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Crisis management practices followed by the nursery owners

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Abstract

This study titled as Crisis Management Practices Followed by Nursery Owners in Pune District — assessed the management practices followed by the 150 nursery owner's nursery owners across Daund, Haveli, and Maval tehsils, using structured interviews analysed via descriptive statistics. Despite resource constraints, 46.66 per cent demonstrated medium, and 30.67 per cent high, levels of crisis management practices. All owners cited environmental stressors like erratic rainfall and temperature extremes, alongside pest and disease outbreaks, lack of technical knowledge, insufficient market access, high input costs, and inadequate credit access. Owners advocated for targeted interventions: subsidies, access to quality inputs, simplified credit systems, skilled labor training, and ongoing capacity building in climate-smart horticulture. The study concludes that proactive crisis management-supported by institutional backing, policy reforms, educational investments, and digital tools-is essential for sustaining rural livelihoods and strengthening economic resilience in India's nursery sector.

Keywords: Crisis Management Practices, Nursery Owners, Management, Risk Management

Introduction

Agriculture remains the backbone of India's economy, engaging about 42 per cent of the population and contributing approximately 18.2 per cent to GDP, with an average growth of around 4.18 per cent over the past five years, despite a slowdown to 1.4 per cent in FY 2023-24. The horticulture sector, accounting for about 33 per cent of agricultural GVA, has driven diversification, nutritional security, and rural incomes. As of mid-2025, India has over 28,113 plant nurseries, predominantly small-scale and owner-operated, with Maharashtra, Uttar Pradesh, and West Bengal hosting the largest concentrations Pune district, a major horticultural hub in Maharashtra, features a diverse nursery landscape, ranging from small family-run operations to larger commercial centers. These nurseries supply planting material, landscaping services, and technical guidance, often catering to local and institutional clients.

In the context of rising climate variability, pest outbreaks, market volatility, and resource constraints, effective crisis management has become essential for sustaining nurseries and rural livelihoods. This study focuses on crisis management practices followed by the nursery owners in the tehsils of Daund, Haveli, and Maval, exploring their socio-economic profiles, existing management practices, and strategies for resilience. It offers policy-relevant insights into enhancing nursery-sector stability through institutional support, capacity building, and proactive planning. When a crisis hits, organizations that are well-prepared with a clearly defined crisis management team and pre-established response protocols can act swiftly to contain damage and communicate transparently with stakeholders, thereby preventing misinformation and loss of trust. Recovery begins once the immediate threat is addressed, focusing on resuming normal operations, repairing damage, and rebuilding stakeholder confidence. Post-crisis reviews help identify lessons learned and refine the crisis plan for future resilience. For nursery owners, key crisis scenarios include climate variability (e.g. extreme heat or cold, pest and disease proliferation, soil degradation), supply chain disruptions, and economic downturns that reduce demand or revenue. Effective crisis management empowers nurseries to maintain operations, protect financial stability and reputation, uphold environmental compliance, and emerge stronger and more community-aligned.

Methodology

There are 2599 nurseries in Maharashtra, out of this 2599 nurseries, Pune district hosts 225 nurseries, which is 8.66 per cent of all plant nurseries in Maharashtra, making it the district with the highest nursery count in the state. Therefore, the present study focuses on Pune district. Located in western Maharashtra, Pune spans ≈ 15,642 km² (about 5.10 per cent of the state's area), lying between 17°54′–18°32′ N and 73°19′–75°10′ E, and bordered by the districts of Ahmednagar, Solapur, Satara, Raigad, and Thane. Geographically it extends from the Sahyadri foothills into the Deccan Plateau, divided into three zones—Ghatmatha (west hills), Maval (central plateau), and Desh (eastern plains)—resulting in climatic variation, with cooler elevated west and hotter, drier east under the tropical

monsoon climate. Three tehsils—Daund, Haveli, and Maval—were selected for the study, with villages chosen through random sampling. There are total 150 respondents were randomly selected. Personal interview conducted to collect the data and analysed using statistical tools such as percentage, frequency, tertiary categorization method.

Results and Discussion

The crisis management practices followed by the nursery owners is measured in 4 different components. They are environmental, production, marketing and economic crisis. The results of the management practices followed by the nursery owners were mentioned in table 1.

Table 1: Distribution of the nursery owners according to crisis management practices followed by them.

SI. No	Crisis	Management practices	Yes	No
A	**Environmental Crisis**			
1.	Increasing temperature during hot summer days	Using Misting or Fogging Systems	92 (61.33)	58 (38.67)
		Establishing polyhouse and shade nets	134 (89.33)	16 (10.67)
		Manual water spraying	150 (100.00)	0 (0.00)
2.	Decreasing temperature during extreme cold winter season	Mulching and Soil Protection	64 (42.67)	86 (57.33)
		Artificial Lighting for Heat	90 (60.00)	60 (40.00)
3.	Effect of pollution on the quality of the nursey produce	Installing filtration systems or sedimentation tanks for water pollution	58 (38.67)	92 (61.33)
		Soil Remediation, Soil Testing, Organic and Sustainable Practices	94 (62.67)	56 (37.33)
4.	Impact of longer rainy days in rainy season may cause floods	Improving Drainage Systems	109 (72.67)	41 (27.33)
		Using Raised Beds/ polythene covers	150 (100)	0 (0.00)
		Rainwater Harvesting and Storing	68 (45.33)	82 (54.67)
5.	Impact of covid-19 and other likewise pandemic situations	Digital Marketing/ e-commerce websites	118 (78.67)	32 (21.33)
		Being member with Local Organizations	52 (34.67)	98 (65.33)
6.	Occurrence of Accidents and Animal Attacks	Using of safety Protocols and maintaining emergency kits	78 (52.00)	62 (48.00)
		Use of Fencing, Barriers, Rodent and Bait traps	140 (93.33)	10 (06.67)
B	**Production Crisis**	**Management practices**		
1.	Unavailability of Mother plant, Fertilizers, Labor in time	Diversifying Seed and sapling Suppliers	105 (70.00)	45 (30.00)
		Seed, other inputs Storage and Preservation	62 (41.33)	88 (58.67)
		Growing from Cuttings and Grafting's	110 (73.33)	40 (26.67)
2.	Outbreak of Pest and Diseases	Maintaining Sanitation and Hygiene	140 (93.33)	10 (06.67)
		Proper Plant Spacing and Air Circulation	113 (75.33)	37 (24.67)
		Practicing Integrated Pest and Disease Management (IPDM) techniques	104 (69.33)	46 (30.67)
3.	Sudden failure of irrigation facilities	Regular System Maintenance and Inspection	123 (82.00)	27 (18.00)
		Manual Irrigation/Hand sprayers	150 (100.00)	0 (0.00)
		Keeping Diesel/Petrol operated sprayers	72 (48.00)	78 (52.00)
4.	Failure in supply of the electricity	Backup Power Systems (Generators)	48 (32.00)	102 (68.00)
		Subscription to emergency power supply services	16 (10.67)	134 (89.33)
5.	Delay of work due to health issues to staff member	Temporarily hiring Staff	150 (100.00)	0 (0.00)
		Prioritizing Critical Tasks	150 (100.00)	0 (0.00)

6.	Plant theft and damage	Installing Security Systems (Manual, / Webcam system)	86 (57.33)	64 (42.67)
		Legal and Insurance Solutions	32 (21.33)	118 (78.67)
7.	Land ownership and Lease issues	Secure and Transparent Registered Lease Agreements	56 (37.33)	94 (62.67)
8.	Storing the nursery plants till they sold out	Availability of storage facilities	61 (40.67)	89 (59.33)
		Rental storage facilities	52 (34.67)	98 (65.33)
C	**Marketing Crisis**	**Management practices**		
1.	Change in the customer preferences	Monitoring customer trends and preferences	127 (84.67)	23 (15.33)
		Diversify product offerings	90 (60.00)	60 (40.00)
2.	Lack of transportation facility	Establishing partnerships with local transport providers	47 (31.33)	103 (68.67)
		Purchase / rent or lease vehicles	25 (16.67)	125 (83.33)
3.	Delay in marketing due to traffic conditions	Using GPS and route optimization software	67 (44.67)	83 (55.33)
		Structuring flexible delivery schedules	60 (40.00)	90 (60.00)
4.	Decreasing of the demand of the nursery produce at the time of harvesting	Analyzing seasonal trends and forecast	96 (64.00)	54 (36.00)
		Diversify production (cut and loose flower)	79 (52.67)	71 (47.33)
5.	Fraudulent online orders or scams effecting sales	Secure payment methods	118 (78.67)	32 (21.33)
		Monitor and identify suspicious activity	86 (57.33)	64 (42.67)
6.	Growing competition leads to price fluctuations	Offering Value-Added Services (Terrarium, Bonsai, Multi coloured grafting)	43 (28.67)	107 (71.33)
		Focusing on Customer satisfaction	133 (88.67)	17 (11.33)
		Create an inviting and unique shopping /purchasing experience Day specific)	27 (18.00)	123 (82.00)
D	**Economic crisis**	**Management practices**		
1.	Supply chain disruptions due to delay in production, quality issues	Implementing strict quality control measures	111 (74.00)	39 (86.00)
		Focussing on seasonal varieties	94 (62.67)	56 (37.33)
2.	Complex procedures to avail credit facilities from financial institutions	Using Digital Platforms for Application	62 (41.33)	88 (58.67)
		Building Strong Relationships with Financial Institutions	24 (16.00)	126 (84.00)
		Maintaining good CIBIL score	54 (36.00)	96 (64.00)
3.	Rise in Economic recession	Improving customer engagement and loyalty	136 (90.67)	14 (09.33)
		Focusing on cost efficiency	103 (68.66)	47 (31.33)
4.	Negative Media Coverage	Keeping customer ratings/reviews	118 (78.67)	32 (21.33)
		Improve customer relations and transparency	135 (90.00)	15 (10.00)
		Work on building a positive online presence	84 (56.00)	66 (44.00)
5.	Over-Expansion of the nursery business	Conduct a comprehensive review of the expansion	51 (34.00)	99 (66.00)
		Consolidate and focus on core areas	38 (25.33)	112 (74.67)
		Seek expert advice and strategic solutions	80 (53.33)	70 (46.67)

(Figures in parenthesis indicates percentage)

A. Environmental Crisis Management Practices

Nurseries in Pune adopt various adaptive measures to tackle environmental challenges. During extreme heat, 100 per cent use manual water spraying, 89.33 per cent deploy shade nets or polyhouses, and 61.33 per cent use misting or fogging systems. In winter, 60 per cent use artificial lighting and 42.67 per cent apply mulching. Pollution control is addressed through soil testing and sustainable practices (62.67 per cent) and water filtration/sedimentation systems (38.67 per cent). Throughout extended rainy seasons, 100 per cent employ raised beds or polythene coverings, 72.67 per cent improve drainage, and 45.33 per cent implement rainwater harvesting/storage. Additionally, 78.67 per cent moved to digital marketing during COVID-19, though only 34.67 per cent collaborated with local support organizations, and to manage animal attacks and accidents, 93.33 per cent used fencing/traps and 52 per cent maintained emergency safety protocols.

B. Production Crisis Management Practices

Nurseries address production disruptions through supplier diversification (70 per cent) and using propagation techniques like cuttings and grafting (73.33 per cent). About 41.33 per cent practice input storage and preservation. Pest and disease outbreaks are handled via strict sanitation (93.33 per cent), proper plant spacing (75.33 per cent), and Integrated Pest and Disease Management (IPDM) methods (69.33 per cent). Irrigation failures are countered by manual watering (100 per cent), regular system maintenance (82 per cent), and backup diesel/petrol sprayers (48 per cent). Electricity failures are less well managed: only 32 per cent use backup generators, and 10.67 per cent subscribe to rental emergency power. Labor shortages are managed by temporary hiring replacements and focusing on critical work (100 per cent).

C. Marketing Crisis Management Practices

To adapt to consumer and competitive shifts, 84.67 per cent monitor market trends, and 60 per cent diversify their product offerings. Transportation issues are managed through local partnerships (31.33 per cent), self-owned or leased vehicles (16.67 per cent), GPS/route optimization (44.67 per cent), and flexible scheduling (40 per cent). Demand fluctuations are addressed using trend forecasting and seasonal analysis (64 per cent), while 52.67 per cent diversify into high-turnover items like cut flowers to avoid unsold stock losses. Online fraud is mitigated by secure payment systems (78.67 per cent) and vigilance for suspicious activity (57.33 per cent). Competitive pricing pressure is met by prioritizing customer satisfaction (88.67 per cent), offering value-added services (28.67 per cent), and creating engaging in-store promotions or themed events (18 per cent).

D. Economic Crisis Management Practices

Nurseries face economic disruptions with strategies including strict quality control (74 per cent) and cultivation of seasonal varieties to align supply and demand (62.67 per cent). Credit access is improved through digital platforms (41.33 per cent), maintaining a good CIBIL score (36 per cent), and building direct bank relationships (16 per cent). During downturns, 90.67 per cent focus on customer loyalty, and 68.66 per cent emphasize cost efficiency. To counter reputational threats, 90 per cent work on transparency and customer relations, 78.67 per cent promote positive reviews, and 56 per cent maintain strong online presence (e.g., via WhatsApp bots). Over-expansion risks are managed with expert consultation (53.33 per cent), internal review of growth strategies (34 per cent), and operation consolidation (25.33 per cent).

These summaries reflect how nursery owners tackle environmental, production, marketing, and economic crises through targeted, proactive strategies to ensure resilience and sustainability.

Table 2: Distribution of nursery owners according to overall crisis management practices followed by nursery owners (n= 150)

Sl. No.	Overall crisis management practices followed by nursery owners	Frequency	Percentage
1	Low (Up to 26)	34	22.67
2	Medium (27 to 40)	70	46.66
3	High (41 and above)	46	30.67
	Total	150	100.00

From table 2 it is cleared that nearly half of the nursery owners (46.66 per cent) fall into the medium level crisis management category, about 30.67 per cent demonstrate high-level crisis management, while 22.67 per cent exhibit low-level performance. Thus, the majority of owners show moderate to strong preparedness in managing crisis overall.

Conclusion

The study shows that most nursery owners in Maharashtra are majority display medium to high overall crisis preparedness, indicating effective uptake of crisis management practices. To overcome these, nursery owners advocate for subsidies, access to skilled labor, and lower input costs, along with easier credit access, Majority of the nursery owners are facing major challenges such as climate change, heavy rainfall, and pest and disease outbreaks. Therefore, it is recommended that SAUs, KVK, IMD and State Agricultural department should provide Agro Advisory services through social media platforms and regular training—highlighting that financial support and capacity building are key to enhancing resilience and long-term sustainability in the sector. suggesting that many have adopted effective risk mitigation measures.

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