

# Exploring the Preference for Rice and Wheat

Posted at: 14/05/2025

## Exploring the Preference for Rice and Wheat Government Policies and Agricultural Implications

### Introduction

In recent decades, there has been a marked increase in the cultivation of **rice and wheat** in India. These two crops have become dominant in the country's agricultural landscape, especially in states like Punjab, Haryana, and Uttar Pradesh. This shift can be attributed to several factors ranging from **government policies**, **irrigation support**, and **technological advancements**. This preference for rice and wheat has implications for food security, ecological sustainability, and long-term agricultural planning in India.

---

### Reasons Behind the Preference for Rice and Wheat

#### 1. Government Support via Minimum Support Prices (MSP):

- One of the primary reasons for the expansion of rice and wheat acreage is the **government's guaranteed procurement** of these crops at **Minimum Support Prices (MSP)**.
- This **price assurance** makes rice and wheat a safer financial choice for farmers compared to other crops like pulses, oilseeds, and cotton, which do not have similar procurement mechanisms.
- In contrast, **other crops** often face price volatility, lack of guaranteed market access, and the absence of **price stabilization measures**.

#### 2. Substantial Irrigation Support:

- Rice and wheat are primarily grown in **irrigated areas**, providing a significant advantage in terms of **water availability**, which stabilizes production.

- With irrigation, farmers can avoid the risks associated with **rain-dependent crops** (like pulses and oilseeds), making rice and wheat more reliable.

### 3. Research and Breeding Focus:

- Rice and wheat receive **priority in public research and breeding**. There have been consistent breakthroughs in breeding high-yielding varieties with better **resilience to pests, diseases, and climate stress**.
- Example: The **first-generation Green Revolution wheat varieties** such as **Kalyan Sona** and **Sonalika** were designed to resist **rust diseases** and offer higher yields.
- The **Indian Council of Agricultural Research (ICAR)** has also been developing **genome-edited rice and wheat varieties**, which are more responsive to fertilizers and water applications, thus further boosting yield.

### 4. Stable Yields and Lower Risk:

- Rice and wheat are **highly stable crops** in terms of yield. Compared to other crops like oilseeds and pulses, rice and wheat show **relatively lesser yield risk**.
- This **predictability** in yields encourages farmers to opt for them, as there is less uncertainty about returns.

---

## The Legacy of the Green Revolution

- The **Green Revolution** of the 1960s significantly transformed Indian agriculture, particularly in the case of wheat and rice.
  - High-yielding varieties (HYVs) of wheat and rice, along with the introduction of **chemical fertilizers, pesticides, and irrigation technologies**, helped India move from food scarcity to self-sufficiency.
- **Wheat Varieties:**
  - **Kalyan Sona** and **Sonalika** varieties of wheat, released in the late 1960s, had an average yield of **3.8 tonnes/hectare** under normal growing conditions.
  - These varieties were bred not only for higher yields but also for **disease resistance**

(such as **rust diseases**) and **climate-smart traits**, making them adaptable to a variety of growing conditions.

- **Recent Wheat Innovations:**

- The **HD-3385 variety of wheat**, released in 2023, can yield an average of **6 tonnes/hectare** with a potential of **over 7.3 tonnes/hectare**.
- It is resistant to all major **rust diseases** (yellow, black, and brown rusts), providing higher yields with lower vulnerability to diseases.

---

## Technological Advances: Genome-Edited Rice and Wheat

Recent developments in **genome editing** have further improved the prospects for rice and wheat cultivation:

### Genome Edited Rice

- **Pusa DST Rice 1** (Genome-Edited Rice):
  - **Parent Line:** Cottondora Sannalu (MTU-1010)
  - **Edited Gene:** **DST (drought and salt tolerance)** gene, which reduces its expression.
  - **Effect:** This rice variety is more resilient to **drought, salinity, and alkalinity stress**, making it viable in regions with water scarcity and poor soil conditions.

### Genome Edited Wheat

- **Kamala Wheat** (Genome-Edited Wheat):
  - **Parent Line:** Samba Mahsuri
  - **Edited Gene:** **Gn1a gene**, which is responsible for regulating **grain number**.
  - **Effect:** This wheat variety promotes **cytokinin accumulation**, leading to **higher grain numbers** per ear, and thus improving the overall yield.

---

## Challenges to Crop Diversification

While rice and wheat remain the preferred crops for Indian farmers, this preference has led to several challenges:

### 1. Neglect of Other Crops:

- **Pulses, oilseeds, and cotton**, which are also crucial for **nutritional diversity** and **agricultural sustainability**, have been pushed to the margins.
- **Cotton acreage** in states like Punjab has fallen significantly, from **3.4 lakh hectares** in 2015-16 to just **1 lakh hectares** in 2024-25.

### 2. Ecological Imbalance:

- A focus on monoculture cropping (mainly rice and wheat) has led to **soil degradation**, depletion of water resources, and **reduced biodiversity**.
- For instance, the **over-exploitation of groundwater** for rice cultivation in Punjab has raised concerns about long-term water scarcity.

### 3. Economic Implications:

- While rice and wheat are profitable in the short term, the **long-term economic sustainability** of such cropping patterns is questionable.
- This has led to a need for **crop diversification** and a better focus on improving the productivity of **neglected crops** like pulses, oilseeds, and cotton.

---

## Conclusion

The preference for **rice and wheat** among Indian farmers is driven by several interrelated factors:

- **Government support (MSP)**
- **Irrigation availability**

- **Research-backed yield stability**

However, this dominance has led to several challenges, including **ecological imbalances** and the **marginalization of other crops**. Addressing these issues requires:

- **Policy reforms** that incentivize crop diversification.
- **Increased research** and development support for pulses, oilseeds, and cotton.
- Sustainable water management practices to ensure that the focus on rice and wheat does not lead to environmental degradation.



**AKKA IAS ACADEMY**  
[www.akkaids.com](http://www.akkaids.com)