

TREND IN AREA, PRODUCTION AND PRODUCTIVITY OF COCONUT IN INDIA

M.V. George, K. Vijaya Kumar and Jacob Mathew*

CPCRI, Kasaragod 671 124

Coconut palm, one of the traditional tree crops grown in India plays a vital role in the economic, cultural and social activities of the people. With an annual production of 9283 million nuts from an area of 1.5 million hectares during 1989-90, India ranks third among the coconut growing countries. Cultivation of coconut in India is mostly concentrated in the west and east coasts of the country. The state of Kerala, which accounts for about one per cent of the total land area of India, contributes to about 56.6 per cent of the area and 47 per cent of the

production of coconut. The other Southern states viz. Tamil Nadu, Karnataka and Andhra Pradesh together account for 34 per cent of area under coconut but contribute 44 per cent of the production. All the other states together account for about 9 per cent of area and production of coconut in India. The trend in area, production and productivity of coconut in India is discussed here with special reference to four major coconut growing states.

AREA

The area under coconut

showed an impressive growth during the period from 1955-56 to 1970-71 but the growth rate slackened in the seventies and early eighties (Table I). It is interesting to note that actually there was a reduction in the area under coconut during the seventies and early eighties in Kerala, which resulted in lower growth rate on all India level. Due to the impact of root (wilt) disease, the productivity of coconut gardens in the Central and Southern districts of Kerala has been steadily dwindling so that even well maintained coconut gardens have become less profitable and

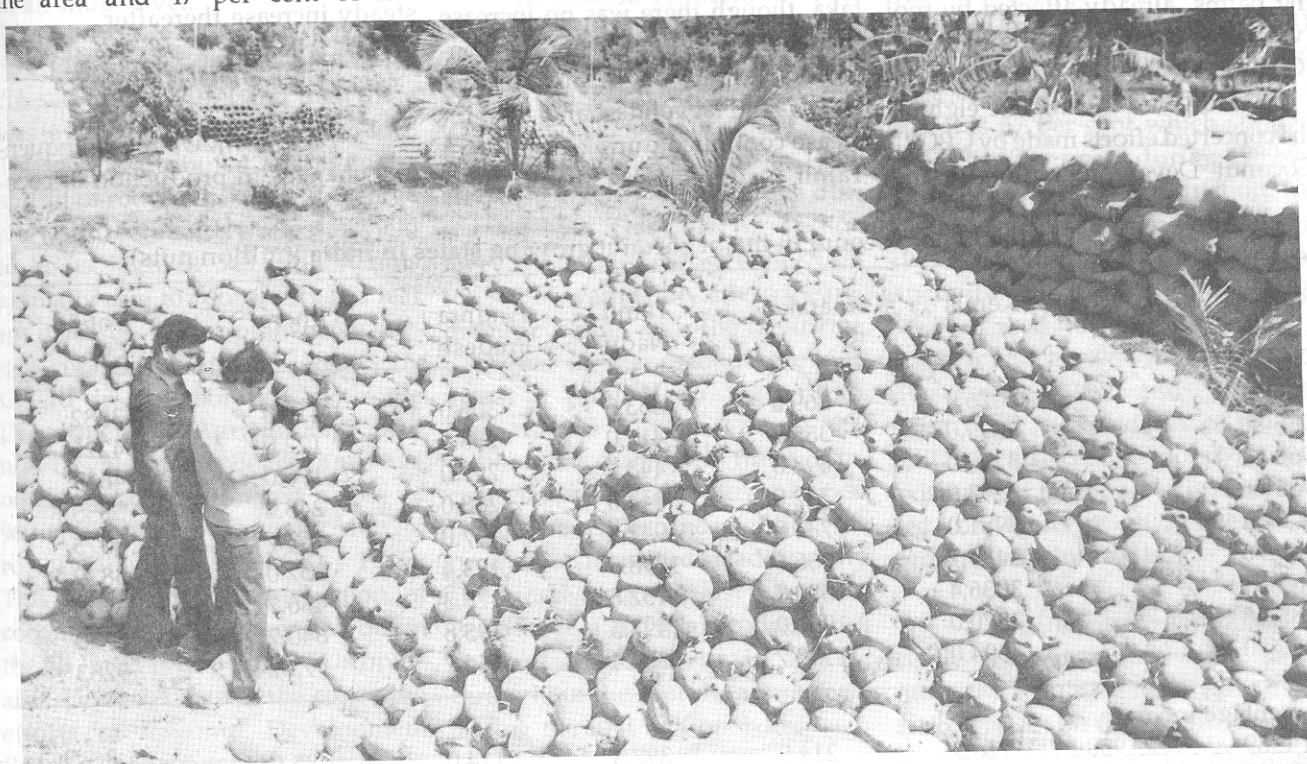


Table 1. Area under coconut in major coconut growing states in India ('000 ha)

Year	Kerala	Karnataka	Tamil Nadu	Andhra Pradesh	Others	Total
1950-51	409.4	93.2	66.0	33.2	20.2	622.0
1955-56	448.0	88.3	51.5	35.6	23.6	647.0
1960-61	501.0	96.0	55.0	33.0	32.0	717.0
1965-66	586.3	115.4	90.2	33.3	59.5	884.0
1970-71	719.1	130.3	95.1	37.1	64.0	1045.5
1975-76	692.9	151.1	109.9	40.5	75.5	1069.9
1980-81	666.2	171.5	160.0	42.4	87.2	1083.3
1985-86	704.7	205.6	149.6	47.4	118.3	1225.6
1989-90	875.9	225.4	225.9	59.0	123.3	1509.5
Percentage increase on 1989-90 over 1950-51	113.9	141.8	242.3	77.7	510.4	142.7

many cultivators in fact prefer to replant coconut with rubber to get better returns. During 1976 more than 185 million bearing palms were estimated to be diseased in Kerala (George *et al* 1979), which rose to 242 million bearing palms by 1985 in addition to 54 million non-bearing palms already affected by root (wilt) in Kerala during 1984-85 (CPCRI, 1985).

However during late eighties the concerted efforts made by CPCRI, Coconut Development Board and

Department of Agriculture have started giving dividends and the area under coconut in Kerala started increasing. Subsidy for new planting given by Coconut Development Board had helped considerably to reverse the declining trend in acreage noticed in seventies. In Karnataka, though there was no increase in area during fifties, there was continuous expansion in area during sixties and seventies and the increase continued during eighties. In Tamil Nadu, though there was a

reduction in the area under coconut during fifties, steep increase in the area was seen especially during early sixties and again during the second half of eighties. Andhra Pradesh showed only marginal changes in area during the period 1950-51 to 1970-71, but showed a slow but steady increase thereafter.

PRODUCTION

Table 2 shows the quinquennial changes in production of coco-

Table 2. Production of coconut in major coconut growing states in India (million nuts)

Year	Kerala	Karnataka	Tamil Nadu	Andhra Pradesh	Others	Total
1950-51	2026.0	369.0	463.0	306.0	418.0	3582
1955-56	3099.0	355.0	417.0	233.0	122.0	4226
1960-61	3220.0	498.0	448.0	297.0	176.0	4639
1965-66	3293.0	362.0	844.0	288.0	248.0	5035
1970-71	3981.0	731.8	941.5	157.0	263.7	6075
1975-76	3439.7	766.6	1098.6	173.4	352.0	5829
1980-81	3036.4	890.0	1132.8	175.3	486.7	5720
1985-86	3370.0	1062.0	1494.5	195.8	640.7	6770
1989-90	4394.0	1158.7	2302.4	654.7	773.2	9283
Percentage increase on 1989-90 over 1950-51	116.9	214.0	397.3	114.0	85.0	159.2

Table 3. Productivity/ha in major coconut growing states in India

Year	Kerala	Karnataka	Tamil Nadu	Andhra Pradesh	Total
1950-51	4949	3959	7015	9217	5759
1955-56	6917	4020	8097	6545	6532
1960-61	6427	5188	8145	9000	6470
1965-66	5617	3137	9357	8649	5698
1970-71	5536	5616	9900	4232	5811
1975-76	4964	5073	9996	4133	5449
1980-81	4558	5190	9762	4134	5280
1985-86	4792	5165	9990	4131	5524
1989-90	5017	5141	10192	11097	6150

nut in states. The total production of coconut during 1950-51 was only 3582 million nuts which rose to 9283 million nuts during 1989-90 recording an increase of 157 per cent over a period of 40 years. It is interesting to note that there was a steep rise in production of coconut in all the states during the period 1985 to 1990, more than 37 per cent increase in all India level.

In Kerala, the production increased upto 1970-71 and then there was a declining trend till 1980-81. This can be attributed mainly to the spread of root (wilt) disease. George *et al* (1976) estimated the loss in yield to be as high as 340 million nuts annually due to root (wilt) and leaf rot diseases. A comprehensive survey conducted during 1984-85 by CPCRI in collaboration with the Department of Agriculture, Coconut Development Board and five other agencies estimated a loss of 968 million nuts annually due to root (wilt) disease (CPCRI, 1985). This severe loss in production of coconuts in Kerala brought down the all India production of coconuts also. However due to the concerted efforts of Coconut Development Board, Department of Agriculture

and CPCRI, the declining trend in production could be checked. As a result of well distributed rainfall from 1984-85 onwards the production of coconut in Andhra Pradesh, Tamil Nadu and Kerala increased considerably which boosted the all India production to the level of 9283.4 million nuts during 1989-90.

In Andhra Pradesh, the production of coconut was fluctuating and showed a declining trend till 1985-86 but showed a steep rise thereafter. The production of 195.8 million nuts recorded during 1985-86 reached 654.7 million nuts during 1989-90. This low production level in Andhra Pradesh for 1970-71 to 1985-86 was mainly due to the frequent cyclone and the recurring droughts in the coconut growing areas. In Tamil Nadu, the production was as low as around 400 million nuts during the fifties. It increased substantially during sixties. During seventies and eighties, the production increased steadily with a steep increase during last four years. In Karnataka, the total production of coconut was slowly increasing throughout the four decades except during the first half of sixties.

PRODUCTIVITY

The average productivity in India during 1950-51 was 5759 nuts per hectare which increased to 6532 nuts during 1955-56. Thereafter the productivity was found to be declining steadily throughout except during last four years (Table 3). The declining trend in all India productivity was mainly due to the declining trend in Kerala. During 1950-51 producing 2026 million nuts Kerala's share of the national production was 57 per cent which slipped down to 47 per cent during 1989-90 though the actual production increased to 4394 million nuts during 1989-90. In Kerala, the average productivity of 6917 nuts during 1955-56 decreased to 5617 nuts during 1965-66 and to 4964 nuts and 4792 nuts during 1975-76 and 1985-86 respectively. The incidence of the debilitating disease like root (wilt) and existence of larger areas under rainfed conditions result in the lower productivity in Kerala.

The increasing number of senile and unproductive palms in most of the holdings also exert deleterious effect on the production and productivity of coconut in Kerala

(Thampan, 1989). The survey conducted during 1984-85 covering the entire disease affected belt in Kerala revealed that the average yield per palm can be as high as 57 nuts whereas the usual state average was only 32 nuts. Irrigation can enhance the productivity of palms even in the severely disease affected regions. By improving irrigation facilities of coconut gardens particularly in the northern districts of Kerala where the dry spell extends to 5-6 months, the productivity of palms can be enhanced considerably.

In Karnataka, the productivity per hectare was relatively low during the fifties and sixties with a dip during 1965-66 and reached the all India level during seventies and remained without much fluctuations. In Tamil Nadu, the productivity per hectare was always high, though fluctuating widely. The average productivity was almost double than that of Kerala. In Tamil Nadu and Karnataka coconut is predominantly an irrigated crop. Wherever unirrigated crops are grown, the holdings are located near tanks and valleys where copious ground water supply to coconut root zone is available. It is interesting to note that the high average per hectare productivity in Tamil Nadu is also due to the high density of palms, which is about 319 palms per hectare. The corresponding figures for Kerala and Karnataka are 229 and 122, respectively (Thampan, 1988). Though the average per palm yield in Karnataka is 54 nuts, the per hectare yield was low because of very low palm density. Whereas in Tamil Nadu with a low average yield of 44 nuts per palm, the productivity was found to be almost double than that of Kerala as well as the country as a whole.

The size and quality of nuts are also found varying from region to region. In Tamil Nadu, the main variety cultivated being the East Coast Tall, the size of the nuts is relatively small when compared to that of Kerala (West Coast Tall) and hence the number of nuts per palm can be high. Another reason for the higher per palm productivity in Tamil Nadu and Karnataka is that a large share of nuts from these states are harvested within six months and consumed as tender nuts. Whereas in Kerala the nuts are generally harvested after 11 or 12 months of maturity and as a result the per palm yield can be low.

In Andhra Pradesh though the productivity was as high as 9217 nuts during 1950-51, it slipped down to 4232 nuts during 1970-71, but improved thereafter to 11097 nuts during 1989-90. Frequent cyclones with recurrent droughts were responsible for the low productivity during late sixties, seventies and early eighties.

Though there was considerable expansion in area under coconut in almost all the coconut growing states and increase in production, there is considerable scope for increasing the productivity levels. Only area effect has contributed maximum to the increase in production observed during the last forty years. The contribution of productivity effect is of very small magnitude. It is also obvious that the performance of Kerala has greater bearing on the all India production. The study also reveals that the present productivity level in India is lower than the productivity of the late fifties. This declining trend could be attributed to the low productivity in Kerala due to the spread of the debilitating root (wilt) disease and frequent occurrence of drought. In the root (wilt) affected areas, re-

moval of senile unproductive and diseased palms, under planting with high yielding and tolerant varieties and better management practices can go a long way in reversing the declining trend in productivity. In the Northern districts where dry spell extends to 5-6 months, irrigation during the dry period will be advantageous. Further there is greater scope for expansion of area in states other than Kerala and in the non-traditional areas.

ACKNOWLEDGEMENT

The authors sincerely thank Dr. M.K Nair, Director, CPCRI, Kasaragod for the facilities provided, Dr. P.K.Das, Head, Division of Social Sciences for his guidance and the Coconut Development Board for furnishing the relevant data and information for preparing this article.

REFERENCES

- George, M.V., Thommen, K.J. and Sukumaran A.S. (1976), Incidence of Kattu Veezhcha, Kambanchelli (Malayalam), *Kalpadenu*, 4(1) : 27-28
- George, M.V., Thommen, K.J. and Sukumaran, A.S. (1979). Incidence of root (wilt) and leaf-rot diseases and oryctes infestation in Kerala. *Proc. Second Annual Symp. Plantation Crops* (Ed. Venkataraman, C.S.). 555
- Central Plantation crops Research Institute (1985). Coconut Root (wilt) Disease : A Survey Report. CPCRI, Kasaragod P15
- Thampan P.K. (1988) *Glimpses of Coconut Industry in India*. Edited by Muhammed Edachal and T.B. Nandakumar. Coc. Dev. Board, Cochin. P219
- Thampan P.K. (1989). *Coconut Industry in India*. APCC, Jakarta, Indonesia. P133.

* CPCRI, Regional Station, Kayamkulam