

# 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?





### 3. Activity and screenshot

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 petroleum and other liquids import by source





**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 TECHNOLOGY, FARMERS CAN MAP CURRENT AND FUTURE CHANGES IN PRECIPITATION, 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 OWNERSHIP RECORDS AND TAMPER-RESISTANCE CAN BE USED TO ADDRESS URGENT ISSUES SUCH AS FOOD FRAUD, SECURITY RECALLS, SUPPLY CHAIN ISSUES, AND FOOD TRACEABILITY IN THE CURRENT FOOD SYSTEM.



1.

2018/19 - 233.3 MILLION TONS GLOBAL PRODUCTION

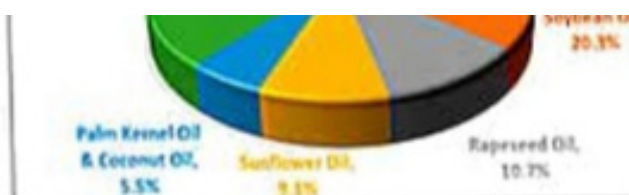


1992/93 - 84.6 MILLION TONS GLOBAL PRODUCTION





(a)



(b)



# FOODGRAINS PRODUCTION

*In million tonnes*

285.0



2017-'18

285.2



2018-'19

297.5



2019-'20

308.6



2020-'21

(4th Advance)



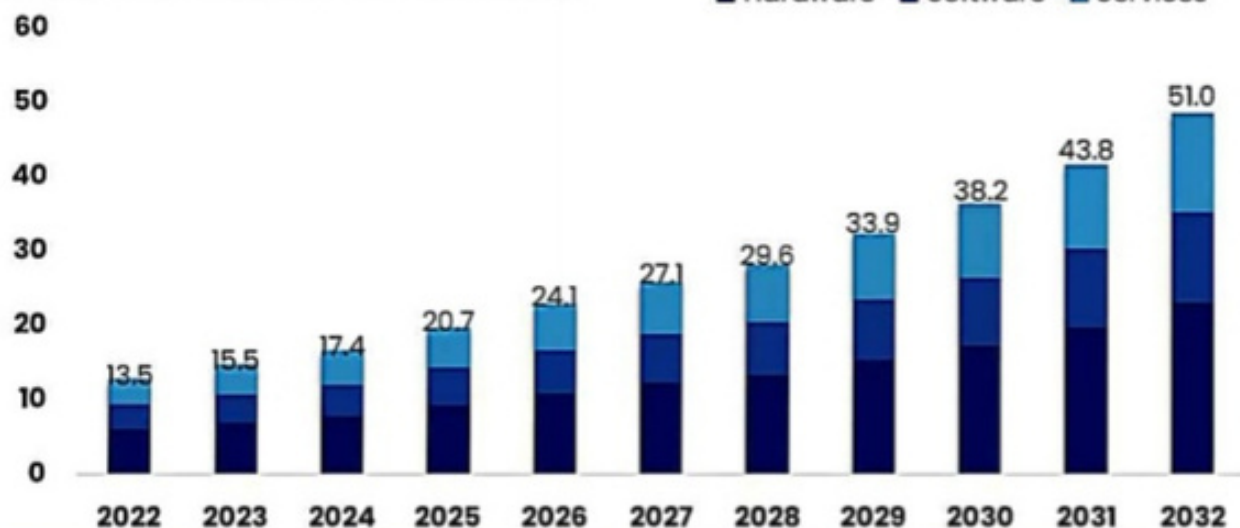
\*Includes rice, wheat, coarse cereals and pulses

Estimates)

## 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%**

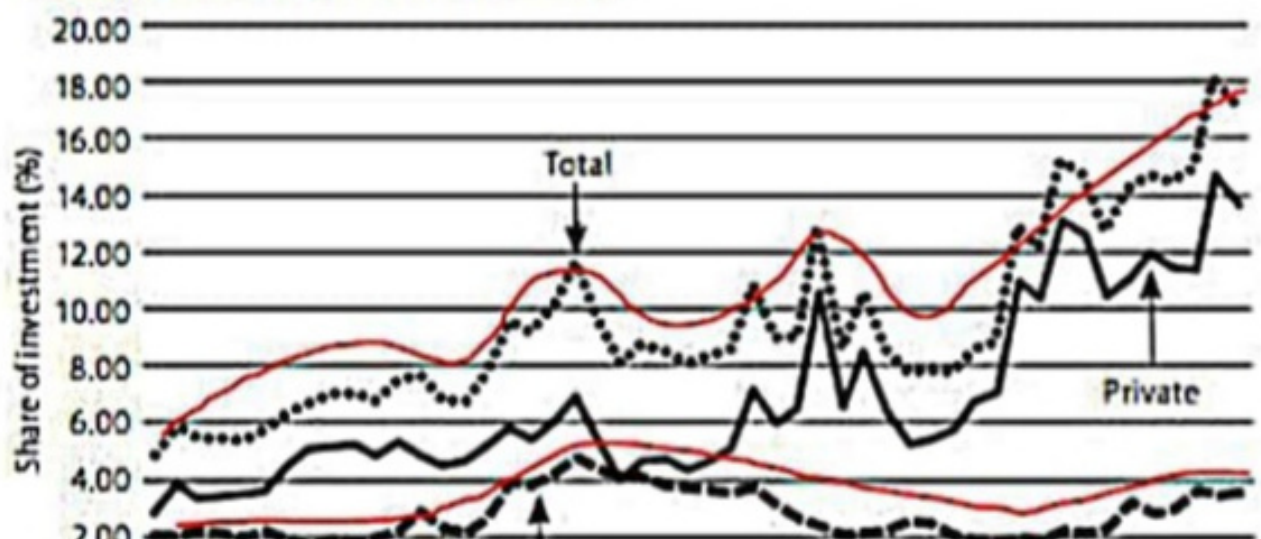
The forecasted market  
size for 2032 in USD:

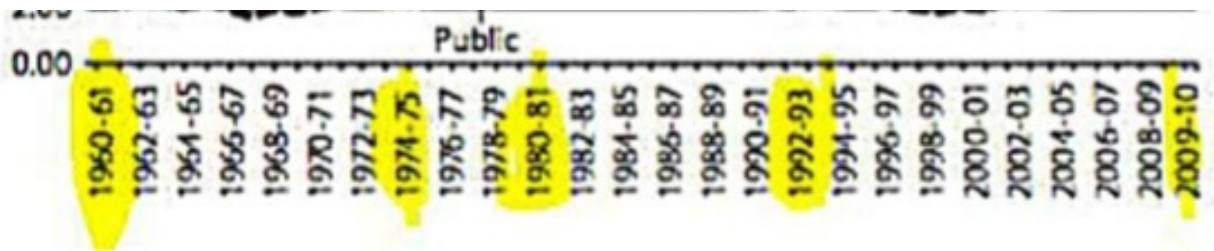
**\$51.0B**



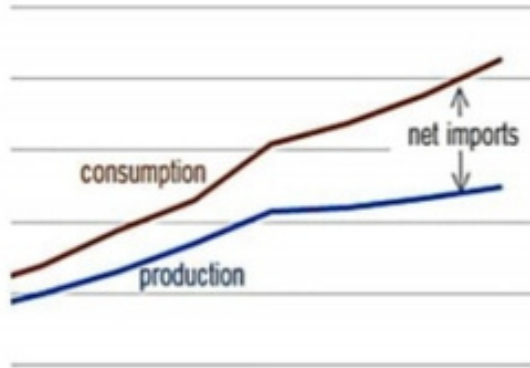
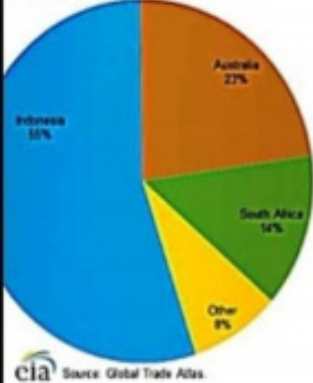
MarketResearch  
WIDE RANGE OF GLOBAL MARKET REPORTS

**Figure 2: Gross Fixed Capital Formation in Agriculture as a Share of GDP-Agriculture at Current Prices (%)**

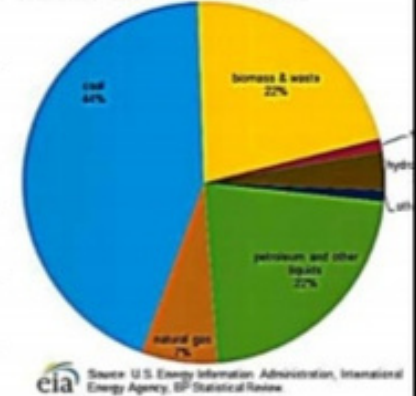




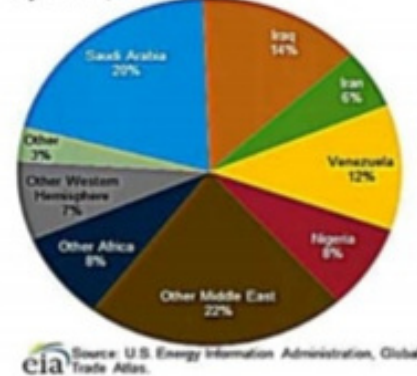
coal imports by source, 2012



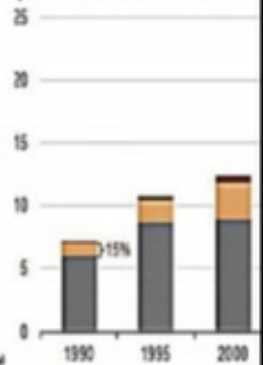
Total energy consumption in India, 2012



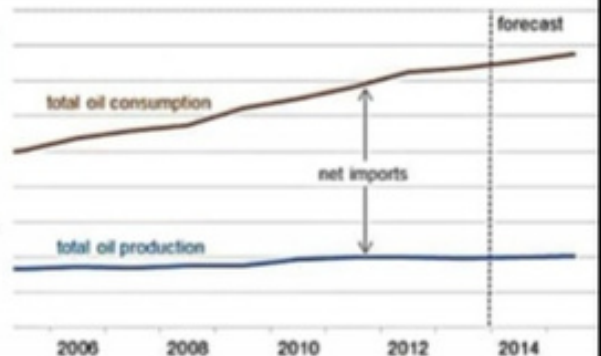
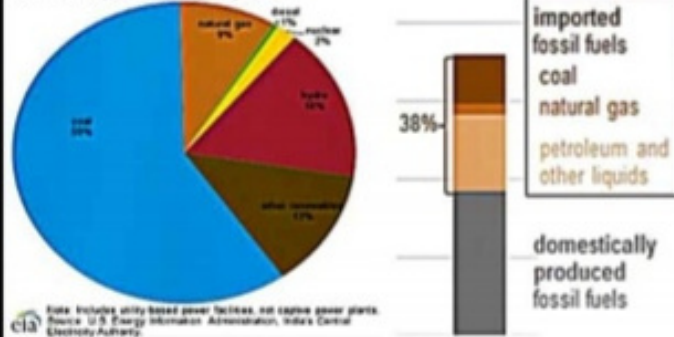
India petroleum and other liquids imports by source, 2013



India fossil fuel consumption quadrillion British thermal units



India installed power capacity, May 2014



## **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.**