

ACREAGE AND PRODUCTION STATISTICS OF ARECANUT IN INDIA

By

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Introduction

The principal arecanut producing countries are India, Pakistan, Malaya, Ceylon, Burma and Philippines. According to reported figures, among the arecanut growing countries of the world, India stands first with an annual harvest of over 97,005 tonnes of arecanuts (in terms of cured nuts) from about 1.17 lakh hectares. Though India ranks first in the world in regard to both acreage and production of arecanut, she has not become self-sufficient so far and has been importing more or less all these years. Her annual imports of betelnuts for the last 5 years, on an average are 1.25 lakh quintals. During 1962-63 she imported 0.90 lakh quintal of betelnuts.

Production of arecanuts is concentrated in the three States, Kerala, Mysore and Assam which together share about 94.8 percentage of total acreage in India and the rest is scattered over Maharashtra, West Bengal, Madras, Andhra Pradesh and Orissa. As the current India's production falls short of demand, she has been meeting the internal demand by regular imports. Government of India have been trying to cut down these imports to the minimum. By gradual decrease in import licences only 89,777 quintals of betelnuts were imported during 1962-63, as against an import of

5,06,000 quintals of betelnuts during 1951-52. They are also simultaneously intensifying measures for stepping up the production of arecanuts within the country. Since the inception of Indian Central Arecanut Committee in 1949, the activities and research programmes of this Committee have been aimed at improving the production and marketing of this crop in India.

For planning and execution of the schemes, the Government of India and the Indian Central Arecanut Committee have been handicapped to a very great extent due to the lack of adequate and reliable data on Arecanut Statistics, in particular, relating to acreage and production. Accurate crop forecasts are of enormous use both to consumers and to those engaged in trade since such forecasts greatly help to stabilise the prices and facilitate trade operations. The preparation of forecasts which covers statistics of both acreage and production is the responsibility of the agriculture and / or revenue departments of the State Governments in India. These crop forecasts were found to be not accurate due to the main reason that the officials in-charge of the collection of data could not leeston adequate attention towards the collection of statistics relating to

this perennial crop due to their pre-occupation with other related works.

In this article an attempt has been made to review the present official method to collect the statistics relating to acreage and production of arecanuts and the steps taken to improve them.

Current Official methods of collecting data

Of the two aspects of crop forecasts, namely acreage and production, the statistics of acreage in the temporary settled areas are considered to be fairly reliable owing to the fact that there exists in these areas an elaborate revenue agency consisting of Patwaris reaching the remotest villages and responsible for maintaining yearly statistics of crop acreage by field to field inspection. On the other hand, the acreage statistics in the permanently settled areas are of doubtful accuracy since in these areas such field staff does not exist. Area Statistics are estimated by district officers in these areas, on the basis of their personal observation and the information supplied by the Divisional Officers. Regarding the annual production, it has been estimated in different States indirectly by making local enquiries to various assembling markets and in the producing areas of the State.

The present position as regards the enumeration of area under and production of arecanut is briefly discussed below:

Madras, Mysore Andhra and Maharashtra: Regular estimates of acreage and production are prepared annually by the Revenue Agency. The estimates of acreage under the crop are prepared on the basis of their usual regular crop and land use statistics records, while the production estimates are purely empirical as they are based on eye estimates and local enquiries.

No scientific and objective procedure is employed.

Assam: The land records department of the State is responsible for the maintenance of crop abstract at the village level, but there is no provision for incorporation of area under crop like arecanut in the village crop abstract. This crop, in the revised form for compilation of agricultural statistics, is included under "condiments and spices." The reports which are being submitted from the revenue circles are found to be mostly incomplete.

West Bengal and Kerala: No regular estimates of acreage and production are prepared by the State Governments. However, an agricultural Sample Survey was conducted by the former Travancore-Cochin State Government during 1949-54. Since this was not extended to Malabar region, area, Statistics compiled from crop register are still being made use of for Malabar region.

Special surveys conducted so far

Pilot surveys have been completed in Mysore and West Bengal.

West Bengal: A scheme for collection of statistics of area under and production of arecanut in West Bengal State was implemented during the period July 1953 to February 1954 by the State Government with financial assistance from this Committee. Arecanut cultivation is scattered in small plots and arecanut orchards are generally mixed up with other plantations. Considering the nature of arecanut cultivation in the State complete enumeration technique was adopted. Average coverage of a single tree is determined from the orchard trees and the average yield of a tree is also assessed from orchard trees. To estimate the area under cultivation total

number of palms enumerated was multiplied by the average coverage of a single tree in an orchard and the production is estimated by multiplying the total number of palms by the average yield per tree in an orchard. Since No. of bearing trees scattered is more than half of the bearing trees (orchards and scattered together) in the State, the estimates are likely to be biased. It is, however, desirable to estimate the average yield rate per bearing tree separately for two distinct groups—those grown in orchards and in scattered manner.

Mysore: A Pilot Sample Survey to estimate the area under arecanut and production in Mysore State was carried out during the period September 1953 to June 1955 with financial assistance from this Committee. For sampling purposes the villages were classified as those officially reported growing areca, those officially reported not growing areca and non-reporting villages. For estimation of area and number of arecanut palms, villages were selected from the first group with probability proportional to the reported acreage under arecanut. In the second and third groups, villages were selected with equal probability. The yield estimation was confined to the first group only. The results of the survey indicated high sampling error for the estimates of acreage and production.

A critical examination of the reports on the Pilot Sample Survey in Mysore State and the survey in West Bengal initiated to take up the conduct of fresh sample surveys in all the arecanut growing States for the estimation of acreage and production of arecanuts.

Sample Survey Scheme:

Due, however, to the doubtful accuracy of acreage under cultivation of arecanuts and yield of arecanuts based on defective

methods of estimating acreage and yield per acre, it was felt that sample surveys for the correct estimation of area and yield of arecanuts, as is being conducted in case of annual crops, should also be carried out in the circumstances.

The Indian Central Coconut Committee was also stressing Government of India for funds for similar surveys in case of coconuts. Government of India agreed to provide under Second Five Year Plan necessary funds for the combined sample surveys for the correct estimation of area and yield of arecanuts and coconuts in all important arecanut and coconut growing States.

The first round of the surveys (The duration of a round of the survey is one Agricultural year) was started in September 1958 in Assam and in the States of Kerala, Mysore, Madras, Maharashtra and Andhra Pradesh late in 1958-59. In Orissa State the actual field work was started only in October, 1960. The surveys are being continued till the end of the three years during the third five year plan also to study the reliability of the estimates of yield rate and production of crops and during the rest of the period of the third five year plan the State Governments will be sharing the expenditure on the surveys with the Ministry of Food and Agriculture, Government of India. It is also expected that the concerned States would continue these surveys after the end of the Third Plan as a regular programme of work in the State Schemes.

In West Bengal, similar surveys for arecanut and coconut (expenditure being met jointly by Indian Central Arecanut Committee and Indian Central Coconut Committee on 50:50 basis) have, however, been started very late in July, 1962.

A brief report of the first three rounds of the surveys in the States of Kerala, Mysore, Madras, Andhra and Maharashtra and the second, third and fourth rounds of the surveys in the Assam State are given below:—

Object of the surveys: The object of the above combined surveys is to estimate:—

1) The total number of arecanut palms (and coconut palms) classified according to age groups, bearing, and non-bearing, healthy and diseased.

2) area under arecanuts (and coconuts).

3) production of arecanuts (and coconuts) based on the estimate of number of bearing palms and average yield per bearing palm, and

4) to collect information on cultural practices, incidence of pests and diseases etc.

Coverage: It covers all the important arecanut growing areas in Madras, Andhra and Mysore. In Kerala, the survey covers all taluks except a few in the forest areas. In Maharashtra the survey is confined to only two arecanut growing districts Ratnagiri and Kolaba. And in case of Assam it covers seven plain districts and one hilly district.

Sample design and sample size: Stratified sampling method was adopted. For estimation of area, a sample of villages was selected from out of the strata with probability proportional to the area under arecanut in each stratum. In all States, except Kerala arecanut palms in all selected villages were completely enumerated. A sub-sample of villages were then considered for yield study and collection of information relating to cultural practices. In each village belonging to the sub-sample three gardens were selected at random

and one cluster of palms consisting of eight bearing palms each from the first two gardens and two clusters from third garden were then selected for conducting harvesting experiments.

In case of Kerala, from each of the selected villages for the survey, from out of the State ten percent of the plots (survey sub-division) grouped in clusters of ten plots each were selected by systematic sampling with a random start for enumeration of palms. A sub-sample of five clusters of plots was then selected for harvesting experiments from the clusters of plots selected for area estimation. One plot each having at least sixteen bearing palms was selected from these five clusters of plots. In the plots so chosen harvesting experiments were done on the first six of the 16 bearing palms and the remaining 10 bearing palms were kept for observing the proportion of bunches plucked as ripe and tender.

In Andhra, since the cultivation of arecanut crop was reported in smaller number of villages than the sample size of 200 villages as suggested by the Institute of Agricultural Research Statistics and as the area under the crop is hardly 360 acres, complete enumeration of all villages growing arecanuts was undertaken. For yield study and collection of information relating to cultural practices, the procedure followed in the other states except Kerala was followed.

During the second round of the survey though the sample design, sample size and method of collection of data have not been altered, in all the states, about 25% of villages selected in the first round of the survey was retained for the second round while the remaining to make the sample size were freshly selected villages. Similarly for the third round of survey. And,

thus, during the third round of the survey, the total sample size fixed for a State, contained 25% of the villages retained from the first round, 25% of villages from the fresh villages selected for the second round (so that the total no. of village retained from 1st and 2nd round never exceeds 50%), the remaining villages selected afresh. This procedure of retaining the villages from each round is to find out the fluctuations, if any, in the yield as compared to the area.

Field Work: The investigators/Enumerators under these surveys were given necessary training in classifying the palms as bearing and non-bearing, as healthy and diseased, and collection of data on cultural practices etc. and filling up the schedules (Uniform forms and schedules for recording data were prescribed in consultation with the Statistical Adviser, Indian Council of Agricultural Research), before they were actually entrusted with the work. Time of harvesting was fixed by the investigators in consultation with the owners of the selected gardens and the harvesting was done as far as possible, according to local practices. Information on cultural practices was collected from the cultivators themselves.

The progress of these surveys is being reviewed at annual conference of the State Statisticians under the Chairmanship of the Statistical Adviser, Indian Council of Agricultural Research. And now that almost five rounds of the surveys are over in Assam four rounds in the States of Kerala, Madras, Mysore, Maharashtra and Andhra Pradesh,

two rounds of the surveys in Orissa, and one round in West Bengal, the comprehensive technical reports on the first three rounds of the surveys in different arecanut growin States, viz. Assam, Kerala, Madras, Maharashtra and Mysore, were reviewed at the recent State Statisticians conference held at Hyderabad in November, 1963 to review the progress of these sample surveys under the Chairmanship of Statistical Adviser, I. C. A. R.

The results of these surveys as furnished in the technical reports will be discussed in the next articles to follow, after the finalisation of reports and confirmation of results.



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