



Knowledge Networks for Climate-Smart Agriculture: Connecting Farmers with Timely Information

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Climate change is transforming Indian agriculture through irregular rainfall, heat waves, droughts and new pest outbreaks. Farmers today need more than traditional experience—they need timely, reliable and location-specific information. Modern information and communication technologies (ICTs) are helping bridge this gap by delivering weather forecasts, crop advisories and expert recommendations directly to farming communities.

What is a Knowledge Network?

A knowledge network connects agricultural scientists, extension professionals, government departments and farmers through digital platforms. Instead of information moving only from research stations to villages, knowledge flows in both directions. Farmers share their problems while experts provide quick, practical and scientifically validated solutions.

Climate Change Knowledge Network in Indian Agriculture

One of India's important initiatives is the Climate Change Knowledge Network in Indian Agriculture (CCKN-IA). Developed with support from the Department of Agriculture and international partners, the programme uses the Network for Information on Climate (Ex) Change (NICE) platform to generate and disseminate localized climate-smart advisories. Weather information from IMD, expert knowledge and farmer feedback are combined to prepare practical recommendations.

How the NICE Platform Helps Farmers

The NICE platform supports farmer registration, weather-based advisories, feedback collection, query management and multimedia communication. Farmers receive information through SMS, posters, voice messages, one-page advisories and short videos. Extension personnel use tablets to collect field information and communicate farmers' needs back to experts, making the system truly interactive.

Quality Matters

The success of any advisory depends on four important qualities: it should be understandable, locally relevant, timely and technically complete. Information written in simple local language, supported by photographs and delivered at the right crop stage is far more useful than lengthy technical recommendations.

Role of NICRA and Climate-Smart Villages

India has also launched the National Innovations on Climate Resilient Agriculture (NICRA) programme and the Climate-Smart Village approach. These initiatives demonstrate drought-tolerant varieties, water conservation, climate-resilient farming practices, community institutions and weather-based planning so that villages become better prepared for climate risks.

The Way Forward

Future agricultural extension should combine digital technologies with human interaction. Scientists, extension officers, progressive farmers and farmer groups must work together through mobile applications, WhatsApp groups, village meetings and digital knowledge platforms. Such integrated systems will improve decision-making, reduce climate risks and strengthen sustainable agriculture.

Conclusion

Climate-smart farming begins with climate-smart information. When farmers receive the right information at the right time in a simple and practical form, they are better prepared to face climate uncertainty. Knowledge networks such as CCKN-IA, together with initiatives like NICRA and Climate-Smart Villages, demonstrate how technology and extension can work together to build resilient farming communities.