



From Barren to Bountiful: Kachchh Farmer's Success with Climate-Smart Farming

***Dr. Manish Kanwat¹, Ramniwas², Neeraj Singh³ and Avinash Bochalya⁴**

¹Principal Scientist & Head, CAZRI, Bhuj, India

²SMS (Horticulture), CAZRI Bhuj, India

³DDM, NABARD, Bhuj, India

⁴SMS (Soil Science), CAZRI, Bhuj, India

***Corresponding Author's email: kanwatmanish@gmail.com**

In the scorching, drought-hit region of Kachchh, Gujarat, where farming is a gamble against extreme heat, erratic rains, and poor soil, one farmer has turned the odds in his favor. Mr. Ishwar Bhai Patel, from Rampar Roha village in Nakhatrana taluka, has transformed his one-acre plot into a year-round source of income, thanks to innovative technology and a bit of scientific know-how. His story, supported by the Krishi Vigyan Kendra (KVK) in Bhuj, is inspiring farmers across the region to rethink traditional agriculture.

Farming in Kachchh is tough. Summer temperatures soar above 40°C, rainfall is scarce, and the soil is losing its fertility. For vegetable growers like Mr. Patel, these conditions often meant low yields and financial strain. But with the introduction of non-woven UV-stabilized low tunnels and biodegradable mulch, Mr. Patel found a way to beat the climate. These tools create a protective microclimate for crops, shielding them from harsh sunlight, wind, and temperature swings, while the mulch keeps the soil moist, controls weeds, and enriches the land as it naturally decomposes.

In January, Mr. Patel started with muskmelon during the Rabi season. Using low tunnels and mulch, he harvested an impressive 13.96 tonnes per acre, earning ₹2,91,600 at ₹20.88 per kg. After spending ₹62,321 on seeds, fertilizers, labor, and equipment, he pocketed a net profit of ₹2,29,279—a return nearly five times his investment. The eco-friendly mulch also meant no plastic waste, a win for both his farm and the environment.

When summer arrived, most farmers would let their fields rest, as tomatoes typically fail in the blistering heat, but not Mr. Patel. He reused his tunnels and mulch to grow tomatoes, a bold move that paid off. The tunnels kept the plants cool and protected, producing high-quality tomatoes that fetched a 40% higher price than those grown in open fields. With a gross income of ₹1,85,000 and costs of just ₹48,000, he earned ₹1,37,000 in profit earned from this project.

During the monsoon-heavy Kharif season, Mr. Patel planted ridge gourd, again reusing the same mulch at no extra cost. The crop yielded 8.2 tonnes per acre, bringing in ₹1,00,000. With only ₹28,000 in expenses, his profit was ₹72,000. Over the year, his one-acre farm produced three different crops—muskmelon, tomato, and ridge gourd—generating a total income of ₹5,76,600 and a net profit of ₹4,38,279.

Mr. Patel's success is more than just numbers. By carefully choosing crops suited to each season and reusing his setup, he maximized his land's potential while keeping costs low. The biodegradable mulch ensured his farm stayed sustainable, avoiding the soil pollution caused by plastic alternatives. His approach shows how farmers can adapt to climate challenges without harming the environment.

Word of his achievements spread fast. Over 30 neighboring farmers have adopted his methods, inspired by field demonstrations and workshops organized with KVK experts. Some have even formed a cooperative to buy supplies, share knowledge, and sell their produce together, making farming less risky and more profitable.

Mr. Patel's journey is a beacon of hope for Kachchh and beyond. By blending affordable technology with smart crop choices, he's shown that farming in harsh climates can be both sustainable and lucrative. As more farmers follow his lead, this model could reshape agriculture in India's arid regions, proving that even in the toughest conditions, innovation can make the land bloom.



Muskmelon as First crop in Rabi season



Tomato as second crop in summer season



Ridge gourd as third crop in kharif season