



Wings and Wheels for Farmers: Kisan Rail and Krishi Udan - Bridging the Gap Between Fields and Markets

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India's agriculture faces major challenges from post-harvest losses, inefficient logistics and limited market access, particularly for fruits, vegetables and other perishables [1]. To address these issues, the Government of India introduced Kisan Rail and Krishi Udan to strengthen agricultural transportation and supply chains. Kisan Rail provides affordable, efficient and timely rail transport for agricultural produce, connecting surplus production regions with major consumption markets and reducing spoilage [2][3]. Krishi Udan promotes faster air transportation of high-value perishables, particularly from remote, hilly and North-Eastern regions, improving their access to domestic and international markets [4][5]. Together, these initiatives strengthen India's multimodal agricultural logistics, reduce post-harvest losses, improve market connectivity and price realization, and support higher farmer incomes. By linking production centres with consumption markets, they contribute to a more efficient, resilient and farmer-centric agricultural marketing system [6].

Kisan Rail Scheme

Launched in 2020, Kisan Rail provides affordable and timely rail transport for agricultural produce, including perishables, connecting farmers with distant markets. It helps reduce post-harvest losses, transportation costs and market-access constraints through efficient, all-weather services. Under Operation Greens, eligible perishables receive freight support, making transportation more affordable for farmers and improving market opportunities and income [1].

Objectives of the Scheme

- To provide fast, safe and reliable transport.
- To reduce post-harvest losses.
- To improve market access and price realization.
- To reduce transportation costs through subsidies.
- To ensure all-weather, year-round connectivity.
- To strengthen farm-to-market linkages.
- To promote sustainable agricultural logistics.
- To increase farmers' income and rural development.

Operation and Management of the Kisan Rail Scheme

The Kisan Rail Scheme is jointly implemented by Indian Railways and the Ministry of Agriculture and Farmers' Welfare, providing dedicated trains for efficient transport of agricultural produce. It operates on demand-based scheduling with refrigerated coaches to maintain quality, supported by strong coordination among farmers, mandis, and logistics agencies.

Routes and Network include:

- Pan-India connectivity across major agricultural regions
- Strategic routes based on demand and production
- Continuous expansion to new areas

- First and last-mile connectivity through road integration

Benefits:

- To reduce transportation costs through bulk movement and subsidies.
- To ensure fast and reliable delivery of agricultural produce.
- To minimize post-harvest losses through temperature-controlled transport.
- To improve market access and price realization.
- To enhance transport efficiency and farmers' income through timely delivery.

Current Scenario of Kisan Rail Services

Since its launch, the Kisan Rail Scheme has expanded to more than 150–200 demand-based routes in coordination with agricultural departments and market agencies. Over 2,300 services have transported approximately 7.9 lakh tonnes of perishable commodities, highlighting its growing contribution to India's agricultural logistics and market connectivity [6].

Subsidies for Kisan Rail

The scheme initially provided a 50% freight subsidy under the Operation Greens (TOP to Total) initiative, supported by the Ministry of Food Processing Industries, to promote the transport of fruits and vegetables. Over time, the subsidy structure has been rationalized, with Indian Railways continuing support at a reduced rate of around 40-45 percent to ensure long-term sustainability. [6].

Status of Kisan Rail

- The first Kisan Rail service was launched on 7 August 2020, connecting Devlali (Maharashtra) to Danapur (Bihar). Subsequent routes connected Anantapur–Delhi, Bengaluru–Delhi and Nagpur–Delhi.

Eligible Commodities

- **Fruits:** Mango, banana, guava, litchi, papaya, citrus fruits, pineapple, pomegranate, apple, etc.
- **Vegetables:** Beans, brinjal, capsicum, carrot, cauliflower, chilli, okra, onion, potato, tomato, etc.

Challenges and Limitations**Operational Challenges**

- Difficulty in aligning train schedules with harvesting periods
- Limited availability of dedicated coaches during peak seasons
- Risk of spoilage due to improper handling

Infrastructure Challenges

- Inadequate cold chain and storage facilities
- Poor rural road connectivity affecting first/last mile transport
- Limited warehousing at railway stations
- Lack of advanced tracking systems

Future Prospects of Kisan Rail**Planned Expansions**

- Expansion to remote and underserved regions.
- Increased train frequency during peak seasons.
- Inclusion of more agricultural commodities.
- Exploration of international routes for exports.
- Greater public–private partnerships.

Innovations in Rail Transport

- Advanced refrigeration and cold-chain technologies.
- GPS and IoT-based tracking systems.
- Automated loading and unloading facilities.
- Energy-efficient and eco-friendly transport practices.
- Integrated end-to-end supply-chain systems.

Kisan Udaan Scheme

The Kisan Udaan Scheme, launched under the Union Budget 2020–21, promotes air transport of agricultural produce to improve supply-chain efficiency. It enables faster movement of perishables, reduces post-harvest losses and supports better price realization. The scheme particularly benefits farmers in remote, hilly and North-Eastern regions by connecting production areas with major markets [7].

Key focus areas include:

- Faster transportation of perishable agricultural produce
- Reduction in post-harvest losses
- Improved market access for remote regions
- Strengthening of agri-logistics through air connectivity

Key Features of the Scheme

Main Components

- **Air Cargo Services:** Provides fast air transport of agricultural produce through dedicated cargo space in flights.
- **Cold Chain Infrastructure:** Ensures quality preservation using temperature-controlled storage and refrigerated transport.
- **Regional Connectivity:** Connects remote and underserved areas to major markets via expanded airport networks.
- **Market Coordination:** Links mandis with air logistics for efficient collection and distribution of produce.
- **Digital Integration:** Enables online booking, tracking, and efficient route management using technology.
- **Subsidies and Financial Support:** Reduces transportation costs through government incentives and financial assistance.

Eligibility Criteria

- **Type of Produce:** Covers perishable items like fruits, vegetables, flowers, dairy, and fish requiring quick transport.
- **Geographical Focus:** Prioritizes farmers from remote, hilly, and tribal regions for better market access.
- **Registered Farmers:** Only farmers or groups registered with agricultural bodies can avail benefits.
- **FPOs & Cooperatives:** Encourages participation of FPOs for bulk transport and cost efficiency.
- **Quality Compliance:** Requires proper packaging, labeling, and standards for market suitability.

Krishi Udaan Scheme 2.0

- **Launch:** Introduced on 27 October 2021 to strengthen air-based agricultural logistics.
- **A2A Model:** Based on “Agriculture to Aviation” for seamless integration of farm produce with air transport.
- **Vision:** Aims to enhance farmers’ income through efficient and faster logistics systems.

Significance

- **Drone Integration:** Promotes use of drones for modern agricultural practices and logistics.
- **Biofuel Potential:** Encourages future use of sustainable aviation fuels in agri-transport.
- **Value Chain Integration:** Enhances value realization through better supply chain connectivity.

Objectives

- To ensure seamless, cost-effective, and time-bound air logistics for agri-produce.
- To increase the share of air transport for horticulture, fisheries, livestock, and processed goods.
- To integrate multiple schemes and stakeholders for a resilient agri-value chain.

Identified Trade Routes

- **Amritsar–Dubai:** Facilitates export of baby corn.

- **Darbhanga–India:** Supports transport of litchi to domestic markets.
- **Chennai/Visakhapatnam/Kolkata–East Asia:** Enables seafood exports.
- **Sikkim–India:** Promotes organic produce distribution.
- **Agartala–Delhi/Dubai:** Supports pineapple trade.
- **Dibrugarh–Delhi/Dubai:** Facilitates mandarin orange transport.
- **Guwahati–Hong Kong:** Enhances export of pulses, fruits, and vegetables.

Krishi Udaan Scheme Provisions

- **Air Transport Incentives:** Waives landing, parking, and navigation charges to promote affordable air transport of agri-produce.
- **Cargo Infrastructure Development:** Establishes hub-and-spoke freight systems and strengthens airport and off-airport logistics facilities.
- **Resource Pooling:** Encourages collaboration among government bodies, airlines, and logistics stakeholders for efficient operations.
- **Technological Integration:** Implements the E-KUSHAL platform for coordination, monitoring, and integration with e-NAM.
- **Hub-and-Spoke Model:** Develops centralized cargo hubs with efficient distribution networks for faster movement of goods [4].

Storage Facilities

- **Airport Cold Storage:** Maintains produce quality through temperature-controlled storage.
- **Refrigerated Transport:** Preserves the cold chain during transit.
- **Packhouses & Processing Units:** Enable sorting, grading and packaging.
- **On-Farm Storage:** Supports portable and solar-powered storage solutions.
- **Integrated Cold Chain:** Connects farms, storage facilities and markets for end-to-end handling.

Involved Agencies and Stakeholders

The Ministry of Civil Aviation oversees implementation, while the Ministry of Agriculture & Farmers' Welfare supports beneficiary identification and farmer outreach. Airlines and airport authorities provide cargo transport and handling infrastructure, while FPOs and cooperatives aggregate produce for efficient transportation. Cold-chain companies and technology providers support quality preservation, digital booking, tracking and logistics management.

Benefits to Farmers

- **Faster Delivery:** Enables quick transport of perishables to distant markets.
- **Quality Preservation:** Maintains freshness through cold chain systems.
- **Expanded Market Access:** Allows farmers to reach wider domestic and export markets.
- **Higher Income:** Ensures better price realization due to reduced losses.
- **Reduced Wastage:** Minimizes spoilage through efficient handling and transport.
- **Farmer Empowerment:** Reduces middlemen and improves bargaining power.

Challenges and Limitations

Potential Barriers

- **High Initial Costs:** Requires significant investment in cold chain and logistics infrastructure.
- **Limited Awareness:** Low awareness reduces farmer participation.
- **Infrastructure Gaps:** Inadequate storage, transport, and connectivity hinder implementation.
- **Regulatory Issues:** Complex procedures and compliance requirements delay adoption.

Impact on Agricultural Sector

Kisan Udan improves agricultural logistics by reducing transit time, minimizing post-harvest losses and strengthening cold-chain support. It expands farmers' access to domestic and international markets, supports better price realization and higher incomes, and contributes to rural employment, infrastructure development and economic growth.

Conclusion

Kisan Rail and Kisan Udaan have strengthened agricultural logistics by improving transport efficiency, market access and post-harvest management. Through cold-chain facilities, subsidies and digital systems, they support better price realization and farm incomes. Despite infrastructure and coordination challenges, these initiatives contribute to rural development, farmer empowerment and a more resilient agricultural supply chain.

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