



Plant Archives

Journal homepage: <http://www.plantarchives.org>

DOI Url : <https://doi.org/10.51470/PLANTARCHIVES.2026.v26.supplement-2.429>

SOCIO-ECONOMIC PROFILE AND CONSTRAINTS FACED BY COCONUT GROWERS IN SOUTH GOA DISTRICT OF GOA INDIA

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(Date of Receiving : 15-05-2026; Date of Revision : 04-07-2026; Date of Acceptance : 25-07-2026)

ABSTRACT

Coconut (*Cocos nucifera* L.) is a major plantation crop of South Goa district, contributing substantially to farm income and rural employment along the western coastal belt of India. The present paper draws on a field survey of 120 coconut growers selected through a multistage sampling procedure from twelve villages spread across the Salcette, Sanguem and Quepem blocks of South Goa district, and examines two specific aspects of coconut cultivation in the district: the socio-economic profile of the growers and the major production and marketing constraints confronting them. Respondents were stratified into marginal, small, medium and large farm-size groups on the basis of their operational holding. The socio-economic analysis showed that close to half the sample (49.17%) was above fifty years of age, that male respondents (75.83%) and nuclear families (69.17%) predominated, and that mean annual household income rose sharply with farm size, from Rs. 3.78 lakh among marginal growers to Rs. 14.97 lakh among large growers. Garrett's ranking technique was employed to prioritise the constraints reported by growers. High labour wages (Garrett score 69.42), high cost of fertilizers and other inputs (62.47) and damage by monkeys, rodents and major insect pests (60.85) emerged as the leading production constraints, while price fluctuation (71.88), high transportation cost (67.54) and damage losses during transportation and marketing (63.19) were identified as the foremost marketing constraints. The findings are discussed in relation to comparable studies on coconut and other plantation crops reported from Karnataka, Kerala and Nagaland, and policy measures relating to labour-saving mechanisation, price stabilisation and strengthening of farmer collectives are suggested to improve the welfare of coconut growers in the region.

Keywords : Coconut, socio-economic profile, constraints, Garrett ranking, South Goa

Introduction

Coconut (*Cocos nucifera* L.), often described as the “*Kalpavriksha*” or tree of life on account of the diversity of products it yields, occupies a place of considerable economic and cultural significance along the western coastal belt of India, and Goa is no exception to this pattern, Somdev and Zechariah (2025). The crop is woven into the agrarian landscape, the cuisine and the rural livelihood system of the state, providing a steady, if modest, stream of income to a large number of small and marginal households even as it competes for land with horticultural crops and, increasing with non-agricultural land use. South Goa district, with a relatively large area under coconut and

a correspondingly significant volume of production, exemplifies many of the structural tensions that characterise plantation agriculture across the southern peninsula: an ageing grower population, fragmented and frequently inherited landholdings, rising wage rates for skilled climbing labour, and an uneven adoption of modern irrigation and input-use practices.

Goa, despite reporting its output in number of nuts rather than tonnes and therefore not figuring among the officially listed top coconut-producing states, possesses a sizeable area of 26,807 hectares under the crop, of which South Goa district alone accounts for 17,082 hectares, the single largest share within the state (DPSE, Goa, 2025). Coconut cultivation in South Goa

is interwoven with the district's coastal agro-climate, its predominantly lateritic soils and a cropping system in which coconut is frequently grown together with arecanut, cashewnut, black pepper and a range of vegetable and fruit intercrops. Notwithstanding this favourable agro-ecological setting, coconut growers in the district, in common with growers elsewhere in the

country, continue to encounter a range of socio-economic and structural constraints, including an ageing cultivator base, rising wage rates, escalating input costs and an unorganised marketing system dominated by intermediaries, all of which erode the profitability of the enterprise and discourage continued investment in the crop.

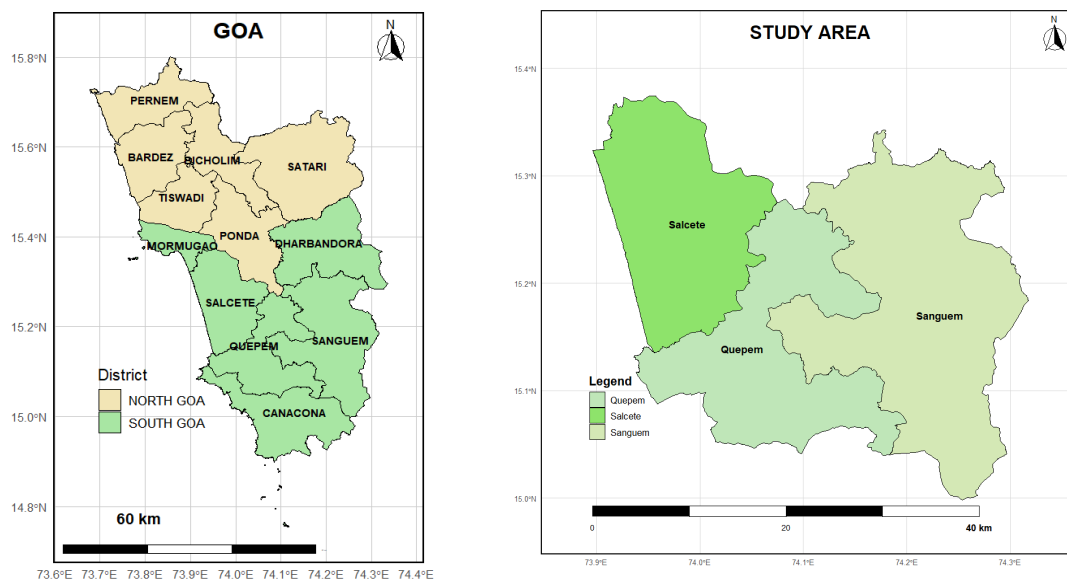


Fig. 1 : Map depicting the study area

An accurate description of the socio-economic background of coconut growers, together with a systematic identification and prioritisation of the constraints they perceive, is therefore a necessary first step towards designing extension, credit and marketing interventions that are well matched to ground realities. While a number of studies have examined the socio-economic profile and constraints of coconut growers in the traditional coconut belts of Kerala, Tamil Nadu and Karnataka, region-specific empirical evidence from Goa remains comparatively scarce. The present paper, drawing upon a primary survey of coconut growers in South Goa district, accordingly addresses two specific objectives: (i) to examine the socio-economic profile of coconut growers in the district, and (ii) to identify and rank, through Garrett's ranking technique, the major production and marketing constraints faced by these growers, with a view to suggesting suitable policy measures.

Materials and Methods

The study was undertaken in South Goa district of Goa, which was purposively selected on the strength of its possessing the largest area (17,082 ha) and the highest production of coconut among the two districts of the state. A multistage sampling design combining purposive and simple random sampling without

replacement (SRSWOR) was followed for selection of respondents. Within South Goa, three blocks, namely Salcete, Sanguem and Quepem, were purposively chosen on the basis of their relatively larger area under coconut. From each selected block, four villages were drawn by SRSWOR, giving a total of twelve villages, and from each village ten coconut-growing households were again selected by SRSWOR, yielding an overall sample of 120 respondents. For purposes of comparative analysis, the sample was further stratified into four operational-holding categories -marginal (below 1 ha, $n = 29$), small (1-2 ha, $n = 38$), medium (2.1-4 ha, $n = 34$) and large (above 4 ha, $n = 19$) -on the basis of recognised farm-size classification.

Primary data relating to the socio-economic characteristics of the respondents and the constraints faced by them in coconut cultivation and marketing were collected through personal interviews using a pre-tested and structured interview schedule, administered during the agricultural year 2025-26. Secondary information was drawn from publications of the Coconut Development Board, the Directorate of Planning, Statistics and Evaluation, Government of Goa, and the Department of Agriculture and Farmers Welfare, Government of India.

The socio-economic profile of the respondents was examined using simple tabular and percentage analysis, supplemented by means and standard deviations for continuous variables such as age, family size, annual income and farming experience. Percentage was computed as the number of respondents in a given category expressed as a proportion of the total number of respondents in the corresponding group, multiplied by 100.

The relative severity of the production and marketing constraints reported by growers was assessed using Garrett's ranking technique, a method particularly well suited to converting the ordinal ranks assigned by individual respondents into an interval-scaled composite score that permits aggregation across the whole sample. Respondents were asked to rank a pre-identified list of production constraints and marketing constraints in order of severity, and the ranks so obtained were converted into per cent positions using the expression

$$\text{Per cent position} = 100 (\text{Rij} - 0.5) / \text{Nj}$$

where Rij is the rank given to the i-th constraint by the j-th respondent and Nj is the total number of constraints ranked by that respondent. The per cent positions so obtained were converted into Garrett scores with the help of Garrett's conversion table, after which the mean Garrett score for each constraint was computed and the constraints were arranged in descending order of severity, the constraint with the highest mean score being treated as the most severe.

Results and Discussion

Table 1 presents the socio-economic and farm profile of the sampled coconut growers, disaggregated across the four farm-size categories and for the sample as a whole (N=120). The discussion that follows takes up each characteristic in turn, drawing out both the overall pattern and the manner in which it varies with farm size.

Table 1 : Socio-economic and farm profile of coconut growers in the study area (N=120).

Sr.no	Particulars	Marginal N=29	Small N=38	Medium N=34	Large N=19	Overall N=120
1	Age Group					
	Young (18-30)	4 (13.79)	6 (15.79)	3 (8.82)	0 (0.00)	13 (10.83)
	Middle (31-50)	10 (34.48)	16 (42.11)	16 (47.06)	6 (31.58)	48 (40.00)
	Old (Above 50)	15 (51.72)	16 (42.11)	15 (44.12)	13 (68.42)	59 (49.17)
	Total	29 (100)	38 (100)	34 (100)	19 (100)	120 (100)
	Mean $\pm$ SD	49.48 $\pm$ 13.10	47.13 $\pm$ 14.58	50.53 $\pm$ 13.68	58.26 $\pm$ 13.64	50.42 $\pm$ 14.14
2	Gender					
	Male	22 (75.86)	24 (63.16)	28 (82.35)	17 (89.47)	91 (75.83)
	Female	7 (24.14)	14 (36.84)	6 (17.65)	2 (10.53)	29 (24.17)
	Total	29 (100)	38 (100)	34 (100)	19 (100)	120 (100)
3	Caste					
	General	14 (48.28)	18 (47.37)	17 (50.00)	15 (78.95)	64 (53.33)
	OBC	7 (24.14)	9 (23.68)	4 (11.76)	2 (10.53)	22 (18.33)
	ST	4 (13.79)	10 (26.32)	9 (26.47)	0 (0.00)	23 (19.17)
	SC	4 (13.79)	1 (2.63)	4 (11.76)	2 (10.53)	11 (9.17)
	Total	29 (100)	38 (100)	34 (100)	19 (100)	120 (100)
4	Education Status					
	Illiterate	1 (3.45)	1 (2.63)	3 (8.82)	0 (0.00)	5 (4.17)
	Can read & write	3 (10.34)	3 (7.89)	0 (0.00)	0 (0.00)	6 (5.00)

	Primary (1-5)	4 (13.79)	0 (0.00)	2 (5.88)	1 (5.26)	7 (5.83)
	Secondary (6-10)	8 (27.59)	17 (44.74)	12 (35.29)	5 (26.32)	42 (35.00)
	Higher Secondary	9 (31.03)	12 (31.58)	9 (26.47)	4 (21.05)	34 (28.33)
	Graduation	4 (13.79)	4 (10.53)	8 (23.53)	8 (42.11)	24 (20.00)
	Post Graduation	0 (0.00)	1 (2.63)	0 (0.00)	1 (5.26)	2 (1.67)
	Total	29 (100)	38 (100)	34 (100)	19 (100)	120 (100)
5	Main Occupation					
	Farming	15 (51.72)	21 (55.26)	17 (50.00)	11 (57.89)	64 (53.33)
	Government	5 (17.24)	3 (7.89)	3 (8.82)	1 (5.26)	12 (10.00)
	Private	2 (6.90)	6 (15.79)	5 (14.71)	2 (10.53)	15 (12.50)
	Business	3 (10.34)	7 (18.42)	5 (14.71)	5 (26.32)	20 (16.67)
	Retired	4 (13.79)	1 (2.63)	4 (11.76)	0 (0.00)	9 (7.50)
	Total	29 (100)	38 (100)	34 (100)	19 (100)	120 (100)
6	Family Type					
	Nuclear	20 (68.97)	27 (71.05)	26 (76.47)	10 (52.63)	83 (69.17)
	Joint	9 (31.03)	11 (28.95)	8 (23.53)	9 (47.37)	37 (30.83)
	Total	29 (100)	38 (100)	34 (100)	19 (100)	120 (100)
7	Family Size					
	Small (1-5)	20 (68.97)	23 (60.53)	19 (55.88)	13 (68.42)	75 (62.50)
	Medium (6-10)	7 (24.14)	12 (31.58)	9 (26.47)	1 (5.26)	29 (24.17)
	Large (above 10)	2 (6.90)	3 (7.89)	6 (17.65)	5 (26.32)	16 (13.33)
	Total	29 (100)	38 (100)	34 (100)	19 (100)	120 (100)
	Mean ± SD	5.21 ± 2.13	5.87 ± 3.23	6.03 ± 3.57	7.53 ± 4.09	6.02 ± 3.30
8	Annual Income					
	Up to 2-lakh	4 (13.79)	2 (5.26)	2 (5.88)	0 (0.00)	8 (6.67)
	2 to 5-lakh	24 (82.76)	32 (84.21)	17 (50.00)	0 (0.00)	73 (60.83)
	Above 5-lakh	1 (3.45)	4 (10.53)	15 (44.12)	19 (100.00)	39 (32.50)
	Total	29 (100)	38 (100)	34 (100)	19 (100)	120 (100)
	Mean ± SD	3.78 ± 1.45	4.01 ± 1.58	5.49 ± 1.80	14.97 ± 6.92	6.11 ± 4.98
9	Farming Experience					
	Less than 15 years	6 (20.69)	4 (10.53)	2 (5.88)	0 (0.00)	12 (10.00)
	15 to 30 years	11 (37.93)	16 (42.11)	14 (41.18)	6 (31.58)	47 (39.17)
	More than 30 years	12 (41.38)	18 (47.37)	18 (52.94)	13 (68.42)	61 (50.83)
	Total	29 (100)	38 (100)	34 (100)	19 (100)	120 (100)
	Mean ± SD	29.31 ± 12.73	29.74 ± 14.42	31.03 ± 14.50	38.42 ± 12.37	31.38 ± 13.93

10	Farm Size					
	Marginal (<1 ha)	29 (100.00)	0 (0.00)	0 (0.00)	0 (0.00)	29 (24.17)
	Small (1 to 2 ha)	0 (0.00)	38 (100.00)	0 (0.00)	0 (0.00)	38 (31.67)
	Medium (2.1 to 4 ha)	0 (0.00)	0 (0.00)	34 (100.00)	0 (0.00)	34 (28.33)
	Large (Above 4 ha)	0 (0.00)	0 (0.00)	0 (0.00)	19 (100.00)	19 (15.83)
	Total	29 (100)	38 (100)	34 (100)	19 (100)	120 (100)
	Mean ± SD	0.76 ± 0.13	1.44 ± 0.26	2.47 ± 0.51	12.54 ± 7.85	3.32 ± 5.09
11	Age of Plantation					
	Less than 25 years	2 (6.90)	4 (10.53)	2 (5.88)	0 (0.00)	8 (6.67)
	25 to 50 years	21 (72.41)	27 (71.05)	23 (67.65)	13 (68.42)	84 (70.00)
	Above 50 years	6 (20.69)	7 (18.42)	9 (26.47)	6 (31.58)	28 (23.33)
	Total	29 (100)	38 (100)	34 (100)	19 (100)	120 (100)
	Mean ± SD	38.28 ± 13.65	41.45 ± 12.30	47.21 ± 11.67	50.26 ± 9.64	43.71 ± 12.72
12	Irrigation Method					
	Sprinkler	13 (44.83)	16 (42.11)	16 (47.06)	7 (36.84)	52 (43.33)
	Drip	0 (0.00)	4 (10.53)	6 (17.65)	8 (42.11)	18 (15.00)
	Surface	7 (24.14)	9 (23.68)	5 (14.71)	0 (0.00)	21 (17.50)
	Rainfed	9 (31.03)	9 (23.68)	7 (20.59)	4 (21.05)	29 (24.17)
	Total	29 (100)	38 (100)	34 (100)	19 (100)	120 (100)
13	Source of Irrigation					
	Well	9 (31.03)	15 (39.47)	13 (38.24)	9 (47.37)	46 (38.33)
	River	4 (13.79)	3 (7.89)	3 (8.82)	1 (5.26)	11 (9.17)
	Canal	7 (24.14)	11 (28.95)	10 (29.41)	6 (31.58)	34 (28.33)
	Rainfed / No source	9 (31.03)	9 (23.68)	8 (23.53)	3 (15.79)	29 (24.17)
	Total	29 (100)	38 (100)	34 (100)	19 (100)	120 (100)
14	Frequency of Harvest					
	Twice (per year)	3 (10.34)	3 (7.89)	2 (5.88)	0 (0.00)	8 (6.67)
	Thrice (per year)	26 (89.66)	34 (89.47)	30 (88.24)	15 (78.95)	105 (87.50)
	Four times (per year)	0 (0.00)	1 (2.63)	2 (5.88)	4 (21.05)	7 (5.83)
	Total	29 (100)	38 (100)	34 (100)	19 (100)	120 (100)

(Note: Figures in parentheses indicate percentage to the respective column total.)

Age

The age distribution of the sample reveals a farming population that is, on balance, advancing in years: 49.17 per cent of the overall sample fell in the “above fifty” category, with only 10.83 per cent

classifiable as young growers in the 18-30 age bracket. The mean age of the overall sample stood at 50.42 ± 14.14 years, and a discernible gradient emerged across farm-size groups, with mean age rising from 47.13 years among small growers to 58.26 years among large

growers. This pattern is broadly consistent with the ageing of the coconut grower community reported in other coconut-growing tracts of the country, and is plausibly linked to the fact that larger holdings tend to be inherited family assets accumulated and consolidated over decades, with younger family members frequently opting out of full-time cultivation in favour of salaried or business occupations, a tendency reflected later in the occupational distribution.

Gender, caste and household composition

Male respondents constituted three-fourths of the sample (75.83 per cent), a proportion that rose to as high as 89.47 per cent among large growers and fell to 63.16 per cent among small growers, suggesting that women are somewhat more visibly engaged as primary respondents and, by extension, as decision-makers on smaller holdings where the operation is closer to a household enterprise than a more formally organised farm business. In terms of social category, growers

belonging to the General category formed the single largest group overall (53.33 per cent), with Other Backward Classes, Scheduled Tribes and Scheduled Castes together accounting for the remainder; large farmers were disproportionately drawn from the General category (78.95 per cent), which is consistent with the historically uneven distribution of larger landholdings across social groups in much of rural India. With respect to household structure, nuclear families predominated across every farm-size category (69.17 per cent overall), although the share of joint families was notably higher among large growers (47.37 per cent) than among any other group, possibly reflecting a deliberate strategy of keeping larger ancestral holdings undivided across generations. Family size, correspondingly, increased with farm size, from a mean of 5.21 ± 2.13 among marginal growers to 7.53 ± 4.09 among large growers, lending support to the proposition that larger families are both a cause and a consequence of larger landholdings in a plantation-crop setting.

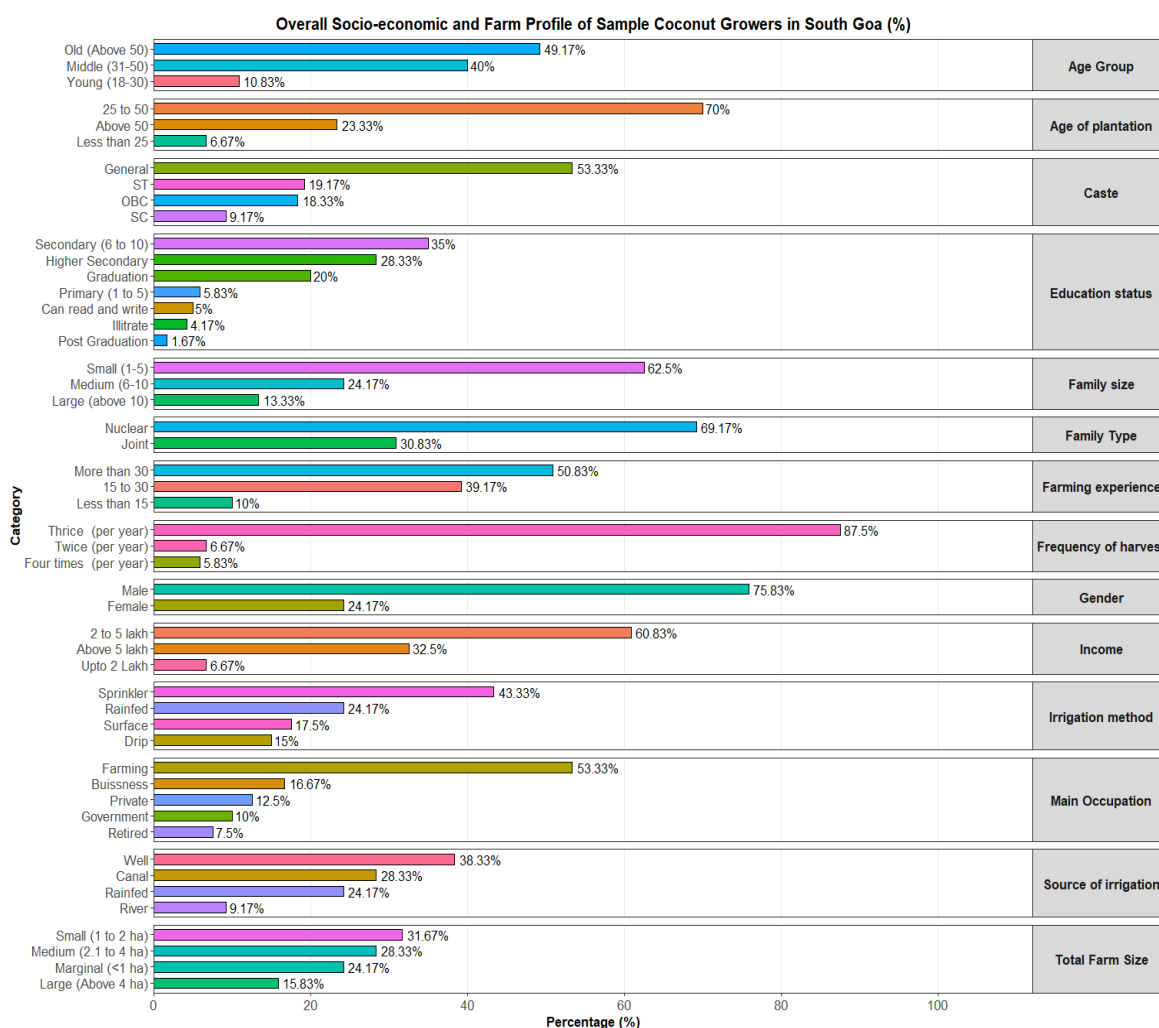


Fig. 2 : Overall socio-economic and profile of sample coconut growers in South Goa (n=120).

Education and occupation

The educational profile of the sample was moderate rather than markedly low: secondary education (35.00 per cent) and higher secondary education (28.33 per cent) together accounted for nearly two-thirds of all respondents, while illiteracy was confined to a small minority (4.17 per cent overall, concentrated mainly among medium growers). Graduate-level education was considerably more common among large growers (42.11 per cent) than among marginal growers (13.79 per cent), a pattern that, when read alongside the occupational data, suggests that better-educated household heads on larger holdings are more likely to combine cultivation with formal employment or business. Indeed, while farming was reported as the principal occupation by a slight majority of the sample (53.33 per cent), a substantial proportion depended primarily on business (16.67 per cent), private employment (12.50 per cent), government service (10.00 per cent) or retirement income (7.50 per cent), with business as a principal occupation notably more prevalent among large growers (26.32 per cent) than among marginal growers (10.34 per cent). This occupational diversification is consistent with the broader literature on plantation-crop households, in which coconut cultivation, given its relatively low labour intensity per unit area and its tolerance of periodic neglect, is frequently combined with off-farm income sources rather than pursued as an exclusive occupation, a pattern noted for areca nut and cashew growers in comparable agro-climatic settings by Kasinath *et al.* (2019) and Jagdale *et al.* (2024) respectively.

Income, farming experience and farm size

Annual household income displayed a strong and consistent positive association with farm size. The mean annual income rose from Rs. 3.78 ± 1.45 lakh among marginal growers to Rs. 14.97 ± 6.92 lakh among large growers, a difference of nearly fourfold, with the overall sample mean standing at Rs. 6.11 ± 4.98 lakh. Correspondingly, while 82.76 per cent of marginal growers and 84.21 per cent of small growers fell in the Rs. 2-5 lakh income bracket, the entire sample of large growers (100.00 per cent) reported income above Rs. 5 lakh, underlining the extent to which farm size functions as a proxy for overall economic standing in this setting, presumably through a combination of larger coconut output, more diversified cropping, and greater capacity to engage in remunerative off-farm activity. Farming experience followed a similar, if less pronounced, gradient, with mean experience increasing from 29.31 ± 12.73 years among marginal growers to 38.42 ± 12.37 years among

large growers, and just over half the overall sample (50.83 per cent) reporting more than thirty years of experience in coconut cultivation -a finding that, taken together with the age distribution discussed earlier, reinforces the picture of a long-established, experience-rich, but ageing grower community. Mean operational holding itself rose, as definitionally expected, from 0.76 ± 0.13 ha among marginal growers to 12.54 ± 7.85 ha among large growers, the considerably larger standard deviation in the latter group reflecting the wider dispersion of holding size that is typical once farms move beyond a certain threshold of consolidation.

Plantation age, irrigation and harvest practices

The age of coconut plantations in the sample was concentrated in the twenty-five-to-fifty-year bracket (70.00 per cent overall), with a further 23.33 per cent above fifty years and only 6.67 per cent below twenty-five years, indicating that fresh planting and replanting activity in the district has been relatively limited in recent years. Mean plantation age rose with farm size, from 38.28 ± 13.65 years among marginal growers to 50.26 ± 9.64 years among large growers, suggesting that the largest holdings are also, on average, carrying the oldest stands of palms -a combination that, from a production-economics standpoint, raises legitimate concerns regarding declining yield potential and the eventual need for systematic replanting, particularly where ageing growers may be reluctant to undertake the substantial gestation-period investment that replanting entails. With regard to irrigation, sprinkler systems were the most widely adopted method overall (43.33 per cent), followed by rainfed cultivation (24.17 per cent), surface irrigation (17.50 per cent) and drip irrigation (15.00 per cent); drip adoption was markedly more common among large growers (42.11 per cent) than among marginal growers, where it was entirely absent, pointing to capital constraints as a likely barrier to the adoption of more water-efficient technology among smaller holders. Wells remained the principal source of irrigation water across all farm-size categories (38.33 per cent overall), followed by canal sources (28.33 per cent), while a notable share of holdings (24.17 per cent) had no organised source of irrigation and depended entirely on rainfall, a vulnerability that becomes particularly significant in years of erratic monsoon distribution. Finally, the overwhelming majority of growers (87.50 per cent) reported harvesting their coconut palms thrice a year, a practice broadly consistent with recommended harvest intervals for the crop under Goa's agro-climatic conditions, while four annual harvests -indicative of more intensive, better-irrigated management -were

reported almost exclusively by medium and large growers.

Taken together, these results depict a coconut-growing population in South Goa that is ageing and largely experienced, moderately educated, increasingly engaged in non-farm occupations as farm size rises, and characterised by a pronounced positive association between farm size and both income and access to improved irrigation infrastructure. The pattern closely parallels observations made for coconut and other plantation-crop growers elsewhere in peninsular India, for instance by Krishnamurthy *et al.* (2015) in their assessment of the trading needs of coconut growers, while extending the evidence base specifically to the South Goa context, where comparable farm-size-disaggregated profiling has not previously been available.

Production Constraints Faced by Coconut Growers

The Garrett ranking of production constraints reported by coconut growers in South Goa is presented in Table 1. High labour wages emerged as the most severe production constraint, with the highest Garrett score of 69.42, closely followed by the high cost of fertilizers and other inputs (62.47) and damage by monkeys, rodents and major insect pests such as the rhinoceros beetle and red palm weevil (60.85). Delay in disbursement of government subsidies (57.68) and climate uncertainty in the form of irregular rainfall (54.04) occupied the fourth and fifth ranks respectively, while constraints relating to technical knowledge -insufficient knowledge of micronutrient management (49.72) and incidence of diseases such as bud rot, stem bleeding and root wilt (47.79) -were ranked comparatively lower, and difficulty in obtaining quality planting material (36.57) was identified as the least severe production constraint.

The pre-eminence of high labour wages as the foremost production constraint is consistent with the well-documented shortage of skilled coconut climbers across the traditional coconut belt and reflects the comparatively wage-intensive nature of coconut harvesting, which still depends overwhelmingly on manual climbing rather than mechanised picking devices in most of South Goa. The high ranking accorded to input cost and to pest damage similarly mirrors the genuine and continuing burden of escalating fertilizer prices and the documented vulnerability of coconut palms to rhinoceros beetle and red palm weevil infestation along the humid west coast, while the comparatively lower ranking of planting-material and disease-specific constraints suggests that growers perceive these issues as

relatively more manageable than the pervasive pressure of rising labour and input costs.

Table 2 : Garrett Ranking of Production Constraints Faced by Coconut Growers in South Goa (N = 120)

S. No.	Production Constraint	Garrett Score	Rank
1	High labour wages	69.42	I
2	High cost of fertilizers and other inputs	62.47	II
3	Damage by monkeys, rodents and major insect pests (rhinoceros beetle, red palm weevil)	60.85	III
4	Delay in disbursement of government subsidies	57.68	IV
5	Climate uncertainty (irregular rainfall)	54.04	V
6	Insufficient knowledge of micronutrient management	49.72	VI
7	Incidence of diseases (bud rot, stem bleeding, root wilt)	47.79	VII
8	Difficulty in obtaining quality planting material	36.57	VIII

(Source: Field survey, 2025-26)

Marketing Constraints Faced by Coconut Growers

Table 2 presents the Garrett ranking of marketing constraints reported by the sample growers. Price fluctuation was identified as the most serious marketing constraint, recording the highest Garrett score of 71.88, followed by high transportation cost (67.54), damage losses during transportation and marketing (63.19), exploitation by middlemen (60.38) and high labour charges for loading, unloading and dehusking (54.73). Inadequate market information (50.81), low bargaining power of farmers (41.46), lack of storage facilities (34.77) and delayed payment by traders and buyers (29.15) were ranked progressively lower in severity.

The dominance of price fluctuation as the principal marketing constraint reflects the absence of any organised price-discovery or price-stabilisation mechanism specific to coconut in the study area, which leaves individual growers exposed to seasonal and buyer-driven price variation. The high ranking accorded to transportation cost, damage losses and middleman exploitation is consistent with the generally long and intermediary-heavy character of coconut marketing channels operating in the district, where transportation and handling charges typically constitute the largest single component of marketing cost. The relatively lower ranking of storage-facility and delayed-payment constraints, by contrast, suggests that the limited perishability of mature coconut continues to

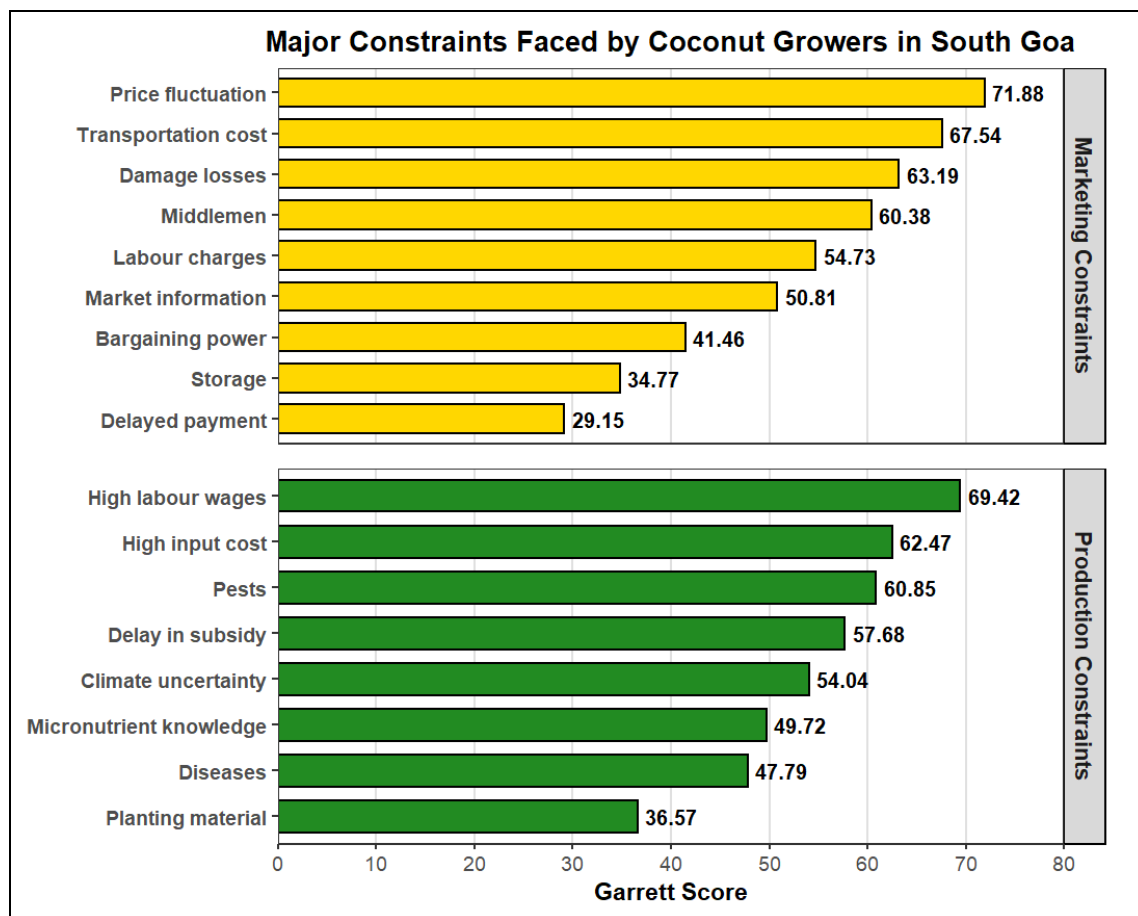
afford growers a measure of flexibility in timing their sales that partially offsets the absence of organised storage infrastructure.

Table 3 : Garrett Ranking of Marketing Constraints Faced by Coconut Growers in South Goa (N = 120)

S. No.	Marketing Constraint	Garrett Score	Rank
1	Price fluctuations	71.88	I
2	High transportation cost	67.54	II
3	Damage losses during transportation and marketing	63.19	III
4	Exploitation by middlemen	60.38	IV
5	High labour charges (loading, unloading, dehusking)	54.73	V
6	Inadequate market information	50.81	VI
7	Low bargaining power of farmers	41.46	VII
8	Lack of storage facilities	34.77	VIII
9	Delayed payment by traders and buyers	29.15	IX

(Source: Field survey, 2025-26)

Similar findings have been reported in earlier studies conducted in other coconut-growing regions of India. Kumar *et al.* (2022), using Garrett's ranking technique on coconut farmers in Palakkad district of Kerala, reported price fluctuation in the market (Garrett score 67.36) as the foremost marketing constraint and non-availability of labour (65.81) as the second most severe constraint overall, a ranking pattern closely comparable to that obtained for South Goa, where price fluctuation and labour wages likewise occupied the topmost ranks within their respective constraint categories. Similarly, Somdev and Zechariah (2025), in a study of coconut farmers in Kollam district of Kerala, reported unavailability of labour (Garrett score 75.2) as the foremost production constraint and price fluctuation (70.1) as the foremost marketing constraint, a pattern that, although derived from a different agro-climatic setting, closely mirrors the relative severity of labour- and price-related constraints documented for South Goa.



(Source: Field survey, 2025-26)

Fig. 3 : Garrett Ranking of Major Production and Marketing Constraints Faced by Coconut Growers in South Goa

Policy Suggestions

- 1. Skill development and mechanisation:** Regular training programmes should be organised to develop skilled coconut climbers, and subsidies may be extended for the adoption of climbing devices and other labour-saving equipment, so as to reduce dependence on increasingly costly manual labour.
- 2. Strengthening farmer collectives:** Coconut growers should be encouraged to market their produce collectively through cooperative societies and Farmer Producer Organisations (FPOs), which would improve their bargaining power, reduce per-unit marketing costs and curtail exploitation by middlemen.
- 3. Improving market information services:** Timely dissemination of information on prevailing prices, demand and market arrivals through digital platforms, mobile applications and extension agencies would enable growers to make better-informed marketing decisions and avoid distress sales.
- 4. Developing price-stabilisation mechanisms:** Given the dominant position of price fluctuation among marketing constraints, suitable price-support and procurement mechanisms specific to coconut and its products may be developed to protect growers from adverse market conditions.
- 5. Strengthening input and subsidy delivery:** Timely and adequate availability of fertilizers and other inputs, along with more prompt disbursement of government subsidies, would help address two of the leading production constraints identified in the study.
- 6. Integrated pest and vertebrate-pest management:** Extension support for integrated management of rhinoceros beetle, red palm weevil and vertebrate pests such as monkeys and rodents would help reduce the production losses associated with these constraints.
- 7. Improving transport and storage infrastructure:** Development of collection centres, improved local transport arrangements and basic storage facilities would help reduce transportation costs and damage losses, two of the more severe marketing constraints reported by growers.

Conclusion

The socio-economic profile of coconut growers in South Goa district, examined here across marginal, small, medium and large farm-size categories, points to a transitional agrarian structure in which an ageing,

experienced, but only moderately diversified small-holder base coexists with an emerging stratum of larger, better-educated, more income-secure and occupationally diversified growers. Farm size emerges as a powerful organising variable underlying the observed variation in age, family structure, income, irrigation access and plantation age alike, with larger holdings consistently associated with older household heads, older plantations, higher incomes and greater adoption of capital-intensive irrigation technology. These findings carry direct implications for policy and extension practice: the concentration of ageing plantations in the medium-to-large category underscores the need for a systematic replanting and rejuvenation programme targeted particularly at these groups, while the comparatively low adoption of efficient irrigation methods among marginal and small growers points to the value of subsidy-linked irrigation interventions calibrated to the resource constraints of smaller holdings. The pronounced occupational diversification observed even among principal cultivators suggests, further, that coconut-sector extension strategies in the district would do well to accommodate a part-time, multiple-occupation grower profile rather than assuming full-time, exclusive engagement in cultivation. Future research building on this socio-economic foundation -particularly in conjunction with the cost, return and marketing analysis that forms the remaining objectives of the broader study -would help establish more precisely the channels through which these socio-economic characteristics translate into farm-level profitability and market participation. The present study has identified and ranked, through Garrett's ranking technique, the major production and marketing constraints faced by coconut growers in South Goa district of Goa, based on a primary survey of 120 sample growers drawn from twelve villages across three blocks of the district. High labour wages, the high cost of fertilizers and other inputs, and damage by pests and vertebrate pests were identified as the principal production constraints, while price fluctuation, high transportation cost and damage losses during transportation and marketing emerged as the principal marketing constraints confronting growers. These findings, considered together with comparable Garrett-ranking evidence from Karnataka, Kerala, Tamil Nadu and Nagaland, point to labour scarcity, rising input prices and price instability as fairly pervasive challenges across India's coconut and plantation-crop sector. Skill development and mechanisation to address labour scarcity, strengthening of farmer collectives and cooperative marketing, timely delivery of inputs and subsidies, and the development

of organised price-information and price-stabilisation mechanisms would together help mitigate the constraints identified and improve the economic position of coconut growers in South Goa district.

Acknowledgement

The authors sincerely thank the Department of Agricultural Economics, College of Agriculture, Acharya Narendra Deva University of Agriculture & Technology, Kumarganj, Ayodhya, Uttar Pradesh, for providing the necessary facilities and support to conduct this research. The authors are also grateful to the coconut growers of South Goa for their valuable cooperation during the field survey. Dr. Supriya supervised the research, guided the study design and data interpretation, and critically reviewed the manuscript. Ishita Omar assisted in data analysis and manuscript editing, while Nitin Mourya and Satyam Kumar contributed to data collection, data compilation, proofreading, and overall manuscript preparation.

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