

PRODUCTION AND MARKETING OF COPRA IN LAKSHADWEEP ISLANDS

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The traditional method of copra making and marketing continues to be the major economic activity of the farm sector in the islands, though there is a perceptible decline in the number of farmers who take up the activity.

Copra making has been a household activity in Lakshadweep islands since time immemorial and in the olden times copra was the most important agricultural produce of the islands. The islanders used to travel annually to the mainland by sailing boat (locally called odam) and sold copra to the merchants and bought back their essential requirements for the whole year. Even now the traditional method of copra making and marketing continues to be the major economic activity of the

farm sector in the islands, though there is a perceptible decline in the number of farmers who take up the activity. Copra is made both by farmers and also by coconut oil industries in the islands. Farmers sell it either to merchants who in turn sell it in mainland or to the coconut oil industries in their respective island or farmers make copra for their own consumption and for selling. They make copra by sun drying of coconut whereas coconut oil industries use both sun drying and copra dryers. Though many copra dryers of various

capacities and different sources of energy are available at present in the market, sun drying remains the most economic way of making copra for a farmer in Lakshadweep islands.

Harvesting and storage of nuts

The practice of copra making starts with harvesting. There used to be a dedicated climber for harvesting coconuts from all



the palms in the land holding of a household. The climber is always well aware about the number of palms in the owner's property, which even the family members may not be aware because some of the palms will be adjacent to the homestead while some palms may be in a distant isolated landholding.

In earlier days, nuts were harvested at intervals of 45 days. However, due to a shortage of climbers and high wage rates, harvesting is now carried out once every 60 days or more. Only two harvests are done during the entire rainy season.

Usually, palm climbing is done manually which is a very tedious, challenging and physically strenuous job. For facilitating manual climbing of the palm, climbers use 'thala', a simple traditional device made of coir. Thala will be adjusted in both hands and feet in order to get the required grip for the feet and hands of the climber while climbing up or down. The climber keeps a sharp knife tucked to the hip, secured near his dhoti he wears. Older bunches with fully

matured nuts are cut and the whole bunch is slowly allowed to fall to the ground. A skilled climber can climb 20-30 palms in a day and with maximum working hours 3-4 hours. Earlier days, after harvesting all the palms, the climber in return used to take either some coconuts or money. Nowadays, climbers take Rs. Rs. 40 (present wage rate) as wage rate for climbing per palm. Of late climbers, who mostly use mechanical climbing device, from mainland are brought to render their service for harvesting coconuts in all the islands. Coconut Development Board has organized training programmes for youths from the islands on palm climbing using mechanical device under the 'Friends of Coconut Trees (FoCT)' programme.

Coconuts are separated from the bunches by the house owner or family member of the household and nuts are taken to a shed specially made, either with a roof thatched with plated coconut leaves (locally called kidu) or with a GI sheet roofing or with a tiled roof for storage for further processing. Harvested coconuts from the land situated away from the household



are transported in a power tiller for storing inside the shed. The nuts harvested during the monsoon season, ie. from May to September, are stored in the shed and taken out for copra making during the summer months.

Dehusking

Manual dehusking is followed in Lakshadweep using an iron rod (locally known paara). Usually, one rupee is charged for dehusking one coconut. A skilled labour can dehusk 1000-2000 coconuts in 3-4 hours. They start the dehusking work after finishing the morning prayer (locally called fajr) or after finishing the evening prayer (locally called Asr). The dehusked nuts are packed into 50 or 100 kg bags and transported to drying yards for copra production.

Drying

Farmers use either their courtyard or the beach near to them as drying yard. Some farmers also use terraces of their residence to dry coconut. By December- January, farmers and entrepreneurs prepare temporary drying yards (locally called kopparebeli) in the open space near the sea shore. Dried coconut petioles are initially fixed on the four corners of the square shaped yard, followed by covering the



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sides with plated dried coconut leaves (kidu). To reinforce the boundaries, additional petioles are sometimes placed between the sides. Further, nylon nets are used to cover the top and sides to prevent the entry of flies, birds, insects etc. Dehusked nuts are transported to the drying yard for further processing.

The dehusked nuts are cut open using a sharp knife by keeping them on a wooden cutting block, traditionally made using the wood of locally available trees like thespesia (sheerani), teak wood brought from the mainland etc. Nut water is generally wasted. However, some farmers used to keep flat vessels below the cutting block for collecting the water, which is used as a fresh drink. The elder person of the house usually does the nut cutting work and the kids and other family members spread the cut opened nuts on the kidu (plated coconut leaves). Some farmers engage labourers also for spreading the nuts for drying. The process starts from early morning around 7 am and ends by maximum upto 10 to 11 am before it gets very hot under the sun.

Based on the capacity of the drying yards, nuts are cut open. On an average, 500-1000 nuts are cut in a day. After 2-3 days (getting two active sunny days, or locally expressed rand beel), when the kernel gets loosened from the shell, the shell is removed using a wooden tool. Nowadays, scooping tools made of plastic are commonly used everywhere in the islands. The second stage of drying takes around 4-5 days. Every evening, the nuts kept for drying are covered with tarpaulin sheets to prevent moisture from seeping in during the night and early morning hours. In olden days, plated coconut leaves were specially made to match the size of the drying yard and used to cover the copra during the night time. These coverings were removed by 7 a.m. the next morning. The elders admit that if nuts are not properly taken care of during the nighttime, there is a chance for fungal infection in the nuts, resulting in a decline in the quality of the copra. Farmers assess the proper drying of nuts by test-breaking the dried copra and listening to the sound while breaking it by hand. The good quality whole copra is graded

and put in gunny bags, sewn using a needle and plastic rope. It is then weighed and transported to the mainland, to either Mangalore or Calicut port, through the motor sailing vessels (MSV) locally called manchu. The leftover copra pieces and chips are pressed to extract oil, which is then used for household purposes.

During the long-term storage in the shed, many nuts get germinated due to the high moisture during the rainy season, which affects the copra quality. Also, the low night time temperatures and early morning mist during December and January adversely affect the quality of the cut-open nuts if not properly managed. The rich tradition of copra making in the islands is on the decline. Many farmers have started selling coconuts as fresh mature nuts rather than sticking to the traditional practice of copra making, which they consider a labour-intensive activity. Among the present generation, those who continue copra making do not take much care while processing the nuts for copra making. They simply keep the cut-opened nuts on the white sand, leading to the entry of

dust and thus affecting the quality of the copra.

Storage

Copra is usually sold either to the local trader or coconut oil expelling units in their respective islands or to wholesalers in the mainland. Farmers used to store the dried copra in gunny bags till transportation facilities to the mainland were ready or until it was sold to the cooperative society or local trader on the island. Copra is stored without touching the floor, at an elevated place.

Coconut dryers

Copra dryers are used mainly by coconut oil mills and a few entrepreneurs making copra and selling the same in the mainland. The majority of coconut oil mills in the Lakshadweep islands possess one or two copra dryers. All these copra dryers are indirect-type dryers, forced circulation-type dryers, where only hot air comes in contact with the copra, thereby making it good-quality copra. Forced circulation of hot air makes uniform drying possible in this dryer. Coconut shell, a byproduct of the unit, is generally used as fuel. Few of the units use firewood also as fuel. These indirect copra dryers make it possible to produce good-quality, uniformly dried copra. The common capacity of such a typical dryer is 2000-3000 coconuts per batch. It takes two days to dry one batch of copra, right from breaking the coconut to drying.

Quality analysis

As part of a study on coconut enterprises in the Lakshadweep islands, copra samples were collected from selected islands and analysed at CPCRI Kasaragod. The results indicated that with regard to the physical quality of the copra, the samples were clean,

The physical quality of the copra is clean, pearly white, with less than 0.5% foreign matter (sand, dust, straw, and shell), without any mouldy/black and wrinkled kernels.

pearly white, with less than 0.5% foreign matter (sand, dust, straw, and shell), without any mouldy/black and wrinkled kernels. With regard to the moisture content, the ranges observed were within the prescribed standard, i.e. 6% for all three grades. Earlier studies had reported that Laccadive micro tall, a coconut cultivar from Lakshadweep, had an oil percentage as high as 75% (Krishnakumar et al., 2014). However, the analysis of oil content of the copra samples collected from different islands showed upto 69.6%. This may be due to the fact that a very limited number of nuts of the Laccadive micro tall cultivar are used for copra making since only a very limited number of palms of the cultivar are available in the islands, which is quite meagre to give a high oil output from the copra used for oil milling.

The deoiled cake was also analysed. According to AGMARK standards, deoiled coconut cake should be in the form of flakes or powder and must be free of harmful substances. It should not exhibit rancidity, contain adulterants, have insect infestation, have visible fungal growth, or have any musty odor. The product should also be clean, without dirt, foreign materials, or metallic particles (IS: 3591-1985). Physical examination of the deoiled cake samples collected from various islands revealed that all were in powdered form, free from

rancid smell, visible fungal growth, and musty odor. The moisture and crude protein content were within the specified limits, less than 10% and 18-22%, respectively, making these deoiled cakes suitable for use as cattle feed.

Marketing of copra in Lakshadweep islands

Currently the important marketing channels of copra in Lakshadweep Islands are as follows.

- Farmers sell copra directly to the trader in the mainland
- Farmers sell copra to the local traders and local traders in turn sell it to the trader in the mainland
- Farmers sell copra directly to the oil expelling units in the island
- Farmers sell copra directly to the oil expelling units in the mainland
- Farmers sell copra to the local traders and local traders in turn sell the copra to the oil expelling units
- Farmers sell the nuts to the oil expelling units and the oil units prepare copra and sell the surplus quantity of copra (after meeting the requirement for oil expelling) to traders in the mainland

Previously, co-operative societies in the islands were playing a major role in the copra marketing sector. These societies used to regularly procure copra from farmers and market in the mainland. However, since the last two years the societies have discontinued the procurement of copra from farmers due to various reasons. At present coconut oil expelling units and local traders are the important stakeholders in the copra marketing sector of

Table 1. Marketing of copra in Lakshadweep islands handled by local traders

S. No.	Island	Number of traders	Average quantity of copra sold to mainland per year (t)	Average quantity of copra sold to oil expelling units per year (t)
1.	Agatti	3	85	10
2.	Amini	13	314	7
3.	Androth	8	155	31
4.	Chetlat	6	38	-
5.	Kadmat	6	178	17
6.	Kalpeni	7	44	16
7.	Kavaratti	5	52	25
8.	Kiltan	5	16	18
9.	Minicoy	1	-	2
10.	Bitra	3	3	-
Total		54	885	126



islands.

The island-wise details of copra marketing in Lakshadweep handled by traders are furnished in table 1.

There are about 54 local traders who are engaged in copra marketing business across the 10 islands. Local traders in the islands purchase copra from farmers and sell it to the wholesalers in the mainland or to the coconut oil expelling units in the islands. The total quantity of copra thus traded by 54 local traders in a year is about 1011 tonnes; 885 tonnes sold to the mainland and 126 tonnes sold to the oil expelling units as shown above. Among the islands, the quantity of copra sold to the mainland is highest in Amini followed by Kadmat. Similarly, the quantity of copra sold to oil expelling units is highest in Androth where the four oil expelling units are functioning followed by Kavaratti and Kiltan.

Apart from the volume of copra trade handled by the traders in the islands as discussed above, a substantial quantity of copra is directly marketed by

the farmers to different players including oil expelling units in the islands, wholesale copra dealers in the mainland and coconut oil industries in the main land.

Copra price in Lakshadweep islands mainly depends on the market rate prevailing in Kozhikode and Mangalore markets in the mainland. A farmer selling copra to the local trader of the island usually gets the payment after the trader sells the copra in the mainland and on an average, Rs. 200-300 will be reduced per quintal of copra on account of the transportation charges and incidental expenses. Some traders make the payment immediately after the purchase. Of late, the pattern of copra marketing in which the local trader who operates in partnership with a copra trader in the mainland procures copra from the farmers and offer on the spot payment at the prevailing market rate also is very prominent.

Constraints in copra production and marketing

Coconut farmers and entrepreneurs perceive that

the production and marketing of copra in the islands is on the decline since the last many years. A major factor contributing to the decline is lack of interest among the farmers in copra making and the emerging pattern of selling fresh mature nuts instead of copra since the utilization and demand for fresh coconut is increasing. They also perceive a general decline in coconut productivity in the islands which directly influence the quantity of copra produced and marketed.

- Limited availability and high transportation cost, when available, is the major problem experienced by the farmers, copra traders and coconut oil expelling units. This restricted their market to the respective island itself instead of selling their product in mainland or in other island markets at a more competitive price.
- Sun drying is the most common method adopted for copra making in the islands. Copra making by this method



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is feasible only during summer months i.e. for six months from December to May. Coconuts harvested during rainy season are stored usually in sheds or sometimes just heaped in the farm itself and used to making copra during next summer.

- Many coconuts get germinated by that time resulting in less copra weight. The germinated coconuts also are used to extract oil. Oil mills when procured give considerably less amount for this second quality copra.
- Quality of copra is adversely affected due to improper storage of copra from the time it is prepared up to the time when facility is available for its transportation to mainland through MSVs. This delay in transportation of copra happens many times in a year. Similarly non uniform drying of copra by farmers who do not give adequate care to follow proper method for sun drying of copra also results in poor quality copra. In these circumstances many farmers are finding it difficult to meet the stipulated quality standards of copra and thus realizing lower price for the copra they sell. Usually oil expelling units dry the copra procured from farmers which do not conform to the minimum prescribed quality standards, especially moisture content, in their dryer once again before oil extraction.

Interventions

The following interventions are suggested to enable the coconut growers and entrepreneurs

associated with copra production and marketing in Lakshadweep islands to effectively address the challenges in the sector.

- Timely availability of transportation facility at a competitive cost needs to be assured to entrepreneurs to transport copra between islands and between island and main land. Hence, a system needs to be put in place to give priority for the coconut farmers and entrepreneurs from the islands for transporting copra between islands and to the mainland especially by utilizing the return trips of barges or MSVs.
- Capacity development programmes can be organized by Krishi Vigyan Kendra for creating awareness and imparting required skill to farmers and entrepreneurs on methods for production of copra having prescribed quality standards.
- Establishing a central facility in private or public sector or under FPO which can be provided on hire basis to farmers for dehusking and drying coconut would be a major intervention to produce quality copra at a competitive price in the islands. The machineries required are a mechanical dehusker, electrically operated, of required capacity according to the coconut availability in the respective island and an indirect type copra dryer which would make copra making feasible throughout the year and would help in producing quality copra by assuring uniform drying. Loss of coconuts by germination during rainy season also could be reduced. ■