



An Empirical Study on Agronomic Issues and Production of Coconut plantation in India with special reference to Tumkur district in Karnataka.

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I.Introduction:

Coconut plantation origin lies in south asian region. The height of the coconut palm ranges between 80 – 100 feet. As the usability of coconut is more, the plantation is increasing importance. India is one of the major producer of coconut in the globe. During 2021-22, Indian economy accounts for 34 per cent of coconut production in the world. For India's GDP the contribution of coconut is Rs.307,498. Around 12 million people have found livelihood from this plantation.

The required soil for the production of coconut plantation is alluvial, laterite, red sandy loam and coastal sandy soil ranging from 5.2 to 8 are good for growing coconuts. Apart from this soil depth should be 1.2 m depth and soil should have good retention facility. In laterite soil dig a pit comprises of 1.2m*1.2m*1.2m and fill it with cowdung and ash and loose soil upto 60 cm before planting. In loamy soil keep pit size as 1m*1m*1m and top soil content as 50 cm deep. Very important issue is filling the pit with coconut husks in an upward direction to retain moisture. After each husk layer sprinkle 10 per cent to prevent termites in the field.

II. Review of literature:

1.V. Pragadeesh, Shibi Sebastian, S. Srivara Buddhi Bhuvanewari, R. Gangai Selv (2022) studied An Analytical Study on Marketing Behaviour of Coconut Growers in Coimbatore District. The study focused that Coimbatore tops in area and production of coconuts in Tamil Nadu. Though production had been increased in the recent years. Farmers are facing difficulties in finding new marketing channels for their produce and also facing hardships in fetching fair and remunerative price for their nuts. Coconut copra, coconut oil price had also fallen drastically recently. The study was undertaken with the objective of analysing marketing behaviour of coconut growers in Coimbatore district. An Ex- post facto research design was used for this study. The study was taken-up in Coimbatore district of Tamil Nadu. Out of the twelve blocks in Coimbatore district, "Sulthanpet block", "Pollachi (North)", "Pollachi (South) block" were selected. A sample size of 120 coconut cultivating farmers was selected by using simple random sampling technique. The required data was collected by personal interview using a well-structured and pretested interview schedule. The result revealed that nearly sixty per cent of the respondents (58.33 per cent) had medium level of marketing behaviour, 21.67 per cent of the respondents had low level of marketing behaviour, only 20 per cent of the respondents possessed high level of marketing behaviour. Majority of the respondents sold their produce in village itself; cent percent of the respondents graded and counted their produce. Most of the respondents sold their produce through middlemen. The coconut growers are found to possess

medium level of marketing behaviour. Hence, it should be definitely noted down by planners and policy makers at state and district level to make arrangement for marketing the products for maximum price.

2. Anandu Bhovi (2016) conducted study on Problems and prospects of coconut marketing in Karnataka State – An Economic Analysis

The study intends to inspect the Coconut and copra marketing and problems associated in the marketing process of the products in Karnataka state. Karnataka state has been selected for the present study purposively. In the state, Tumkur, Hasan, Chitradurga, and Chikmagalur districts were selected for the study in the first stage, then two talukas from each selected districts were chosen based on maximum area under the crop. Ultimately 30 farmers from different villages from each of the talukas were selected. Study concludes that, two main marketing channels are identified in the area, of them channel-II gives more profit to the farmers; further small farmers are getting low profit and because of many intermediaries involved in the marketing process and facing the problem of low return, storage, transport, high cost of inputs, lack of irrigation facilities etc.

III. Research methodology:

Major objectives of the study are:

- 1) To examine the agronomic issues of coconut plantation.
- 2) To examine production of coconut plantation in India, Karnataka and Tumkur district.

Nature and source of data:

The study conducted with the help of secondary as well as primary data . Secondary data obtained through journals, reports, periodicals and internet. Primary data collected through personal interview.

IV. Results and discussion:

Preparation of land for Coconut planting:

Land, topography, soil type and environmental issues mattered to prepare the land for coconut plantation. The land should be cleaned appropriately of weeds and rocks and marking of planting holes. Soil conservation measures are required if the land is slopy.

Climatic conditions for coconut plantation:

Under various climatic conditions coconut plantation can be grown. As coconut is a tropical crop ,the plantation can grow between 20N and 20 S. and rainfall of between 2000mm per year evenly distributed throught the year is suitable for maximum growth and production of coconut.

Fertilizers and manures of coconut plantation:

After planting coconut seedlings watering and manuring should be made. Also it is recommended to apply 20 to 50 kg of manure per palm per year during the season of southwest monsoon. Farmers can apply different types of manures such as cowdung and other farm yard manure, green leaves.

Planting time for coconut:

The ideal time to coconut seedlings are winter season ie., after June, July, August, September, October ,rainy season every year. Coconut trees become fruit bearing after four years of planting. Normally it takes about 15 months for its fruits to ripen, when the nut is green in colour it will be used as tender coconut. Mulching operation should be done and dewweding should be properly made in order to get more yield, ie., productivity level. Clean

the interspace appropriately for sowing other seasonal and perennial crops such as arecanut , betelvine, coco,pepper and other spice crops. Always farmers should maintain distance from coconut to other various crops .

Irrigation for coconut plantation:

As cocont seedlings are highly sensitive drip irrigation has considered as ideal type of irrigation .Apart from drip irrigation farmers can go for sprinkler irrigation and and other type of irrigation. S drip irrigation ensures light moisture to the root of the coconut palm which is helpful for the liveliness of coconut palm. During the summer season, coconut seedlings are require watering at intervals for every three days, whereas during winter season irrigation for every week is enough . Fourty liters of water per saplings can increase the yield of coconut tree by 50 per cent.

Table 1

Cost of Production of coconut plantation:

Sl No	Particulars	Value (Rs)
1.	Material cost	80.00
2.	Labour cost per day	300.00
3.	Seedling quantities per acre: 80	
4.	Yield of coconut per palm	35 per piece
5.	2000 nuts * Rs.35 per nut	70,000.00
6.	Total labour cost per acre	26,400.00
7.	Material cost per acre	23,600.00
8.	Total cost	50,000.00
	Net Returns	70,000.00

Source: Primary data collected from Tumkur district.

Table 2

Production of coconut in various countries.

Rank	Country/region	2020	2019	2018	2017	2016
1	India	19,824,848	87,074,536	15,100,000	07,200,000	19,400,000
2	Indonesia	14,695,000	14,682,000	16,413,000	11,166,772	11,344,306
3	Philippines	14,490,923	14,765,057	14,726,165	14,049,131	13,825,080
4	Brazil	2,458,839	2,348,663	2,345,400	2,210,139	2,634,396
5	Sri Lanka	2,233,600	2,468,800	2,098,400	1,960,000	2,408,800
6	Vietnam	1,719,415	1,677,044	1,571,709	1,499,228	1,469,960

Rank	Country/region	2020	2019	2018	2017	2016
7	Papua New Guinea	1,217,293	1,205,510	1,186,400	1,186,400	1,186,400
8	Mexico	895,291	908,302	926,400	927,200	925,600
9	Thailand	827,424	866,416	858,235	761,914	904,094
10	Malaysia	560,984	536,606	495,531	517,589	504,773
11	Myanmar	541,415	530,540	511,790	489,691	490,276
12	Bangladesh	431,596	431,596	466,975	408,635	374,269
13	Dominican Republic	429,546	421,559	404,482	390,939	374,474
14	Ghana	412,459	404,156	395,000	384,000	380,380
15	China	400,417	395,975	403,000	327,000	371,250
16	Tanzania	382,162	419,916	436,800	444,800	444,800
17	Vanuatu	270,372	296,944	300,000	300,000	300,000
18	Mozambique	251,122	251,508	251,634	250,223	252,667
19	Nigeria	225,574	228,645	228,000	231,200	227,200
20	Samoa	182,672	181,148	180,863	176,193	173,550
21	Venezuela	180,304	179,926	173,396	201,098	193,112
22	Colombia	153,832	145,578	140,249	142,235	135,908
23	Kiribati	152,130	150,000	146,000	167,400	167,400

Rank	Country/region	2020	2019	2018	2017	2016
24	Solomon Islands	152,130	140,000	120,000	120,000	120,000
25	Guyana	148,490	140,200	136,603	136,606	170,699
26	Kenya	110,013	109,889	105,362	92,313	115,228
27	Ivory Coast	105,660	106,632	108,800	112,800	113,600
28	Jamaica	86,400	103,200	103,500	101,000	80,100
29	Comoros	84,899	86,329	84,800	81,600	80,800
30	<i>French Polynesia</i>	83,808	84,365	84,000	83,000	83,000
31	El Salvador	76,501	71,280	119,505	119,505	65,329
32	Cambodia	70,199	69,329	69,000	70,000	70,000
33	Madagascar	56,257	58,400	58,400	59,200	60,000
34	Guinea	52,744	52,555	53,014	52,663	51,986
35	Micronesia	45,814	48,063	48,000	48,000	48,000
36	Tonga	42,000	42,000	42,400	44,800	44,800
37	Guinea-Bissau	40,895	40,869	40,661	41,155	40,790
38	Peru	36,559	34,565	32,923	32,645	32,353
39	Cuba	33,816	42,049	49,682	58,552	59,815
40	Haiti	27,751	27,971	28,000	27,000	27,000

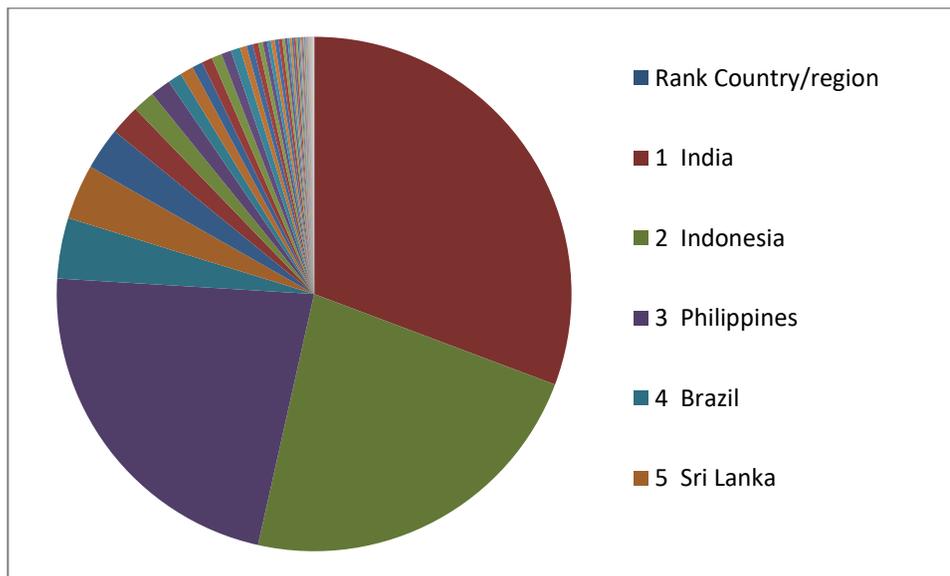
Rank	Country/region	2020	2019	2018	2017	2016
41	Marshall Islands	23,062	19,420	19,200	30,400	30,400
42	Fiji	21,680	23,822	22,700	22,663	23,856
43	Taiwan	17,891	18,955	19,561	20,348	19,633
44	Panama	15,765	15,562	15,610	15,733	15,494
45	<i>New Caledonia</i>	15,280	15,200	15,200	15,200	15,200
46	Costa Rica	15,000	15,000	14,838	14,292	14,812
47	Honduras	13,898	13,905	13,995	13,794	13,926
48	Benin	13,897	14,007	14,400	14,400	14,400
49	Trinidad and Tobago	13,737	15,004	15,200	15,200	15,200
50	Suriname	13,628	14,069	14,574	14,072	14,672
51	Ecuador	13,154	13,202	14,000	15,000	16,000
52	Guatemala	11,763	14,787	15,200	16,000	10,400
53	Somalia	11,660	11,000	8,800	8,800	8,800
54	Pakistan	11,455	9,802	9,765	9,765	9,867
55	Togo	10,869	11,181	11,200	11,200	11,200
56	Saint Lucia	9,609	9,566	9,600	10,400	10,400
57	Equatorial Guinea	7,715	7,793	7,701	7,651	7,537

Rank	Country/region	2020	2019	2018	2017	2016
58	East Timor	7,647	7,431	7,200	7,200	7,200
59	Liberia	6,964	6,943	7,000	7,000	7,000
60	Dominica	6,880	6,747	7,000	8,000	8,000
61	Grenada	5,893	5,944	6,000	6,000	6,000
62	Nicaragua	5,259	5,534	5,600	4,800	4,800
63	Cape Verde	5,157	5,260	5,000	5,000	4,000
64	Nepal	4,578	4,675	4,540	307	334
65	Sierra Leone	4,300	4,285	4,328	4,288	4,241
66	<i>Tokelau</i>	4,136	3,951	4,000	4,000	4,185
67	Senegal	3,903	4,000	3,200	3,200	3,200
68	Cameroon	3,861	3,958	4,000	4,000	4,000
69	Seychelles	3,744	3,628	3,600	3,500	3,500
70	Republic of the Congo	2,932	3,000	2,400	2,400	2,400
71	Saint Kitts and Nevis	2,927	2,891	3,000	3,000	3,000
72	Saint Vincent and the Grenadines	2,848	2,700	2,618	2,455	2,405
73	Bahamas	2,740	2,730	2,762	2,729	2,697
74	<i>Niue</i>	2,664	2,608	2,600	2,600	2,600

Rank	Country/region	2020	2019	2018	2017	2016
75	Nauru	2,438	2,426	2,400	2,400	2,400
76	Barbados	2,049	2,466	2,400	1,600	1,600
77	Belize	1,827	1,651	1,689	1,666	1,400
78	<i>Cook Islands</i>	1,767	1,771	1,766	1,763	1,784
79	Tuvalu	1,589	1,586	1,600	1,600	1,600
80	Mauritius	806	845	800	800	800
81	São Tomé and Príncipe	750	750	740	799	786
82	<i>Puerto Rico</i>	684	656	682	713	683
83	Brunei	401	400	404	400	395
84	Maldives	299	272	225	435	557
85	Singapore	122	122	123	122	128

Source: Food and Agriculture Organization (FAO).

It is clear from the above table that Major coconut producing countries are, India, Indonesia, Phillipines, Brajil, Sri Lanka followed by other countries.



Harvesting of coconuts:

Farmers with the help of harvesting assistance persons should climb the coconut trees and they can pluck the bunches of the coconut from the trees and supply to wholesalers and retailers and sale the same as coconut is having multipurpose use the demand is increasing. In India, coconuts are part of life and parts of coconut trees will be utilized for house construction purposes and dry leaves of the coconut trees will be used as sweeping sticks, coconut dry husks will be utilized for cleaning the vessels and more number of value added products. As consumption of coconut is relatively more its production can be encouraged.

Production of coconut in the globe:

The country that produces the most coconuts in the world is [Indonesia](#). Indonesia is a very large chain of islands scattered across the Indian and Pacific Oceans. Indonesia also has a tropical climate, and it is responsible for a significant proportion of coconuts in the world. Every year, Indonesia produces approximately 17 million metric tons of coconuts. The Indonesian coconut production has remained relatively flat during the past five years. Indonesia has worked hard to maintain its coconut production, particularly in the face of increasing demand.

There are several other countries that produce a significant number of coconuts as well. For example, [India](#) is the second-largest producer of coconuts in the world. In 2020, Indonesia produced approximately 14.7 million metric tons of coconuts, placing it significantly behind Indonesia, but also significantly ahead of most other countries. The other country that produces a lot of coconuts is the [Philippines](#). The Philippines produces a similar number of coconuts to Indonesia, with 14.4 million metric tons of coconuts being produced in 2020. There is no other country that produces more than 2.5 million metric tons of coconuts per year.

Coconut production in India

India ranks 3rd for coconut production in the world. During 2020-21, India contributed 34% to the world's coconut production. Moreover, it is all because of the top coconut producing states in India that have agricultural advantages over other states.

During 2020-21, India's coconut production stood at 9,687 nuts per hectare, which is one of the highest in the world. In addition, Karnataka, Tamil Nadu, and Andhra Pradesh have the highest coconut production in India.

Evidently, together these three states account for 90.04% of the nation's production, with 89.13% of the coconut area.

During the financial year 2021, India's coconut production accounted for 9689 nuts per hectare. Karnataka, Tamil Nadu and Andhra Pradesh account for 90.04 per cent of the coconut production in India.

Karnataka accounted for 4210.8 tonnes amounting to almost 23 per cent of coconut production in the country. The state has almost 5 lakh acres of land involved in coconut production.

Tamil Nadu accounts for 3751 tonnes of coconut per annum. The state uses 4.65 lakh hectares of land for coconut production having a market share of 27.47 per cent.

In Financial year 2021, Kerala produced about 3307 tonnes of coconut, accounting for 24.22 per cent of the total market share in the country.

In Financial year 2021, West Bengal produced about 278.73 tonnes of coconut, fifth largest producer of coconut.

Coconut production in Tumkur in Karnataka:

The most important crop of Tumkur district, Karnataka, India is arhar dal (pigeon pea).

The most important crop of Tumkur district, located in the southern state of Karnataka, India, is arhar dal (pigeon pea). Tumkur is one of the major pigeon pea producing districts in Karnataka, and it contributes significantly to the overall production of the crop in the state. Pigeon pea is an important crop for the local economy as it provides livelihoods for many farmers in the district and is also an important source of protein for the local population.

Apart from pigeon pea, Tumkur district is also known for the cultivation of other crops such as paddy, sugarcane, groundnut, coconut, ragi (finger millet), and maize. The district's rich agricultural potential is attributed to its fertile land, favourable climate and availability of irrigation facilities. Agriculture is the mainstay of the district's economy, and the government has taken various initiatives to promote agricultural productivity and improve the living standards of farmers in the region.

Agriculture is the backbone of our country. Most of the Land in Tumkur taluk is occupied by agriculture. Due to lack of awareness, farmers grow different variety of crops in different localities. Ultimately they face the problems in crop production due to low yield. Crop suitability map provide solutions to all these problems. The cropping pattern includes majorly Coconut plantation, Arecanut plantation, Banana plantation, Ragi, Wheat, Maize, Jowar and other crops.

IV.Suggestion:

1. Related to coconut farming profits the numbers are rising if you give good material, care and investment to the process. Further coconut farming has extensive opportunities to meet food security globally, employment opportunities and livelihood in rural areas.

V.Recommendation:

Government support to Coconut production in India:

Under the Ministry of Agriculture and farmers welfare the Coconut board of India has initiated various support for the growth, production and ideal coconut growing techniques. Related to production of coconut the Government of India has focused specific areas:

1. Production and distribution of quality planting material for coconut trees.
2. Expansion of farm area for coconut cultivation.
3. Improvement in farming technique.
4. Helping exporters to participate in exporting events.
5. Training to exporters on export specific products.
6. Creating opportunities to form a market for coconut globally for better revenue
7. Kera Suraksha Insurance scheme Coconut pal insurance schemes are there to help farmers with crop losses due to natural calamities and other reasons.

All these measures should be effectively implemented in order to enhance area under coconut, production of coconut and productivity of coconut in India, Karnataka and in Tumkur district .

VI. Conclusion:

It may be concluded that Coconut plantation is gaining increasing importance . Coconut can be utilized for multipurpose . By increasing area and production of coconut it is possible to expect enhanced production of coconut and health of the people may be enhanced and farmers community can expect more enhanced income ,so that they can lead decent standard of living.

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