

Recommendations from the Silver Jubilee National Conference Submitted to the Government of Maharashtra

The Silver Jubilee National Conference on "Innovation and Entrepreneurship for Rural Prosperity: An Agricultural Perspective", organized by the Maharashtra Society of Agricultural Economics (MSAE) and the Department of Agricultural Economics, MPKV, Rahuri, brought together experts, researchers, policymakers, and industry professionals to deliberate on key issues in agricultural economics and rural development. Based on the discussions and technical sessions, the following recommendations have emerged:

Theme – I: Agribusiness and Entrepreneurship Development Recommendations

1. Economic Viability of Sustainable Integrated Farming Systems (IFS) in Western Maharashtra

- Farmers should adopt the Crops + Dairy + Horticulture (C + D + H) farming system, as it has proven to be the most economically viable.
- Encourage a gradual shift from Crops only to integrated systems (C + G, C + D, and C + D + H) to improve farm employment and income stability.
- Promote the C + D + H system due to its highest Incremental Benefit-Cost Ratio (IBCR) of 2.43, indicating its profitability and sustainability.

2. Agri-startups and Rural Enterprises: Private Horticulture Nurseries in Navsari District, Gujarat

- Strengthen support for horticulture nurseries through training programs and financial credit access to enhance enterprise profitability.
- Encourage entrepreneurial development in the nursery business as it generates substantial employment and income.
- Promote plant nursery businesses as a major agribusiness sector to ensure sustained growth and employment generation in rural areas.

3. Economic Analysis of Tomato Production under Drip Irrigation in Western Maharashtra

- Promote the adoption of drip irrigation as it increases tomato productivity by 26.63 per cent, and provides higher net returns.
- Encourage drip irrigation systems to achieve water and electricity savings of 27.25 per cent while maintaining economic viability.
- Address constraints in interculture operations, electricity supply, high investment cost, and after-sales service to ensure wider adoption of drip irrigation.

4. Economic Analysis of Krushiraj Agro-tourism as Agribusiness in Maharashtra

- Encourage farmers with adequate resources to establish Agro-Tourism Centers (ATCs) as a profitable entrepreneurial activity.
- Implement local self-government participation for better execution of agro-tourism policies.
- Streamline licensing procedures and enhance entrepreneurship training to overcome major constraints faced by ATC owners.

5. Agricultural Disparities in India: Regional Challenges and Solutions

- Expand micro-irrigation (drip and sprinkler systems) and invest in rainwater harvesting, especially in water-scarce states like Rajasthan, Jharkhand, and Maharashtra.
- Promote organic farming, bio-fertilizers, and balanced nutrient management to improve soil health and sustainability.
- Strengthen the Kisan Credit Card (KCC) program and simplify crop insurance claim processes to enhance financial support for farmers.
- Establish climate adaptation funds to mitigate risks associated with climate variability.
- Expand the e-NAM (National Agriculture Market) for better price realization and market accessibility for farmers.
- Develop integrated farming models that combine crops with livestock and horticulture for diversified income streams.
- Encourage the cultivation of pulses, oilseeds, and horticultural crops to enhance self-sufficiency and reduce dependence on imports.
- Promote innovative and modern farming methods to ensure inclusive agricultural development and long-term sustainability.

Theme – II: Innovative Marketing Strategies Recommendations

1. Export Potential of Millets Grown in India

- Enhance millet production by addressing the decline in cultivation area to sustain both domestic and export markets.
- Diversify export destinations beyond UAE, Saudi Arabia, and Nepal to reduce dependency on a few countries.
- Strengthen export promotion policies and market exploration strategies to maximize the global demand for Indian millets.
- Encourage millet processing industries to develop value-added products for better international market penetration.

2. Impact of Farmer Producer Organizations (FPOs) on Farm Economy

- Increase awareness and farmer participation in FPOs through targeted campaigns, training programs, and financial incentives.
- Provide subsidies, tax benefits, and reduced input costs to FPO members to encourage greater membership and economic stability.
- Facilitate access to market linkages, credit, and technology through local agricultural departments and NGOs.
- Promote cost-effective and profitable agricultural enterprises like soybean, onion, pomegranate, and goat rearing through FPO support systems.

3. Role of MSP in Cotton Farmers' Decision-Making in Gujarat

- Institutional interventions should consider previous acreage and yield levels along with price factors (MSP or FHP) to sustain cotton cultivation.
- Increase investment in cotton research, focusing on high-yielding varieties and hybrid development to enhance productivity.
- Recognize the stronger influence of non-price factors (yield, Bt technology) over price factors in cotton acreage decisions.
- Implement long-term policies that account for the slow rate of acreage adjustment to price changes (4.18 years) for better planning.

4. Comparative Economics of Contract and Non-Contract Papaya Farming in Gujarat

- Encourage contract farming (CF) models for papaya cultivation due to their higher efficiency, profitability, and assured market linkages.
- Provide farmers with technical guidance, supervision, and labor support to enhance productivity in CF systems.
- Promote CF adoption by improving access to quality inputs (manures, fertilizers, and irrigation) while managing production costs effectively.
- Reduce risks related to price and yield fluctuations by ensuring price assurances and stable markets under CF agreements.

Theme – III: Value Addition and Agri-Processing Recommendations

1. Economic Analysis of Geranium Processing in Western Maharashtra

- Encourage geranium cultivation by providing financial support and training to farmers to maximize economic benefits.
- Develop processing facilities to enhance oil recovery and ensure higher value addition for cultivators.

- Promote investment in geranium processing units, as they demonstrate economic viability with an IRR of 32.47 per cent.
- Optimize land utilization to meet processing unit capacity needs, with area requirements ranging from 7-20 hectares.

2. Economic Analysis of Production and Value Chain of Millet in Maharashtra

- Reduce the cost of millet production by adopting mechanization, efficient resource utilization, and sustainable farming techniques.
- Encourage farmers to diversify income streams by utilizing millet by-products and improving efficiency in input use.
- Support the development of millet-based value-added products like biscuits (B:C ratio of 1.77), Papads (1.82), and Satv (2.03) to enhance profitability.
- Facilitate collaboration with FPOs and cooperatives to establish millet processing facilities and gain better market access.
- Promote branding and marketing strategies to target health-conscious consumers and export markets.
- Provide government subsidies and incentives to improve millet processing infrastructure and encourage sustainable farming practices.

3. Economics of Processing and Marketing of Custard Apple Pulp

- Encourage the expansion of custard apple pulp processing due to its profitability (B:C ratio of 1.47) and employment generation potential.
- Strengthen supply chain efficiency by improving fruit availability, quality control, and timely procurement.
- Promote SHG participation in pulp processing and market linkages to enhance profit margins and market reach.
- Improve marketing efficiency by focusing on direct consumer sales (Channel III), which provides the highest returns (93% share in consumer rupee).
- Address key constraints like seasonal fruit availability, pulp discoloration, and small-scale processing through targeted interventions and technology adoption.
- Support the diversification of SHG-led processing units to include other seasonal fruits, ensuring year-round income and employment opportunities.

4. Post-Harvest in Vegetable Marketing: An Insight from Tapi District, South Gujarat

- Implement training programs for vegetable growers on scientific post-harvest handling techniques to minimize losses.

- Encourage proper grading, packaging, and storage facilities to improve the shelf life of vegetables.
- Enhance transportation infrastructure to ensure efficient and timely delivery of produce to markets.
- Promote awareness regarding the importance of harvesting at the right maturity stage to maintain product quality and reduce losses.
- Establish cold storage and warehousing facilities to reduce spoilage and post-harvest losses in perishable vegetables.
- Develop government-supported schemes for subsidized storage, transportation, and market linkages to sustain vegetable production profitably.

Theme IV: Climate-Smart Agriculture Recommendations

1. Adoption of Laser Land Levelling (LLL) for Water and Energy Conservation

- Farmers should shift from traditional land levelling to laser land levelling (LLL) to reduce irrigation time by approximately 8.2 hours per hectare for wheat and 32.5 hours per hectare for paddy, leading to significant water savings and reduced energy consumption for operating water pumps.
- Scaling up LLL technology is crucial as it has the potential to save around 5065 thousand Liters of water per hectare per LLL operation in the rice-wheat system of the Indo-Gangetic Plains.
- Given the increasing water demand across domestic, industrial, and agricultural sectors, adoption of LLL can enhance water-use efficiency, making more water available for other critical sectors.
- LLL technology can reduce irrigation electricity consumption by approximately 2200 KWh per hectare, easing the fiscal burden on the government by lowering electricity subsidies.
- Adoption of LLL can reduce greenhouse gas (GHG) emissions by approximately 209 kg CO₂ equivalent per hectare per LLL operation, contributing to climate change mitigation efforts.
- The reduced use of electricity for irrigation indirectly lowers carbon emissions associated with power generation.
- The average yield increase per hectare was 275 kg for wheat and 291 kg for paddy, contributing to higher food production.

2. Policy and Government Support for LLL Implementation

- Given its multiple benefits, LLL should be promoted at a national level as a sustainable water and energy conservation technology.
- Policymakers should integrate LLL into water resource management and agriculture sustainability programs.
- The technology should be included in state and central government schemes to encourage wider adoption among farmers.

3. Policy Implications for Climate-Smart Agriculture (CSA) Adoption

- Promotion of CSA Technologies – Various climate-smart agriculture (CSA) technologies, including site-specific nutrient management (e.g., Green Seeker), crop diversification, and improved crop varieties, should be promoted for sustainable farming.
- Farmer Awareness Programs – Farmers should be educated on the tangible and intangible benefits of CSA technologies to encourage widespread adoption.
- Regional Target Setting – A region-specific target should be set for increasing the area under CSA practices.
- Economic Feasibility – CSA technologies improve the economic viability of farming, making it suitable for inclusion in government programs aimed at doubling farmers' incomes.

4. Recommendations for Addressing Agricultural Vulnerability in Maharashtra

Priority Implementation of Climate Adaptation Projects

- Climate change adaptation programs such as NICRA and POCRA should be first implemented in highly vulnerable districts, including Gadchiroli, Latur, Osmanabad, Beed, Jalna, and Sindhudurg.
- Subsequently, these programs should be extended to other highly vulnerable districts such as Dhule, Thane, Ahmednagar, Aurangabad, Solapur, Akola, Hingoli, Nanded, Chandrapur, Nagpur, and Bhandara.

Theme V: Agri-Tech and Digital Agriculture Recommendations

1. Economic Impact of MPKV Released Sugarcane Variety Co-86032 on Farm Economy in Maharashtra

- Increased investment in sugarcane research and extension is essential, given the high economic returns (Rs. 1,95,170.22 crores gross and Rs. 21,721.85 crores net) generated by the Co-86032 variety over 28 years.
- Policy support should focus on enhancing research funding to sustain and improve sugarcane productivity.

- Strengthening the dissemination of improved sugarcane varieties through farmer awareness programs can maximize economic benefits at the farm level.

2. ICT Digital Agriculture and an Attempt to ‘Double Farmers’ Income’: A Case Study in West Bengal

- ICT-based agricultural solutions such as ‘Matir Katha’ should be promoted as game-changers for enhancing farm productivity and profitability.
- Government initiatives should integrate digital tools to improve pre- and post-cultivation practices, agricultural marketing, and supply chain efficiency.
- Farmers, particularly small and marginal ones, should be provided with digital literacy training to maximize the benefits of ICT in agriculture.
- ICT adoption should align with Sustainable Development Goal (SDG) No. 8 to harness its full potential in poverty reduction and agricultural sustainability.

3. Status and Performance of e-NAM in India: An Overview

- Efforts should be made to eliminate operational bottlenecks to improve e-NAM efficiency and accessibility.
- Digital literacy programs for farmers must be developed to enhance their understanding and participation in e-NAM.
- Technology infrastructure should be strengthened to expand market areas and ensure seamless transactions.
- Government policies should focus on integrating financial services, enhancing payment security, and providing region-specific solutions to maximize the impact of e-NAM.

4. Effect of COVID-19 on Small Vegetable Growers of Punjab: An Economic Analysis

- Establishing farmer-producer cooperatives is crucial for improving vegetable production, marketing efficiency, and reducing post-harvest losses.
- Government intervention is needed to improve logistics, vendor management, and storage facilities to mitigate market disruptions during crises.
- Strengthening transportation networks can ensure timely procurement and distribution, reducing losses incurred by farmers and market intermediaries.
- Policies should focus on providing financial assistance and alternative market linkages to support vegetable growers affected by economic shocks.

5. Performance of Pradhan Mantri Fasal Bima Yojana (PMFBY) in Latur District of Maharashtra State

- The claims processing mechanism under PMFBY must be streamlined to ensure timely and adequate compensation for farmers.

- Enhancing transparency through digital platforms and local accessibility can improve farmer participation and trust in the scheme.
- Expanding the coverage of crops under PMFBY can provide comprehensive protection to farmers against climate risks.
- Implementing a direct benefit transfer system can expedite financial assistance and reduce bureaucratic delays.
- Local grievance redress mechanisms should be established to ensure fair loss assessment and enhance accountability in the insurance process.
- Continuous evaluation and adaptation of PMFBY are necessary to meet the evolving needs of farmers and strengthen agricultural resilience.

These recommendations, if implemented, will contribute to **enhancing farmers' income, strengthening rural enterprises, and ensuring sustainable agricultural growth in Maharashtra**. The outcomes of the conference will be instrumental in shaping future policies for the state's agricultural sector.

We request the **Government of Maharashtra** to consider these recommendations for **optimum resource management, rural prosperity, and long-term agricultural sustainability**.

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