

## **India needs Green Revolution 2.0 to restore healthy crop balance**

### **Paddy Production in Punjab is unsustainable.**

#### **1-Key points**

Farmers' key demand is legal guarantee for MSP. Other demands include withdrawal from the WTO and trade agreements.

This report argues that.

- MSP on paddy grown using free power is harmful in long run.
- Also, India need not withdraw from the WTO as India has been successfully defending farmers' interests despite strong pressures at the WTO.
- Paddy Production in Punjab is unsustaibale. Punjab needs Green revolution 2.0 to restore crop production prevailing in 1960s.

The Minimum Support Price (MSP) and free electricity makes growing water-intensive paddy artificially cheaper. This unfairly disadvantage eco-friendly, naturally grown paddy that relies on rain or canal water.

This raises a critical question: Are we marginalizing farmers committed to sustainable agriculture at the expense of those who are not?

MSP and free power also overlook the long-term crisis: in a few decades, the water table could fall to levels inaccessible even for drinking.

Eliminating MSP on water intensive Paddy is imperative to foster sustainable farming practices and enhance ecological resilience.

We need to usher Green revolution 2.0 which would essentially be restoring crop mix that existed Pre Green revolution 1.0. We do not have any other option.

## **2-Paddy, the water intensive crop**

Just two crops, paddy (paddy) and wheat, account for around 90-95% value of total MSP purchases. The maximum procurement of Paddy is done in states like Punjab and Haryana.

Paddy, a water-intensive crop, consumes 2-3 times more water than alternative crops like maize or pulses. Every kilogram of paddy produced in Punjab consumes about 800-1200 liters of water. Normally Punjab should not grow water intensive Paddy. But paddy production in Punjab becomes possible due to a combination of MSP, complimentary electricity, and subsidized fertilizers.

Paddy cultivation accounts for over 70% of groundwater withdrawal. Over 90% of Punjab's agricultural water comes from tube wells, and the number of active wells has increased exponentially in recent decades. As a result, the water table in Punjab is declining at an alarming rate of 0.4 meters per year, with some areas experiencing drops of up to 1 meter annually.

Farmers, incentivized by free electricity for tube wells, often lack motivation to conserve water, further exacerbating the crisis.

Excessive water usage also contributes to soil salinization, rendering land unproductive and reducing crop yields in the long run. Additionally, pesticide and fertilizer runoff from paddy fields pollutes water bodies, harming aquatic ecosystems and human health.

As the water table depletes, pumping costs for farmers rise, making agriculture less profitable. This creates a vicious cycle where farmers are forced to cultivate more water-intensive crops to maintain income, further stressing the water resources.

Growing water intensive paddy in water scare areas like Punjab is not sustainable in medium or long term. The MSP support contributes to the decline.

However, this approach overlooks the long-term crisis: in a few decades, the water table could fall to levels inaccessible even for drinking.

There is another problem. The MSP and free electricity schemes disadvantages environmentally sustainable, naturally grown paddy using rain or canal water by making water-intensive paddy artificially competitive.

### **3-Need to usher in Green Revolution 2.0**

Prior to the Green Revolution in the mid-1960s, Punjab's agricultural landscape boasted a more diverse range of crops compared to the present focus on paddy and wheat. Here are some key crops grown back then:

#### **I-Cereals:**

- Maize: Staple food and fodder for livestock.
- Pearl millet (Bajra): Drought-resistant grain crop, also used for making flatbreads.
- Barley: Used for food, animal feed, and malting.
- Sorghum (Jowar): Versatile crop for food, animal feed, and industrial uses.
- Finger millet (Ragi): Nutritious grain known for its health benefits.

#### **II-Pulses:**

- Gram (Chana): Major source of protein for vegetarians.
- Moong (Mung bean): Easy-to-digest dal popular in various dishes.
- Masoor (Masoor dal): Rich in protein and dietary fiber.
- Arhar (Pigeon pea): Versatile legume used in dals and various culinary preparations.

#### **III-Oilseeds:**

- Sesame (Til): Multipurpose crop for oil, food, and religious rituals.
- Mustard: Source of edible oil and used in condiments.
- Castor: Industrial oilseeds used in various applications.

#### **IV-Other Crops:**

- Cotton: Cash crop providing raw material for textiles.
- Sugarcane: Used for sugar production and local consumption.
- Fruits and vegetables: Grown for local consumption and trade, including melons, pumpkins, gourds, and various vegetables.

Overall, pre-Green Revolution Punjab featured a rich tapestry of crops reflecting diverse dietary needs, economic opportunities, and environmental conditions. The shift towards paddy-wheat dominance has brought substantial food production gains but raised concerns

about water sustainability and ecological diversity. We need to usher Green revolution 2.0 which would essentially be restoring crop mix that existed Pre Green revolution 1.0. We do not have any other option.

#### **4-Solutions for sustainability and Green revolution 2.0:**

- Crop diversification: Promote less water-intensive crops like pulses, oilseeds, and vegetables can significantly reduce water demand. Guarantee MSP on these crops.
- Adopting water-saving technologies: Drip irrigation, laser land leveling, and precision agriculture can significantly improve water use efficiency.
- Market reforms: Eliminating free electricity for agriculture and introducing water pricing mechanisms can discourage overuse and encourage conservation.
- Promoting farmer awareness and education: Educating farmers about the long-term consequences of unsustainable practices and providing training on water-efficient techniques is crucial.

#### **5-The WTO challenge.**

**Farmers demand withdrawal from the WTO over these issues.** But withdrawal from the apex trade rule making body is not feasible, even though few provisions are discriminatory. India has successfully defended its position at the WTO, keeping its local minimum support price (MSP) program unaffected and maintaining high tariffs on import of Agriculture produce.

The United States and other countries argue that India's MSP support for wheat and rice exceeds the maximum 10% price support permissible under the WTO's Agreement on Agriculture (AoA). In 2020-21, India reported its price support at about 15%, but the US claims the support was 93.4%.

This discrepancy arises from the AoA's outdated method of calculating subsidies. It calculates subsidy by comparing the Minimum Support Price (MSP) not with the current market price but with the export price from 1986-89, known as the reference period. Additionally, AOA considers the total production for calculation, not just the quantity

bought under MSP. All this is a built-in design defect of the AOA that goes against India.

India got a reprieve from pressure during the WTO's 2013 Bali Ministerial Conference, which adopted a "peace clause" that allows India to continue with the MSP programme under strict conditions. Although the Bali decision offered some relief, it is limited and has strict transparency requirements. India and other developing nations are advocating for a permanent solution. This will remain the most critical issue for India at WTO's MC13 meeting in Abu Dhabi in the last week of February.

### **6-Two options on PSH**

At the 13th Ministerial Conference, India seeks the explicit classification of the PSH programme as "Green Box" support as this would exempt it from obligations to reduce support levels. Chances of any success are remote as the US and many developed countries do not want this.

India may undertake not to export rice commercially from its PSH stock for a permanent solution to the PSH issue. India will not lose from cuts in rice exports. China, with higher rice productivity, does not encourage the export of rice. However, as every kg of rice produced may consume an average of 800-1,200 litres of water, production in many Indian states like Punjab may not be viable without free electricity.

India can also consider setting higher production targets for some crops and limit its support to only 75 per cent of the output. This strategy fits into the AoA's Blue Box category, a method China has used to avoid AoA limits. However, this approach requires careful consideration, as setting a production limit might not be politically agreeable.