



18 June, 2024

Direct Seeding of Rice

Context: The Punjab government is promoting direct seeding of rice (DSR), which uses 15-20% less water than the traditional method requiring 3,600 to 4,125 liters per kilo.

➤ Definition:

- Modern technique where rice seeds are directly sown into the field, replacing traditional transplanting.
- Efficient and sustainable, offering benefits for farmers, the environment, and the economy.
- **Herbicide-Tolerant Basmati Rice:** ICAR commercialized non-GM Ht basmati rice varieties allowing direct application of the herbicide Imazethapyr due to a mutated ALS gene.

➤ Weed Diversity and Risks:

- Imazethapyr targets specific broadleaf weeds, not all types.
- Herbicide-resistant weeds may evolve, posing a threat to rice production and food security.
- Similar challenges observed with Bt-Cotton and pink bollworm resistance.

➤ Historical Context:

- DSR has been used in the North Western Plains (e.g., Punjab, Haryana) for Basmati rice cultivation.
- The Green Revolution promoted water-intensive transplanted rice, causing ecological issues.
- **Innovations in DSR:** From 2014 to 2017, innovations at IARI Karnal led to the adoption of TAR-VATTAR technology using climatic factors and herbicides like Pendimethalin to reduce costs and save water.

➤ Recent Adoption and Impact:

- During COVID-19, labor shortages led to increased DSR adoption in Punjab, proving its viability.
- The Haryana government conserved 31,500 crore liters of water in 2022 by adopting DSR on a large scale.

How DSR Works

➤ Traditional Method:

- Seeds are sown in nurseries and transplanted after 25-35 days to flooded fields.
- Labour and water-intensive but maximizes yields and maintains crop health.

➤ DSR Method:

- No nursery preparation or transplantation required.
- Seeds are directly sown 20-30 days prior to the usual transplantation time.
- Field is irrigated and laser leveled before seeding with a seed drill or lucky seeder.
- Seeds are treated with fungicide before sowing.
- First irrigation 21 days after sowing, followed by 14-17 rounds at 7-10 day intervals.
- Traditional method requires 25-27 irrigations.

➤ Soil Texture:

- Suitable for heavy or medium-to-heavy-textured soils.
- Light-textured soils require more frequent irrigation, counteracting water-saving benefits.
- Punjab's soil is 20% light-textured; Majha and Doaba regions have heavy-textured soils, while Malwa has a mix.

➤ Iron Content:

- Soil with severe iron deficiency and weed problems is unsuitable for DSR.
- Fields previously cultivated with cotton, maize, and sugarcane may lack iron.
- Soils with plant-available iron are ideal for DSR.
- Iron supplements should be non-oxidized for effective use.

DIRECT SEEDING vs TRANSPLANTING	
Direct Seeding	Transplanting
-Relatively cheaper than transplanting	-Relatively costly
-Require less labor	-Labor requirement is high
-Average yield is high	-Average yield is lower excepting long aged varieties
-Plants are usually healthier and have stronger, deeper root system	-Plants have not vigorous deep root system
-Final plant cover is random and looks natural	-Final plant cover is regular
-Large amount of seed is required	-Seed requirement is less
-Plant density is higher	-Plant density is optimum
-Weed control is difficult	-Easy of weed control

➤ Advantages of DSR

- Saves 15% to 25% water by requiring less irrigation.
- Reduces labor costs and solves labor shortage issues.
- Helps replenish groundwater by preventing the hard crust formation.
- Reduces stubble burning by allowing earlier crop maturity.
- Saves up to 27% energy due to less pumping for irrigation.
- Enhances fertilizer use efficiency.
- Reduces methane emissions by eliminating the need for field flooding.
- Causes less soil structure disturbance.

➤ Disadvantages of DSR

- Difficult weed control due to lack of standing water.
- Requires large amounts of seeds.
- Needs costly laser land leveling.
- Sensitive to rain; seeding must be done before the monsoon.
- Heavy herbicide use can lead to herbicide-resistant weeds.
- Aerobic soil conditions increase nitrous oxide emissions.
- Uneven cropping may lead to lower yields.

Kerala Migration Survey 2023

Context: The Kerala Migration Survey (KMS) 2023 report was unveiled last week in Thiruvananthapuram at the Lok Kerala Sabha.

Key Findings

➤ Number of Emigrants:

- Estimated at 2.2 million in 2023, up from 2.1 million in 2018.

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- Number of returnees increased from 1.2 million in 2018 to 1.8 million in 2023.
- **Decline in Emigration to the Gulf:**
 - Preference for non-GCC destinations grew from 10.8% in 2018 to 19.5% in 2023.
 - In 1998, GCC destinations accounted for 93.8% of Kerala's emigrants.
- **Rising Student Emigration:**
 - Increase in student emigrants who prefer destinations outside the GCC for higher education.
 - Students make up 11.3% of total emigrants, with numbers nearly doubling from 129,763 in 2018 to 250,000 in 2023.
- **More Women Emigrating:**
 - Women's proportion of emigrants increased from 15.8% in 2018 to 19.1% in 2023.
 - 71.5% of women emigrants are graduates, compared to 34.7% of men.
 - 51.6% of women emigrants work in nursing, and 45.6% of student migrants are women.
 - 40.5% of women emigrants are in Western countries, compared to 14.6% of men.
- **Regional Emigration Patterns:**
 - 41.8% of emigrants hail from North Kerala, predominantly from Malappuram district.
 - Central Kerala contributes 33.1% of emigrants, with more migration to non-GCC destinations.
 - South Kerala sends 25% of the state's emigrants.
- **Religious Composition of Emigrants:**
 - Muslims, making up 26% of Kerala's population, constitute 41.9% of emigrants.
 - Hindus, who are 54% of the population, account for 35.2% of emigrants.
 - Christians, 18% of the population, represent 22.3% of emigrants.
- **Growing Remittances:**
 - Remittances surged from Rs 85,092 crores in 2018 to Rs 216,893 crores in 2023, a 154.9% increase.
 - Per capita remittance in 2023 was Rs 61,118; average remittance per emigrant household was Rs 2.24 lakh.
 - Remittances were used for house/shop renovation (15.8%), bank loan repayment (14%), educational expenses (10%), and medical bills (7.7%); only 6.9% were for day-to-day expenses.
- **Increase in Returnees:**
 - Largest increase in returnees in the last five years: 495,962 individuals (38.3%).
 - Main reasons: job loss (18.4%), low wages (13.8%), poor working conditions (7.5%), illness or accident (11.2%), desire to work in Kerala (16.1%), homesickness (10.2%), and retirement (12.1%).
- **Trends Over Last 30 Years**
 - The first KMS in 1998 estimated 1.4 million Keralites had emigrated.
 - This rose to 1.8 million in 2003, 2.2 million in 2008, and 2.4 million in 2013 before declining to 2.1 million in 2018.

- The global Malayali diaspora is estimated at 5 million, with another 3 million living outside Kerala but within India.

Road Ahead

➤ Educational Infrastructure:

- Enhance state's educational infrastructure and provide resources for safe migration pathways for student emigrants.
- Regular monitoring and regulation of language training centers and recruitment agencies to prevent deceit and fraud.
- Encouraging Brain Gain: Develop policies to encourage students studying abroad to return home after acquiring valuable skills.

➤ Improving Labour Emigrant Skills:

- Strengthen skills of labour emigrants to secure better employment opportunities and pay abroad.
- Promote non-GCC destinations, especially in the West, as preferable options.
- Rehabilitation of Return Migrants: Implement comprehensive rehabilitation and reintegration measures for the growing number of return migrants.

Protection of Children from Sexual Offences Act (POCSO)

Context: BJP veteran and former Karnataka Chief Minister B.S. Yediyurappa appeared before the Criminal Investigation Department (CID) on Monday in connection with a POCSO case.

- **Purpose:** The POCSO Act was established to protect children from sexual assault, harassment, and pornography.
- **Enactment:** It was passed in 2012 under the Ministry of Women and Child Development.
- **Amendment:** In 2019, the Act was amended to enhance punishments for various offences, aiming to deter perpetrators and ensure the safety and security of children.
- **Provisions of the POCSO Act**
 - **Scope:** The Act protects children under 18 from sexual assault, harassment, and pornography.
 - **Investigation Timeline:** Investigations must be completed within two months from the registration of the FIR, and trials should conclude within six months.
 - **Aggravated Assault:** The Act considers an assault aggravated if it involves mentally ill children, public servants, or individuals in authority over the child.
 - **Punishment:** For aggravated penetrative sexual assault, the Act prescribes a minimum of 10 years' imprisonment, which can extend to life imprisonment and fines.
 - **Reporting:** The Act mandates the reporting of offences, and failure to do so can result in six months' imprisonment or a fine.
 - **False Complaints:** It also penalizes false accusations.

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- **2019 Amendments:** The amendments increased the minimum punishment for certain offences and introduced higher penalties for assaults on children under 16.

➤ Key Features of the Act

- **Gender-Neutral:** The Act applies to all children under 18, regardless of gender.
- **Mandatory Reporting:** It requires anyone aware of an offence to report it.
- **No Time Limit:** The Act allows for the reporting of abuse at any time, without a time limit.
- **Confidentiality:** It prohibits the disclosure of the victim's identity.
- **Institutional Requirements:** Institutions must conduct regular police verification and training for employees interacting with children and adopt zero-tolerance child protection policies.

➤ General Principles of the POCSO Act

- **Right to Life and Survival:** The Act aims to protect children from all forms of abuse.
- **Best Interests of the Child:** It prioritizes the harmonious development of the child.
- **Dignity and Compassion:** Child victims should be treated sensitively throughout the justice process.
- **Non-Discrimination:** The Act ensures a transparent and just process, irrespective of the child's background.

- **Preventive Measures:** It provides training for self-protection to children at risk of re-abuse.
- **Right to Information:** The child must be kept informed about legal proceedings.
- **Right to Be Heard:** Children should be allowed to express their views on matters affecting them.
- **Effective Assistance:** The Act mandates the provision of necessary support for the child's recovery.
- **Privacy Protection:** The child's privacy and identity must be safeguarded throughout the legal process.
- **Minimize Hardship:** The Act aims to reduce secondary victimization and hardship during the justice process.
- **Safety:** It ensures the protection of the child before, during, and after the justice process.
- **Compensation:** The Act provides for compensation to support the child's relief and rehabilitation.

Global Laws to Protect Children from Sexual Harassment

➤ UN Convention on the Rights of the Child (CRC):

- **Article 34:** This article requires states to protect children from all forms of sexual exploitation and abuse.
- **Article 35:** It obliges states to prevent the abduction, sale, or trafficking of children.

NEWS IN BETWEEN THE LINES

eMigrate Portal



Recently, the Ministry of External Affairs (MEA) and State Bank of India (SBI) signed a Memorandum of Understanding (MoU) to enhance digital payment services on the eMigrate portal.

About eMigrate Portal:

- The eMigrate portal is a **digital platform** that **helps make the emigration process for Indian workers** more transparent and online
- It was launched by the **Ministry of Overseas Indian Affairs (MOIA)** in **2014**.
- The portal also **allows emigrants with ECNR** (Emigration Check Not Required) category passports to register voluntarily for overseas employment.
- It is an **initiative by the Ministry of External Affairs (MEA)** to **help blue-collar workers** who want to work in countries that require emigration checks (ECR).
- Its goal is to make the emigration process easier and safer online and to protect the rights of migrant workers.
- It does this by digitizing the emigration process and creating a common platform connecting **foreign employers, registered recruitment agents** and insurance companies.
- It integrates with **Common Services Centres (CSCs)** to offer registration, document handling and service booking assistance to citizens.

Teesta River



Recently, the Border Roads Organisation (BRO) rescued nearly 50 tourists from Lachung in north Sikkim, relocating them to Mangan town after restoring connectivity between Chungthang and Mangan via the new Toong bridge over the Teesta River.

About the Teesta River:

- The Teesta River is a significant river that flows through the states of **West Bengal and Sikkim** before entering Bangladesh.
- The river **originates from the Tso Lhamo Lake** in the northern Sikkim Himalayas.
- This river is a **tributary of the Brahmaputra River, known as the Jamuna in Bangladesh**.
- The Teesta River flows south through the **Siwalik Hills east of Darjiling** (West Bengal), turns southeast through the **Sivok Khola pass** and eventually **joins the upper Padma River** (Ganga River).
- The major tributaries of the Teesta River include **left-bank tributaries** like **Lachung Chhu, Rani Khola, Dik Chhu, Chakung Chhu** and **Rangpo Chhu** and **right-bank tributaries** such as **Zemu Chhu, Rangit River and Rangyang Chhu**.

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Place in News

Pantanal Wetland

Recently, Brazil's Pantanal wetland engulfed in an unprecedented wave of fires, setting grim new records for June.

About Pantanal Wetland:

- The Pantanal is a **seasonally flooded wetland** in **South America** that's the **world's largest freshwater wetland** and **tropical wetland**.
- It's **located in the Brazilian state of Mato Grosso do Sul**, as well as parts of **Mato Grosso, Bolivia and Paraguay**.
- It is more than 20 times the size of the Everglades and covers an estimated 68,000 square miles.
- It is a **mosaic of ecosystems** with abundant water and is home to a rich variety of wildlife.
- It is home to iconic wildlife such as **jaguars, giant otters, capybaras, black caimans**, and over 650 bird species, including numerous **migratory birds**.
- Acting as a crucial **carbon sink**, the Pantanal plays a significant role in absorbing and **sequestering carbon dioxide** from the atmosphere.
- The Pantanal has been recognized internationally as a **UNESCO World Heritage site** in **2000** and designated as a **Ramsar Wetland** of International Importance.



POINTS TO PONDER

- Recently, which medical institute was designated as a WHO Collaborating Centre for "Fundamental and Literary Research in Traditional Medicine"? – **National Institute of Indian Medical Heritage (NIIMH), Hyderabad**
- Recently, Cyril Ramaphosa was re-elected as the President of which country? – **South Africa**
- Which organization recently signed an agreement with Sansad TV to make Indian art and culture more accessible? – **Indira Gandhi National Centre for the Arts (IGNCA)**
- Which country hosted the 50th G7 leaders summit? – **Italy**
- Recently, who became the first Indian to win a three-star Grand Prix event in equestrian? – **Shruti Vora**

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