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EX-IAS OFFICER'S PADDY REVOLUTION WITH 75% LESS WATER

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Abstract

Punjab, once rich in water resources, now faces a looming groundwater crisis due to decades of intensive paddy cultivation. By 2039, water tables could plummet below 1,000 feet, threatening agriculture and rural livelihoods. In response, retired IAS officer Kahan Singh Pannu developed an innovative Seeding of Rice on Beds (SRB) technique. This method, which plants rice on raised beds and irrigates only the furrows, reduces water use by up to 75% while maintaining crop yields. Early adoption shows significant cost savings and resource conservation. As SRB gains traction among farmers, it offers a scalable, sustainable model for water-stressed regions nationwide, combining traditional wisdom with modern innovation to secure India's agricultural future.

Introduction

The land of five rivers, Punjab, once lush with natural water resources, is now staring down a ticking ecological time bomb. Known for feeding millions with its vast paddy fields, the state is grappling with a silent but severe groundwater crisis. With water tables sinking by several feet each year, experts warn that 2039, groundwater in the region could fall below 1,000 feet, making farming unsustainable and rural livelihoods unviable.

During this grim scenario, a quiet revolution is taking root—led not by a policymaker or scientist, but by a retired IAS officer, Kahan Singh Pannu, who decided that retirement wasn't the end of his service, but the beginning of a new mission. His innovative technique, Seeding of Rice on Beds (SRB), is not just conserving water; it's rewriting the script for Punjab's agricultural future.

A Revolutionary Approach: Seeding of Rice on Beds (SRB)

Armed with his academic background in agriculture and decades of administrative experience, Kahan Singh returned to his roots in Jai Nagar village to confront the crisis head-on. Observing the drastic decline in groundwater levels due to traditional paddy cultivation, he developed the SRB method, a water-saving alternative to conventional rice farming.

Unlike traditional methods that require fields to be continuously flooded, SRB involves planting paddy on raised soil beds and irrigating only the furrows, cutting water use by a staggering 75 percent.

"Traditionally, producing one kilogram of rice requires about 4,000 litres of water. With SRB, we can drastically reduce that," Singh explains. To bring the idea to life, he collaborated with local machinery developers to design a bed-planter device that automates the bed-making and seed-sowing process in one go.

The innovation not only saves water but also reduces labour, improves efficiency, and lowers input costs. But one of the biggest challenges was weed control. Traditional farmers rely on flooding fields to kill weeds.

Singh tackled this by using herbicide-tolerant paddy seeds, developed by the Indian Agricultural Research Institute. These seeds allow for targeted weed control without compromising crop yield.

Fig.1: Kahan Singh Pannu's Seeding of Rice on Beds (SRB) Method Revolutionizes Water-Smart Paddy Cultivation

Fig.2: SRB method adopted by Punjab Farmers (Source: Courtesy Kahan Singh Pannu)

Real World Impact

The SRB technique has shown promising results across 12 trial sites in Punjab. Pannu himself achieved a yield of 28 quintals of paddy per acre, comparable to traditional methods. Jaswinder Singh, a farmer from Lambra village in Hoshiarpur district, adopted SRB on two acres of land. "I observed that using this technique, I was able to save Rs 8,000 per acre on irrigation and labour costs," he shared. "Earlier, we had to irrigate the field at least 20 times. With SRB, just four times was enough." Despite the reduced irrigation, Singh harvested 24 quintals of rice per acre. "Usually, we're afraid to try something new. But this worked so well, I'm doubling my SRB area next season," Singh says. "I believe this technique will greatly help farmers get the same yield from the same land while reducing irrigation and labour costs. More importantly, we will be saving so much groundwater," he added. "Many farmers are now planning to expand their use of SRB next season," Singh shares, hopeful that a movement is beginning.

A Model for Sustainable Farming Nationwide

At a time when large swathes of India are facing water shortages, SRB could serve as a blueprint for sustainable agriculture beyond Punjab. It proves that the solution to large-scale challenges doesn't always lie in expensive technologies or top-down policies, but in innovative thinking rooted in local knowledge. By planting rice on raised beds, conserving water, and empowering farmers to embrace change, Kahan Singh Pannu is not just saving groundwater, he's planting the seeds of a sustainable revolution.

Future prospects

The SRB method, though still in its early stages of adoption, has the potential to transform agriculture not just in Punjab, but across water-stressed regions in India. Its benefits are multifold:

Environmental: Drastically reduced groundwater extraction.

Economic: Lowered costs of irrigation and labour.

Social: Empowering farmers with sustainable, affordable technology.

With proper support from government policies, agricultural universities, and cooperative societies, SRB could be scaled to millions of acres. Singh envisions a future where precision agriculture, conservation techniques, and farmer education go hand-in-hand to build climate resilience. There's also potential for technological enhancements, including automated weed detection, seed mapping, and soil moisture sensors tools that could further improve SRB's effectiveness and appeal to younger, tech-savvy farmers.

Conclusion

This goal is much more than just conserving water, according to Kahan Singh Pannu. Its goals are to safeguard Punjab's future, revive its rural villages, and preserve its cultural legacy. "I can still clearly remember village wells, people manually fetching water, and animals consuming fresh aquifer water," he says. "We are searching further into the ground for water now that those wells are dry." His invention provides a model for a country dealing with growing water scarcity, not simply Punjab. SRB is more than just a method; it is a representation of resiliency, optimism, and the conviction that one individual, one field, and one idea can spark a revolution. Kahan Singh's transformation from bureaucrat to bed planter demonstrates that persistent change doesn't require a miracle—just the courage to act—in a world on the verge of an environmental catastrophe.