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## Punjab's Water Law Linked to Air Pollution in Delhi

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### Why in News

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The severe **air pollution crisis in NCR-Delhi region** is found to be **related to the timing of stubble burnings** in the neighbouring states of **Punjab, Haryana**.

Farmers in these states have been setting fire to their fields after harvesting of paddy since the 1980s. But “**the timing**” of stubble burning has significantly **changed** after **Punjab Preservation of Subsoil Water Act, 2009 (PPSW)** came into effect.

### Practice Prior to the PPSW Act, 2009

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- The farmers in Punjab were **sowing paddy nurseries from mid-to-late April and transplanting the seedlings from mid-May to late-May**.
  - For the **first three weeks** after transplanting, the plants have to be **irrigated almost daily** to ensure **water-logged conditions** to **prevent weed growth**.
  - But nursery sowing and transplanting, during **peak summer**, led to **massive groundwater depletion**.
- As a result, the paddy, including **155-day varieties such as Pusa-44**, got harvested by **early October** — and the **burning of the stubble** used to get over around **mid-October**.

The **stubble burning period** and the **onset of winter in Northern India** had a considerable **time gap** which **avoided the air pollution crisis** in the area.

### Implementation of PPSW Act, 2009

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- The act was brought in **to prevent the groundwater crisis** during summer.
- The Act barred any nursery sowing and transplanting of paddy before May 15 and June 15, respectively.
- This ensured that a significant part of the **crop's water requirement is met from monsoon rains** and also, lesser water loss due to evaporation after mid-June.

- Late transplanting left farmers with little time between harvesting and preparing the field for the next crop and hence farmers are resorting to the burning of stubble.

### **Positives of PPSW Act, 2009**

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The delayed paddy transplantation has been helping to save 1,000 billion liters.

It is **equal** to the **total water consumption of Ludhiana**, an industrial town, for **two years**.

### **Impact of PPSW Act, 2009**

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- Implementation of the PPSW Act (2009) made the time period of stubble burning coincident **with the onset of winter** in Northern India.
- Also, **wind movement remains very slow** and **moisture levels** in the lower atmosphere remain high during this period.
- It creates a layer, due to which all the **particulate matter and gases** from the **burnt stubble**, as well as vehicles and industries, get **accumulated**, instead of moving away.
- At this time of the year, **winds in Punjab generally blow from the northwest to the southeast**.
  - **Haryana and Delhi** are to **the south and southeast of Punjab**.
  - Also, these **northwesterly winds** are **calm with a speed of less than 2 kmph** which results in '**air locking**' at many places.

Thus, the PPSW Act (2009) may have helped arrest the rapid decline in the groundwater table and aquifers, but it has contributed to the unprecedented deterioration in **Air Quality Index (AQI)** in the National Capital Region

**Source: IE**