

Climate Change And Its Implications (CCI)

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Lecture-13_14



Share to total economy of India

2019-20	18.4%
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2020-21	20.2%
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Classification of crops

- **Field crops:** crop other than fruit and vegetables



wheat

rice

barley

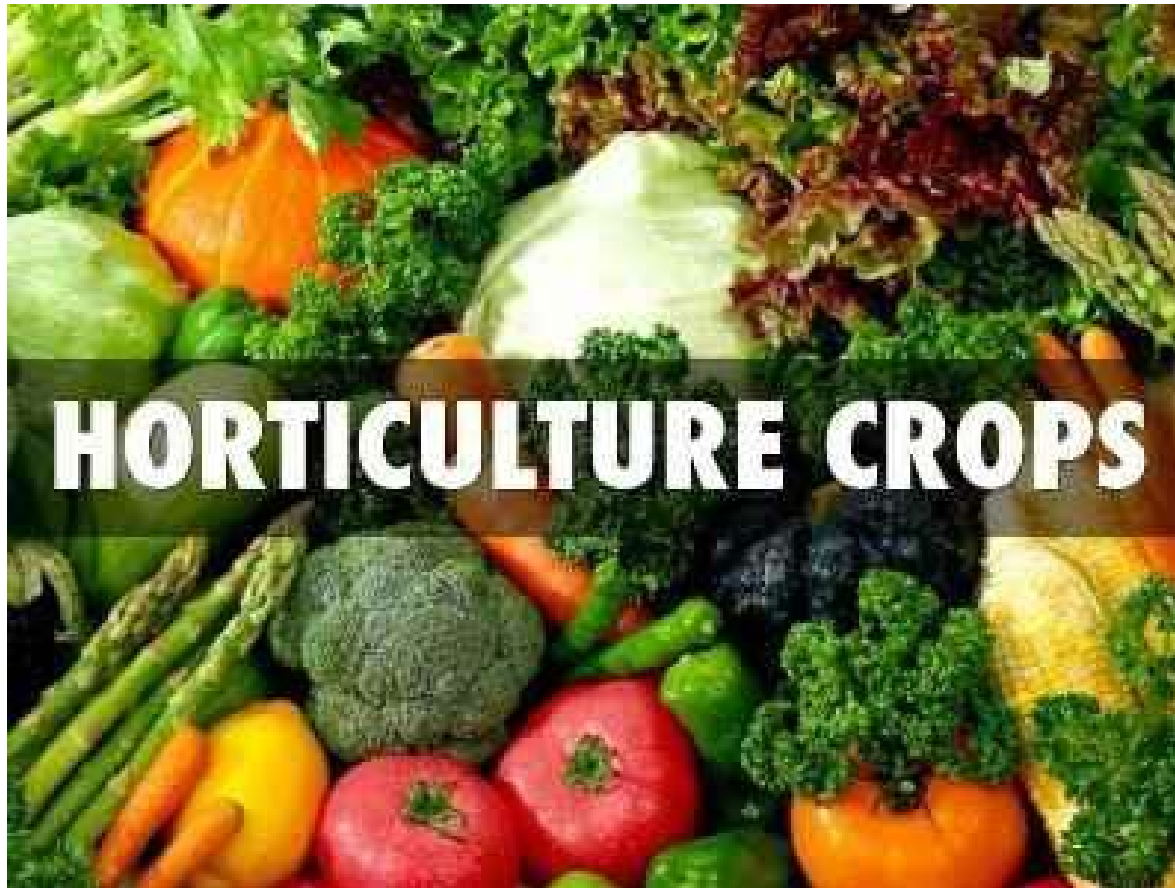
- Commercial crops/cash crops



- Oil seed crops:



- Horticultural crops:

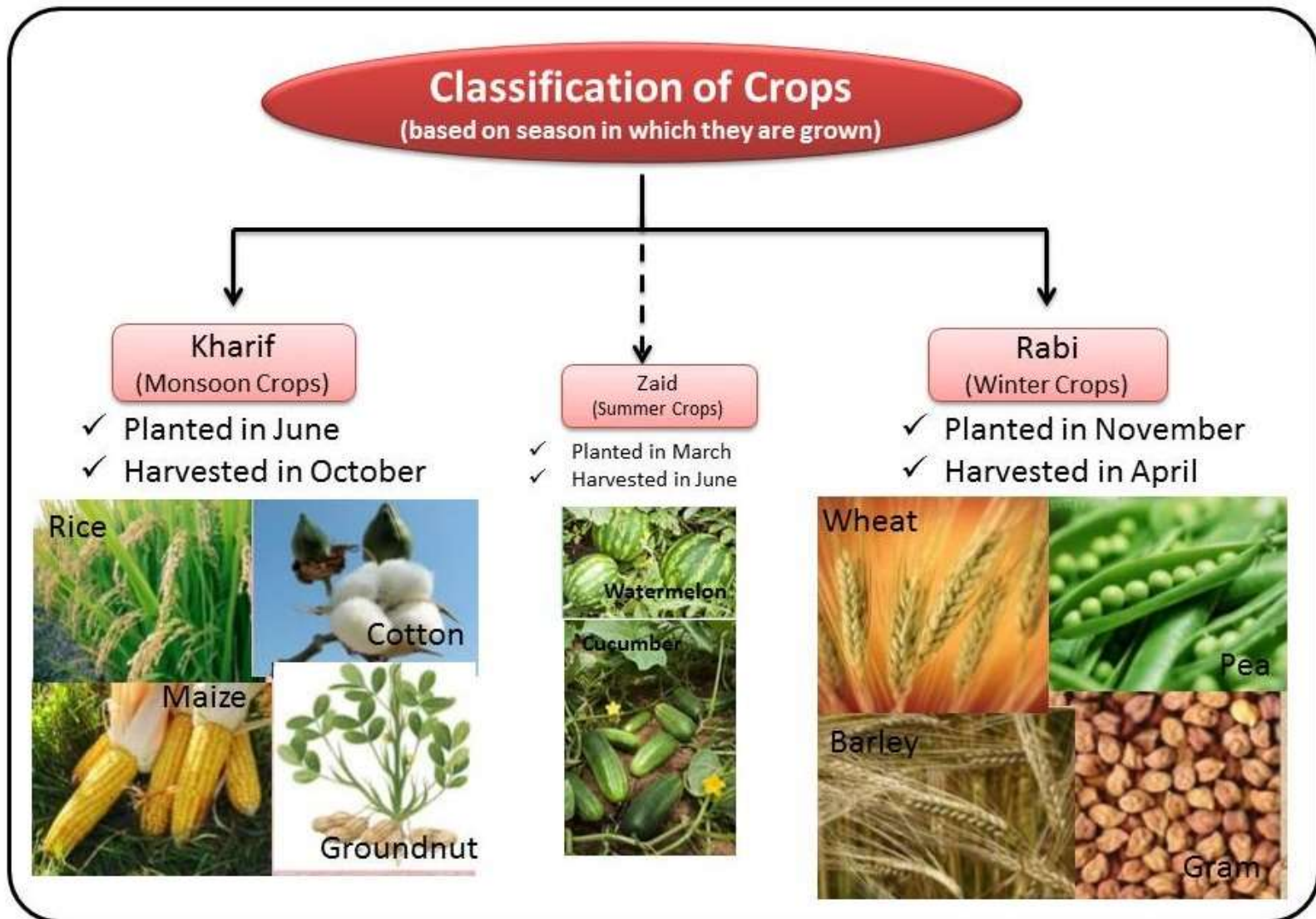


- Tree, bush and perennial vine fruits
- Perennial bush and tree nuts
- Vegetables (roots, tubers, shoots, stems, leaves, fruits and flowers of edible and mainly annual plants)
- Trees, shrubs, turf and ornamental grasses propagated and produced in nurseries for use in landscaping or for establishing fruit orchards or other crop production units

- Plantation crops:

Coffee, tea, rubber, coconut, banana, tobacco

Cropping seasons in India



State	Season	Local name	Growing month
Andhra Pradesh	Kharif	Serva or Abi	July – December
	Rabi	Dalwa or Tabi	December – April
	Summer	In limited areas	March/April – June
Assam	Pre-monsoon	Ahu	Mar/April– June/july
	-	Sali	June/July- Nov/Dec
	-	Boro	Nov - May
Bihar	Summer	-	March – July/Aug
	Autumn	-	May/June–

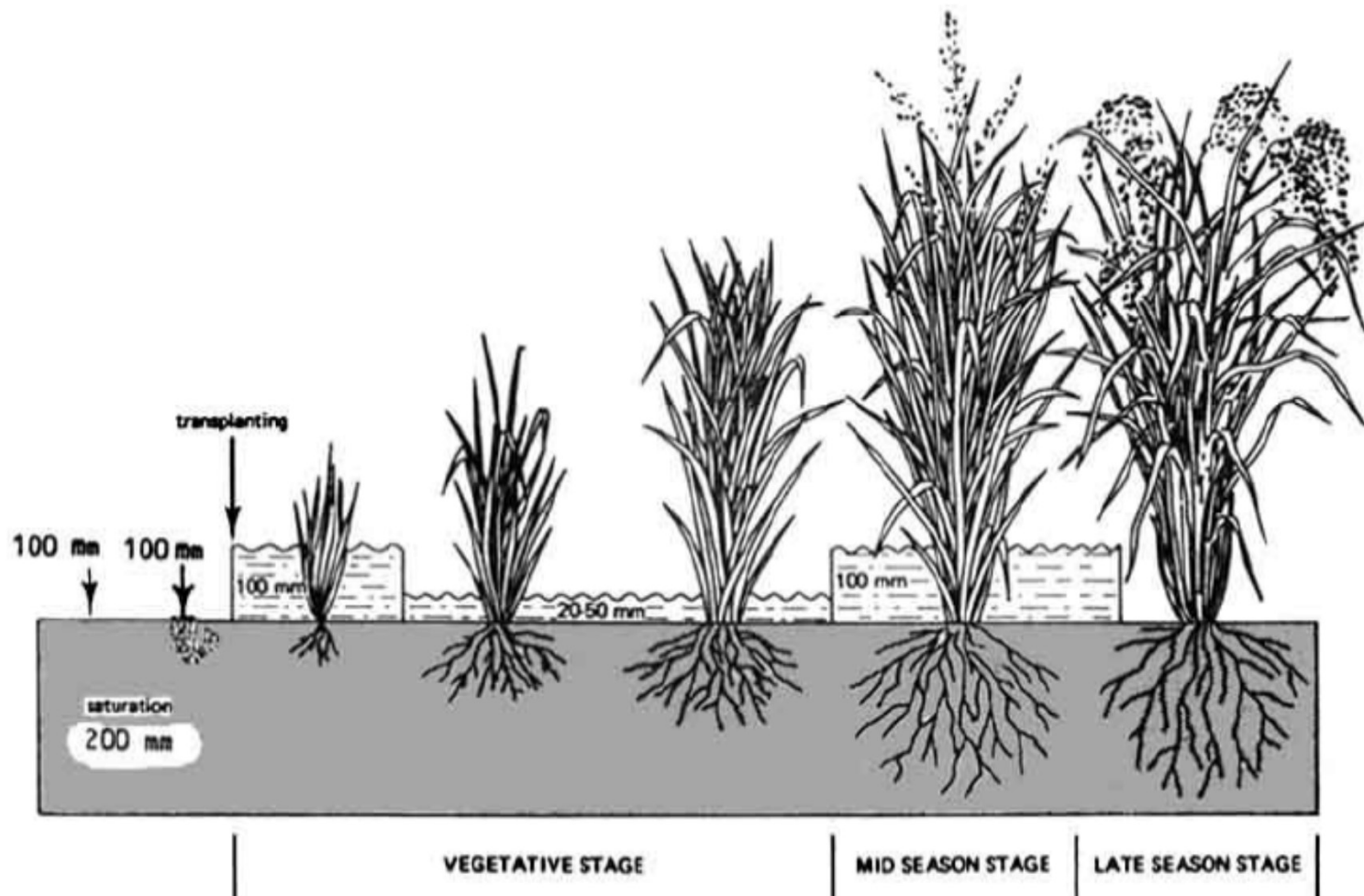
			Sept/Oct
	Winter	-	June – Nov/Dec
Gujarat	Kharif	Chomasu Dangar	June/July-Oct/Nov
	-	Unala Dangar	Dec – June
Haryana	Kharif	-	May/June– Sept/Oct
Himachal Pradesh	Kharif	-	June/July- Sept/Oct
Jammu & Kashmir	-	-	Jammu: June-Nov Kashmir: Last week of April - October
Karnataka	Kharif	-	June – Dec
	Summer	-	Jan-May/June
Kerala	first crop	Virippu	April-May/Sept- Oct
	Second crop	Mundakan	Sept-Oct/Dec-Jan
	Third crop	Punja	Dec/Jan-Mar/April
Madhya Pradesh	Kharif	-	June/July-Dec
Maharashtra	Kharif	-	June/July-Dec
Manipur	Kharif	-	Mar/June- Sept/Oct

Meghalaya	Kharif	-	May/June- Aug/Sept
	Rabi	-	-----
Nagaland	Kharif	-	May/June- Nov/Dec
	Rabi	-	Feb - May
Orissa	-	Sarad	June-Dec
	-	Dalua	Dec-April
	-	Beali (short Duration)	April/May –Sept (Only in uplands)
Punjab	Kharif	-	May – Nov
Rajasthan	Kharif	-	June/July-Sept/oct

Tamil Nadu	-	Navarai	Jan-April
	-	Sornavari	April – July
	-	Kar or Kuruvai	June – August
	-	Samba	June/July- Nov/Dec
	-	Thaladi or Pishanam	Sept/Oct- Feb/March
Uttar Pradesh	Kharif	-	June – Oct
West Bengal	Pre-Kharif	Aus	April-Sept
	Kharif	Aman	June-Dec
	Summer	Boro	End Nov-Mid June

How climate influences agricultural
production?

1. Crop water requirement



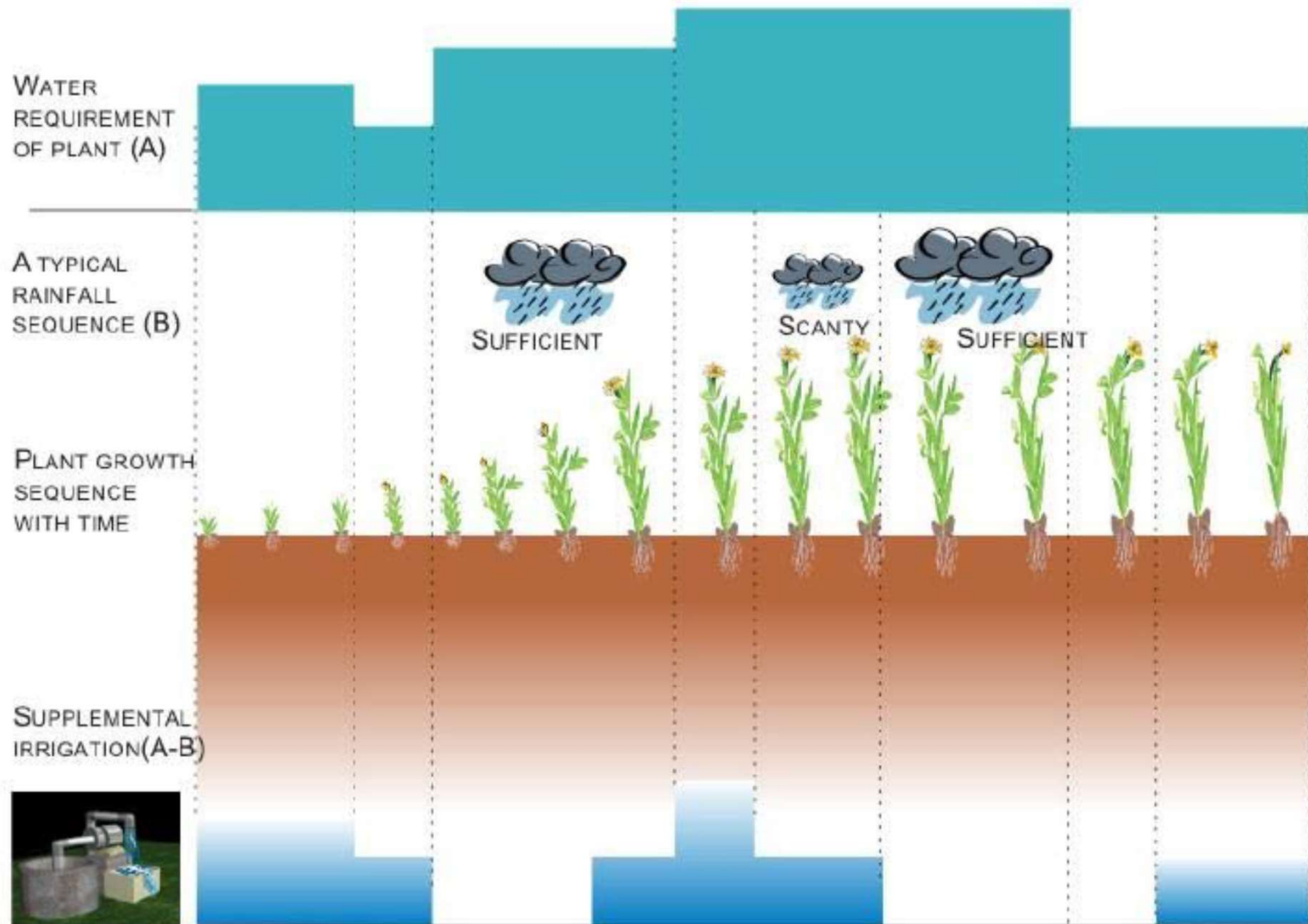
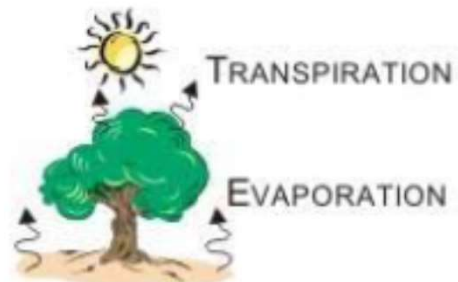


FIGURE 5 . Typical irrigation requirement of a crop and water provided naturally by rain or artificially by pumping

Major climatic factors influencing irrigation requirement

- Sunshine
- Temperature
- Humidity
- Wind speed

1)



SUNNY : HIGH EVAPOTRANSPIRATION



CLOUDY : LOW EVAPOTRANSPIRATION

2)



HOT : HIGH EVAPOTRANSPIRATION



COOL : LOW EVAPOTRANSPIRATION

3)



HUMID : LOW EVAPOTRANSPIRATION



DRY : HIGH EVAPOTRANSPIRATION

4)



CALM : LOW EVAPOTRANSPIRATION



WINDY : HIGH EVAPOTRANSPIRATION

Irrigation scheduling

Estimating crop water requirement

CROPWAT (FAO model)

- CROPWAT is a decision support tool developed by the Land and Water Development Division of FAO
- CROPWAT 8.0 for Windows is a computer program for the calculation of crop water requirements and irrigation requirements based on soil, climate and crop data
- The program allows the development of irrigation schedules for different management conditions and the calculation of scheme water supply for varying crop patterns
- Model can also be used to evaluate farmers' irrigation practices and to estimate crop performance under both rainfed and irrigated conditions.

Software

<http://www.fao.org/land-water/databases-and-software/cropwat/en/>

<http://www.fao.org/3/X0490E/X0490E00.htm>

CLIMWAT