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### An Economic Analysis of Nursery Enterprise in Thane and Palghar of Konkan Region

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#### Abstract

Nursery enterprise plays a vital role in supporting horticulture, agriculture, landscaping, and forestry by providing quality planting material. The study was conducted in the Konkan region of Maharashtra, by selecting 30 sample nurseries from Thane and Palghar districts. The research aimed to analyse the cost returns, profitability, and overall viability of nursery enterprise. The data was collected through personal interviews using structured schedules for the reference year 2023–24. The analysis revealed that per farm capital investment was (Rs. 67.81 lakh), with land comprising the largest share (48.52%). The major components of nursery enterprise were Mango (45.81%), Sapota (18.50%) and Coconut (13.91%). The per farm cost of nursery production was Rs. 1504506, while gross returns stood at Rs. 2703725, resulting into a net profit of Rs. 1199219. The benefit-cost ratio of nursery enterprise was found to be 2.25. The break-even analysis showed that profits start beyond the production of 8238 grafts/seedlings. The study concluded that nursery enterprise is highly profitable and suitable for adoption by small and medium farmers in the Konkan region.

**Keywords:** Nursery enterprise, profitability, Konkan region, benefit-cost ratio, break-even point, grafts, seedling production

#### Introduction

A nursery is a managed environment created to cultivate seedlings under optimal conditions until they are ready for planting. The primary goal of any nursery is to produce enough high-quality seedlings to meet the demands of its customers. The nursery industry is continuously expanding, producing billions of plants annually and playing a vital role in various sectors such as forestry, agriculture, landscaping, parks, and cut flowers. As long as plants are in demand, nurseries will remain essential. Nurseries around the world vary in scale, from small family-run operations, sometimes started as a side business to supplement income, to large commercial enterprises employing many workers and producing millions of plants. Regardless of size, effective management is key to ensuring a nursery's financial success. (Krishnan, P. R. *et.al.* 2014) [5].

The Konkan region of Maharashtra possesses agro-climatic conditions that are highly suitable for horticultural crops, making it one of the leading horticultural zones in the state. Recognizing this potential, the state government has made significant investments in horticultural research and development to boost the production of key horticultural crops in the area. In this context an attempt is made to assess economics of nursery enterprise in Thane and Palghar

districts of Konkan region.

#### Data Source and Methodology

From the north Konkan region, Thane and Palghar districts were selected purposively for investigation the information regarding the list of nurseries, number of nurseries in each tehsil were obtained from District Superintendent Agricultural Officer. On the basis of number of nurseries in each tehsil, six tehsils having maximum number of nurseries were selected purposively from both districts. From Thane district Shahapur, Bhivandi and Murbad tehsils were selected and from Palghar district Dahanu, Palghar and Jawahar tehsils were selected. Total 30 sample nurseries were selected on proportionate number basis from both districts. Data was collected from selected nursery owners by personal interviews with the help of specially designed schedule. Simple statistical tools such as average, percentage, ratios, standard cost concepts, break-even point, Benefit cost ratio etc. were used for analysis.

#### Reference period

The information and data for present study is pertained to year 2023-24

### Cost, returns and profitability of nursery business

To assess cost, returns and profitability items of cost considered were

#### Items of direct cost

1. Cost of plant material (seed, rootstock, seedling)
2. Cost of scion
3. Cost of containers and potting media
4. Cost of fertilizer, FYM, manure
5. Cost of irrigation charges
6. Cost of Nutrient agrochemicals (Growth promoter and plant protection chemicals)
7. Miscellaneous cost
8. Supervision charges
9. Annual Maintenance cost of mother orchard

#### Items of indirect cost

1. Interest on working capital
2. Interest on fixed capital
3. Depreciation on protected structure, go down, machinery, irrigation structure, hand tools and implements

4. Rental value of Land/ Land rent
5. Amortization cost

### Results and Discussion

#### 1. Capital investment in nursery enterprise

The information regarding capital investment in nursery enterprise is given in Table 1. The table revealed that, per farm capital investment was Rs. 67.81 lakh, out of which maximum (48.52%) was under land followed by buildings (18.58%) and 5.90 per cent were under irrigation structure such as bore well, well, drip, sprinkler, pond and pumphouse etc. It was also observed that 3.54 per cent (Rs. 240000) was invested in shed such as polyhouse, shed net and potting shed. It was observed that land was major component of capital investment and the overall capital investment in nursery enterprise is of moderate level.

It was concluded that unlike other agricultural enterprises such as processing units, cashew processing unit, mango processing unit, poultry business or dairy enterprise the capital investment in nursery enterprise is relatively less and due to which more number of farmers can be engaged in nursery enterprise.

**Table 1:** Capital investment in nursery enterprise. (Figures in Lakhs)

Sr. No.	Particulars	N = 30
1	Land	48.52 (71.55)
2	Building (Residential +Byre + Store+ Farm house+ Godown)	12.60 (18.58)
3	Implements, machinery& Hand tools	0.29 (0.43)
4	Irrigation structure (Bore well, Well, Drip, Sprinkler, Pond, Pump House)	4.00 (5.90)
5	Shed (Polyhouse, Shed Net, Potting Shed)	2.40 (3.54)
	Total	67.81 (100.00)

(Figures in parentheses indicate percentage to total)

#### 2. Composition of nursery enterprise in study area

The information regarding per farm composition of nursery enterprise in study area is presented in Table 2. It was observed from the table that among the various components of the nursery enterprise adopted by the sample nursery owners Mango (38.93%), Cashew (33.10%) and Sapota (22.10%) were found to be the major components of nursery enterprise in study area. The table also shows that the total number of grafts prepared in the nursery was 35869. Out of which 16433 (45.81%) were mango grafts. Out of the total mango grafts prepared by the nursery owners 9187 were of Kesar, Alphonso (3450), Pairy (2000), Rajapuri (800), Ratna (495) and Sindhu (500). The total Sapota grafts prepared in the nursery were 6638 (18.50%) out of which 6188 were of Kalipatti and only 450 of Cricket ball variety. The total Coconut seedlings prepared were 4990 (13.91%) out of which 1250 were of Pratap, West Costal Tall (1140) and Banavli (2600). Total 3333 (9.29%) Cashew grafts were prepared in the nursery and all were of Vengurla 4 variety. The total Arecanut seedlings prepared in the nursery farm were 2750 (7.67%) and all were of Shrivardhan variety. It was also found that total 900 (2.51%) grafts of Golden plumeria were prepared. Saundarya variety was used in golden plumeria. Only 825 (2.30%) grafts of Rose were prepared in the nursery by using the variety named Hybrid tea rose.

As regards to the survival percentage of grafts, it was observed that the highest survival percentage was of Rose (87.27%) followed by Golden plumeria (86.67%) and Arecanut (86.11%). The lowest survival percentage was

found in Sapota grafts (59.96%) followed by 64.26 per cent in Mango. The survival percentage of Coconut and Cashew were found to be 77.96 per cent and 76.23 per cent, respectively.

The table also indicates that per farm total number of saleable grafts, seedlings were 24839. Out of which maximum 10560 (42.51%) were of mango followed by Sapota 3980 (16.02%) and Coconut 3890 (15.66%). The saleable grafts of Cashew, Arecanut, Golden plumeria and Rose were 2541 (10.23%) 2368 (9.53%) 780 (3.14%) and 720 (2.90%), respectively. The total number of grafts sold by the nursery enterprise was found to be 24073 and the total income generated through the nursery enterprise was found to be Rs. 2703725. Out of the total number of grafts, seedlings sold, maximum 10120 (42.04%) were Mango grafts earning the income of Rs. 910800 (33.69%) followed by Sapota grafts 3910 (16.24%) receiving the income of Rs. 469200 (17.35%) and Coconut seedlings 3765 (15.64%) receiving Rs. 753000 (27.85%). The total number of grafts, seedlings sold of Cashew, Arecanut, Golden plumeria and Rose were 2470 (10.26%) 2315 (9.62%) 753 (3.13%) and 740 (3.07%), respectively. The income earned from the sale of Cashew grafts was Rs. 222300 (8.22%) and Arecanut seedlings was Rs. 266225 (9.85%). The income received by selling the grafts of Golden plumeria and Rose was Rs. 45200 (1.67%) and Rs. 37000 (1.37%), respectively.

It was concluded that nursery enterprise is one of the high-income earning enterprise in the study area which require less capital investment. Another important attribute of this enterprise is the existing farm resources such as land and

irrigation water can be utilized more effectively and provides higher income to the farm in the study area. The farmers in the study area do not need to invest more amount in capital and machinery and such business can be easily started in rural areas. The farmers in the study area should

avail the benefits of this enterprise and is also well supported by the climate of Konkan region, which is very much suitable for hardening of grafts and overall nursery operations.

**Table 2:** Composition of nursery enterprise

Sr. No	Name of Crop	Area of Mother Orchard	No. of grafts Prepared	No of saleable grafts	No. of grafts Sold	Survival Percentage	Income
1	Mango	0.53 (38.93)	16433 (45.81)	10560 (42.51)	10120 (42.04)	64.26	910800 (33.69)
2	Sapota	0.3 (22.10)	6638 (18.50)	3980 (16.02)	3910 (16.24)	59.96	469200 (17.35)
3	Coconut	0.05 (3.49)	4990 (13.91)	3890 (15.66)	3765 (15.64)	77.96	753000 (27.85)
4	Cashew	0.45 (33.10)	3333 (9.29)	2541 (10.23)	2470 (10.26)	76.23	222300 (8.22)
5	Arecanut	0.02 (1.47)	2750 (7.67)	2368 (9.53)	2315 (9.62)	86.11	266225 (9.85)
6	Golden Plumeria	0.01 (0.74)	900 (2.51)	780 (3.14)	753 (3.13)	86.67	45200 (1.67)
7	Rose	0.002 (0.17)	825 (2.30)	720 (2.90)	740 (3.07)	87.27	37000 (1.37)
	Total	1.37 (100.00)	35869 (100.00)	24839 (100.00)	24073 (100.00)		2703725 (100.00)

(Figures in parentheses indicate percentage to total)

### 3. Per farm cost and returns of nursery enterprise

The information regarding per farm cost and returns of nursery enterprise is given in Table 3. It was seen from the table that per nursery total cost incurred for preparing grafts/seedlings of various grafts, seedlings was found to be Rs.1504506. Out of the total cost incurred maximum Rs. 461924 (30.70%) was incurred by mango followed by coconut Rs. 339845 (22.59%) and sapota Rs. 326359 (21.69%). The minimum Rs. 25132 (1.67%) cost was incurred for preparation of rose plants followed by golden plumeria Rs. 26615 (1.77%). Also the total costs incurred for preparation of Cashew and Arecanut grafts/seedlings were Rs. 133521 and Rs. 191111, respectively. The gross returns received per farm nursery enterprise was Rs. 2703725 out of which maximum Rs. 910800 (33.69%) was received from mango followed by coconut Rs. 753000

(27.85%) and sapota Rs. 469200 (17.35%). Also the gross returns received after selling of Cashew and Arecanut grafts/seedlings were found to be Rs. 222300 and Rs. 266225, respectively.

The net profit earned by per farm nursery enterprise was Rs. 1199219 out of which maximum Rs. 448876 (37.43%) was earned from mango grafts followed by coconut seedlings Rs. 413155 (34.45%) and sapota grafts Rs. 142841 (11.91%). The minimum net profit Rs. 11868 (0.99%) was earned from rose plants. The cost of preparation of per graft/seedling was calculated by dividing total cost incurred by total number of grafts/seedlings actually sold. It was seen from the table that the maximum cost of per graft/seedling preparation was in case of Coconut (Rs.90) followed by Sapota (Rs. 85) and Cashew (Rs. 54).

**Table 3:** Per farm cost and returns of nursery enterprise

Sr. No	Name of Crop	Total Cost	Gross Returns	Net Profit	Per graft/seedling total cost	Sale price per graft/seedling	Net Profit per graft/seedling
1	Mango	461924 (30.70)	910800 (33.69)	448876 (37.43)	46	90	44
2	Sapota	326359 (21.69)	469200 (17.35)	142841 (11.91)	85	100	15
3	Coconut	339845 (22.59)	753000 (27.85)	413155 (34.45)	90	250	160
4	Cashew	133521 (8.87)	222300 (8.22)	88779 (7.40)	54	70	16
5	Arecanut	191111 (12.70)	266225 (9.85)	75114 (6.26)	32	40	8
6	Golden Plumeria	26615 (1.77)	45200 (1.67)	18585 (1.55)	35	60	25
7	Rose	25132 (1.67)	37000 (1.37)	11868 (0.99)	34	50	16
	Total	1504506 (100.00)	2703725 (100.00)	1199219 (100.00)			

(Figures in parenthesis indicates percentage to total)

The other crops such as Mango, Arecanut, Golden plumeria and Rose cost Rs. 46, Rs. 32, Rs. 35 and Rs. 34, respectively. Further it was seen from the table that the maximum per graft, seedling selling price was in case of Coconut (Rs. 250), followed by Sapota (Rs. 100) and Mango (Rs. 90). The per graft selling price of Cashew, Arecanut, Golden Plumeria and Rose were Rs. 70, Rs. 40, Rs. 60 and Rs. 50, respectively. The net profit per graft, seedling earned by the nursery enterprise shows that the maximum (Rs. 160) net profit per graft, seedling was earned in Coconut, followed by Mango (Rs. 44) and (Rs. 25) in Golden Plumeria. The net profits per graft, seedling in Cashew and Sapota were found to be Rs. 16 and Rs. 15, respectively. Also the net profit earned from Arecanut seedlings and rose grafts were Rs. 8 and Rs. 16, respectively.

### 4. Per farm Profitability of nursery enterprise

The information regarding per farm profitability of nursery enterprise is given in Table 4. It was observed from the table that among the fruit crops the highest benefit cost ratio was found to be in case of Sapota (3.28) followed by Cashew (2.50) and Mango (2.03). Out of the two Plantation crops, the benefit cost ratio of Arecanut (3.54) was more than that of Coconut (1.82). Among the two ornamental crops Rose is found more profitable than Golden plumeria having the benefit cost ratios (3.12) and (2.43) respectively.

It was also seen that Arecanut was the most profitable crop in the whole nursery enterprise followed by Rose and Coconut. It was also observed that the total benefit cost ratio of the per farm nursery enterprise was 2.25 which reveals that the nursery enterprise is much profitable business.

**Table 4:** Per farm Profitability of nursery enterprise

Sr. No.	Particulars	Fruit crops			Plantation crops		Ornamental Crops		
	Crop	Mango	Cashew	Sapota	Arecanut	Coconut	Rose	Golden Plumeria	Total
1	<b>Cost</b>								
	a) Variable cost	326533	78084	159645	104645	166798	21805	23164	880674
	b) Fixed cost	135391	55436	166714	86466	173047	3327	3451	623832
	Total Cost	461924	133521	326359	191111	339845	25132	26615	1504506
2	Gross Returns	910800	222300	469200	266225	753000	37000	45200	2703725
	<b>Net Returns at</b>								
	a) Variable cost	584267	144216	309555	161580	586202	15195	22036	1823051
	b) Total cost	448876	88779	142841	75114	413155	11868	18585	1199219
3	Benefit- Cost Ratio	2.03	2.50	3.28	3.54	1.82	3.12	2.43	2.25

### 5. Break-even point

The information regarding break-even point of a nursery farm is given in Table 5. It was seen from the table that the fixed cost of the nursery farm was Rs. 623832. The variable cost of the nursery farm was Rs. 880674. Also it was observed from the table that, total 24073 grafts, seedlings were sold from the nursery farm in the study period. The gross return earned by selling 24703 grafts, seedling was found to be Rs. 2703725.

**Table 5:** Break-even point

Sr. No.	Particulars	Number/ Price
1	Fixed Cost	623832
2	Variable Cost	880674
3	Total Grafts, seedlings Sold	24073
4	Gross Returns	2703725
5	Selling price per graft, seedlings	112.31
6	Variable cost per graft, seedlings	36.58
7	Break-even point	8238

The selling price of per graft, seedling was found to be Rs. 112.31. The variable cost of per graft, seedling was found to be Rs. 36.58. The break-even point of the nursery farm was found to be 8238 grafts, seedlings. It was concluded from the table that the nursery farm should maintain production level above 8238 grafts, seedlings to cover its total investment and from here onwards the nursery will start getting its profits.

### Conclusion

The capital investment in nursery enterprises is moderate and primarily land-based, making it a relatively remunerative venture for farmers compared to other agri-based enterprises. The mango (38.93%), cashew (33.10%), and sapota (22.10%) were the major components of nursery enterprises in the study area, with a total production of 35869 grafts. Nursery enterprise in the study area is a highly profitable, it is relatively low-investment venture that efficiently utilizes existing farm resources. The total cost of graft and seedling production per nursery was Rs. 1504506, with mango accounting for the highest share (30.70%), followed by coconut (22.59%) and sapota (21.69%). The cost of per graft preparation was highest for coconut (Rs. 90), whereas coconut had the highest net profit per graft (Rs. 160), indicating better profitability. Overall, mango emerged as the most economically rewarding crop in terms of both absolute and per-unit profitability. The overall benefit-cost ratio of 2.25 for the nursery enterprise indicates its strong economic viability and profitability. The break-

even analysis indicated that the nursery farm must maintain level of production above 8238 grafts/seedlings (break-even point).

### References

- Babalola FD. Assessment of small-scale private nursery enterprises in Ibadan, Oyo State, Nigeria. *Small Scale For.* 2008;7(3):263-73. <https://doi.org/10.1007/s11842-008-9054-2>
- Eko OD, Adedokun MO, Soaga JA, Okojie LO, Atanda TA, Abisoye T. Socio-economic importance of tree nursery enterprises in Lagos State, Nigeria. *J Appl Sci Environ Manag.* 2021;25(1):21-8.
- Iroabuchi JN, Odii MACA, Emenyonu CA, Gbolagun AO, Onyeke AC, Esogwa IE, *et al.* Productivity and profitability of citrus nursery operation in Abia State, Nigeria. *Int Res J Sci Technol Educ Manag.* 2022;2(4):1-1.
- Jacob DE, Ufot I, Enefiok N, Udo S. Profitability of ornamental plant business in Akwa Ibom State, Nigeria. *Eurasian J For Sci.* 2018;6(1):35-43.
- Krishnan PR, Kalia RK, Tewari JC, Roy MM. *Plant nursery management: Principles and practices.* Jodhpur: Central Arid Zone Res Inst; 2014.
- Mumavu EN, Nakabonge G, Tibaingana A, Ssegawa P, Balikowa K, Tabwenda L, *et al.* Potential contribution of urban roadside plant nurseries to forest plant conservation and human well-being in the face of climate change, Uganda. *Afr Geogr Rev.* 2024;43(7):847-59.
- Nwankwo TN. Viability of floricultural plants nursery business in Southeast, Nigeria. *Int J Agric Sci Technol.* 2024;12(1):229-40. <https://doi.org/4272514527811231>
- Shukla R. An economic study of plant nursery business in Udaipur, Rajasthan. *J Prog Agric.* 2010;1(1):48-51.
- Shwetanjali, Tevari P, Suresh K, Beeraladinni D, Kammar S. Economic analysis of horticulture nursery enterprises in Koppal district of Karnataka. *J Farm Sci.* 2023;36(2):189-94. <https://doi.org/10.61475/jfm.v36i02.15>
- Yadav RD, Rajeswari S, Kishore NTK, Murthy BR. Economic analysis of papaya nurseries in Kadapa district of Andhra Pradesh – a case study. *Andhra Pradesh J Agric Sci.* 2021;7(4):220-223.