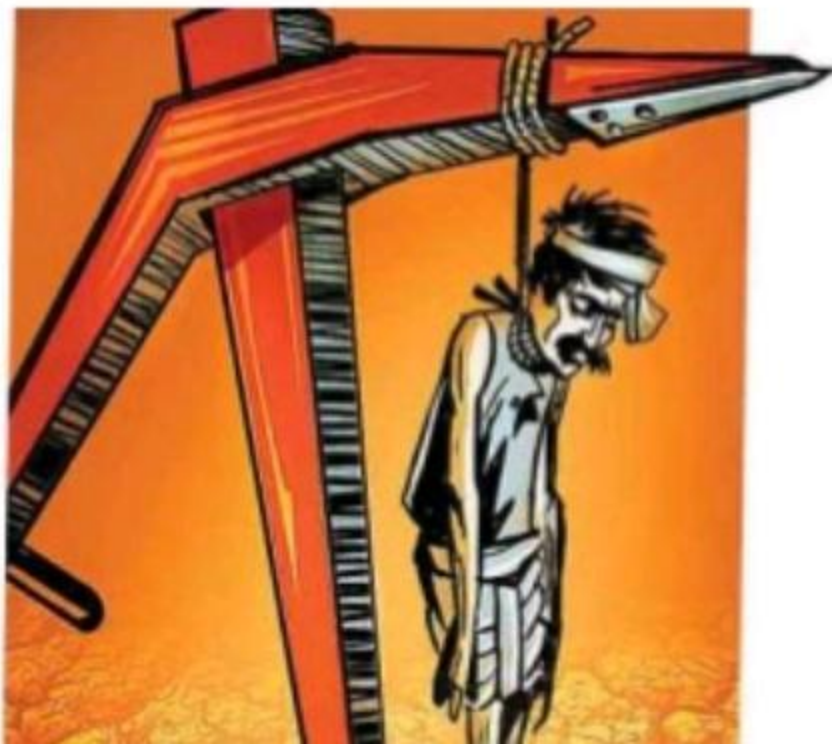
## Trend of agriculture production & It's contribution to GDP



	FY 05	FY08	FY11	FY14	FY16
Production USD (billion)	87	129	203	293	322
Contribution to GDP (percentage)	17.4	16.8	17	16.9	17.3

(Source: RBI database, FAO stats and Tata strategic research)

- ❖ Though GDP rate is increasing over the years, it is not generating sufficient employment opportunities in the country.
- ❖ Growth in agriculture is decelerating.
- ❖ Indian farmers are facing a big challenge from international competition and the government is going ahead with reduction in the public investment in agriculture.
- ❖ Subsidy on fertilisers is decreased leading to increase in the cost of production.
- ❖ Reduction in import duties on agricultural products have proved harmful to agriculture in the country.
- ❖ Farmers are withdrawing their investment from agriculture causing a downfall in employment in agriculture.



# FOOD SECURITY

- ▣ **Food security**, as defined by the United Nations' Committee on World **Food Security**, means that all people, at all times, have physical, social, and economic access to sufficient, safe, and nutritious **food** that meets their **food** preferences and dietary needs for an active and healthy life.
- ▣ The National **Food Security** Act,2013 (NFSA 2013) converts into legal entitlements for existing **food security** programmes of the Government of **India**. It includes the Midday Meal Scheme, Integrated Child Development Services scheme and the Public Distribution System..

- ▣ Urbanisation and growing non-agricultural business establishments in rural India have led to shrinking cultivation area. However, through increasing productivity by growing High Yielding Varieties (HYV), India is food secure. India's foodgrain production increased from 50.82 million tonnes in 1950-51 to more than 260 million tonnes at present. But food security has to be examined in terms of availability, accessibility, utilization and vulnerability. Therefore, apart from production policies and programmes relating to buffer stocking, distribution, monitoring prices become important.

- ▣ The following are the measures to be taken for achieving food security for growing population through higher food production.

### **1. Education and literacy**

Role of education in improving farm efficiency and technology adoption has been well established. As agriculture transformed from subsistence to commercial level, farmers seek information on a wide range of issues to acquire knowledge or upgrade their skills and entrepreneurial ability. Literacy emerges as an important source of growth in adoption of technology, and use of modern inputs like fertilizers and machines.

An educated workforce makes it easier to train and acquire new skills and technologies required for productivity growth. Thus, contribution of literacy will be substantial on yield growth and domestic supply of food.

## ▣ 2. Crop diversification

Food availability is a necessary condition for food security. India is more or less self sufficient in cereals but has deficit in pulses and oilseeds. Due to changes in consumption patterns, demand for fruits, vegetables, dairy, meat, poultry, and fishery products has been increasing. There is a need to increase crop diversification and improve allied activities to produce such crops and produces in which we are deficient.

### ▣ 3. Tackling climate change

Food security in India can be achieved by paying higher attention to issues such as climate change, limiting global warming, including the promotion of climate-smart agricultural production systems and land use policies at a scale to help adapt and mitigate ill effects of climate change.



#### ▣ 4. Integrated water management

India needs to produce more crop per unit of land and water resources. Alarming rates of groundwater depletions and increasing environmental and social problems pose acute threats to mankind. Improved management of irrigation water is essential in enhancing production and productivity, food security and poverty alleviation. Agriculture is the biggest user of water accounting for over 80 percent of the water withdrawals. There are pressures for diverting water from agriculture to other sectors. It has been projected that availability of water for agriculture use in India may be reduced by 21 percent by 2020, resulting in drop of yields, especially rice, leading to price rise and threat to food security of the poor. The needs of other sectors for water cannot be ignored. As a result, it is necessary that an integrated water use policy is formulated and judiciously implemented. Modern methods of irrigation like sprinkler, drip irrigation, fertigation, among other water efficient tools need to be adopted on larger scale.

## ▣ 5. Integrated nutrient management

Attention needs to be given to balanced use of nutrients. Phosphorus deficiency is the most wide spread soil fertility problem in both irrigated and non-irrigated rainfed areas. To improve the efficiency of fertilizer-use, what really needed is enhanced location-specific research on efficient fertilizer practices, improvement in soil testing services, development of improved fertilizer supply and distribution systems and development of physical and institutional infrastructure.

## ▣ **6. Improved technology adoption**

Adoption of technologies like integrated nutrient management, integrated pest management and integrated weed management need to be made available for adoption to ensure higher production and sustainability of production base.

## ▣ 8. Awareness on population growth

The awareness of the pressures of increasing population growth and consumption patterns on ecosystem functioning should be created to sensitize farmers on adoption of sustainable crop cultivation and management practices.

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# PDS

- The Public Distribution System (PDS) evolved as a system of management of scarcity through distribution of food grains at affordable prices. Over the years, PDS has become an important part of Government's policy for management of food economy in the country. PDS is supplemental in nature and is not intended to make available the entire requirement of any of the commodities distributed under it to a household or a section of the society.
- PDS is operated under the joint responsibility of the Central and the State Governments. The Central Government, through Food Corporation of India (FCI), has assumed the responsibility for procurement, storage, transportation and bulk allocation of food grains to the State Governments. The operational responsibility including allocation within State, identification of eligible families, issue of Ration Cards and supervision of the functioning of Fair Price Shops (FPSs) etc., rest with the State Governments. Under the PDS, presently the commodities namely wheat, rice, sugar and kerosene are being allocated to the States/UTs for distribution. Some States/UTs also distribute additional items of mass consumption through the PDS outlets such as pulses, edible oils, iodized salt, spices, etc

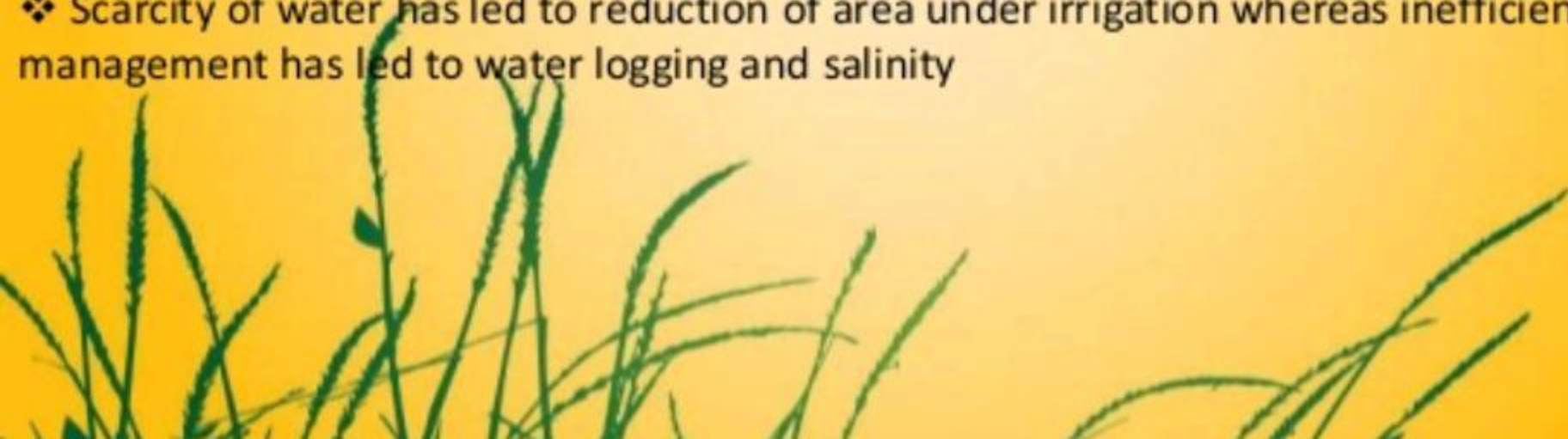
- ▣ Make a note on Pradhan Mantri Fasal Bima Yojana.

## **How can we become self sufficient ?**

- ❖ Self sufficiency can be attained if government provides proper agricultural infrastructure, market linkage and also encourages the use of latest techniques.
- ❖ Instead of concentrating only on wheat or rice, the food crop with a better growth potential in that particular area must be encouraged.
- ❖ Creation of necessary infrastructure like irrigation facilities, availability of electricity and subsidies can also attract private investments in agriculture.
- ❖ The focus on increasing food grain production which should be on a sustainable basis and liberal free trade in grains will create massive employment and reduce poverty in rural areas.

## **What is the future of India's food security?**

- ❖ Shift from cultivation of food crops to cultivation of fruits, vegetables, oil-seeds and pulses. This has led to reduction of net sown area under cereals and pulses.
- ❖ Competition for land between non-agricultural uses and agriculture has reduced net sown area.
- ❖ Productivity of land is declining due to overuse of fertilisers, pesticides and insecticides.
- ❖ Scarcity of water has led to reduction of area under irrigation whereas inefficient water management has led to water logging and salinity.





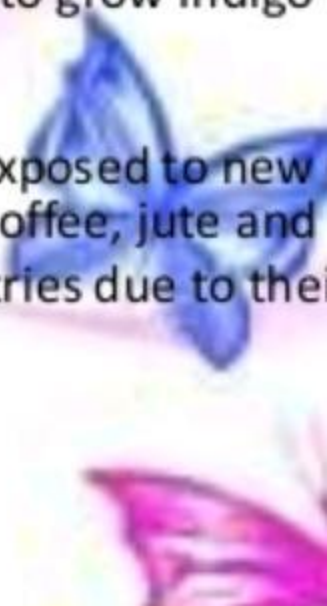


# Impact of Globalisation on Agriculture

In the 19th century when European traders came to India, Indian spices were exported to different countries of the world and farmers were encouraged to grow these crops. Even today, spices are one of the important export items from India.

During the British period cotton belts of India attracted the British and eventually cotton was exported to Britain as a raw material for their textile industries. The Champaran movement started in 1917 in Bihar because the farmers of that region were forced to grow Indigo for the British textile industries.

Under globalization, particularly after 1990, Indian farmers have been exposed to new challenges. Despite India being an important producer of rice, cotton, rubber, tea, coffee, jute and other agricultural products, our agricultural products are not able to compete with developed countries due to the heavily subsidized agriculture in those countries.



- ▣ Globalization aims at integrating national economy with that of the world. Increased free and open international trade, foreign investment, technology exchange etc. are all integral to the globalised world. Globalisation had a significant impact on Indian agriculture – in many good and some bad ways. Read more on Brainly.in - <https://brainly.in/question/9775417#readmore>

- ▣ Positive Impact of globalisation
- ▣ Economic impact: Globalisation enabled greater access to technological advancements in agriculture, including high yield varieties, genetically modified crops (GM crops) and micro-irrigation techniques. Foreign investment in agriculture in contract farming, cold storage and food processing have helped farmers. Access to foreign markets has greatly boosted Indian agricultural exports. Read more on Brainly.in - <https://brainly.in/question/9775417#readmore>

- ▣ Social impact: Globalisation helped improve food productivity and production and helped transform rural agrarian societies. It has empowered the farmers to understand, reach out and compete in global markets. The new technologies, especially in irrigation, helped in addressing rural water stress and keeping agriculture viable. It has also helped change the agrarian society's attitudes towards new technologies in farming. Read more on Brainly.in - <https://brainly.in/question/9775417#readmore>

- ❑ Negative Impact of globalisation: Economic impact: Multi National Companies (MNCs) captured the Indian markets making farmers dependent on the expensive high yield seeds and fertilizers. Attraction of global market resulted in farmers shifting from traditional or mixed cropping to unsustainable cropping practices. The competition from cheaper imports pushed down the prices of crops like cotton, wheat etc making agriculture unsustainable for many farmers. Read more on Brainly.in - <https://brainly.in/question/9775417#readmore>

- ▣ Social impact: Unsustainable agriculture practices post-globalisation and the inability to compete against cheaper imports contributed to distress migration of rural farmers, destroying rural agrarian societies and traditional family structures. The dependency of MNC seeds resulted in farmers losing touch with indigenous seeds and farming methods. Globalisation caused change in food habits with increased consumption of proteins, sugars and fats causing increase in lifestyle diseases. Read more on Brainly.in - <https://brainly.in/question/9775417#readmore>

- ▣ **Conclusion:** In light of certain harmful impact of globalization, government has taken many steps to safeguard the farmers from globalization including:
- ▣ ● Negotiating at the WTO for fairer rules and trade practices
- ▣ ● Imposing higher duties on imports to safeguard farmers from import surges
- ▣ ● Higher MSPs for farmers to protect against fall in prices due to cheaper imports
- ▣ ● Promotion of Indian produce through GI tags & organic foods
- ▣ ● Encourage sustainable agricultural practices, indigenous breeds and

❖ To make agriculture successful and profitable, proper thrust should be given to the improvement of the condition of marginal and small farmers. . The green revolution produced much. But it is being alleged that it has caused land degradation. The keyword today is "brown revolution" which includes genetic engineering.

❖ In fact organic farming is much in vogue today because it is practised without factory made chemicals such as fertilizers and pesticides. Hence, it does not affect environment in a negative manner.

❖ Indian farmers have a bleak future if they continue growing food grains on the holdings that grow smaller and smaller as the population rises. Indian farmers should diversify their cropping pattern from cereals to high-value crops. This will increase incomes and reduce environmental degradation simultaneously

❖ India's diverse climate can be harnessed to grow a wide range of high-value crops.

**Did you know ?**

**Organic agriculture will adapt to climate change more**





Thank you

