

Capacity Building Strategies for Farmers: Empowering the Hands That Feed the World

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Introduction

Every season, millions of farmers across India and the developing world walk into their fields carrying generations of knowledge of the soil, the rains, and the rhythms of nature. Yet, that same wealth of experience often exists in isolation, disconnected from modern science, market intelligence, financial tools, and policy support. The result? Enormous potential, routinely underutilized.

Capacity building is the bridge between what farmers *know* and what they *need to know* to thrive in today's rapidly changing agricultural landscape. It is not about telling farmers they are doing something wrong. It is about equipping them with new skills, resources, information, and confidence to make better decisions on the farm, in the market, and in their communities from drone-assisted crop monitoring to farmer producer organizations (FPOs), from climate-resilient seed selection to food processing enterprises capacity building is quietly powering agriculture's most meaningful transformation. Let's explore what it looks like in practice, and why it matters more than ever.

What Does "Capacity Building" Actually Mean?

The term gets thrown around frequently in government reports and development circles, but at its core, capacity building for farmers means strengthening three interconnected dimensions:

- **Knowledge capacity** - understanding modern agronomic practices, pest management, soil health, and post-harvest handling
- **Skill capacity** - the ability to practically apply that knowledge through hands-on training and demonstrations
- **Institutional capacity** - the power to organize collectively, access credit, navigate markets, and engage with government schemes

When all three dimensions grow together, farmers don't just produce more they earn more, waste less, and build resilience against shocks like climate extremes, price crashes, and input scarcity.

Strategy 1: Farmer Field Schools Learning by Doing

One of the most proven and people-centred approaches to capacity building is the Farmer Field School (FFS) model, pioneered by the FAO in the 1980s for

Integrated Pest Management in rice fields across Asia. The concept is simple but powerful: bring a group of 20–25 farmers together in their own field every week throughout a crop season, and let them learn through observation, experimentation, and discussion guided by a trained facilitator. Rather than sitting in a classroom listening to lectures, farmers in an FFS compare two plots side by side one managed with conventional practices and another with improved techniques. They observe insect life, soil moisture, plant health, and yield outcomes. They make decisions together. They debate. And most importantly, they *own* the learning process.

The results speak for themselves. Studies across Sub-Saharan Africa, South Asia, and Southeast Asia have consistently shown that FFS graduates use 30–50% fewer pesticides, achieve higher yields, and are far more likely to adopt sustainable practices compared to those who receive only conventional extension advice. In Kerala, FFS models adapted for spice crops and paddy have helped smallholders in Wayanad and Thrissur districts improve both productivity and profitability. The genius of FFS is that it builds confidence alongside competence. A farmer who has *discovered* that a particular pest-management strategy works through their own observation is far more committed to it than one who was simply told to follow instructions.

Strategy 2: Digital Literacy and AgriTech Adoption

We live in an era where a smallholder in rural Kerala can access real-time weather forecasts, crop advisory services, mandi prices, and government scheme applications all on a basic smartphone. But access to technology means little without the ability to use it meaningfully. Digital literacy programs tailored for farmers are emerging as one of the most cost-effective capacity building strategies of our time. Organizations like the Digital Green initiative and platforms such as Kisan Suvidha, mKisan, and IFFCO Kisan have demonstrated how short, localized video content in regional languages can communicate complex agronomic information in ways that resonate with farming communities. Equally important is training farmers to use precision agriculture tools. Soil health cards, drone-based crop monitoring, and satellite-linked advisory systems are no longer futuristic concepts they are operational realities in progressive farming districts. However, without trained farmers who understand what an NDVI map means or how to interpret a soil health

card recommendation, these technologies remain underused investments.

Capacity building in digital and precision agriculture must also address the gender gap. Women farmers, who constitute nearly 60–80% of the agricultural workforce in many Indian states, are often left out of technology training programs. Targeted digital literacy drives for women's self-help groups and Mahila Kisan programs are correcting this imbalance, one village at a time.

Strategy 3: Financial Literacy and Access to Credit

Ask any farmer what holds them back, and within the first two answers, you'll almost certainly hear: money. Not just the lack of it, but the complexity of accessing it through formal channels. Financial capacity building goes beyond teaching farmers about bank accounts. It encompasses understanding loan products, crop insurance schemes like Pradhan Mantri Fasal Bima Yojana (PMFBY), warehouse receipt financing, commodity futures markets, and the financial mechanics of running a farm as a business.

Training programs run by NABARD, regional rural banks, and agricultural universities have made significant strides in demystifying agricultural finance. When farmers understand how to use a Kisan Credit Card effectively, how to file insurance claims without being turned away on technicalities, or how to leverage a commodity exchange to hedge against price volatility they gain a financial confidence that transforms their relationship with risk. Microfinance institutions and FPOs have further widened access by creating peer-based savings and credit groups at the village level. The social accountability within these groups often produces better loan repayment rates than conventional banking while simultaneously building financial skills and habits among participants.

Strategy 4: Post-Harvest Management and Value Addition Training

India loses an estimated ₹92,000 crore worth of food annually due to poor post-harvest handling a staggering statistic that represents not just economic waste but nutritional loss and missed farmer income. Capacity building in post-harvest management is one of the highest-return investments in the entire agricultural development toolkit.

Training farmers in proper harvesting techniques, moisture management, grading, and sorting can immediately reduce losses and improve price realization. Going further, training in primary food processing such as making spice powders, dried vegetables, pickles, jams, and cold-pressed oils helps farmers capture value that currently flows to middlemen and processors. In Wayanad and Idukki districts of Kerala, tribal and smallholder farmers trained in value

addition for spices like cardamom, pepper, and coffee have successfully established micro-enterprises that sell directly to urban consumers and exporters. The training they received covering processing hygiene, packaging, labeling, FSSAI compliance, and marketing transformed them from commodity sellers into food entrepreneurs. This kind of capacity building creates a multiplier effect. One trained farmer often becomes a resource person for others in the community, creating informal knowledge networks that outlast any government program.

Strategy 5: Organizing Through Farmer Producer Organizations

Perhaps the most structurally transformative capacity building strategy of the last decade in India has been the promotion of Farmer Producer Organizations (FPOs). An FPO aggregates smallholder farmers into a collective enterprise, giving them the economic muscle to negotiate better input prices, access institutional credit, invest in processing infrastructure, and enter premium markets. But an FPO is only as strong as the capacity of its members and leadership. Building that capacity requires sustained investment in:

- Governance training for board members and elected leaders
- Business plan development for collective enterprises
- Market linkage skills including contract farming negotiations and export compliance
- Accounting and financial management at the organizational level

The Government of India's ambitious target of establishing 10,000 FPOs by 2027 recognizes this and has paired the formation push with capacity building support through NABARD, SFAC, and agricultural universities. The early results are promising, with FPOs in Maharashtra, Madhya Pradesh, and Odisha demonstrating measurable income gains for member farmers.

Strategy 6: Climate Literacy and Adaptation Skills

Climate change is no longer a distant threat. Erratic monsoons, unseasonal frosts, heat waves, and shifting pest and disease patterns are already disrupting farm calendars across India. Farmers who don't understand these changes or who lack the tools to adapt face deepening vulnerability. Climate capacity building for farmers includes training in:

- Climate-resilient crop varieties and their management requirements
- Water conservation techniques such as drip irrigation, rainwater harvesting, and conservation agriculture

- Agroforestry systems that diversify income while improving ecological resilience
- Weather-based farm planning using agrometeorological services

Organizations like the International Crops Research Institute for the Semi-Arid Tropics (ICRISAT) and ICAR's network of Krishi Vigyan Kendras (KVKs) have developed accessible climate adaptation toolkits for farmers in vulnerable regions. In Kerala, where the floods of 2018 and 2019 devastated farming communities, climate literacy programs have become a core part of agricultural rehabilitation efforts.

The Role of Agricultural Universities and KVKs

No discussion of farmer capacity building in India is complete without acknowledging the role of Krishi Vigyan Kendras (KVKs) the frontline science and technology institutions of the ICAR network. With over 700 KVKs spread across the country, they serve as the most extensive infrastructure for farmer training, demonstration, and technology transfer ever built in the agricultural sector. When KVKs function at their best with active, field-oriented scientists, well-equipped demonstration farms, and strong community linkages they are extraordinary capacity building engines. Strengthening their mandate, resources, and community integration remains a priority for agricultural policymakers. Agricultural universities, too, have a crucial role in developing farmer-facing curriculum materials, training the trainers who deliver extension programs, and conducting action research that solves real farm problems rather than laboratory abstractions.

Principles of Effective Capacity Building

Not all capacity building programs deliver lasting results. The ones that do tend to share a few common characteristics:

- **Demand-driven:** responding to what farmers actually need rather than what institutions want to teach
- **Participatory:** treating farmers as active co-creators of knowledge rather than passive recipients
- **Combine theory with practice:** using field demonstrations, role-plays, and case studies alongside information delivery
- **Sustained over time:** not confined to one-day workshops that are quickly forgotten

- **Local leadership:** identifying and empowering progressive farmers to become champions and peer educators within their communities

Conclusion

Capacity building is not a soft add-on to agricultural development it is its very foundation. Seeds, technology, credit, and infrastructure all matter. But without capable, informed, and organized farmers at the center of the system, none of these inputs reach their full potential. Investing in farmer capacity is investing in food security, rural prosperity, and ecological sustainability all at once. Every training session held, every field school graduated, every FPO leader mentored sends a quiet but powerful message: the farmer is not a problem to be solved, but a solution waiting to be supported. The hands that feed the world deserve every tool, skill, and opportunity we can place within their reach.

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