

# INDIAN AGRICULTURE CROP PRODUCTION ANALYSIS ( 1197-2021 )

LONG -TERM INTERNSHIP

PROJECT REPORT

# **Team Members:**

1. MANAPURAM DHANALAKSHMI
2. MAJJI DWARAKAMAYI
3. MAJJI VIJAY BABU
4. MARIPALLI SUNIL
5. MATIBOINA VIJAYA KUMAR

# INDIA AGRICULTURE CROP PRODUCTION ANALYSIS (1997 - 2021)

## INTRODUCTION:-

Analyzing India's agricultural crop production from 1997 to 2021 is quite a task, considering the vast historical and agricultural diversity of the country. This analysis would likely cover shifts in crop cultivation patterns, technological advancements, socio-economic factors, and their impacts on production over centuries. It would provide valuable insights into India's agrarian history and its journey towards becoming one of the world's leading agricultural producers.



## Overview:-

Certainly! An overview of India's agricultural crop production from 1997 to 2021 would highlight significant milestones, trends, and transformations. This includes the introduction of various crops, the influence of climate and geography, the adoption of modern agricultural practices, policy interventions, the Green Revolution, and the role of technology in boosting productivity. Additionally, it would address challenges such as land degradation, water scarcity, fluctuating market prices, and the need for sustainable farming practices. Such an overview would offer a holistic understanding of India's agricultural landscape over centuries.

### Purpose:-

Analyzing India's agriculture crop production from 1997 to 2021 serves various purposes, such as:

Trend Identification: Understanding long-term trends in crop production can help policy makers, researchers, and farmers anticipate future challenges and opportunities in the agriculture sector.

Policy formulation: Governments can use this data to formulate policies aimed at improving agricultural productivity, ensuring food security, and promoting sustainable farming practices.

Resource allocation: Analyzing crop production data helps in allocating resources more efficiently, such as subsidies, irrigation facilities and research funding, to areas where they are most needed.

Market forecasting: it provides insights into market trends and helps stakeholders make informed decisions related to investments, trade, and pricing strategies.

climate change impact: monitoring crop production over time helps assess the impact of climate change on agriculture and develop adaptation strategies to mitigate its effects.

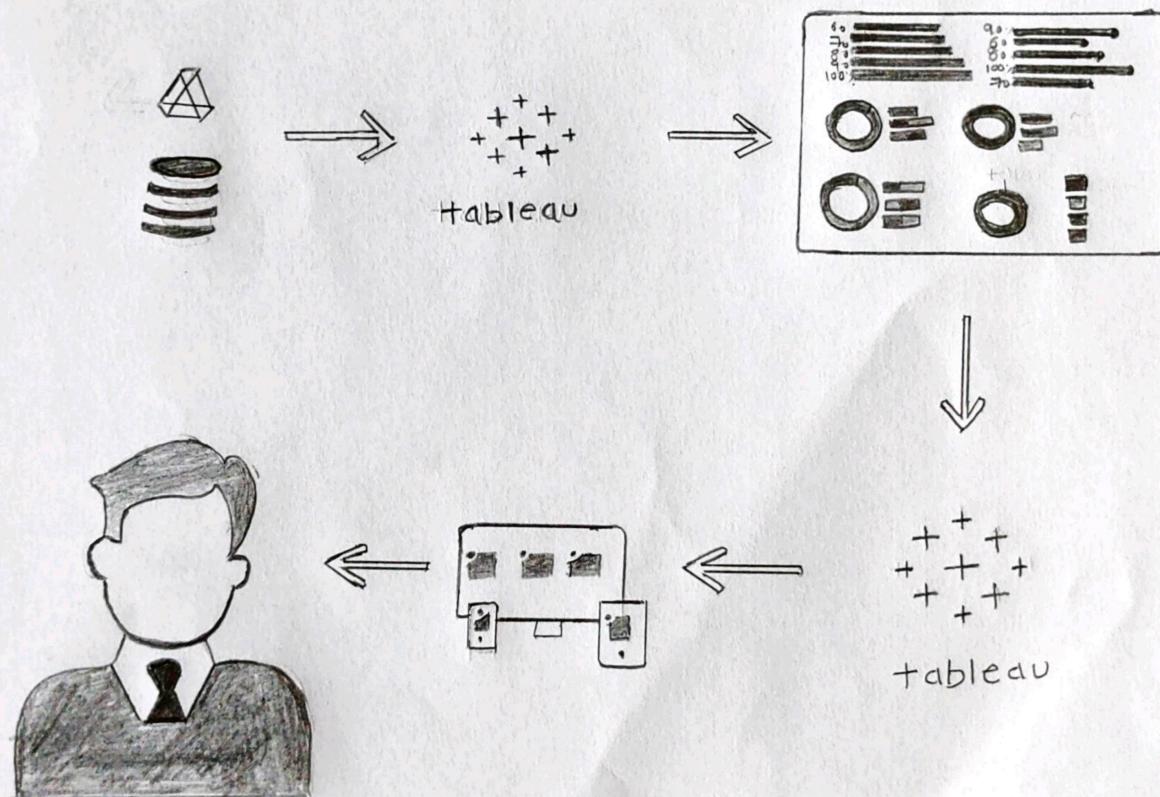
Research and Development :- Researches can

use this data to identify areas for further research and innovation in agricultural practices, crop breeding, and technology adoption.

### Literature Survey:

Analyzing crop production in India from 1997 to 2021 would be quite a task! Assuming you meant 1997, conducting a literature survey on India's agriculture and crop production during that period would involve researching academic journals, government reports, and agricultural databases. Key factors to consider would include technology advancements, policy changes, climate variations, and socio-economic influences on crop yields. Do you need assistance finding specific literature or data sources for your survey?

### Theoretical analysis:



the centuries. While the specifics would be conjectural, drawing parallels with known historical events and socio-economic trends could help construct a theoretical analysis of India's agriculture during this vast time frame.

### Hardware / Software Requirements of the project:-

#### Hardware Required :-

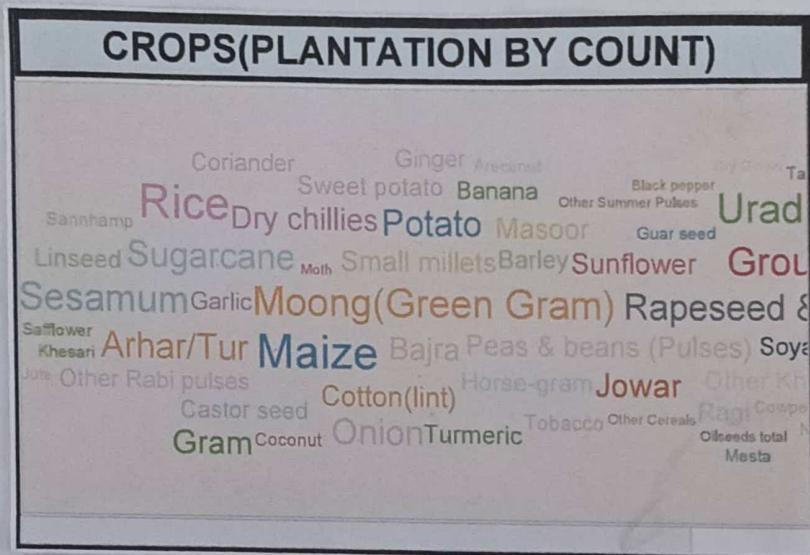
- Processor : Intel i3, i5 or 11<sup>th</sup> gen processor or similar processor.
- RAM : 4GB or above.
- Hard disk : 100GB or above.
- Input devices : Key board, Mouse.
- Output device : monitor.
- Required Space : min : 400mb  
max : 1GB.

#### Software Required :-

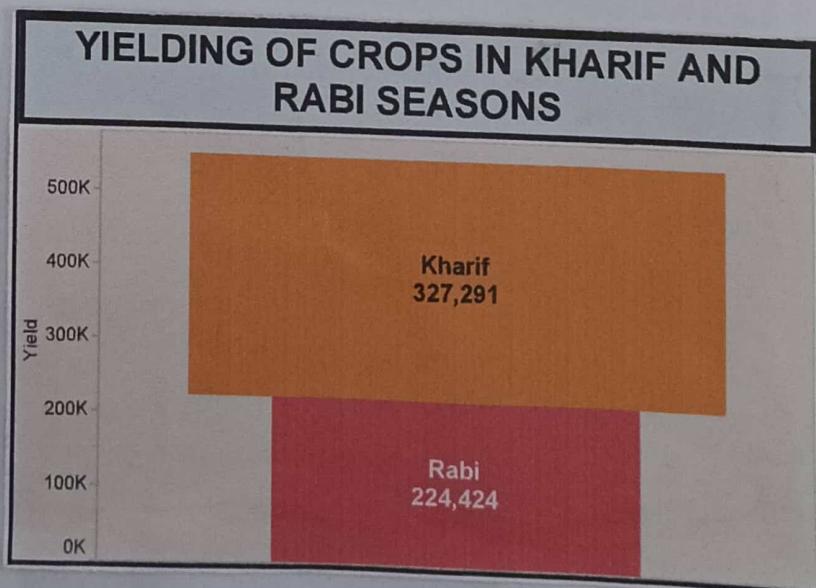
- Any operating system.
- Tableau
- Python for data analysis, exploratory data analysis.
- Front - end Development - HTML for structuring content Java Script for interactivity.
- Back - end Development - Python.
- Frame works and libraries - Flask.



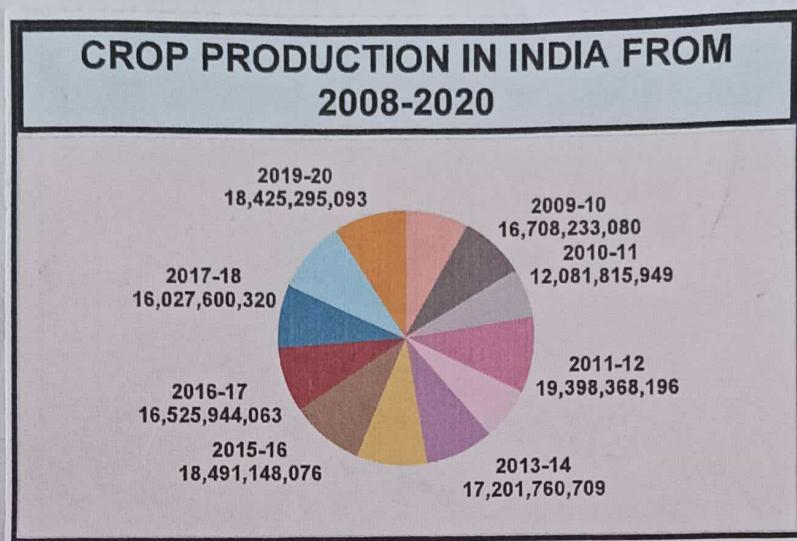
Visualization - 1 :-



Visualization - 2 :-



Visualization - 3 :-

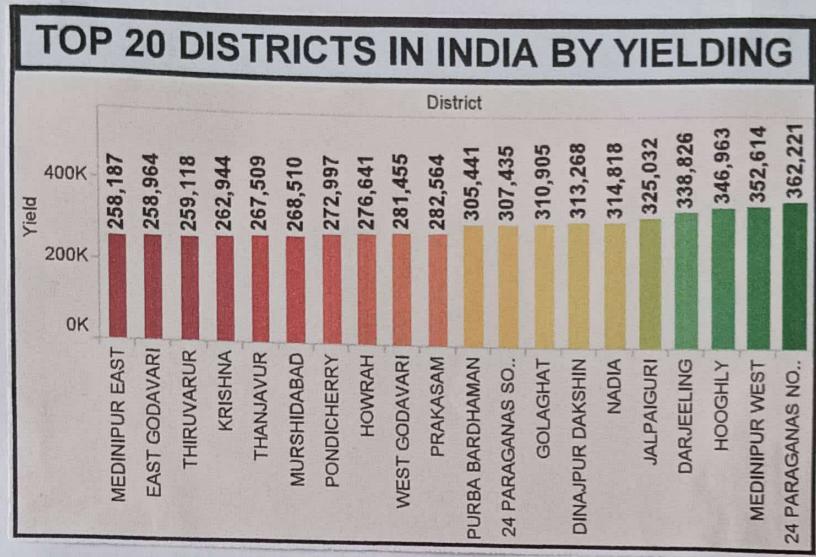


Visualization - 4 :-

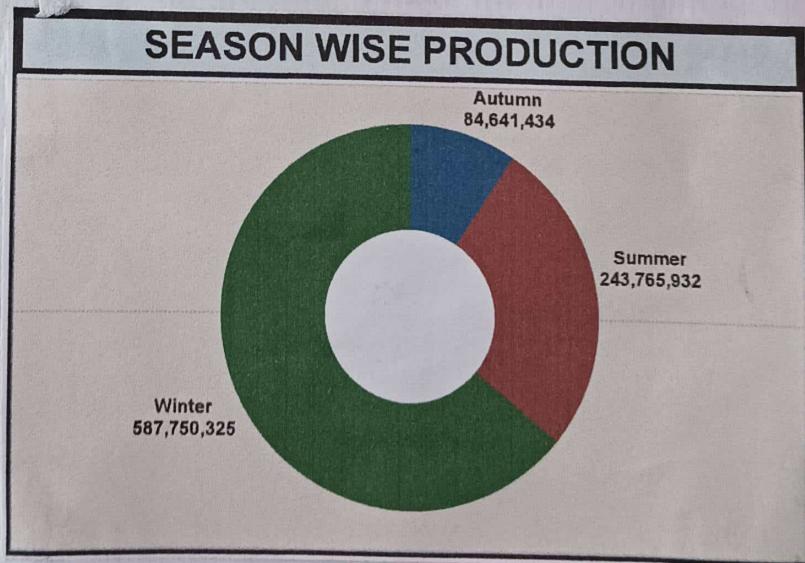
### PRODUCTION OF TOP 15 CROPS IN WHOLE YEAR

Season	Crop	Production Value
Whole Year	Arihar/Tur	432,556
	Dry chillies	6,915,394
	Gram	3,247,931
	Groundnut	4,504,982
	Jowar	1,006,178
	Maize	5,893,279
	Moong(Gre..)	319,444
	Onion	76,624,094
	Potato	251,289,394
	Rapeseed ..	1,056,207
	Rice	2,616,273
	Sesamum	3,208,163
	Sugarcane	4,869,417,949
	Urad	583,544
	Wheat	8,865,390

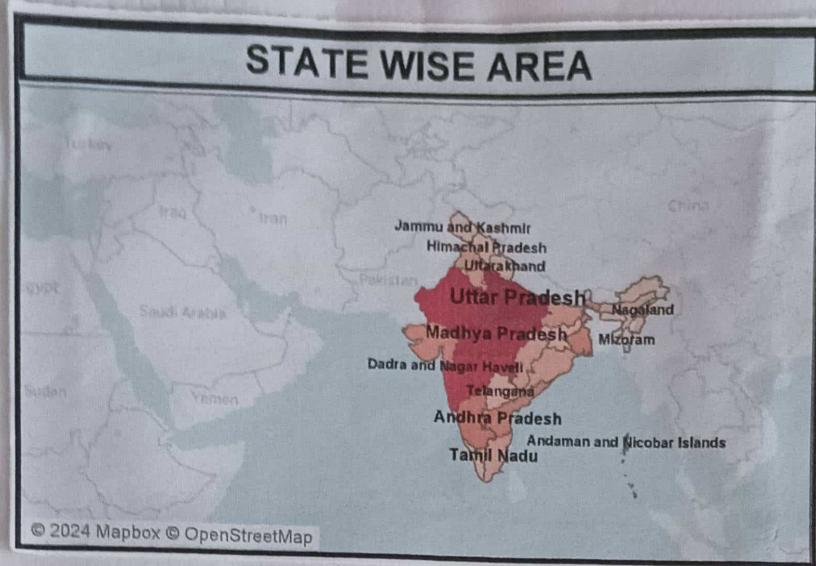
visualization - 5 :-



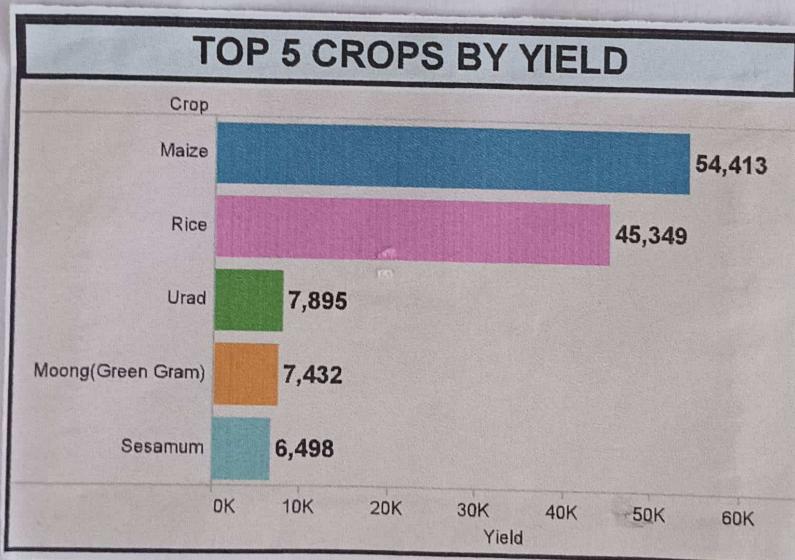
visualization - 6 :-



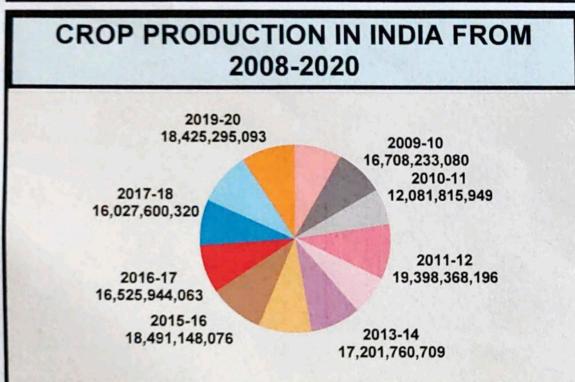
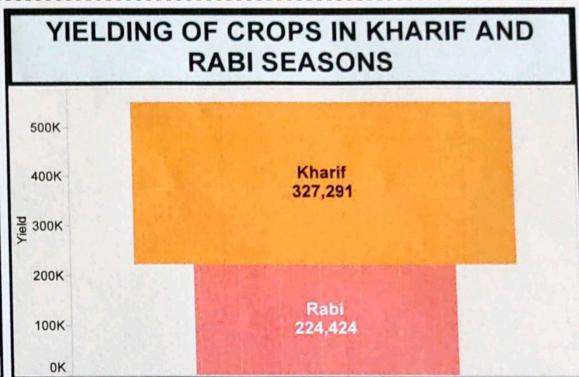
Visualization - 7 :



Visualization - 8 :



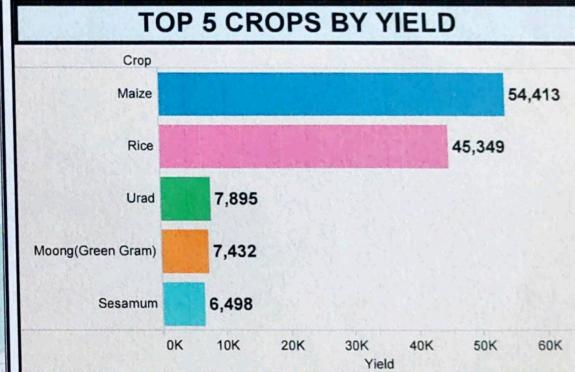
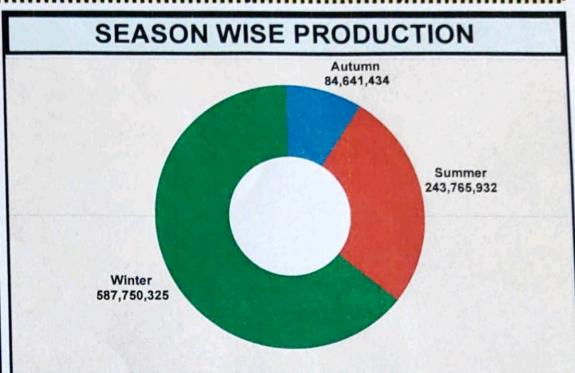
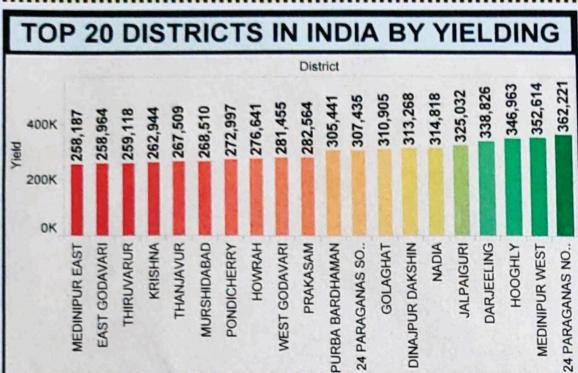
## INDIA AGRICULTURE CROP PRODUCTION ANALYSIS (1997-2021)



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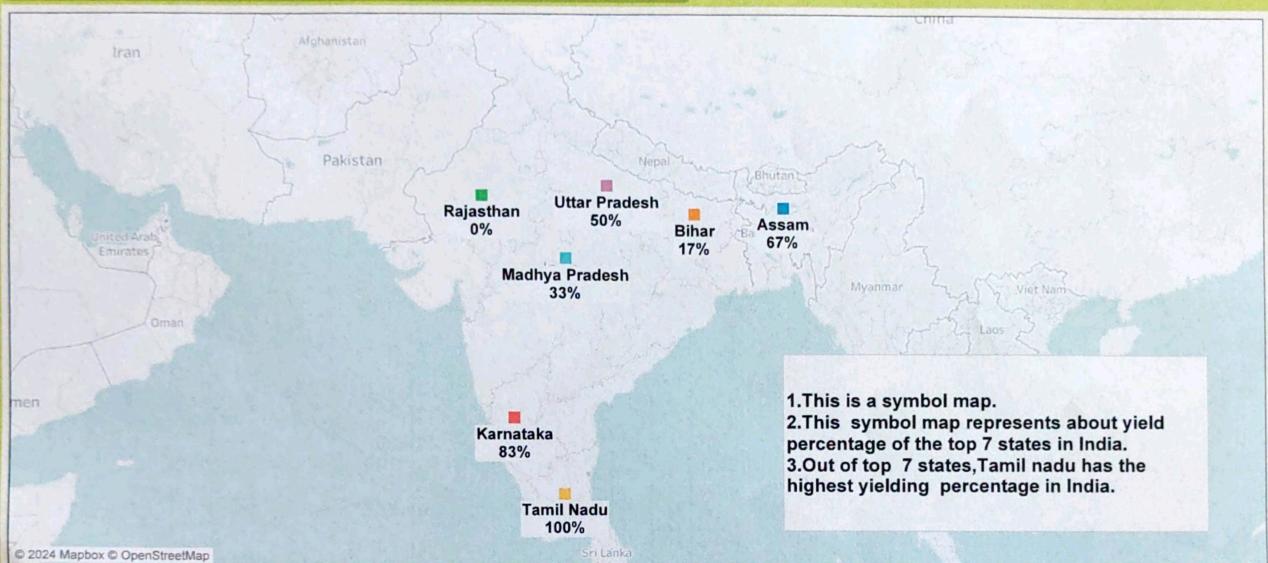
YIELD PERCENTAGE OF TOP 7 STATES IN INDIA

YEAR WISE CROP YIELD IN INDIA FROM 2000-2020

TOP 10 CROPS BY AREA

PRODUCTION OF RICE IN TOP 15 STATES

YEAR WISE PR..



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TOP 10 CROPS BY AREA

PRODUCTION OF RICE IN TOP 15 STATES

YEAR WISE PR...

Year	Crop								
	Sesamum	Small millets	Soyabean	Sugarcane	Sunflower	Sweet potato	Tapioca	Tobacco	Turmeric
2000-01	167	192	158	24,550	230	1,636	1,581	182	576
2001-02	185	216	175	26,038	336	1,443	682	349	584
2002-03	165	205	145	23,582	297	1,989	1,539	373	650
2003-04	186	245	213	23,655	354	2,016	1,696	333	694
2004-05	191	189	200	22,361	372	2,838	1,732	303	763
2005-06	215	203	207	25,339	301	2,975	1,729	301	789
2006-07	202	191	203	24,320	371	2,374	1,921	323	791
2007-08	224	171	191	24,573	334	2,418	2,061	233	642
2008-09	217	193	202	25,797	322	2,724	2,169	237	810
2009-10	177	175	171	26,087	295	2,267	2,086	323	732
2010-11	251	204	256	26,801	298	1,573	1,146	268	612
2011-12	255	205	246	26,233	289	2,427	2,355	303	916
2012-13	884	184	282	29,063	239	2,278	1,285	270	772
2013-14	261	218	252	29,695	308	2,670	2,366	382	1,020
2014-15	276	255	249	29,961	295	2,240	2,442	303	1,000
2015-16	274	271	219	28,934	268	2,643	2,329	374	1,728
2016-17	863	214	341	28,738	291	2,725	2,219	348	1,867
2017-18	350	286	335	29,360	331	3,175	2,491	351	1,974
2018-19	333	271	370	30,395	263	3,378	2,663	306	2,979
2019-20	346	306	324	32,389	355	4,136	2,913	313	2,015

1.This is a highlight tables.

2 .This highlight tables represents about the year wise crop yield from 2000-2020

3.Sugarcane has the highest yielding from 2000-2020.



## INDIA AGRICULTURE CROP PRODUCTION ANALYSIS (1997-2021)

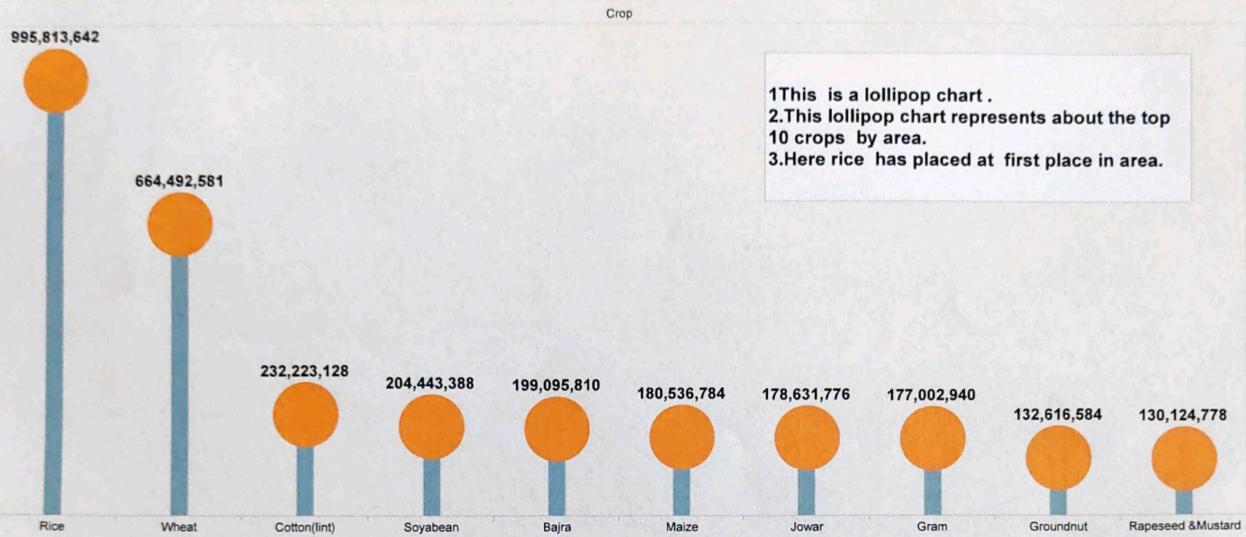
YIELD PERCENTAGE  
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YEAR WISE CROP YIELD IN INDIA  
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TOP 10 CROPS BY AREA

PRODUCTION OF RICE IN TOP 15  
STATES

YEAR WISE  
PRODUCTION OF MAJ..



## INDIA AGRICULTURE CROP PRODUCTION ANALYSIS (1997-2021)

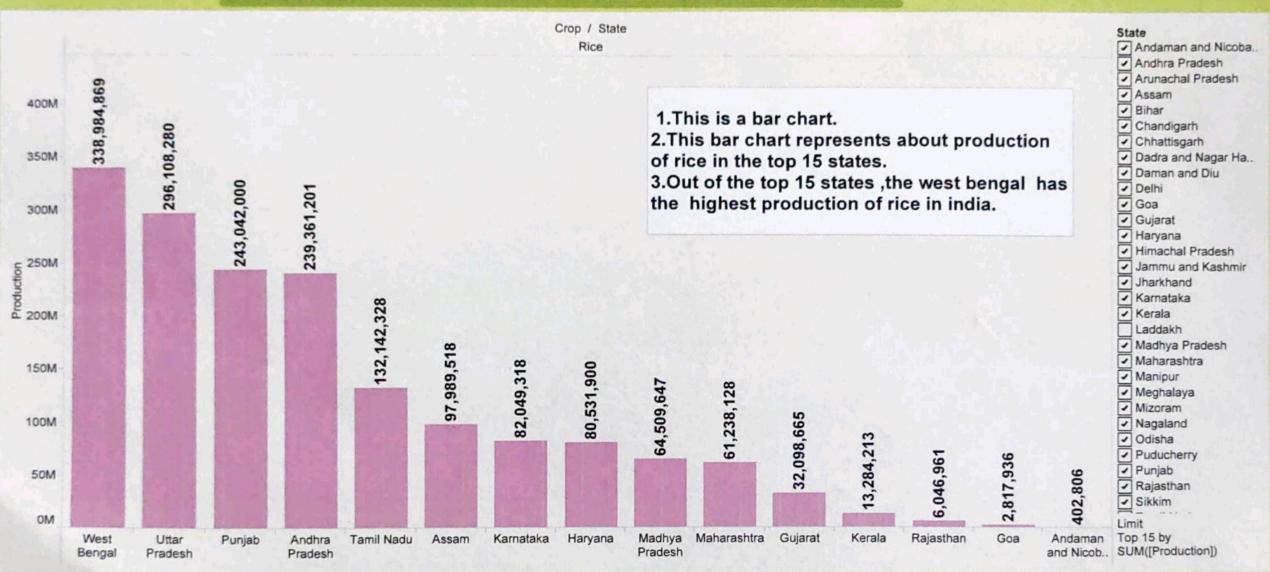
YEAR WISE CROP YIELD IN INDIA FROM..

TOP 10 CROPS BY AREA

PRODUCTION OF RICE IN TOP 15 STATES

YEAR WISE PRODUCTION OF MAJOR CROPS

SEASON WISE PRODUCTION AND YIE..



## INDIA AGRICULTURE CROP PRODUCTION ANALYSIS (1997-2021)

TOP 10 CROPS BY AREA

PRODUCTION OF RICE IN TOP 15 STATES

YEAR WISE PRODUCTION OF MAJOR CROPS

SEASON WISE PRODUCTION AND YIELD

YEAR WISE YIELDING OF COCONUT IN KER..



- 1.This is a stacked bars.
- 2.This stacked bars represents about the year wise production of major crops.
- 3.Here sugarcane has the largest production than rice and wheat.

## INDIA AGRICULTURE CROP PRODUCTION ANALYSIS (1997-2021)

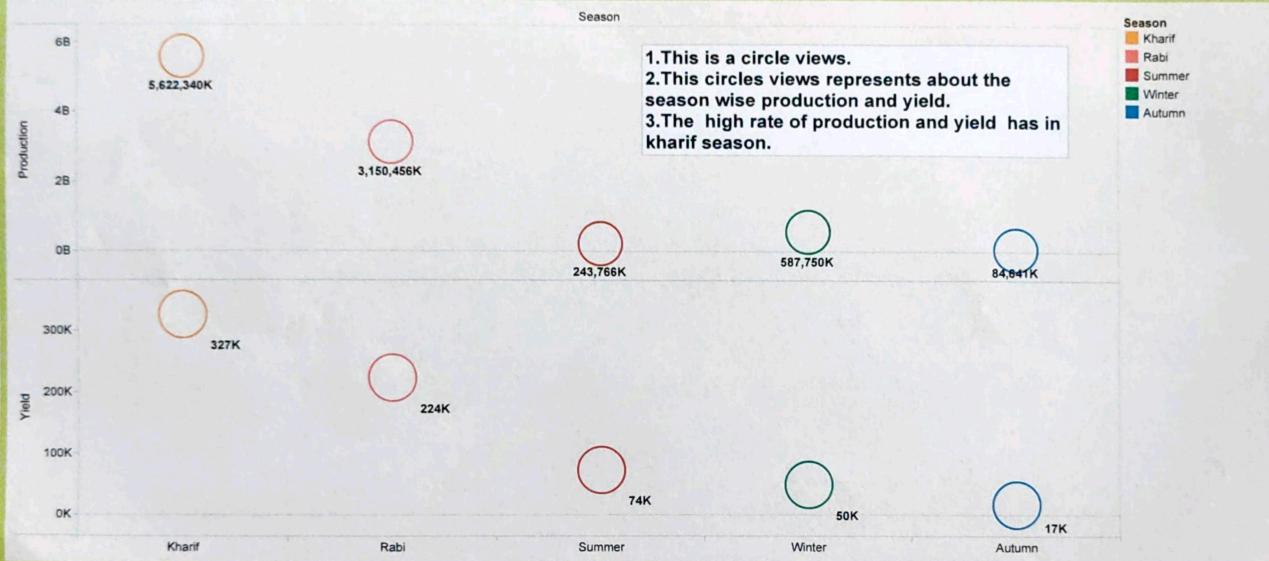
PRODUCTION OF RICE IN TOP 15 STA...

YEAR WISE PRODUCTION OF MAJOR CROPS

SEASON WISE PRODUCTION AND YIELD

YEAR WISE YIELDING OF COCONUT IN KERALA

SEASON WISE YIELD



INDIA AGRICULTURE CROP PRODUCTION ANALYSIS (1197-2021)

The treemap displays the following data:

Season	Year	Crop	Production (K)	Yield (K)													
2011-12	96K	2015-16	94K	2018-19	90K	2016-17	90K	2017-18	90K	2007-08	89K						
2014-15	96K	2012-13	94K							2004-05	86K	2019-20	82K	2001-02	79K	2000-01	79K
2013-14	95K	2006-07	91K							2003-04	85K						
2008-09	95K	2010-11	91K							1999-00	78K						
2009-10	94K	2005-06	91K							2002-03	84K	1997-98	75K				

**Legend:**

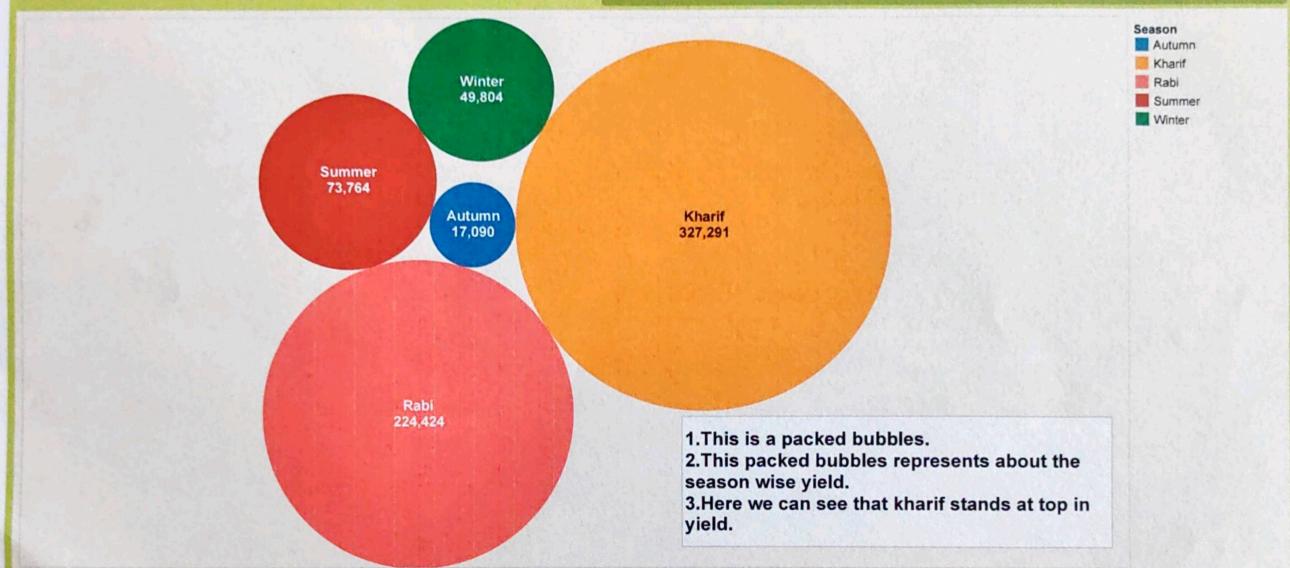
- State: Andaman and Nicobar, Andhra Pradesh, Arunachal Pradesh, Assam, Bihar, Chandigarh, Chhattisgarh, Dadra and Nagar Ha., Daman and Diu, Delhi, Goa, Gujarat, Haryana, Himachal Pradesh, Jammu and Kashmir, Jharkhand, Karnataka, Kerala, Laddakh, Madhya Pradesh, Maharashtra, Manipur, Meghalaya, Mizoram, Nagaland, Odisha, Puducherry, Punjab, Rajasthan, Sikkim.
- Yield: 74K (light green), 96K (dark green).

**Annotations:**

- This is a treemap.
- This treemap represents about the year wise yielding of coconut in kerala.
- The kerala has the highest yielding of coconut from the year 2011-2015.

## INDIA AGRICULTURE CROP PRODUCTION ANALYSIS (1997-2021)

PRODUCT    YEAR WISE PRODUCTION OF  
ION OF R... MAJOR CROPS    SEASON WISE PRODUCTION AND  
YIELD    YEAR WISE YIELDING OF  
COCONUT IN KERALA    SEASON WISE YIELD



## ADVANTAGES AND DISADVANTAGES:

### ADVANTAGES:

1. Diverse crop production: India's varied climate and geography allow for a wide range of crops, contributing to food security and economic stability.
2. Increased yield: Technological advancements and improved agricultural practices have led to higher crop yields, meeting the demands of a growing population.
3. Employment generation: Agriculture remains a significant source of employment, particularly in rural areas, supporting livelihoods and reducing poverty.

### DIS ADVANTAGES:

1. Dependency on monsoons: Agriculture in India heavily relies on monsoon rains, making crops vulnerable to unpredictable weather patterns and droughts.
2. Small Landholdings: Fragmented land ownership limits economies of scale and hinders investment in modern technology and infrastructure.
3. Pesticide overuse: Excessive pesticide and fertilizer use have led to environmental degradation, soil depletion, and health risks for farmers and consumers.

Addressing these challenges requires comprehensive policies focusing on sustainable agriculture practices etc.

### APPLICATIONS :-

1. Policy formulation: Governments can use this data to formulate agricultural policies, such as subsidies, incentives, and infrastructure development, to support farmers and enhance productivity.
2. Market forecasting: Businesses involved in agriculture, such as agribusiness firms and commodity traders, can use crop production data to forecast market trends, make informed decisions about supply chain management, and optimize pricing strategies.
3. Food security: Analysis of crop production trends helps in assessing the country's food security status, identifying regions vulnerable to food shortages, and designing interventions to ensure adequate food supply for the population.
4. International Trade: Crop production statistics are crucial for assessing India's position in the global agricultural market, determining export potential, and negotiating trade agreements with other countries.

Overall, crop production analysis serves as a cornerstone for informed decision-making across various sectors.

### CONCLUSION :-

1. Diversification of crops: India has seen a diversification of crops grown with a shift towards high-value crops like fruits, vegetables, and cash crops alongside traditional staples like rice and wheat.

2. Green Revolution impact: The green revolution in the 1960s played a crucial role in increasing agricultural productivity, particularly in wheat and rice production, through the adoption of high-yielding varieties, irrigation techniques, and chemical fertilizers.

In conclusion, while India has made significant strides in agricultural crop production over the years, there are ongoing challenges and opportunities for further growth, sustainability, and equity in the sector. continued investment in research, infrastructure etc.

#### Future scope :-

Analyzing India's agriculture crop production from 1997 to 2021 would involve examining various factors such as crop types, yields, weather patterns, government policies, technological advancements, and market trends. Future scope could involve forecasting potential challenges like climate change impacts, water scarcity, and the need for sustainable farming practices, as well as opportunities such as leveraging technology for precision agriculture, improving infrastructure, and enhancing market access for farmers. Additionally, exploring innovations like genetics engineering, vertical farming, and digital agriculture could shape the future of India's agriculture sector.