Project Report

NM2023TMID33521

Indian Agricultural Crop Production Analysis (1997-2021)

1 . INTRODUCTION

1.1 Overview

According to The World Bank , India is global agricultural powerhouse. It is the world's largest producer of milk, pulses and spices and has world's largest cattle herd (buffaloes) , as well as the largest area under wheat, rice and cotton.

1.2 Purpose

Agriculture is an evolutionary process that consists of a series of activities such as the production of food , fibers, feed and raising of domesticated animals to fulfill the demand of the population, Agriculture is a key to development in the area of human civilization.

2 . Problem Definition & Design Thinking

Empathy Map

Says
What have we heard them say?
What can we imagine them saying?

Thinks
What are their wants, needs, hopes, and dreams?
What other thoughts might influence their behavior?

Inia's
Agricultural
Crop Production
analysis (1997-
2021)

Does

What behaviour have we observed?

Feels

What are their fears, frustrations, and anxieties?

3. Activity and screenshort

1. Recent developments in agriculture
2. Million tons global production
3. Good grains production
4. Internet of things in agriculture market
5. Gross fixed capital formation in agriculture as a share of GDP-Agriculture at current prices (%)
6. India's petroleums and other liquids import by source

RECENT DEVELOPMENTS IN AGRICULTURE

ARTIFICIAL INTELLIGENCE

ARTIFICIAL INTELLIGENCE (AI) CONSISTS OF REMOTE SENSORS, SATELLITES, AND UAVS WHICH MONITOR PLANT HEALTH, SOIL CONDITION, TEMPERATURE, HUMIDITY, ETC.

WATER MANAGEMENT INITIATIVES
WATER MANAGEMENT INITIATIVES INCLUDE WATERSHED MANAGEMENT, DRIP IRRIGATION AND WATER USER ASSOCIATION TO STRENGTHEN THE AGRICULTURAL SECTOR.

MODERN GREENHOUSE
GREENHOUSE IS THE BEST WAY TO GROW CROPS, FRUITS, VEGETABLES ETC. MODERN GREENHOUSES MAKE THIS WAY MORE RELIABLE AND EASY FOR FARMERS.

GIS BASED AGRICULTURE
THROUGH GIS BASED TECHNOLGY, FARMERS CAN MAP CURRENT AND FUTURE CHANGES IN PRECIPITTION, TEMPERATURE, CROP YIELDS, PLANT HEALTH, AND SO ON.

DATA FROM THE SKY - DRONES
DRONES HELP TO DEFINE CROP BIOMASS, THE PRESENCE OF WEEDS, PLANT HEIGHT AND WATER SATURATION ON CERTAIN FIELD AREAS WITH HIGH PRECISION.

BLOCKCHAIN
THE ABILITY OF BLOCKCHAIN TO TRACK OWNSHIP RECORDS AND TAMPER-RESISTANCE CAN BE USED TO ADDRESS URGENT ISSUES SUCH AS FOOD FRAUD, SECURITY RECALLS, SUPPLY CHAICENCES, AND FOOD TRACEABILITY IN THE CURRENT FOOD SYSTEM
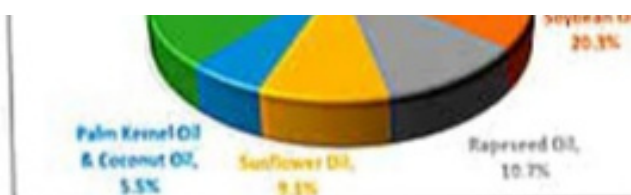
1.

2018/19 - 233.3 MILLION TONS GLOBAL PRODUCTION

Others, 20.3%

Palm Kernel Oil & Coconut Oil, 4.6%

Palm Oil, 31.3%

1992/93 - 84.6 MILLION TONS GLOBAL PRODUCTION

Palm Oil, 15.9%

Others, 33.6%

Sunflower Oil,
8.4%

Rapeseed Oil,
11.3%

Soybean Oil,
24.2%

Palm Kernel Oil
& Coconut Oil,
5.5%

Sunflower Oil,
9.1%

Soybean Oil,
20.3%

Rapeseed Oil,
10.7%

pib

75 Azadi Ka Amrit Mahotsav

ECONOMIC SURVEY 2021-22

FOODGRAINS PRODUCTION

In million tonnes

285.0	285.2	297.5	308.6
2017-'18	2018-'19	2019-'20	2020-'21
			(4th Advance

Internet Of Things In Agriculture Market

Size, By Component, 2022–2032 (USD Billion)   ■ Hardware ■ Software ■ Services
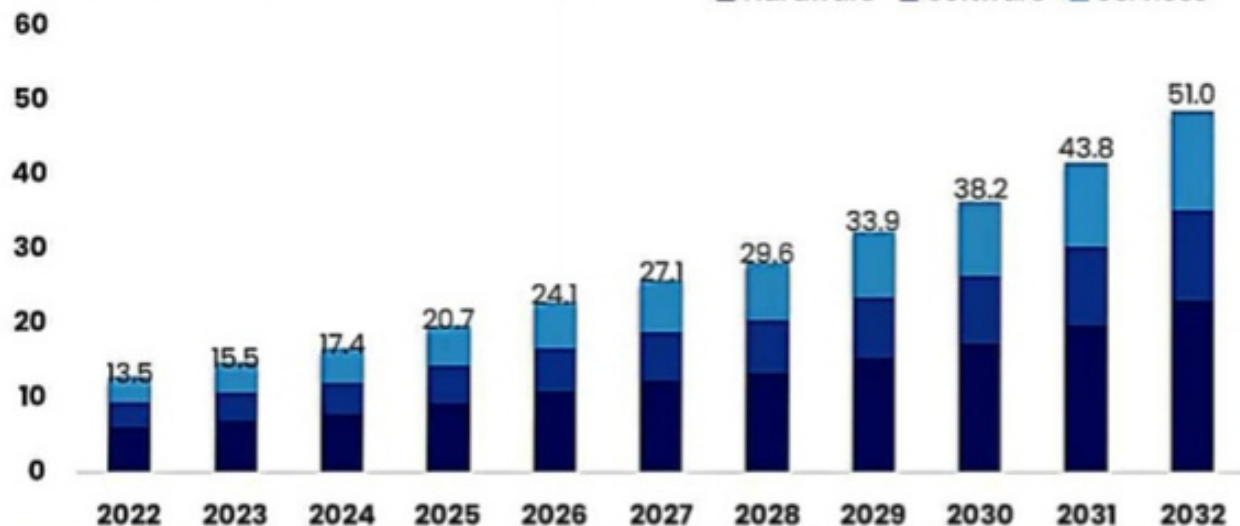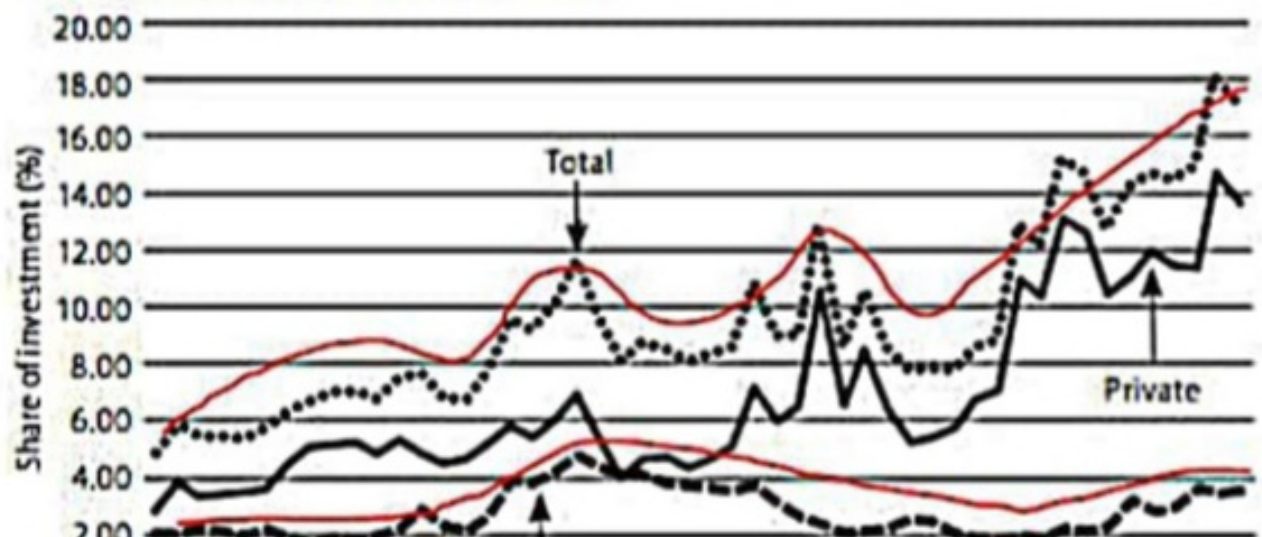

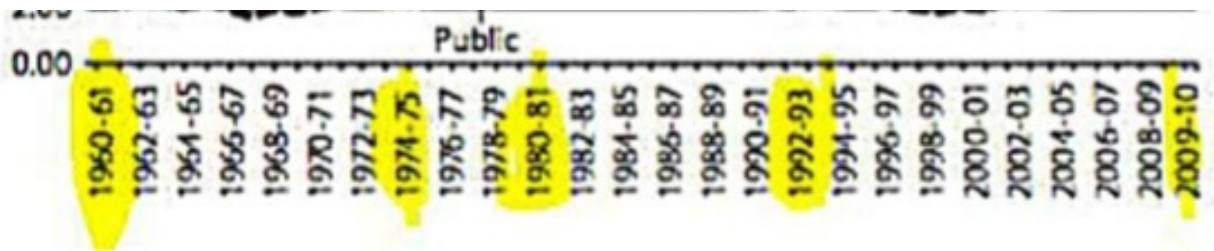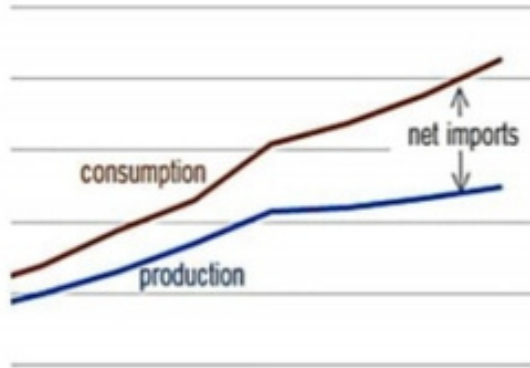The Market will Grow At the CAGR of: **14.6%**   The forecasted market size for 2032 in USD: **$51.0B** ✔ MarketResearch
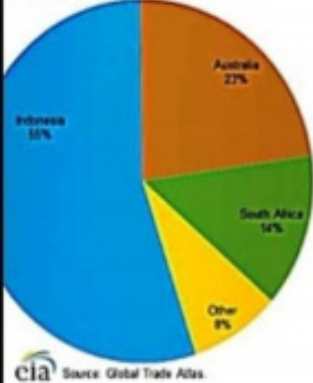
Figure 2: Gross Fixed Capital Formation in Agriculture as a Share of GDP-Agriculture at Current Prices (%)

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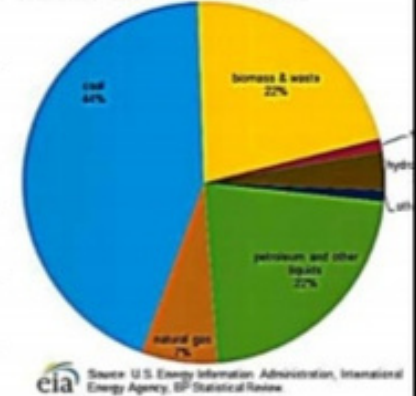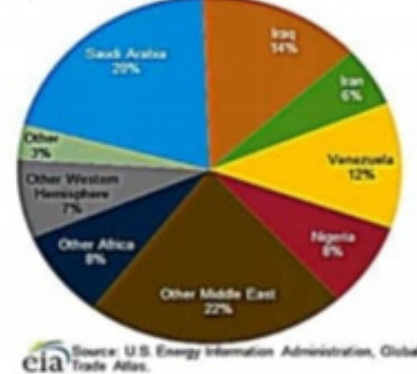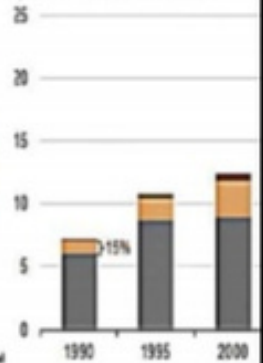1960-61 1962-63 1964-65 1966-67 1968-69 1970-71 1972-73 1974-75 1976-77 1978-79 1980-81 1982-83 1984-85 1986-87 1988-89 1990-91 1992-93 1994-95 1996-97 1998-99 2000-01 2002-03 2004-05 2006-07 2008-09 2009-10

coal imports by source, 2012

Australia 27%
Indonesia 55%
South Africa 14%
Other 8%

eia Source: Global Trade Atlas.

consumption

net imports

production

Total energy consumption in India, 2012

coal 44%
biomass & waste 22%
hydro
petroleum and other liquids 27%
natural gas 7%

eia Source: U.S. Energy Information Administration, International Energy Agency, BP Statistical Review

India petroleum and other liquids imports by source, 2013

Saudi Arabia 20%
Iraq 14%
Iran 6%
Venezuela 12%
Nigeria 6%
Other Middle East 22%
Other Africa 8%
Other Western Hemisphere 7%
Other 3%

eia Source: U.S. Energy Information Administration, Global Trade Atlas.

India fossil fuel consumption
quadrillion British thermal units

25
20
15
10
5
0
1990 1995 2000

Legend
— Crude oil & LPG pipeline
■ Refinery

India installed power capacity, May 2014

coal
natural gas 9%
nuclear 2%
hydro
other renewables 11%

eia Note: Includes utility-based power facilities, not captive power plants. Source: U.S. Energy Information Administration, India's Central Electricity Authority.

imported fossil fuels
coal
natural gas
petroleum and other liquids
38%
domestically produced fossil fuels

forecast

total oil consumption

net imports

total oil production

2006 2008 2010 2012 2014

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4. ADVANTAGE

- **Food processing industries are similarly depend on agriculture**
- **Therefore the development of these industries entirely is depend on agriculture**
- **To reduce the risk of market fluctuations , mechanism of farming**
- **Growing expensive crops**
- **Agriculture supplies raw materials to various agro-based Industries like sugar**

DISADVANTAGE

- **Erosion of soil by heavy rain, floods**
- **Insufficient vegetation cover**
- **Reduces farm productivity**
- **Small and fragmented land holdings**

5 . APPLICATIONS

- **Data science has a huge range of applications in the agricultural sector. One of the most important applications is in disease detection and pest management**
- **Crop yield prediction is an important aspect of agriculture what helps formers make informed decisions about their crops.**

6.CONCLUSION

- The agricultural sector is of vital importance for the region
- India's agricultural sector is still very important to the Indian economy, although it's share of the economy has decreased over the past 50 years

7. FUTURE scope

- **Indian agriculture can help the nation tackle three of its biggest challenges feeding a huge and expanding population, ensuring sufficient energy supplies curbing emissions .**

- **Still, meeting these goals will require a coordinated effort with alignment across policy, investment and agricultural research.**
- **Agriculture is good for the future as it is expected to use advanced technologies and innovations to produce more food with limited land and resources.**