

DIRECT SEEDED RICE (DSR) IN PUNJAB: A PROMISING METHOD WITH CONQUERABLE CHALLENGES

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Punjab's water crisis has reached critical levels, with groundwater depletion threatening the future of agriculture. Direct Seeded Rice (DSR) has emerged as a revolutionary method, offering a blend of water conservation, labor savings, and sustainability. While its advantages are clear, real-world application has unveiled a mix of opportunities and challenges that must be addressed to unlock its full potential.

A Water-Saving Solution

Punjab's groundwater is depleting at an alarming rate of 0.3 to 0.6 meters annually, making traditional puddled rice cultivation increasingly unsustainable. DSR offers a water-saving alternative, reducing irrigation needs by 25-30% per acre.

Efforts like Project PRANA (Promoting Regenerative and No-Burn Agriculture) have been instrumental in popularizing DSR. Through initiatives such as training camps, demonstration plots, and street plays, organizations like The Nature Conservancy and Manav Vikas Sansthan (MVS) empower farmers with knowledge on sustainable practices, including DSR and crop residue management.

However, widespread adoption remains hindered by key challenges.

The Challenge of Unpredictable Weather

Climate variability in Punjab—marked by delayed monsoons and 27 heatwave days in 2024—has disrupted DSR's efficacy. These conditions often lead to poor seed germination, limiting the method's water-saving benefits. The Punjab government's promotion of short-duration rice varieties like PR-126 is a critical step toward resilience.

Reduced Disease Susceptibility: A Key Advantage

One of DSR's standout benefits is its reduced vulnerability to Fusarium foot rot (Bakanae disease). This fungal disease thrives in the waterlogged conditions of traditional puddled rice but struggles in DSR's drier soil environment.

Farmers from districts such as Jalandhar and Moga report healthier crops with lower fungicide costs in DSR fields. This not only boosts yields but also aligns with the goals of sustainable farming.



Financial and Technical Barriers

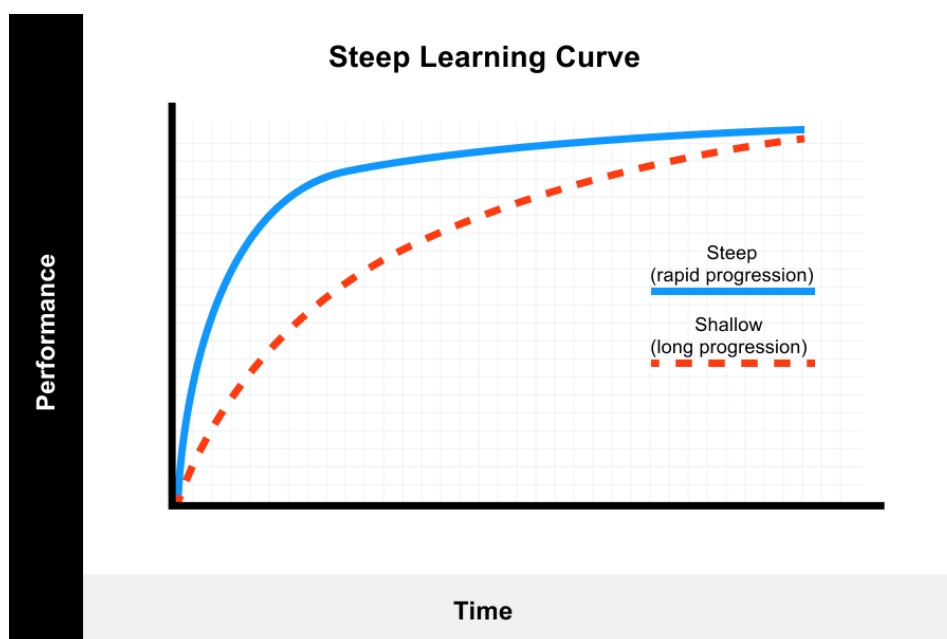
The transition to DSR demands investments in specialized machinery like laser levellers and seed drills, which many small-scale farmers cannot afford. Subsidy programs and rental services exist, but their reach and accessibility remain limited.

This financial burden is particularly acute for debt-ridden farmers, underscoring the need for targeted support programs to bridge the gap.

Weed Management: A Steep Learning Curve

Unlike traditional methods where standing water suppresses weeds, DSR fields are more susceptible to weed infestations. This necessitates tailored herbicide strategies, which can be both expensive and technically demanding.

Experienced farmers have found that over time, effective weed management reduces reliance on herbicides. However, this learning curve presents a significant challenge for new adopters.



Overcoming Misconceptions and Building Trust

Widespread misconceptions about DSR—such as the belief that it consumes more water than traditional methods—discourage farmers from adopting the practice.

Awareness campaigns under Project PRANA aim to dispel these myths, but more comprehensive and localized efforts are needed to build trust and encourage acceptance.

The Road Ahead for Punjab's Farmers

To ensure the success of DSR in Punjab, a multifaceted approach is necessary:

- **Subsidy Accessibility:** Ensure timely and affordable access to DSR machinery through improved subsidy programs and rental services.
- **Education and Training:** Enhance farmer education on effective weed management and crop care techniques.
- **Policy Alignment:** Adjust irrigation schedules to better align with DSR's requirements.

As Punjab's groundwater levels continue to decline, the shift from traditional puddled rice to DSR becomes not just a choice but a necessity. With focused interventions and robust policy support, DSR can play a pivotal role in transforming Punjab's agricultural landscape into a more sustainable and resilient system.

