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## THEME

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### Themes for the coming issues of Indian Coconut Journal

April	Innovative coconut entrepreneurs
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# Let us aim at women empowerment and sustainable coconut farming

*Dear coconut farmers,*

The theme of the March issue of the Indian Coconut Journal is the 'Role of Women in Coconut Sector'. Compared to other crops, coconut farming provides more employment opportunities to women. Participation of women in traditional farming practices, harvesting and processing has been in vogue since long. In the coir sector womenfolk form the lion's share of the workforce. But today, with the onset of mechanization, employment opportunities in coir sector have come down drastically.

**This issue of the journal is trying to analyse how more women participation in coconut sector can be achieved. In the wake of the new and innovative agricultural practices, let us think on how coconut can be utilized for better employment opportunities, better income generation and micro enterprise opportunities to women.**

Let us begin with coconut kernal. More micro enterprises of women in copra processing with the help of modern copra dryers, making coconut oil, virgin coconut oil, coconut chips and various food products using coconut as major raw material can be initiated. Kudumbashree had initiated women empowerment programme through coconut based micro enterprises. Board is imparting training in coconut based convenience foods at its Technology Development Centre at Alwaye, in Kerala. Tender coconut collection, sales, processing for value addition, tender coconut water based convenience food etc. are opportunities women can handle better. Coconut shell based products including handicrafts are another area where more women entrepreneurs and skilled workers can find gainful employment.

Under the 'Friends of Coconut Tree' training programme, out of the 5250 youths trained so far 390 are women. We are targeting more women participation under the 'FOCT' training programme in the coming months. Many of the tender coconut retailers are also women.

The self employment generating initiatives for women by the various departments hold good prospects in coconut sector. The Ministry of Women and Child Development, Government of India has specific programmes for women empowerment. Support to Training and Employment Programme for Women (STEP) is a special programme that aims at increasing economic self reliance to women by enhancing their productivity and enabling them to take up income generation activities. Board is trying to explore the opportunities under STEP through good NGOs to provide training for various coconut related products and services. These trainings are expected to help them to upgrade the skills and ensure sustainable income for women through a variety of projects.

Board has requested the concerned state governments to formulate new schemes for the coconut farmers and processors through the respective agriculture/horticulture departments during 12<sup>th</sup> Five Year Plan. It has been requested to start coconut parks in all the districts where area under coconut cultivation exceeds 25000 Ha. Board also requested to exempt all coconut products from VAT, atleast for the next 5 years. The state governments have been addressed to find adequate budget provision for additional 25 percent subsidy over and above the 25 percent subsidy of the Board for starting new and innovative coconut processing industries. Equity participation of State Governments in Producer Companies floated by coconut farmers, upto 25

percent of the authorised capital is another request mooted by the Board to help farmers to come forward for processing and value addition. It is heartening to note that coconut sector has found a prominent place in the Kerala budget 2012-13. Tender coconut water is declared as the 'official drink of Kerala'. Coconut processing sector can flourish in the coming years if other state governments also follow the suit.

Major programmes implemented by the Board during the 11<sup>th</sup> Five year plan were the Pilot project on Replanting and Rejuvenation, Technology Mission on Coconut, Coconut Palm insurance, Laying out of Demonstration Plots and the Area Expansion Programme. CPS and FOCT are the other two initiatives ventured by the Board during the fag end of the plan period which are not originally envisaged. All the schemes of the 11<sup>th</sup> Five Year Plan period will be continued during the next plan period also. Besides this, FOCT training programme will be made more need based and effective. CPSs will be federated and further encouraged to form 'Producer Companies'. Farmer participation in processing, value addition and export, large scale production of disease resistant, early bearing and high yielding hybrid coconut seedlings and collaborative research in coconut sector are some of the schemes which would be given emphasis during the 12<sup>th</sup> plan period.

Board has initiated the mentoring and vision building process of CPSs in collaboration with Management Institutions. These trainings are expected to enrich the farmer's knowledge, managerial ability, capacity and self confidence. Such empowered CPSs, their Federations and Producer Companies are the foundation stones of the coconut development efforts in the 12<sup>th</sup> plan period.

We have achieved the target of forming 1000 CPSs as scheduled. Registration of these CPSs with the Board is in progress. After the successful initial functioning of the CPSs, we have to form their Federations and Producer Companies. During 2012-13, Board intends to form 10

Producer Companies in Kerala, 10 in Tamil Nadu, 5 each in Andhra Pradesh and Karnataka. Formation of Producer Companies with farmer's equity is the need of the hour for processing, product diversification, value addition and exports. Providing professional capability to these 3 tier farmers' organisations through training, capacity building, technical, managerial and financial support is to be taken up urgently.

**During each year of the 12<sup>th</sup> Five Year Plan period, each CPS should formulate strategies for increasing the production @ 10 nuts per palm per year. CPS should also try to sell 25 percent of the harvest as tender nut. Another 25 percent of the harvest should be used for products other than copra and coconut oil.**

During this year, integrated coconut farming will be implemented through the selected CPSs only. CPSs can also venture into coconut processing by availing the financial assistance of the Board under the Technology Mission on Coconut. CPSs are designated as copra collection centres under the Minimum Support Price scheme. A data bank on good mother palms available with the members of CPSs should be prepared. Each CPS is expected to identify sufficient number of unemployed youth from their area to train as FoCTs. CPSs are also requested to promote more tender coconut harvesting, sales and processing at appropriate levels.

Board is having seven Demonstration Cum Seed Production (DSP) Farms across the country. Three new DSP farms are envisaged during 12<sup>th</sup> Five Year Plan period if the state governments are ready to transfer suitable land free of cost. Let us take concerted efforts to transform the coming five years to a golden era for coconut and coconut farmers through intensive development programmes, in collaboration with respective state governments.



T.K. Jose  
Chairman

## Set for a quantum jump - Chairman, Coir Board



**Prof G Balachandran has recently taken over charge as the Chairman of Coir Board. Excerpts of the interview with Prof. G Balachandran**

*We congratulate you on assuming charge as the new Chairman of Coir Board.*

Thank you.

*Coir Board and Coconut Development Board are sister concerns. So also the importance of working in unison is most essential. Coir sector is providing immense employment opportunities too. What are the future strategies of the Coir Board?*

The coir sector is going through severe hurdles and challenges. There was a period when coir sector was holding a prime position in India. This sector provides employment opportunity to around 7 lakh people directly and indirectly. Out of this, 90% are women employees, who belongs to the economically weaker sector. The latest crisis is the scarcity of labourers in coir sector as in the case of labour scarcity in coconut harvesting. This slows down the production. Hence the Board is in the process of in-

roducing coir extracting machines. There should be machines for spinning too. These are the major two areas where the Coir Board is mainly focusing now. There is a shortage of husk and fibre in Kerala. Coconut Development Board can do great help in increasing the production and procurement of husk and coir fibre. If there are facilities to collect the husk in the farmer's field itself, it can be utilized effectively. Coir Board is thinking of installing the coir extracting machine in the field itself from this April onwards. As the coir fibre is 100 % nature friendly, Board is planning to develop more value added products from this. Exploring new markets with more new products is the motto of the Coir Board now.

Composite Boards and even chappals are made out of coir pith. Coir Board is planning to give upto 40 percent subsidy to the units which are planning to make organic fertilizer from coir pith. Mushroom

can also be grown on coir pith. Mechanization is creating revolutionary changes in the sector. Along with the increase in the product and widening of market, PVC and rubber is tufted with coir for making new products.

Coconut farmers can make use of the coir pith as organic manure for increasing production. If the coconut farmers can convert the husk into coir, they can make additional income and this is an area where both Coir Board and Coconut Development Board can work together. Coir Board would also like to participate in exhibitions of the Coconut Development Board and also in Board's seminars. A mega coir expo is being organised in Guwahati recently. This expo is expected to make a steep growth in the domestic market of the coir products. Coir Board is trying to encourage coconut farming in the north east through this fair.

*The theme of this issue of the*

***journal is the role of women in coconut. Coconut is a women friendly crop. More than 90% of the employees of coir sector are women. What are the strategies taken by the Coir Board for their financial upliftment and security and also a better social status?***

In most of the families headed by women, there would be financial and economic security. This statement is supported by many great economists. The women employees of this sector are unlike those women who are working in a factory or a shop. These women while extracting coir, are feeding their kids, cooking, taking care of the domestic animals and also doing other household works. So they are happy and contented with this job as they are also able to take care of their household activities along with this job. The barter system existing in certain village areas are also encouraging the women workers as they can buy provisions in exchange of coir.

***Which are the prime centers of coir industry in Kerala? Apart from Kerala, which are the other states where coir is grown?***

Alapuzha district in Kerala is the cradle of coir. Foreigners have started factories since long and the employees of these factories were only men. But the coir coming to these factories were extracted by women. This was the best quality coir. Many of these labourers have lost their job due to mechanization. We have to create more employment opportunities for women.

Tamil Nadu has also come to the picture now. The encouragement given to this sector by the state government adds impetus to this strong presence. Tamil Nadu is also having a centralized indus-

trial culture that Kerala doesn't have. They are collecting coconut, cutting it, making fibre, taking the shell, polishing it, making value added products like coconut milk, milk powder etc. all under a single roof. As they are into processing also, mechanization has also taken place speedily. In Kerala there were strong protests against the motorised ratt. But there were no such protests in Tamil Nadu or Karnataka. Eventhough coconut is produced in 12 states and 2 Union Territories, coir products are yet to have its strong presence in all these places. Coir Board is working on creating an awareness on coir products in all these areas.

***Whether mechanization has curtailed employment opportunities in coir sector?***

It is true that Mechanization has brought down 50 percent employment opportunities. It is not only mechanization, but also the non-availability of coir fibre has brought down the employment opportunities.

***Dont you think that along with mechanization, product diversification and value addition is creating new employment opportunities in the coir sector?***

The quantum of coir in the finished product is very meager. When PVC and rubber is also coming up with coir, the quantity of coir becomes less even when the export of coir is going up. The price too has also gone up. Export has crossed 1000 crores.

***It is said that only 25% of the available husk is made use of now. It is also said that husk is not available in required quantities. Is there a contradiction in this? What is your opinion on this?***

We are not in a position to procure husk. Earlier procurement of coconut and dehusking were in bulk. This is now getting faded. Moreover retting and defibering was a common practice. Now dehuking of dried coconut has become difficult. This cause to the non availability of sufficient husk for coir making. As a solution to this, Coir Board decided to provide mobile defibering units in collection centres of husk. A pilot project on this has already started in Alappuzha.

***The export has crossed 1000 crores now. What are the challenges ahead of us in export?***

America, England, U.K and European countries are the major importing countries. China is importing coconut fiber on a large scale for making value added products and is exporting even to India. As the cost of production is less, they are in a position to make available the products at a lesser cost. This is really a challenge to India.

Sri Lanka and Philippines are the major coconut producing countries. They are also producing fibre from coconut husk. Eventhough Tamil Nadu used to export fibre to China earlier, it has come down now. The reason could be the increased export of coir fibre from Sri Lanka. Coir Board is planning to import coir fibre for creating more employment opportunities.

***How does the co operative societies registered with the Coir Board are functioning?***

Eventhough 5000 societies are registered with the Board, very few of them are functioning now. Their lack of experience in functioning management could be the reason.

Coir Board is introducing various schemes for reviving these societies especially for mechanization and value addition. For this Coir Board is planning to work in association with Coconut Development Board and the state government.

***Are you aware of the inequalities existing in the wages for women and also in the basic infrastructure facilities at the work place? Has it come to the notice of the Coir Board?***

The first thing of course is that the women labourers are getting very low wages. As most of these labourers are illiterate or less educated, they are not aware of the various diseases they may have due to the unhygienic conditions at their work place. Coir Board is planning to conduct medical camps for the women labourers. Coir Board would like to associate with related organisations for introducing various schemes for the coir sector.

***Likewise the Coconut Development Board which is planning to distribute uniform for the FoCT trainees, does the Coir Board have any plans to introduce uniform for the coir workers?***

The existing coir workers is an elder group and they do not still prefer a dress code. Young generation are not interested in working in the coir sector. Similar to the palm climbing training programme of the Coconut Development Board, Coir Board is planning to give training to women in spinning. 2000 new mechanized units are being upgraded for women now. Board is planning to attract more women to this sector as there is a scarcity of men labourers in the field.

***Does the Mahatma Gandhi National Rural Employment Guarantee scheme affecting this sector?***

Yes to a greater extent. People are looking for a better job with better pay. There are some model societies in coir sector where womenfolk of the particular locality only form the workforce.

***Has the Coir Board introduced any insurance scheme for the coir workers?***

The existing insurance schemes of the Board are only for accidents and disablement. We are thinking of a welfare scheme for the patients. It is also being examined that financial assistance for making house and educational allowance to their children who are undergoing professional courses. Provisions are made for giving scholarship to medical and engineering students and also for adopting them. When I was the Chairman of the Coir Workers Welfare Association, an old age home was established in Alapuzha district which is still functioning. This was the first initiative of its kind in Asia or even in the world.

***Coir being a natural fibre doesn't need much publicity campaigns. Coir Board is carrying of effective and beautiful publicity campaign. Do you have plans to extend it on a wider scale?***

Of course. Vanity bags and school bags can be made with coir fibre. Board is taking the efforts for doing the same. It is also being explored to find whether carry bags can be made with fiber. Attempts are also made for making coir ply, handicraft items, chains etc. Board is organizing melas in north eastern areas to create awareness on

coir and also to widen the domestic market. Researches is carried out at the CCRIs for coir pith. This will be made available as organic manure in the market soon.

***Coconut Development Board is intensifying its activities on productivity improvement programmes. Board is targeting to a productivity from the existing 42 nuts per palm to 150 nuts per palm. This will be reflected in the coir sector also. This would increase the raw material availability. Farmers can make additional income through the sale of husk. What is your opinion on this?***

The only way for saving the state of Kerala is through coconut farming. All parts of coconut can be used in one way or other. Board has intensified the usage of tender coconut water. If the sale of neera is also promoted, more people will be interested in planting coconut trees. The scarcity of labourers for harvesting and the spread of pest and diseases are the factors which were making coconut farming unattractive. But now with the training programme of the Board these issues would be solved. These initiatives of the Board is to be appreciated.

***Your messages are inspirational in holding back the farmers who are running away from coconut farming. Let us wish that Coir Board may involve in more farmer friendly successful programmes.***

Thank you for getting an opportunity to know about the programmes of the Coconut Development Board.

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*Interviewed by Dr. Remany Gopalakrishnan, Deputy Director, CDB, Kochi-11.*

# Coconut enterprises for women empowerment

Remany Gopalakrishnan

## Introduction

In India 47.1 per cent of Country's total population are women ( 1991 census). This roughly works out to 407.1 million women. Of this, 22.45 per cent which works out to 91.40 million are in work force and 90 percent of them are in the informal sector. The working force in the informal sector is denied of any legislative protection. In agriculture women work force is significantly high in informal sector. Coconut palm, which is one of the most important horticulture crops in the country, is known to provide multiple benefits to mankind. The support of coconut industry to women especially to rural women is quite significant. It provides equal opportunity to women as that of men. In some sectors women outnumber men. Women participate at every stages of coconut cultivation, processing and marketing, though in varying degrees. Coconut farming, coir industry, desiccated coconut industry, copra processing and coconut handicrafts units are the dominant areas where majority of women folk is employed. The new

developments in non-traditional sectors offer socio-economic support to those who are struggling in the lower strata of the society.

Appropriate strategies can be designed for enhancing the employment potential for women as well as on-farm and off-farm income. Coconut based integrated farming with livestock as a component has been identified as the prime area providing maximum employment potential. Intercropping with annuals especially with vegetables and rearing of milch cows, poultry, sericulture and rabbitry are congenial enterprises for women. Simple processing activities at household and community levels can be taken up by Women's Groups / Societies. Coconut chutney, Coconut chips, Nata-de-coco, Coconut burfi, etc. are products, which can fetch very good market in the rural as well as urban areas. Such organizations can also function as local marketing outlets for various coconut products including tender coconut. When the women's groups get entrenched in the different facets of coconut industry, the benefits of such organized





*Women groups at their workplace*

activities will empower them socially and economically. This article throws light on some of the major areas where opportunities exist for enhancing income and employment for women.

**Coir Industry:** Development of coir industry in India in an organized way began in 1859 by James Darrah, an American of Irish origin at Alappuzha, the former Alleppey district in Kerala. It has grown as the biggest employment provider among all coconut based industries. It is the second largest one after agriculture in the state of Kerala. Reports show that globally not more than 10 % and domestically 25 % of the output of husk is utilized for coir fibre extraction. Though countries like Sri Lanka, Thailand and China are in the export of coir, India is the major exporter of coir fibre. Last year India exported coir products worth Rs.1000 crores.

Coir industry provides means of livelihood to nearly seven lakh people who belong to the weaker sections of the society. Of this 90 per cent of the labour forces are women. The different stages of coir processing like, retting, defibring, spinning, and packing are mostly labour intensive. In Kerala alone 5 lakh people are employed in coir industry and it is next to Agriculture sector in providing employment. The utilization of husk and thereby creation of employment opportunities can be enhanced to a considerable extent since the application of coir in various sectors has been increased. Evidently, coir industry, started in an organized way in Kerala, has now spread to states like Tamil Nadu, Karnataka, Andhra Pradesh and

Orissa and in non-traditional states like West Bengal, Assam etc. The traditional retting process of white fibre making has undergone perceptible changes due the invasion of mechanization. Still in all the stages of mechanized processing starting from retting to evolution of a variety of coir products too, involvement of women is nearly 100 percent. Apart from the traditional coir products like coir fibres, coir ropes and coir mats, products ranging from rubberized, coir, coir baskets, garden articles like coir poles, coir pots and vases, pith briquettes,

rooting media of soft fibres to organic manure are the byproducts of the industry. Mechanization in coir industry has helped to improve the quality of the products and to stimulate product diversification. If the tempo of the mechanization improves and the women give better working condition, the industry can support 10 lakh people for their livelihood in which 7-8 lakh would be women beneficiaries.

### **Desiccated Coconut Industry**

Desiccated coconut industry is another organized coconut based industry where women labor dominates men. The dominance of women is more conspicuous in paring of coconut for further processing. Paring is an area which is monopolized by women. Their role in the deshelling operation, is also not insignificant. Here too mechanization has gained momentum. A Desiccated coconut manufacturing unit with a capacity of 5000 nuts per day can provide employment to 70 personnel. There are nearly 80 DC manufacturing units spread all over the country employing more workers. The DC units engage 60-70 per cent women workers in various stages of the processing like deshelling, paring, cleaning, drying, packing etc and thus women outnumber their male counterparts.

**Non-traditional Technologies:** Apart from the traditional sectors new coconut based industries are emerging utilizing the technologies developed by Coconut Development Board. Products viz., coconut cream, spray dried milk powder and coconut water vinegar, packed tender nut water and nata-de-coco

are a few such products. The technologies for these products developed through sponsored researches through various research organizations have already been commercialized and the products are launched. These technologies have been transferred to entrepreneurs and their products have been already launched in the market. A tender nut water packing unit with 10,000 tender nuts capacity can provide employment to 30 persons. Of this 25 % can be women. An industrial unit producing coconut water based vinegar with a capacity of 500 litres/day can provide regular employment to 10 personnel. A skim milk unit with a capacity of 20,000 nuts utilization per day can employ 65 persons. In such units more than 70 per cent employees are women.

All the above technologies can be integrated for the manufacture of various products under one roof utilizing kernel, shell and water. However, this would be a large scale industrial venture requiring higher capital investment. From 10,000 ripe nuts, 2500 Kg cream, 500 Kg coconut powder, 600 Kg vinegar and 600 Kg coconut shell powder can be collected. The technology for integrated processing is available with the Coconut Development Board. A plant with a processing capacity of 10,000 nuts can provide regular employment to 50-55 persons, of which 70-80 per cent can be women workers.

Tender coconut parlors are coming up in all coconut growing areas. Ladies selling tender coconut is a common scene on the streets in Tamil Nadu, Karnataka and Andhra Pradesh. In Kerala too sale of tender coconut has shown remarkable improvement. Now that the Government of Kerala has declared tender coconut water as the official drink of Kerala, the Board is celebrating the Year 2012-13 as the Tender Coconut Water Year. Hope all these would be a boon to the coconut sector and will help increase employment opportunities to both men and women.

### Handicrafts

Handicrafts making, is another area where thousands of artisans earn income for their livelihood. Women are part and parcel of coconut handicrafts units. The shell, husk, stipules, midrib, spathe, and wood are used for the manufacture of different showpieces and curios. In the making of different fancy articles out of coconut wood, shell, husk etc women exhibit special talent in machine carving,

shaping, polishing etc. Not only in the making of fancy articles but also in the production of other utility articles such as furniture, doors, wall panels, floor tiles etc. women enjoy a favored position. It is estimated that nearly fifty thousand artisans are engaged in the industry in the country. All these areas present immense scope for starting coconut wood based industrial units in the country.

Broom making using coconut midribs is also carried out as a cottage industry in coconut growing tracts and are exported to different parts in and outside the country. This sector is a monopoly of women workers. All the diversified uses present employment potential on a higher scale.

The only area where women are yet to venture or tried with hesitation is tree climbing. Now with the introduction of the Friends of Coconut Tree Training this hesitation of women has been getting wiped out and they started climbing the trees with confidence and earning good income. Out of 5300 trained youths 320 happened to be women from various sections of the society. This is a welcome transformation in the society bringing the weaker sections into the forefront. The Board is going to intensify the training programme for the benefit of the coconut sector in the country.

### Organized Women Groups enhance employment opportunities

Status of women in the society is still secondary and their role in developmental process is deplorably marginal. While social taboos, practices and lack of awareness and exposure smother their selves and spirits exploitations of all sorts are going on in all walks of life at their expense. The Project enables and enlightens the women to realize their own latent potentials, and strengthen them to contribute to the development of their families and community.



Organized women groups constitute an effective medium through which product utilization in coconut could be encouraged both at the household and community levels. Women groups when organized under the aegis of Self Help Groups or under co-operatives will increase the effectiveness. Coconut palm, “The Tree of Life”, is known to confer multiple benefits to mankind. Yet, it is a paradox that all the products of the palm are not being profitably utilized for deriving economic benefits. Coconut palm and its products are environmentally friendly also. Suitability of coconut is established as a means of women empowerment and poverty alleviation. Women often are highly discriminated in wage structure and social status and recognition of their output. This will be amply taken care in coconut based activities under the aegis of reputed organizations or Samitis. When women groups get entrenched in the different sectors of coconut industry, the benefit of such organized activities empowers them socially and economically. Community based organizations functioning elsewhere in the country candidly reveal the strength of women in group activities.

Organized activities under the aegis of reputed NGOs or cooperative societies or Self Help Groups (SHGs) or Govt. Departments facilitate the activities including marketing of the produces in more effective manner. The Kudumbasree units function all over Kerala under the control of State Government are typical example of successful Self Help Groups by which women, mostly belong to the category of below poverty line are benefited. Coconut growing villagers could be motivated to form community based organizations for equipping them for actively involving in various farmer participatory programmes coming under the purview of various development agencies or non-government organizations. They can reap the profit and share it among the fellow members. The participatory members become more responsive and responsible by themselves in group activities. Through such collective efforts untapped labour force of



*Spinning of coir is an area where women workforce dominate*

villagers especially women folk could be properly exploited and better market channel for value added products developed. The self-help groups of women are organized at community levels and the members are encouraged to produce value added products.

The sexual division of labour has resulted in the concentration of women in low paying unorganized sectors such as agricultural labour, cottage and traditional industries and selected service sectors. Despite the powerful trade union movements, equal wages for equal work still remains a mirage and gender discrimination at the work place is widely prevalent. The marginalization of women in the economic process and lack of control over resources have been major impediments in improving the status of women.

Kudumbashree is a community based organization in Kerala which demonstrated successful empowerment of women through coconut based microenterprises. It has grown as the biggest largest women’s movement in Asia with the goal of reaching out to the family through women, reaching out to the community through family. The goal was achieved through the holistic development of the poor families through self-help, people’s participation and group action. Naturally empowerment of women through community-based organizations is counted as the first and foremost objective of the mission.

With adequate technical and marketing support the women groups could trigger a process of change in the rural areas by creating gainful employment opportunities for their members at local levels. Reliable data on the actual involvement of women in coconut sector in the country is absent. This points to the need for a concrete survey by any of the national agency which would help bring a correct picture on the participation of women in coconut industry.

**Coconut farming sector:** While in mono cropping, man power requirement is limited, labor potential is more when crop integration is adopted especially with animal enterprises. A one hectare crop-mixed coconut holding can sustain a four-member family for their livelihood. The additional income from unit holdings and the success of farming depend on the cropping pattern and the choice of enterprise. The employment generation from coconut based intercropping was found to be 400 man days per ha against the mono cropping where there is only 160 man days. In addition to the enhanced income, these systems provide participation of family labor which invariably ensures the involvement of housewives and other women members in the family. They engage in nursery raising, weeding, applying manure and fertilizers and irrigation. Their role in collecting the harvested nuts and carrying them on head load to assembling points is significant. In the management of young plantations providing partial shade with plaited coconut leaves is a common practice. Splitting of coconut fronds and plaiting for thatching is the domain of women. The results of a farmer participatory study conducted in Kerala show that women do not experience any discrimination in any of the activities of coconut farming other than the differential wage structure. Women workers never receive equal wages to equal work. It is estimated that there are 5 million households in the country. In small and marginal holdings family labor is 100 percent. Contribution of family labor to the total work force is not exactly quantified. However taking 90 per cent of the holdings as small and marginal it is estimated that 11.25 million people are benefited through coconut farming.

**Government support to women groups:** could bring about salutary transformation in the social status of women. Programme like NREGS poses best opportunity to engage women in the agricultural operations and other development context. Similarly the Support to Training & Employment Programme

for Women (STEP) launched by the Government of India aims to make a significant impact on women by upgrading skills for self and wage employment. The sequence of activities envisaged are mobilizing women in viable groups, improving their skills, arranging for productive assets/access to wage employment, creating backward and forward linkages, improving /arranging for support services, providing access to credit, awareness creation, gender sensitization, nutrition education etc. The women groups in coconut sector can avail themselves of such facilities for empowerment and income generation. These will help develop the group to thrive on a self-sustaining basis.

Asian Pacific Coconut Community (APCC) constituted a task force to look into the problems beset with the women in coconut sector in 2005 with the representation of all major coconut growing countries. The group concluded that there exists glaring disparity among wages between men and women in many sectors. Improvement needed in the hygiene conditions, health sector, and welfare measures of women workers. The backwardness of women was observed as a common evil in all the countries. The task force made many recommendations for improving the status of women work force in coconut sector including ensuring parity in wage.

## Conclusion

Coconut based farming and processing activities is one of the most potential areas by which enhanced income and employment opportunities can be achieved. The industry is set to grow, despite the existing constraints, taking the advantage of its multipurpose utility over other crops. Employment generation through coconut based farming activities, forming organized self-help groups, Coconut Producers Societies and Producers companies should be the future strategy for rural upliftment and poverty alleviation. These activities would help bring social and economic benefits to the women community. A production target of 20000 million nuts is targeted by the end of the 12 Plan period. If then potential is fully exploited number of women folk that could gain higher income and employment would multiply manifold.

No doubt, coconut is the best option for women empowerment, rural prosperity and economic development.

*Deputy Director, CDB, Kochi-11*

# Changing the face of coconut sector... Shoba paves the way

Jayasree A.



Shoba Suresh is the proprietor of M/s. Surya Shobha, the first spray dried coconut milk powder manufacturing unit in Kerala and the second one in India. Spray dried coconut milk powder is gaining importance in food processing sector and as an ingredient in processed foods. Excerpts of the interview with Shoba Suresh.

### ***How did you come to the field of spray dried coconut milk powder manufacturing?***

I possess about 25 cents of leased land in industrial estate, Athani. Initially we had an engineering workshop for manufacturing grills and gates. We also had a paper cup manufacturing unit - Sonu Paper Cup. Later on the idea to start milk powder unit came to my mind and we started working on it. At that time we contacted Coconut Development Board for ascertaining the technical feasibility of the unit. On getting assistance from CDB during 2008 we initiated the work for setting up the unit.

### ***Although coconut milk powder is a high capital investment project, what prompted you to enter into this?***

With some of our gulf contacts we were assured that there is high export demand for this particular product. We had even identified some buyers before starting production. A group of 40 pravasi malayalees alongwith my husband and myself initiated action and acquired land for setting up an integrated coconut processing unit

at Akilad Beach, Chavakkad around eight years back. But after the tsunami, construction of building was not permitted within few kilometers of the beach and hence we had to drop that project. Since then we both were planning for this project.

For this Rs. 2.07 crore project, Coconut

Development Board has sanctioned a back ended subsidy of Rs. 48.475 lakhs under TMOG programme, SBI Thrissur granted a loan of Rs. 80 lakhs and the venture capital from SFAC was Rs. 35 lakhs.

### ***Being a women, what were the initial hurdles faced by you?***

The greatest deterrent to women entrepreneurs is that they are women and due to this they are facing many problems to excel in life and business. The obligations at home too bar them from becoming successful entrepreneurs in both developed and developing nations. Their responsibility for taking care of the children, home and older dependent family members ward them off from devoting their full time for business. But I am lucky that I have the support of my family.

### ***What was the attitude of***





*A view of the unit*

***financing agencies while approaching them for financial assistance for a coconut based industry?***

The financial institutions are skeptical about the entrepreneurial abilities of women. The bankers put unrealistic and unreasonable securities to provide loan to women entrepreneurs. In spite of the fact that women's loan repayment rates are higher than men's, women face more difficulties in obtaining credit. Financial institutions discourage women entrepreneurs on the belief that they may at any time leave their business. Thus women are forced to rely on their own savings, and loan from relatives family and friends.

In our case initially the banks were reluctant for sanctioning loan for coconut products since they were of the opinion that it is better to go for any other profitable business viz. biscuit or food products or even leather based shoe industry than coconut. The bank conducted a market survey for ascertaining the product requirements before sanctioning the loan.

***Whether the loan sanctioned for your project was sufficient for***

***starting the project?***

Usually the women entrepreneurs are suffering from inadequate financial resources and working capital. They lack access to external funds due to their inability to provide tangible security. The interest free loan from Small Farmers Agri Business Consortium was more beneficial as working capital was the major problem for these type of industries during the initial periods.

***With the strong support of your family, I hope you could go ahead very successfully?***

The success of a women entrepreneur depends on the support of her family members in the business process and management. Their interest is a determinant factor in the realization of women folk's business aspirations.

My family consists of husband and two children. My husband, Suresh Kumar after his retirement from military services helps in both the managerial and financial matters for the smooth functioning of the unit. He is also looking after the export of the products.

***What is your raw material***

***source? What is the present capacity of the unit?***

We are getting raw materials from in and around Thrissur. We have tie up with farmers for continuous supply of the same. The installed capacity of the unit is 20000 nuts per day. At present the production of the unit is 180 MT per year. The capacity utilisation is around 60% only since the commercial production started last year only. The annual turn over is around 8 crores.

Good matured nuts are required for extracting coconut milk. For that we even pay Rs.18-20 per nut. Knowledge of alternative source of raw materials availability and high negotiation skills are the basic requirement to run a business. Lack of knowledge on the availability of the raw material and low-level negotiation and bargaining skills are the factors that affect women entrepreneur's business adventures.

***What is your opinion about the technology which you availed from CFTRI through CDB?***

We had availed the technology developed by CFTRI through CDB for spray dried coconut milk powder and set up the unit as per their suggestions. We had to make certain modifications later on as per our requirements and fabricated the same. It is a fully automatic system with disintegrator, milk extractor, tank with agitator, milk crusher, sterilization tank and complete spray drier. We had also installed fully automatic line carton packing machine as per the product requirement.

***What is the brand name of your product? Do you have any plans for maintaining quality standards for the production as well as for the unit?***

Our brand is 'Surya shobha'. We have initiated action for ISO 22000 certifications. The building is constructed as per the food safety norms. The concerned authorities have already started the inspection procedures.

***Do you have any further plans for product diversification or value addition?***

We have already started producing desiccated coconut. There is high demand for coconut milk also. Recently we got an order from Malaysia for coconut milk. We are now trying for the aseptic packaging of the same. We are also planning to set up a virgin coconut oil unit.

***How are the products marketed?***

We have sufficient orders for milk powder as well as DC. Milk powder and DC were exported to Dubai, Baharin and Australia. Now for an Ireland firm we are supplying 4 MT of milk powder and 10MT of desiccated powder every month. Recently we got a supply order for five containers of coconut milk in 25 litre cans from Singapore. Action has also been initiated for contract with some companies in Sharjah, Qatar and USA. We are also planning for setting up an outlet at Dubai.

For the domestic market we have engaged three distributors for Kerala. The tax for the product is higher ie. 4%. The commission for distribution goes as high as 35-40%.

***Are you facing any shortage of labourers?***

Shortage of labourers has become drastic in Kerala. The NREGA scheme has increased it further. At present we are having 12 permanent labourers from Orissa. We cannot depend on the daily wage labourers for this type



*Another view of the unit*

of industry since we have to make prompt supply for being competent in this field.

***How was your association with Coconut Development Board?***

I should specially mention about the support of the Technology Mission cell of the Board. We were having a close contact since the inception of the project and were seeking suggestions at each step. One of the suggestions to the Board is that awareness creation on value added products to the financial institutions is a must so as to get loans sanctioned without much hurdles. The second suggestion is regarding the preparation of project proposals. The details of empanelled agency with their approved fees may be made available.

***What is your message to women entrepreneurs in coconut sector?***

Indian women entrepreneurs are making their presence globally. The educated women especially in Kerala do not want to limit their lives in the four walls of the house. Indian women give more emphasis to family ties and relationships and hence family obligations bar them from becoming successful entrepreneurs. They have to make

a balance between business and home to come out dynamically in the business world.

Despite all the social hurdles, many women have become successful entrepreneurs with their hard work, diligence, competence and will power. Ability to learn quickly persuasiveness, open style of problem solving, willingness to take risks and chances, ability to motivate people, knowing how to win and lose gracefully are the qualities of the successful women entrepreneurs.

In coconut based industries investing money, maintaining the operations and ploughing back money for surplus generation requires high risk taking attitude, courage and confidence. Though the risk tolerance ability of the women folk in day-to-day life is high, in business it is found totally different. Despite the fact that women entrepreneurs are good in giving prompt service and timely delivery the lack of organisational skills is a constraint. If she can overcome this part she can become a successful entrepreneur.

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## Women empowerment through coconut based micro enterprises

C. Thamban, S. Jayasekhar, K.P. Chandran and K.Muralidharan\*

The National Agricultural Policy of India (2000) has highlighted the need for incorporating gender issues into the agricultural development agenda to provide recognition of women's role as farmers and producers of crops and livestock, users of technology, active agents in marketing, processing and storage of food and agricultural labourers. Access to credit and opportunities for employment, enterprise development and income generation opportunities have to be improved to make sustainable improvements in the livelihood of rural women. Performance evaluation reports reveal that women in agriculture programmes implemented have made impact in terms of improving access to information on agricultural technology, adoption of technology and gaining benefits from their use. Rural women have been facilitated through various programmes to form self help groups to take up agro-based micro-enterprises for income and employment generation.

Coconut is unique among horticultural crops in India and assumes considerable significance in the national economy in view of rural employment and income generation. India produced 15730 million coconuts in the year 2009 from an area of 1.94 million hectares with a productivity of 8303 nuts per hectare. Coconut industry provides livelihood to about ten million people in India. The traditional coconut industries which supports thousands of rural poor by providing employment and income are copra making, oil milling, coir making and to a certain extent desiccated coconut industry. Production and marketing of diversified high-value coconut products from all parts of coconut-the kernel, husk, shell, wood, water and leaves; are a potential source of income and employment for the rural women. The coir sector in India is very diverse and involves households, co-operatives, NGOs, manufacturers and exporters. The coir industry employs more than 6.4 lakh persons of whom a majority is from rural areas

belonging to the economically weaker sections of society. Nearly 80% of the coir workers in the fibre extraction and spinning sectors are women. The coir industry in Kerala state alone provides employment to around 4 lakh persons of which 3.25 lakh are women.

The documentation of outputs of the COGENT sponsored project on 'Developing sustainable coconut based income generating technologies in poor rural communities' revealed that women members of the Community Based Organisations under the project increased their income upto 5 times through the production and marketing of coconut high value products compared to their previous income from copra. This project intervention provided employment opportunities to formerly unemployed and under employed rural women resulting in enhanced self esteem, and economic social empowerment.

The analysis of units supported by Kudumbasree Mission, the



*The members of the compost unit*

State Poverty Alleviation Project in Kerala, revealed that in general micro enterprises on copra and coconut oil, shell charcoal, toilet soap, washing soap, coconut based food products, coir yarn spinning, virgin coconut oil etc. are the major types of enterprises. 'Kerasree' units by the women's self help groups for the production and marketing of coconut oil ranked first with respect to the number of coconut based micro-enterprises. 'Friends of Coconut Trees', the innovative coconut palm climbing training programme being implemented by Coconut Development Board, also provided opportunity for unemployed young rural women to realize a better income and livelihood. Out of the 5576 trainees so far trained successfully under the programme, 390 are women.

Apart from the SHGs under Kudumbasree project, women's groups organized under some special projects by other agencies also run coconut based micro-enterprises in Kerala. The success story of SUBICSHA (Sustainable Business Development of Innovative Coconut Based Microenterprises for Holistic Growth and Poverty Alleviation), a special project under SGSY implemented by Perambra block panchayat in Kozhikode District in Kerala state since 2003 stands out

among such units. SUBICSHA, at present functioning as a registered company, is a federation of 700 women Self Help Groups (SHGs) with a total of 7000 members involved in various activities related to production and marketing of coconut products. About 41 value added coconut products are being produced and marketed by SUBICSHA. This unique company has an annual turn over of Rs.43.75 crores through coconut based micro enterprises with annual net sale revenue of Rs. 16.68 crores expecting a per family income of Rs. 25140 per annum.

The scenario analyses of women self help groups in Kerala dealing with the coconut based micro-enterprises revealed that majority of the micro enterprises were started from the year 2002 onwards. On an average, there were eight members in each of the coconut based micro enterprise activity group. Majority of the members belonged to the age group of 35-45 years. 98% of the members were literate and 40% of them had education up to 10th standard. Kudumbasree, the State Poverty Alleviation Project and SUBICSHA were the important sources of information about the potential of coconut based micro enterprises. CPCRI, Coconut Development Board and Kudumbasree were the important agencies that provided training for the women SHGs on coconut based micro enterprises. Majority of the units availed credit facilities for starting the micro enterprises. Local Self Governments, Kudumbasree project and Coconut Development Board provided



*Collecting the compost*

## Success story of a women SHG initiative on managing a microenterprise related to production and marketing of coir pith compost

'Gramajyothi, Kavilumpara, Kozhikode is a women self help group started in the year 1999 with seven active members. They got the awareness about the potential of such a business unit from Coir Board of India and were encouraged by the Gram Panchayat officials and the agricultural extension officials. Subsequently, they were motivated and got trained themselves from a campus training programme organized by STED and Coir Board at Nellikunnu. The initial investment for the unit was around Rs. 3.1 lacs which include the infrastructural facilities and equipment costs. Out of the total initial cost they could garner Rs. 2 lacs from Block Panchayat and rupees fifty thousand from Gram Panchayat as support grant. Coir pith for the compost preparation is being collected from the coconut defibering unit at Kaiveli. The production cycle of enriched coir pith compost takes about 45-50 days. To enrich the coir pith compost, bone meal (20%), neem cake (10%) and Rajphos (10%) are also mixed with the coir pith. In one production cycle, about 14 tonnes of compost is produced. The product is sold

under the brand name 'Suraksha' at the selling price of Rs. 12 per kg. The cost of production per kg comes to about Rs. 9/-. Last year they could sell their product worth Rs. 16 lakhs. On an average, each member could earn Rs. 200/- per day through the microenterprise. The marketing of the product has been done through different agencies like SCB depot, Krishi Bahvan (under the decentralized planning schemes of local self governments) and also through direct selling in towns. Lack of storage facility and problems in procuring fungal culture were the major constraints faced by the unit. On the contrary, the members were extremely happy that the economic benefit in terms of profit share up to Rs. 30,000 per year accrued to each member besides their wage earnings. The members felt improvement in their self confidence and decision making power at home. They have also reflected the empowerment in terms of better self esteem, social interactions and better communication skills. The SHG has been successfully managing the micro-enterprise for the past 13 years and Mrs. Kashika Preman is the present convener of the group.

subsidies/incentives to the SHGs. Initial investment required for starting the coconut based micro enterprise was highest for virgin coconut oil. Benefits of the units as perceived by the members of SHGs were i) economic empowerment ii) better self-esteem, self confidence and influencing power within the household, and iii) better social interactions and communication skills. The women entrepreneurs perceived that difficulty in marketing of the products was the most important constraint in running the coconut based micro enterprises.

We may assertively conclude that the coconut based micro-enterprises run by women SHGs have certainly resulted in empowerment of women



*Packed compost*

associated with the enterprises. Apart from the economic betterment, which being an easily understandable indicator of the

positive impact of the SHGs, there are certain other facts also to be recounted. This includes the dimension of motivation, aspiration, overcoming the fear of authority, confidence in one's own abilities, autonomy in the use of resources in house holds and participation in decision making in the house holds. However, to make the coconut based micro-enterprises sustainable, womens' access to technologies, sources of credit, skills for establishing enterprises etc should have to be improved. Workings through women groups and in partnership with other organisations having wider skills related to empowerment of women are also important.

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# If there's a will, there's a way

Sona John

While working in a handicraft unit of Malanadu Society on a daily basis, Laila was so concerned on her future. She was determined to break the routine of her daily work and want to become an entrepreneur. She already had developed a keen interest in making handicrafts out of coconut shell and wood. It was then that she decided to strike it out on her own. Joy, from Kannur added inspiration. A training programme was conducted by Joy at Laila's residence. Laila and her husband alongwith other 40 trainees attended the handicrafts making training. And now after .... years her dream has come true. She has proved that if there is a will, there is definitely a way. Gramalakshmi coconut shell production and Training Centre is her home based enterprise providing training to women in coconut shell handicrafts.

In true lines to its name, Gramalakshmi Coconut Shell Production and Training centre is adding prosperity to the village of Amanakara at Ramapuram, Pala. Fifteen ladies from in and around

this village are making their livelihood from the Gramalakshmi Coconut Shell Production and Training centre. When venturing into a small scale coconut shell unit, Laila John, the proprietor of the firm, never dreamt that she is going to be the winner of the Micro entrepreneur award under the social responsibly category in 2006. She received the award money and memento from Shri. Jayaram Ramesh, the then Minister for Commerce, Government of India at a colourful function held at Delhi.

She started the first unit at her residence itself. Laila started making some essential kitchen items like ladles, spoons, spatula etc. out of coconut wood and shell with a marginal investment. Axo blade was the only equipment she was using to cut and shape the shell parts. Very soon she understood that cutting and shaping the coconut shell with the axo blade is a tedious task and now she has transformed it to mechanization. Now Laila's Gramalakshmi Coconut Shell Production and Training centre has an investment of Rs.14 lakh

and the unit is running the business of nearly Rs. 1½ lakh per month.

The collected shells are cut into the required shape using a carving and cutting machine. Later on the



*Laila in the unit*

pieces are cleaned using a cleaning machine. Buffing is also done with the blowing machine for the product to look attractive. A driller is used for attaching various parts.

Laila shifted the unit from her residence to the nearby building of



*Laila with her husband John*



*Utility and handicrafts items made by Grama Lakshmi*

a bank in Amanakra. The second unit was started at Chettukulam in 2008. Initially Laila concentrated only on making curios and handicraft items from coconut shell. But later on she turned to utility articles on being found that they hold better demand than curios.

Laila is so particular in selecting the coconut shells for making the products. She is utilizing only the shells of the scraped coconut. She is collecting the shell from the nearby hostels and hotels. Wholesale dealers are also supplying coconut shell. Nearly 1000 kg shell is used in a month to make various utensil items and show pieces. She is also utilizing the wood of nearly 15 coconut trees every month

Initially Laila sold the items in her neighbourhood only. Now she has registered herself as an artisan with several government and non government organisations. Today her enterprise has grown from a home based one women enterprise to a flourishing one employing 15 women. Laila is so proud that she was detrimental in elevat-



*The unit*

ing the status of 16 families including her own. Laila's husband John is also with her full time extending all help.

Laila is a frequent supplier of the handicraft items to the Kairali handicraft emporiums of the government of Kerala. She is also supplying the products to Khadi Board and even in handicraft shops across the state. Laila's products hold good demand in the market. Her worry is that she can not accelerate her production in lines with the

emerging demands as there is a severe scarcity of labourers.

Laila has imparted training to more than 120 ladies. She also conducts training at the Block level and various other centers. A few of her trainees have started their own units too. Grama lakshmi is well equipped to give employment to 40 women employees at a time. Presently 15 women are working in the two units of Grama lakshmi. Most of them are making Rs. 4000 to 4500 a month according to the work they do.

Laila frequently takes part in the exhibitions participated by the Coconut Development Board for the display cum sale of her products. She is a beneficiary of the Board under the Technology Mission on Coconut.

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*Sub Editor, CDB, Kochi-11*



*Cutting the shell to the required shape*



*A view of the training programme*

Coconut has always been an integral part of the culture of Kerala. Of late the coconut sector of the state is facing a major problem with less availability of traditional coconut climbers as the younger generation is keeping away from this profession. The non availability of labour is all the more crucial in coconut cultivation since the harvest of nuts has to be followed in a regular pattern. More over it is a skilled labour too. As a solution to this issue, the Coconut Development Board, introduced the 'Friends of Coconut Tree' training programme which is implemented in Kerala, Karnataka and also in Maharashtra.

In Kasargod district in Kerala, the training was conducted by the Krishi Vigyan Kendra(KVK) functioning under the Central Plantation Crops Research Institute. The project was inaugurated on the farmers day and till now 200 youths have been trained in ten batches. The course is a six day residential training. In Kasargod the project has set a role model for women empowerment also. The 5<sup>th</sup> batch of the trainees of KVK Kasargod were all women who have by now stamped their presence in the field and are much sought after for their valuable service. They fetch the same wages as men thus setting a long way in mainstreaming the gender concerns in agriculture.

## Women empowerment in agriculture- a Kasargodan model

S Leena, M P Jayasree and T S Manojkumar

The long list of youths seeking enrolment in the future batches of the project at KVK, Kasargod reveals the impact of the project. The Board is giving the training free of cost. Board is trying to make the training a pleasant experience for the beneficiaries. Every day begins with a physical fitness package comprising of yoga, breathing exercises, jogging etc. This will enhance the physical and mental strength of the participants. The Board also provides each participant a coconut climbing machine and also insurance coverage.

Though the main agenda of the training is machine aided coconut palm climbing the trainees are also made well versed in all management and plant protection aspect of coconut palm so that once they are into the field, they will be masters in coconut cultivation and not mere labourers. They are acquainted with everything related to scientific cultivation of coconut right from seed to value added products. In addition to these, sessions are held on improving their communication skills, leadership qualities, decision making power, action plan preparation, banking operation etc. Practical sessions on the above said topics helps to the reinforcement of knowledge.

About 65 % of the men who have completed training here have taken up this as their career earning Rs. 300 to 900 per day. Their feedback reveals that apart from being a good source of income this has also helped to raise their self esteem. They are also attempting group approaches to diversify their field of activities in their locality. Some have started up



*The training*



*Training in preparing snow ball tender coconut*

with enterprises like tender nut parlour, snow ball tender nut units etc.

The fifth batch was the first women batch and gained the attention of the media. Ladies from all walks of life- housewives, panchayath members, representatives of voluntary organisations and students took part in the training programme. Smt. Valsamma Appachan, the eldest of the group said that her achievement of climbing coconut palm of



*Reena, a trainee*

16 meter height and cleaning the crown of the palm was beyond her dreams. Smt. Reena, a participant may be the first women ever to climb up a coconut tree and to do artificial pollination. She is an entrepreneur having a tender nut parlour in Nileshwaram and is now hopefully looking forward to incorporate all what she has imbibed from the Friends of Coconut tree training programme of the Board to boost up her enterprise. She is now harvesting tender coconut of her own for selling in the parlour. Babitha and Bijitha, who have taken up this as a part time job were honoured by INFARM

unit of Ballal panchayath for their services in popularizing coconut palm climbing as a women friendly venture. Latha and Usha, two other participants are into snow ball tender nut making. All the women participants opines that machine aided palm climbing requires less effort and is women friendly and safer. It is worth being taken up as a career by women. Now they have a lot to talk about their better experiences in life brought about by the Friends of Coconut Tree training. Apart from being financially secure and self dependent, they have gained a great deal of self confidence and self esteem. They are now capable of making projects with prior planning and communicating the same with the other members of the group. They could even attract more women to their groups.

A Coconut Olympiad is conducted as part of the training on the concluding day of the training. Praseetha Chandran bagged the first prize in the training conducted for ladies. Babitha and Soumyasree were the first runner ups and Reena was the second runner up. The KVK and CPCRI is working in unison for the successful conduct of the FoCT training at Kasargod. Jenson and Johnson from Kozhikode were the master trainers. They put their body and soul together to train the ladies batch. They have made the ladies confident that ladies are not behind men in accomplishing any task.

The Kasargod model of women empowerment facilitated through the Friends of Coconut Tree may gain more momentum in the coming days. These trained ladies with the climbing devices will be a task force in the district finding a solution to the need of the labour shortage in the coconut cultivation sector.

\* SMS, KVK, CPCRI Kasargod

# Friends of Coconut Tree - a Best Model for Women Empowerment

'The Friends of Coconut Tree' training programme of the Coconut Development Board is making revolutionary changes in the coconut sector.

This programme was initiated by the Board at a time when the sector was going through a severe crisis due to the dearth of labourers to undertake harvesting operations. The programme which was started on August 17<sup>th</sup> has already achieved its target of training 5000 youths. It is encouraging to note that most of the trained youth have taken up this as a profession.

The most remarkable achievement of this programme which is worthy to be mentioned is the entry of women to this male dominated sector. Board has given training to 390 women through the training programmes conducted at various district centres.

The first women batch was trained at Kasargod district. Out of the 25 ladies trained at the

centre, 90% are doing harvesting, plant protection operations and even into tender coconut selling. Many of them are climbing 30-50 trees per day.

Reena, a trainee of this batch is a tender coconut seller. Now after attending this training, Reena herself is harvesting the tender coconuts required for selling. Babitha and Bijitha two sisters who had attended the training, Bijitha is doing her final year B.A.. She is doing palm climbing and other plant protection operations along with her sister. They are climbing 30 to 50 trees a day and is charging @ Rs.15 for harvesting and @ Rs.25 for crown cleaning.

13 women have attended the FOCT training programme in Kannur district. They are doing this work as a part time job. Two of the trainees, Bindhu and Shyny are going for this work as a team. Bindhu is climbing upto 25 trees per day and is charging Rs.12 per tree. 49 women attended the training in

Kozhikode district, Praseetha Dineshan, Bindhu Sundaran, Riya.K.B and Sindhu.C.K are some of the trainees who have taken up this as a profession and are making an income of Rs.300-500 per day. As the women trainees are charging only a reasonable rate farmers prefer women for the harvesting work. Praseetha attended this training while working as a post woman. Now she is making double income through this work.

In Thrissur district 48 women have attended the training. Some of the trainees like Sahira, Umadevi, Reena, Udaya and Jayasree have taken up this as a full time profession. They opines that this job has created an additional income to the family. They are proud in becoming an earning member of the family.

63 women have attended the FOCT training programme in Ernakulam district. Dincy, a trainee from Ernakulam is climbing around



*Women in FoCT Training Programme*



*FoCT Training Programme: Different stages*

26 trees per day and is earning upto Rs.700. She is happy that her hard work and sincerity is well rewarded. Those people who have once availed her service are calling her again.

While initiating the training in Kottayam district, Board was not confident that there would be enough women trainees. In Kottayam district, 16 ladies have attended the training. Most of the women participants were confident and determined that this training would give them a better status of living.

In Idukki district, 23 ladies have attended the training. Many of them opinioned that this training has changed their life. They are making additional income from coconut climbing alongwith with the other works they were doing. Sathy Devi, a retired nurse and Jerly Roby, a panchayath member were two of the trainees of Idukki district. Farmers are happy to avail the service of the women climbers as they are charging only a reasonable rate.

In Alappuzha district, Board has given training to 26 women. Anaswara, a trainee is a plus one student. She goes for this work

along with her father Srinivasan also has also undergone training in mechanised palm climbing. She is climbing upto 30 trees per day and she is charging Rs.20 per tree for harvesting and also for crown cleaning. In cities where there are only one or two trees in a compound she is getting upto Rs.50 per tree.

Sandhya another trainee from Alappuzha is excited now that she has been asked to do the pollination work at the Rice Research Centre, at Kayamkulam. She is planning to start this new job from April onwards. Now she is doing this work from 8 am to 12 noon. She is climbing 30 trees a day and is charging @ Rs.20 per tree. After joining her new job, Sandhya is planning to continue this work in afternoon. She is grateful to the Board that the training given in pollination has awarded her this new job.

In Kollam district, 87 ladies have attended the training. The 21<sup>st</sup> batch which has completed the training on March 17<sup>th</sup> was an exclusive women's batch. Martina a trainee from Kollam is climbing 10-40 trees per day. She is charging @ Rs.25 for a tree for harvesting and crown cleaning.

She has started this work since January this year and now she is having a bank balance of Rs.7000. Gracy, Suja, Prasada and Chadramathy have formed a group and they are undertaking this work on a group basis.

In Thiruvananthapuram district Board has trained 618 youths in 27 batches. Out of this 39 are ladies. Most of women trainees are interested in continuing this field. Ranjini, a trainee is climbing 20-30 trees per day. She is getting a regular income of Rs.300 from this job. Leo and Suni were the couple who have attended this training from Thiruvananthapuram district. Both of them were the master trainees of the FoCT programme conducted by the Board in Thane in Maharashtra.

The feedback Board receive from the trainees is very positive. Majority of them are climbing 30-40 trees per day. Preference for the women trainees from the farmers will definitely attract more women to this field. Some of the women are so confident and proud that they are equal alongwith men in becoming an earning member of the family.

*Courtesy: Charge Officers, FoCT*

# Coconut - Beyond copra, oil and water

A.V.D.Dorajee Rao, Y.Ramakrishna, and M.Kalpana

The coconut palm has been the subject of great adulation and admiration across the world and down the ages. It was domesticated mainly for copra, oil and tender nut water. Coir is another important product out of the fruit botanically the mesocarp. This is perhaps the only tree, which has a systematic recorded history dating back to nearly 3000 years before the birth of Christ. Botanists say that the coconut was domesticated in neolithic, stone age, times. When the 1<sup>st</sup> Ice Age has frozen much of the waters of the world reducing the distance between the islands and continents, seafaring tribes found it easy to move between landmasses. They carried coconuts for food and water during their voyages and planted whatever was left over in their new home.

The word 'Coir' refers to a stiff coarse fiber from the outer husk of a coconut fiber, a slender and greatly elongated solid substance. Indian coir industry is an important cottage industry contributing significantly to the economy of the major coconut growing States and Union Territories, i.e., Kerala, Tamil nadu, Andhra Pradesh, Karnataka, Maharashtra, Goa, Orissa, Assam, Andaman & Nicobar, Lakshadweed, Pondicherry, etc. About 5.5 lakh persons get employment, mostly part time, in this industry. Coconut husk is the basic raw material for coir products. Around 50 per cent of the available coir husk is used to produce coir products. Hence, there is scope for growth of coir industry.

## TYPES OF COIR

### Brown fibre

The fibrous husks are soaked in pits or in nets in a slow moving body of water to swell and soften the fibres. The long bristle fibres are separated from the shorter mattress fibres underneath the skin of the nut, a process known as wet-milling. The mattress fibres are sifted to remove dirt and other rubbish, dried and packed into bales. Some mattress fibre is allowed to retain more moisture so that it retains its elasticity for 'twisted' fibre production. The coir fibre is elastic enough to twist without breaking and it holds a curl as though permanently waved. Twisting is done

by simply making a rope of the hank of fibre and twisting it using a machine or by hand. The longer bristle fibre is washed in clean water and then dried before being tied into bundles or hunks. It may then be cleaned and 'hackled' by steel combs to straighten the fibres and remove any shorter fibre pieces. Coir bristle fibre can also be bleached and dyed to obtain hanks of different colours.

Brown coir is used in brushes, doormats, mattresses and sacking. A small amount is also made into twine. Pads of curled brown coir fibre, made by needle-felting (a machine technique that mats the fibres together) are shaped and cut to fill mattresses and for use in erosion control on river banks and hillsides. A major proportion of brown coir pads are sprayed with rubber latex which bonds the fibres together (rubberized coir) to be used as upholstery padding for the automobile industry in Europe. The material is also used for insulation and packaging.

### White Fibre

The immature husks are suspended in a river or water-filled pit for up to ten months. During this time micro-organisms break down the plant tissues surrounding the fibres to loosen them - a process known as retting. Segments of the husk are then beaten by hand to separate out the long fibres, which are subsequently dried and cleaned. Cleaned fibre is ready for spinning into yarn using a simple one-handed system or a spinning wheel.

The major use of white coir is in rope manufacture. Mats of woven coir fibre are made from the finer grades of bristle and white fibre using hand or mechanical looms. Coir is recommended as substitute for milled peat moss because it is free of bacteria and fungal spores.

### Coir processing

Coir or Cocos - Nature's wonder fibre is extracted from the protective husk of the coconut. This golden fibre is spun in a breath - taking range of textured yarn and woven into a spectrum of colorful floor covering

The husks separated from the nuts are retted in lagoons up to ten months. The retted husks are then beaten with wooden mallets manually to produce the golden fibre. The fibre is later spun into yarn on traditional spinning wheels called “Ratts”, ready for dyeing and weaving into myriad shades of floor coverings. A score of varieties/grades of coir yarn are produced and each variety is associated with certain specific characteristics, used for industrial, agricultural and domestic applications.

The starting point of the industry is the process of dehusking after harvesting of the mature coconut crop. Coir fibers are extracted from the husks surrounding the coconut.

In most areas coir is a by-product of copra production, and the husks are left on the fields as mulch or used as fertilizer due to high potash content.

For production of light coloured fibre of spinnable quality green husk of 10 to 12 months old coconuts is ideally suitable. India and Sri Lanka are the main areas where the fibres from the husk (termed ‘coir’) are extracted by traditional methods for the commercial production of a variety of products (brushes and brooms, ropes and yarns for nets and bags and mats and padding for mattresses). However, world wide, only a small part of the fibres available are currently used for these purposes.

### **Fibre Extraction**

The processes of fibre extraction are varied, and depend on the effectiveness of the wet processing such as bleaching and dyeing of coir and also varied end uses.

#### **Traditional fibre extraction**

The traditional production of fibres from the husks is a laborious and time-consuming process. After separating of the nut, the husks are processed by various retting techniques generally in ponds of brackish waters (for three to six months) or in backwaters or lagoons. This requires 10-12 months of anaerobic (bacterial) fermentation

By retting, the husks are softened and can be decorticated and the fibre is extracted by beating, which is usually done by hand. After hackling, washing and drying (in the shade) the fibres are loosened manually and cleaned. The remaining residual pith - which was previously considered a waste problem -

has recently found new profitable markets as a peat moss substitute for horticultural production.

Traditional practices of this kind yield the highest quality of (white) fibre for spinning and weaving. Retted fibres from green husks are the most suitable fibres for dyeing and bleaching. For the production of more coarse brown yarns shorter periods of retting may be applied. These find an increasing outlet in geo-textile applications.

### **Mechanical Extraction**

Alternatively, mechanical processes using either de-fibering or decortivating equipment process the husks after only five days of immersion in water tanks. Crushing the husk in a breaker opens the fibres. By using revolving “drums” the coarse long fibres are separated from the short woody parts and the pith. The stronger fibres are washed, cleaned, dried, hackled and combed.

### **Green decortication and Microbial treatments**

New environmentally friendly methods for fibre production are of interest. These can be locally exploited on relative small-scale, and have the potential to produce a more constant quality of fibres. Novel developments by the Central Coir Research Institute, under Coir Board, using a bio-technological approach with specific microbial enzymes have reduced the retting time substantially to three to five days. High quality fibre production has been maintained.

Similar protocols can be developed to enhance the properties of the fibres in regard to surface properties such as smoothness and porosity. By using specific (microbial) lignolytic enzymes (laccase/phenoloxidase), the fibre surface can be bleached (or activated to react more easily with the dyes).

### **Formation of Yarn**

#### **Hand Spinning**

The usual practice in hand spinning is to roll the fibre into short length of 6 to 9 inches, giving a clockwise twist by hands. When a sufficient quantity has been made, two of these short lengths are taken in hand together and made into yarn of two plies by giving a counter twist, using both palms.

When the counter twist reaches near the end of the striking, further pieces of short lengths kept ready are added one after other, while the counter twist by

hand is continued till the required length of yarn for a knot is reached. This is reeled in the form of a hank and a knot is made at the end. Handspun yarn always has a soft twist.

### Traditional Ratt Spinning

Spinning is usually done on the 'Charka' or spinning wheel. Wheel spinning is gradually displacing hand spinning.

From the middle of the 19th century, coir spinning wheels have been introduced with a view to increasing production and obtaining the hard twist required for the manufacture of matting, etc.

To prepare two-ply coir yarn on the spinning wheel, one set of two wheels, one stationary and the other movable is required. The stationary wheel usually contains two spindles set in motion through the centre of the wheel. The movable wheel contains one spindle only. Two persons take the silvers of 'coir' prepared and kept ready after willowing.

Usually women keeps them in their arm pits, make a loop with a small quantity of fibre and then puts the loop thus formed into the notch of one of the spindles on the stationary wheel and gives the fibre a uniform thickness while walking backward. Another operator then gives the twist to the fibre thus led by turning the handle of the spinning wheel. This operation is continued till the required length of strand is reached. The strands are then passed through a grooved rod and tied together into the notch of the spindle, the grooved rod being allowed to move forward. The movable wheel is turned in the opposite direction.

The object of the grooved rod is to regulate the twist of the yarn and to prevent entanglement of the strands at the time of doubling. When the grooved rod reaches the stationary wheel, the turning of the spindles of the spinning wheel is stopped and all the ends from that of the stationary wheel are cut off and the yarn is tested to see whether there is sufficient twist. If more twist is required, the movable wheel is turned toward its original direction till the required twist is obtained, if it contains more twist than desired, the movable wheel is turned in a direction contrary to the original twist. Traditional Wheel spinning using a spinning wheel requires three people, who may produce 12-15 kg of yarn per day.

### Motorised Traditional Ratt

Motorised Traditional Ratt is a developed form of

a coir spinning 'charka'. Here, the stationary ratt is rotated using a suitable contrivance attached to an electric motor. By attaching the rotating system to the stationary ratt one worker is avoided and the productivity is increased. The wages thus earned are divided among the two workers resulting in enhancement of wages of spinners. This system has been introduced recently and found successful in the industry for spinning all varieties of yarn.

### Motorised Ratt

The research and development in coir industry was mainly aimed for reducing the drudgery of the workers involved in the spinning of coir yarn on traditional and motorized traditional ratts. Two or three spinners are engaged for exercising the production activity in yarn spinning, where they are exposed to changing weather conditions, which ultimately affects the production. They are also forced to walk up and down in the spinning yard for taking the individual strands and for doubling operation.

It was a long time dream of the coir industry to introduce a contrivance for reducing the drudgery of the labourer and improve the productivity and also enhance the earnings of the workers engaged in the spinning. As a result of research and development, a spinning device for attaining the real goals of reducing the drudgery, improving the productivity and to improve the working environment, the motorised ratt was introduced in the industry.

In the case of a motorised ratt the spinner is made to sit on a chair /stool and roll the well cleaned fibre stacked in the spinning trays attached to the spinning device where the yarn is spun and wound over the bobbins attached to the ratt.

The simple device is now popular in the industry and the benefit of the device has been extended to all spinning areas, all over India. Coir B'oard has taken all efforts to popularise this spinning device and a scheme has been evolved under 'Mahila Coir Yojana Scheme' for providing motorised ratt to spinners at a subsidised rate. The introduction of the motorised ratt in the industry has paved way for increasing the employment opportunity, as the new generation has taken up the spinning activity in the coir sector as the change in the working environment. All varieties of coir yarn in the industry are produced on ratt with a slight alteration on the equipment.

## Automatic Spinning

The production turnover in the case of hand spinning was less. The efforts to maximise the productivity of the yarn resulted in the introduction of automatic spinning machine units.

The automatic spinning machine units are capable of production of yarns of runnage varying from 50 to 300 meters/kg and twists from 10 to 30 twists/feet. Coir fibre in the form of bales is the raw material for the unit. These fibres are soaked in water for one hour and are cleaned in the willowing machine. Pith content and the hard bits are removed in the process. Manual attention is also required to remove the hard bits to the fullest extent. These cleaned fibers are passed in to the feeder of silvering machine where the fibers are paralleled and drawn by draw rollers. These paralleled fibers are twisted and taken on to drum.

The twisted paralleled fibers are called silvers. These silvers are fed on to the feeder of the spinning machine and are combed and made to fall on to "W" tray. Core threads of nylon/cotton/HDPE/LDPE assign in the tray are used as carrier agent for the coir fibres. These fibres are entwined on to the thread and are twisted by the grip nozzles/rollers. Two such strands are doubled and wound on to a bobbin to form the yarn of required twist and runnage. The automatic spinning machine facilitates spinning of any varieties of yarn according to the requirement of the industry by varying the parameters of the machine to vary the twist and/or runnage. The yarns thus formed are wound in the form of balls for the easy transportation.

## Rope making

Hand spun yarn; spun from coir fibers which are less cleaned and extracted from inadequately retted husks; containing varying amounts of pith; characterised by its extraordinary thickness; unclean in appearance; very less hairy. The runnage ranges from 50 mts to 60 mts & above.

## The major types of ropes are as follows

**Beypore:** Hand spun yarn; spun from coir fibres extracted from insufficiently retted husks; of bluish brown colour comparable in thickness to thinner types of roping; containing small amounts of pith and husk; less dirty than the other types of inferior varieties of yarns. The runnage ranges from 70 to 90 metres

**Beypore - Z:** Hand spun yarn; spun from coir fibres extracted from insufficiently retted husks; of bluish brown colour; comparable in thickness to thinner types of roping; containing small amounts of pith and husk, less dirty than the other types of interior varieties of yarns. The runnage ranges from 70 to 90 mts.

**Quailandy:** Hand spun yarn; spun from fairly well cleaned coir fibres extracted from retted husk, natural bright golden to greyish in colour; similar in appearance and texture to Ashtamudy; fibres being insufficiently opened lie adhering to each other in the yarn. The runnage ranges from 110 to 130 mts.

## Dyeing

Dyeing of coir fibre/yarn is essential for improving the marketability and aesthetic value of coir products and according to customer taste. A dyestuff is most commonly an organic compound, which can be used to impart colour to a substance. A Wide range of dyes capable of yielding bright shades of excellent fastness are available for the dyeing of yarn.

In dyeing, the fibre absorbs the dye from the aqueous solution is more or less uniformly coloured. The uniformity of dyeing depends upon the absorptive power of coir fibre, the nature of the dye and condition of dyeing. The dyed shade usually must be matched against a sample and the fastness of the dyeing must conform to the specified requirement of the consumer.

## Traditional method of dyeing coir

In the conventional method, the dyeing is carried out in copper or aluminium/Indalium or G.I. vat of 1.2 M diameter and 0.75 height place on hearth made out of country bricks, fired from below using country wood. The dye vat is sufficient to process 60 kg. of coir yarn or 30 kg. coir fibre with a material to liquor ratio of 1:12 for coir yarn and 1:20 for coir fibre.

After filling with required quantity of water, it is heated from below till the required temperature is reached. The required quantity of dyestuffs and chemicals are added to the dye bath after making into a paste. The dye bath is stirred well and the material is entered and turned manually at frequent intervals for level dyeing. At the end of dyeing the material is taken out washed in cold water and dried under shade.

## Improved method of dyeing coir

The improved method of dyeing process is carried

out by highly skilled professionals in the industry using dye vats made of stainless steel and fitted with drainage valve for proper draining of dye effluents.

The vats are fixed on hearths made of firebricks with flue pipes for efficient air draught for maximum utilization of the heat energy. The dyes are taken as per recipes formulated by the Central Coir Research Institute (CCRI), which is available in the shade cards. The quality of dyeing is improved compared to the traditional method of dyeing.

### Mechanized System of Dyeing

In the mechanized system of dyeing, coir yarn is dyed, comprising of dye vats with forced circulation of the dye liquor in two-directions on uniformly arranged coir yarn for uniform level dyeing. The temperature is controlled as per the requirement by regulating the flow of heating system. After the dyeing operation, hydro-extractors are used to drive out of the major part of the mechanically held up water and finally these materials are dried on the endless conveyor dried, for efficient drying. This system of dyeing helps to improve the penetration, shade consistency, uniform dyeing on coir fibre/yarn by the action of temperature efficient and forced circulation of dye liquor and period of dyeing. This method help to dye large quantities of material at a time avoiding shade variation compared to the other two processes.

### The classes of dyes used in coir industry

Dyes belongs to the classes of Basic Acid and Direct dyes are suitable for achieving better fastness properties, penetration and brilliant shade with less cost are common in use in coir industry. These dyes are applied to the materials from their solutions in water with the aid of chemicals like acetic acid, sulphuric acid, formic acid, common salt etc. This facilitate the transfer of dyes from the dye bath to the fibre/yarn under appropriate conditions of temperature for specified periods depending on the dyestuff that is being used. The basic dyes have high tincture value and affinity to coir but are fugitive to light and rubbing. The acid dyes have better fastness to light but of less brightness than basic dyes. Direct dyes find use in producing shades having fastness properties better than acid dyes but they produce dull shades and require longer processing time.

### Dyeing of coir with reactive dyes (ATIC - Procion Brand cold dyeing)

The dye bath is set with the required quantity of dyes stuffs dissolved in water in cold (1:10 m:l ratio) with half the required quantity of salt. The wetted/coir yarn is entered and treated for 20 minutes. The remaining part of the salt is added and worked for another 20 minutes. Half of the prescribed quantity of soda ash is then added and worked for 15 minutes. After wash the remaining part of soda ash is also added and worked for 20 minutes. 10 gl litre urea is added in the dye bath for fixing the dyes to the material at the final stage of dyeing and the material is allowed to remain in the bath for 15 minutes. After dyeing, the material is taken out, squeezed and washed in cold water. Finally the material is soaped with 3 grams per litre soap at boil for nearly 15 minutes, to remove the excess dye stuffs. The material is thoroughly washed in cold water and dried in air under shade. During the process of drying the material is subjected to thorough agitation to have excellent contact of the material with the dye liquor.

The major quantity of dyeing of coir fibre/yarn is done in the small-scale sector using conventional process. With a view to improve the quality of dyed material, modern dyeing methods are also adopted by the industry.

### Coir dyeing with Nucifex dyes from Triade BV Rotterdam

The Nucifex dyestuffs range is specially developed for natural fibre such as coir yarn etc.

#### Compatibility

Nucifex dyes ranging with their almost similar dyeing properties, they can be freely applied together in combination.

Substrate            Bleached coir yarn

Types of Dyes    Nucifex

% based on        Yarn dry weight

#### Process Dyeing

Fresh bath    1:15    Liquor at 50 C

X %    Nucifex dyes Run 10 min at 50 C, followed raise temperature to 80-85 C. Continue dyeing for 90 min.

Add 1-2% Formic acid (1:10) Run 30-45 min.

After treatment (Use fresh bath) 0.5-2 % Fixing agent (improves wet fastnesses)

Cool down, rinse very well and drying

## Bleaching

Bleaching of coir fibre/yarn is essential for improving the colour. This is widely used in coir industry for the purpose of ornamentation of coir products. There are certain shades of dyestuffs to be used in the production of coir matting/carpets, which require bleaching of yarn to improve its penetration and brightness especially in the case of pastel shades.

It is estimated that about 20% of the coir yarn/fibre used for the manufacture of coir mats, mattings rugs and carpets are made out of bleached coir yarn in the coir industry. Bleaching of coir fibre/yarn is generally being carried out using hydrogen peroxide.

The oxidation process using hydrogen peroxide is in vogue in the coir industry. There are two process followed in the industry viz; Hot and cold process. It is also observed that none of the factories are using imported chemicals for bleaching of coir materials. Generally, the chemicals used for bleaching are hydrogen peroxide and sodium silicate. However, there are wide variations in the recipe of different factories as well as the degree of whiteness.

## Global trade

Total world coir fibre production is 250,000 tonnes. The coir fibre industry is particularly important in some areas of the developing world. India, mainly the coastal region of Kerala State, produces 60% of the total world supply of white coir fibre. Sri Lanka produces 36% of the total world brown fibre output. Over 50% of the coir fibre produced annually throughout the world is consumed in the countries of origin, mainly India.

Traditional uses for the coir fiber include rope and twine, brooms and brushes, doormats, rugs, mattresses and other upholstery, often in the form of rubberized coir pads. since 2001, a rising Chinese demand for coir, an expanding market for coir-based erosion control products, and the spread of coir pith as a peat moss substitute in horticulture has further pushed up global production and prices. In turn, other coconut growing countries, including Philippines, Thailand and Vietnam are now expanding their production and export of coir fiber. These changes are also reflected in the international trade in coir. Historically, Sri Lanka had been the world's largest exporter of various fiber grades, whereas India exports largely value added products – yarn, mats,

and rugs. While in 1990 about 80% of global production was exported, growth of the Indian domestic market dropped that rate to below 40%. Global trade volume for coir fiber, value added products – yarn, mats, rugs – and coir pith now stands at about \$140 million per year with India and Sri Lanka respectively accounting for about \$70 and \$60 million of that amount. This may not seem much but in the coconut regions of producing countries coir is an important economic factor. In Sri Lanka, coir related exports account for 6% of agricultural exports, over 1% of all exports and 0.35% of GDP. Moreover, coir milling and value addition, mostly spinning and weaving, are important regional employers, particularly in rural Southern India and coastal Sri Lanka. They give work to 500,000+ people, many of them women working part-time. Yet, working conditions and productivity are generally poor.

## Schemes operated by Coir Board

There are several schemes under implementation by coir board viz., Rejuvenation, Modernization and Technology Upgradation of the Coir Industry, Scheme of Fund for Regeneration of Traditional Industries (SFURTI) and Skill Upgradation and Quality Improvement Scheme etc

## Coir research:

Research on coir is conducted at the following institutes.

Central Coir Research Institute, Kalavoor, Alappuzha, Kerala.

Central Institute of Coir Technology, No. 3A, Peenya Industrial Area, Bangalore-560 058, Karnataka

## Prospects

The challenge for industry is to sustainably expand markets for this versatile renewable resource while maintaining its role as employer for the rural poor. This may require producers to innovate production, improve product consistency, and in particular develop novel applications – jointly with their customers in importing countries. Businesses, public agencies and research institutes are now addressing this challenge in multilateral projects worldwide – setting examples that global trade can be beneficial to all parties involved.

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# Parthenium Weed- An Alarming Threat to Coconut

*Dr.Suja P.Devipriya\* and Dr.N.Purushothaman*

The notorious weed *Parthenium hysterophorus*, commonly known with its generic name –Parthenium– was not of great concern in cropped area of Kerala and southern Tamilnadu. It was mostly noticed in and around railway goods-yards and along the waste lands adjacent to roads and railway tracks. As a weed of waste lands it was infamous due to its dangerous properties. Only rare efforts were attempted here and there to control the weed. The presence of this weed fastly spreads to cultivated land now, and coconut which is the primary homestead crop in Kanyakumari District and in Kerala is facing an alarming threat from this dangerous weed. The pity is that when people of a locality recognize the dangerous ill effects of the presence of this weed in their locality the weed might have sprawled its population to the level of mostly ineradicable levels. Parthenium is now fastly spreading from the south Agastheswaram taluk towards north Kalkulam and Vilavancode taluks of Kanyakumari district and



*A coconut garden thickly inhabited with blooming Parthenium*

proceeds to southern Kerala covering their presence in cultivated area including coconut. The days ahead are the best opportunity period in adopting all possible care to prevent the further spread of Parthenium to cultivated area and to prevent its movement to the north.

## ***Parthenium a highly dangerous weed***

Parthenium produce the allergens - sesquiterpene lactones. It is 15-carbon molecules made of a sesquiterpene linked to a lactone ring. The allergenicity of sesquiterpene lactones is increased by the presence of an  $\alpha$ -methylene group attached to the lactone ring. Sesquiterpene lactones are present in fresh plants, pollen, and in particles from dried plants. The physical contact to the plant creates the eruption of the exposed skin surface resulting in itching and contact dermatitis. Sesquiterpene lactone-induced dermatitis affects men more than women. The pollens float in air causes eczematoid dermatitis and bronchitis. The allergic reaction develops cracks over the sole. Creates chronic lichensified eczema of the exposed skin surfaces. Sore throat and bubbles in the mouth specific to allergic papules develops. This turns to severe dermatitis by loss of scalp, body hair and ridging on nails. The affected person suffers from itchy, red irritated and weepy skin, peeling of skin,



*Young Parthenium weeds beside a private coconut nursery. Purchase of seedlings from these sources increases the chance of spread of the weed to new locations*

puffy eyes, general swelling, fatigue and weight loss. The enormous quantity of allergic pollen creates hay fever, and severe respiratory problems in human beings. The pollens cause asthma, especially in children and elderly people. Besides making the environment highly polluted and unhealthy to human



A cow grazing in an uncultivated land where *Parthenium* engulfed the entire surface



Luxuriant *Parthenium* growing in coconut homestead

habitat with allergic pollen it creates much indirect havoc to life by its effect on livestock and agriculture. The grazing cattle in *Parthenium* inundated area unknowingly feeds on this toxic weed gets fever, dermatitis, eye irritation, inflamed udder and rashes on the skin. Acute and chronic toxicity of *Parthenium* leads to ulcers in mouth and digestive tract, esophagus and abdominal folds. Necrosis of kidney and liver develops, and eventually results in death of the animal. The cows and goats when they eat this weed the milk production decreases and the taste of milk becomes bitter, eventually consumption of it turns to be severely harmful and fatal. The pollens of the weed shed flowers of vegetables such as tomato, chilli and brinjal. It inactivates nitrogen fixing bacteria in pulses by secretion of the chemical *sesquiterpene lactones*.

**Botanical description of *Parthenium* and the ecological advantages making it a potential threat to coconut:**

The weed is of American origin and got introduced accidentally to the other continents in the last century. The plant belongs to the order *Asterales* and family *Asteraceae* with generic name *Parthenium* and species name *hysterophorus*. It is known under different names in different locations and the mostly referred common names are *Parthenium*, White top, Santa Maria Fever few, Congress grass, Gajar ghas, Bitter weed, Carrot Grass, False Ragweed, Ragweed, and Escoba amarga. At sprouting stage cotyledons are rounded paddle shaped 3-4 mm long, born on short stalks 1-2 mm long. The first leaves are egg shaped and covered with fine white hairs. Older leaves become increasingly lobed and deeply divided. The young plants develop in to a rosette, with leaves of 80-200mm long 40-50 mm wide. The older plants are erect; stem highly branched, 30-150 mm high, with deep taproot. At this stage the leaves are

deeply divided and deeply grooved, and develop along the stem. The stems and leaves are covered with white hairs. Flowers are borne on short stalks arising from the leaf forks. They appear in clusters with white flower heads at top of stems. The flower heads are 4-10 mm across with five sided shape, containing long white florets. At maturity the flower heads turns hard and brown. Seeds are dark grey diamond shaped, striped and flattened with 2 mm length. The seeds have no dormancy and are frost tolerant. The weed is an aggressive invader of waste lands and cultivated fields with less tillage. It is a serious threat to annual crops and produces a wide range of toxins which affects other plants. The allelopathic potential of the weed by release of phyto-toxins such as parthenin, ambrosin, coronopilin, and ferulic, caffeic, vanilic, chlorogenic acids, which inhibit germination of several crops including rice, wheat, maize, and sorghum.

*Parthenium* gained entry to India only in 1956 as a casual contaminant through the Mexican wheat imported under PL480 scheme. Within this short period of 56 years it could reach the length and breadth of our country by taking advantage of its fast multiplication features such as prolific seed production, easy and fast dispersal of seeds, high germination ability through out the year, capacity to thrive adverse soil and climatic conditions in a wide range of habitats and ability to withstand commonly adopted control methods. A single *Parthenium* plant can produce over 15000 seeds. The seed can germinate, grow, mature and set seed within 4 weeks. The potential for multiplication in one year even under adverse conditions is unimaginable. The poor agronomic management being adopted for coconut paves the way for the entry and establishment of this obnoxious weed in coconut planted fields.

**The preventive steps to thwart the impending**



Seed dispersal is facilitated by *Parthenium* growing beside the roads

### **tragedy to our crop lands and healthy environment**

The best method of checking this weed is the prevention of its entry. Aware, and make others also aware of the weed's accidental entry when one purchase seeds and planting materials. Locate the nurseries where the weed is present. Avoid purchase of seed materials from such nurseries. Do not purchase seeds of intercrops like green manure from producers who do not comply with relevant seed acts. Utmost care should be taken to monitor the presence of this weed by the farmers. Manual removal at the first sight is the best way for elimination of the menace that threatens the environment. A concerted effort should be taken by farmer associations and resident associations to collect *Parthenium*; burn and destroy the collected material. The leaving off collected mature weeds or using it as manure will increase its population as drying and composting can not destroy the seeds due to its high longevity. Apart from sincere individual effort, collective action by volunteer groups will yield the desired results. Physical contact with *Parthenium* should be avoided by using gloves, nose covers and cloths as skin lesions appear where the plant has brushed against the skin, typically on the legs, thighs, hands and upper limbs. A healthy living environment is the prime requirement of man to day. If we want to achieve it, knowledge of the true danger and concerted, and collective action by all are the need of the hour to eliminate the imminent danger.

### **An integrated weed control approach to eradicate *Parthenium*:**

The paramount way to contain *Parthenium* is manual method of its destruction. The plants should be uprooted (not cut or broken) before flowering and burnt. It is really effective and should be preferred and in small area like home gardens, and nurseries; nevertheless, it is to be done before buildup of



Under poor agronomic management *Parthenium* spreads fast in coconut gardens

population. This will successfully work by engaging persons insensitive to parthenium allergy to uproot the plants. The scarcity of labour and high expense are the main lacunae in manual control of vast affected areas. Ploughing the field controls the weed population to some extent. There are many suggested chemical and biological control measures. The following chemical control measures are proven to give good results:

1. In non-cropped areas such as road sides and railway tracks spraying of 15-20% salt solution can control the weed. However, this should be repeated periodically till the entire population disappears.
2. In cereal cultivating field 2,4D 80% WP @ 2kg a.i./ha as post emergence spray is giving good control.

Efforts to identify insect and plant enemies to control *Parthenium* yielded some promising results. The moth *Epiblem strenuana* introduced from Australia has been reported as a good biological agent to control *Parthenium*. In introducing any exotic biological enemy to weed utmost care has to be taken to ascertain host specificity especially *Parthenium* being a quite hardy weed and resistant to pests and diseases. Certain species of cassia - an innocuous waste land weed (eg. *Cassia sericea*)- show very effective control in checking the spread of *Parthenium* by their aggressive growth smothering the manifestation of *Parthenium*. Awareness about the graveness of *Parthenium*-catastrophe and timely action against its spread are the most important needs to protect our crop and the environment. Prevention is better than cure, and here, cure is insurmountable.

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## 109<sup>th</sup> Board meeting held

The 109<sup>th</sup> Meeting of the Coconut Development Board was held on 25<sup>th</sup> February 2012 at Kochi under the Chairmanship of Shri T.K. Jose IAS, Chairman, Coconut Development Board. Shri Mani C. Kappan, Vice Chairman, Shri G.S. Basavaraj, MP (Lok Sabha), Dr. Charles Dias, MP (Lok Sabha), Shri Sandeep Saxena IAS, Agriculture Production Commissioner & Secretary, Government of Tamil Nadu, Dr. A.K. Misra, Director (Cooperation), Ministry of Consumer Affairs, Food and Public Distribution, Government of India, Adv. Varkala B. Ravikumar, Shri K. Dharmarajan, Smt. K.R. Nethravathi, Shri R. Kalaiselvan, Shri Vasant Vishnu Limaye (Members of the Board) and Shri L. Shivarama Reddy, Officer on Special Duty representing the Horticulture Commissioner, Government of India attended the meeting. The meeting discussed the working paper on 12th Five Year Plan of the Board and made suitable suggestions and recommendations to incorporate.

### Tender Coconut Water is now Kerala's Official Drink

The Finance Minister of Kerala Shri K.M.Mani declared nature's priceless boon to mankind- tender coconut water as Kerala's official drink. Tender coconut water which is lucid, pure and non-toxic replenishes the body in summer. It is a treasure trove of electrolytes like sodium, potassium, magnesium, calcium, and phosphorous. CDB had requested the State Government to declare tender coconut water as the official drink of Kerala taking into account Kerala's significance as a favourite tourist destination and to make the nutritious drink more popular. Board can ensure uninterrupted supply of tender coconut water through its Coconut Producers' Societies.



*A view of the meeting: Shri T.K. Jose IAS, Chairman, CDB., Shri G.S. Basavaraj, MP, Dr. Charles Dias MP, Adv. Varkala B. Ravikumar*



*Meeting, another view: Shri Mani C. Kappan, Vice Chairman, Shri Sandeep Saxena IAS, Agriculture Production Commissioner & Secretary, Government of Tamil Nadu, Dr. A.K. Misra, Director (Cooperation), Ministry of Consumer Affairs, Food and Public Distribution, Government of India, Shri K. Dharmarajan, Smt. K.R. Nethravathi, Shri R. Kalaiselvan, Shri Vasant Vishnu Limaye (Members of the Board) and Shri L. Shivarama Reddy.*

## Kenyan delegation visits the Board



Delegation from the Kenya Coconut Development Authority : Dr.Francis K. Fondo, Managing Director, Kenya Coconut Development Authority and Mwanaisha Chidzuga accompanied by Prof.V.K. Damodaran, Energy Consultant on International Missions, Shri.

Krishna P. Lall, Director, UNIDO Centre for South-South Industrial Cooperation visited CDB headquarters and held discussions with Shri.T.K. Jose IAS, Chairman and other Senior Officers of Coconut Dev. Board on 22<sup>nd</sup> February 2012.

## Coconut and Traditional Food Festival

The sixth coconut and traditional food festival was held at Kultali village, in Sundarban area on 17<sup>th</sup> and 18<sup>th</sup> February 2012. 7000 women representing over one thousand Self Help Groups took part in the food festival. A variety of food items prepared with coconut were displayed in the festival.

Shri. Sugata Ghose, Director, CDB in his address during the inauguration congratulated the Milan Thirtha Society for organizing such a festival in West Bengal. He called upon the society to take up such initiatives in the future also for benefiting the farmers of the area. Shri. Subhas



*A view of the inaugural meeting of Coconut and Traditional Food Festival*

Naskar MLA, Shri. SPasmanavan, CGM, NABAER, Smt. Madhumi Mukaherjee, Director, National Fishery Development Bank, Hyderabad

and Smt. Sandhya Roy, film actress spoke on the occasion. Shri. Sugata Goshe, Director CDB distributed the prizes to the winners during the valedictory function held on 18th February.

## Panacea 2012



*A view of the Board's stall*

Coconut Development Board participated in Panacea 2012 exhibition held at world Trade Centre, Mumbai from 23<sup>rd</sup> to 25<sup>th</sup> February 2012. Prof. Fouzia T Khan, Minister for Health, Government of Maharashtra inaugurated the exhibition.

Board displayed various coconut products, packed tender coconut water, coconut oil, coconut milk powder, virgin

coconut oil, handicrafts made of coconut wood, shell etc. Publications of the Board were also displayed. M/s. Shakthi Coco Product, Pollachi, Tamil Nadu and M/s. Asian High Tech Agro Export had their sales cum display counters in the Board's stall. More than fifty thousand people visited the fair. The fair was organised by Seishido Communications Mumbai.

### Awareness Programme

Coconut Development, Regional Office, Guwahati organised an awareness programme on coconut cultivation and CDB schemes in collaboration with the Directorate of Horticulture, Government of Mizoram in Aizwal on 8<sup>th</sup> February 2012. Shri. T Sangkunga, Secretary, Department of Horticulture, Government of Mizoram inaugurated the programme. In his inaugural address he appreciated the activities of the Board for the welfare of the coconut farmers of the area. Shri. Samuel Rosanglura, Director, Horticulture presided over the programme. Shri. Sugata Ghose, Director, CDB in his keynote address spoke on the prospects of coconut cultivation in Mizoram.

# Training Programme for Women Entrepreneurs and Self Help Groups

Coconut Development Board at its technology Development Centre at Vazakulam, Alwaye, Kerala is imparting training to women's Group, NGOs and other voluntary agencies for upgrading entrepreneurship development skills for optimum utilization of resources, adopting the right processing techniques, usage of cost effective packaging systems and quality assurance. The objectives of the training programme are to focus attention on the huge potential for coconut convenience foods and range of product recipes, to impart training skills, entrepreneurship development, leadership qualities and providing marketing tips. The other objectives of the training are to familiarise the participants about quality control operations and quality management systems being followed in food processing industries and to gain an insight into

various packaging systems for preservation of coconut convenience foods .The programme covers an introductory session, product familiarization, product demonstration, hands on training, quality standards and quality management systems, packaging and preservation techniques and marketing strategies. Products covered are coconut chips, coconut cookies, lemonade, theyal mix, coconut milk toffee, coconut candy, coconut chocolate, coconut pickle, snowball tender coconut and coconut vinegar. There are one day, two days and four days training. Those who are interested in the training may contact Technology Development Centre, Coconut Development Board, Keenpuram, South Vazhakulam, Aluva-683105, Kerala. Phone- 0484 2679680.

## Statement of ownership and other particulars about the INDIAN COCONUT JOURNAL FORM IV (See Rule 8)

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Sd/

(M Thomas Mathew)  
Publisher

Date : 01-03-2012

Districts of the southern states having more than 25000 ha. area of coconut farming (2009-10)			
District	Area (in Ha.)	Production (in Lakhs)	Productivity (per ha.)
<b>Kerala</b>			
Kozhikodu	119166	8680	7284
Malapuram	108380	10630	9808
Kannur	78024	4790	6139
Thrissur	77509	5380	6941
Thiruvanthapuram	71376	5910	8280
Palakkad	57186	4170	7292
Kollam	56675	4120	7270
Kasaragodu	54224	4160	7672
Ernakulam	44475	2350	5284
Alapuzha	39816	2570	6455
Kottayam	28185	1410	5003
<b>Tamil Nadu</b>			
Coimbatore	79532	11508	14470
Thirupur	47826	1848	3864
Tanjavur	32077	4951	15435
Dindigul	27113	5474	20190
<b>Karnataka</b>			
Tumkur	132587	9945.66	7501
Hassan	61880	3471.67	5610
Chitradurga	42563	2915.91	6851
Chikmagalur	37990	1844.78	4856
<b>Andhra Pradesh</b>			
East Godavari	50247	5273.82	10496

# Monthly operations in coconut gardens

## April

### Andaman & Nicobar Islands:

Continue irrigating the nursery. Irrigate the palms if dry spell prevails. Repair bunds and channels to facilitate drainage. Collect seednuts. Lay out nursery for raising seedlings. In sandy and sandy loam soils dig pits of 100 cubic cm and in clayey soils of 60 cubic cm for replanting and under planting at a distance of 7.5 meters both ways. In single hedge system provide spacing of 6mX9m and in double hedge 6mX6mX9m. The rows should be aligned in north south direction. In water logged areas raise mounds with alternate layers of clay and sand for replanting. Take linear trenches of 50 cm width and 60 cm depth between rows of palms. Arrange husk in these trenches layer by layer with concave surface facing upwards and cover with soil. Give a prophylactic spray with 1% Bordeaux mixture to all the palms in areas where the bud rot is occurring every year. Cultivate vegetables and other intercrops in the inter spaces.

**Andhra Pradesh:** Irrigate the garden regularly. Clear the irrigation channels, if necessary. Take all measures to conserve soil moisture by mulching coconut husk, coir pith, dry coconut leaves etc. in coconut basins. Continue collection of seednuts from

selected mother palms. Plough the garden and broadcast green manure seeds for the enrichment of soil fertility. To enrich soil fertility apply tank silt in the garden. Tie the buckled bunches to avoid shedding of nuts. If the attack of blackheaded caterpillar is noticed spray the affected palms with 0.02 percent Dichlorovos or 0.05 percent Malathion and release larval or pupal parasites 3 weeks after spraying. If the attack of mite is noticed, spray neem oil formulation containing 0.004 percent Azadiractin (Neemazal T/S 1% @ 4 ml per litre of water). The spray droplets are to be directed towards the second to fifth immature bunches.

**Assam:** Transplanting of quality seedlings should be done in the main field. Irrigation should be continued if required. First split dose of fertilizers i.e. 500 gram urea, 1000 gram single super phosphate (SSP), 1000 gram muriate of potash (MOP) and 25 gram borax should be given during this period. The quantity of potash may be increased if nut fall and cracking of nuts are noticed. Prophylactic spray should be given to coconut trees by 1% Bordeaux mixture. Leaf axils must be filled with a mixture of 25 gram Sevidol (8G) and 250 gram of fine sand, if not done in March against the attack of rhinoceros beetle.

**Bihar:** Clean the irrigation channels, if necessary and continue frequent irrigation in the garden during summer months. In the case of basin irrigation 200 liter of water is adequate once in 4-5 days depending upon the moisture retention capacity of the soil. Young palms upto the age of 3 years should be irrigated at least once in 3 days. Young seedlings should be shaded properly. If there is water scarcity drip irrigation method can be adopted to save water. Mulch the coconut basins. Clean the drainage channels. Clean the coconut crowns and apply plant protection chemicals. If bud rot is noticed, cut and remove all the affected tissues and apply Bordeaux paste.

### Chhattisgarh / Madhya Pradesh:

Clean and if necessary deepen the irrigation channels and continue irrigation. Plough the land and destroy the weeds. Remove weeds from the basins. Take basins around the palms and mulch with coconut leaves, coir pith etc. Take plant protection measures in the garden. Harvest the intercrops such as turmeric and vegetables.

**Karnataka:** Continue irrigation and collection of seednuts from selected mother palms. Start preparing the nursery beds for sowing of seednuts. Nursery should be raised on well drained light textured soils having irrigation

facilities. Application of sufficient quantities of organic manures and balanced doses of inorganic fertilizers is recommended to improve the nutrient status of the soil to meet nutrient requirements of the palms. Apply organic manure (FYM) @ 50 kg and neem cake @ 5 kg per palm per year. Keep a watch on the incidence of leaf eating caterpillar if the temperature is high and adopt appropriate measures if not taken earlier. If the attack of the mite is noticed, spray neem oil formulation containing 0.004 percent Azadirachtin (Neemazal T/ S 1% @ 4 ml per litre of water) or root feed @ 7.5 ml with equal quantity of water.

**Kerala / Lakshadweep:** Plant coconut seedlings if there are facilities for irrigation. The new roots will sprout before the onset of monsoon and derive the full benefit of the rains. This will help the seedlings to tolerate the water logging condition during monsoon. Continue collection of seednuts during the month. Apply river silt or tank silt to the palms at the rate of half tonne per tree in sandy type of soil. Take pits for new planting/ underplanting of coconut. If the attack of mite is noticed, spray neem oil formulation containing 0.004 per cent Azadirachtin (Neemazal T/S 1% @ 4 ml per litre of water). The spray droplets are to be directed towards the second to fifth immature bunches.

**Maharashtra / Goa / Gujarat:** In low-lying areas where coconut is planted on bunds, clean the

channels between bunds, strengthen and level up bunds by adding top soil dug up from the channels. Continue collection of seednuts and store the collected seednuts in shade. Take pits for planting of seedlings.

**Orissa:** Continue irrigation. Remove weeds and mulch the basins with dry coconut leaves and coir pith. Husk burial may also be taken up in the basins. If attack of pests is noticed, adopt integrated pest management practices comprising mechanical, chemical and biological methods. For the management of leaf eating caterpillar, cut and burn the severely infested lower whorl leaves and spray the under surface of the lower leaves with 0.02% Dichlorovos. Release parasitoids like braconids. To manage the rhinoceros beetle infestation, hook out the beetles using a beetle hook. Fill up the inner most 2-3-leaf axils with 25 g Sevidol (8G) mixed with 250 g fine sand per palm. Treat the manure pits with Carbaryl (50WP) at 0.01 % concentration. Root feed Azadirachtin 10000 ppm (7.5 ml) with 7.5 ml water against the eriophyid mite attack.

**Tamil Nadu / Puducherry:** Continue irrigation in areas where summer showers are not received. Apply tank silt in gardens with sandy soils to increase the soil fertility and to improve soil condition. Continue collection of seednuts. If the attack of mite is noticed, spray neem oil formulation containing 0.004 per cent Azadirachtin (Neemazal T/S 1%

@ 4 ml per litre of water). The spray droplets are to be directed towards the second to fifth immature bunches. If the attack of blackheaded caterpillar is noticed spray the affected palms with 0.02 percent Dichlorovos or 0.05% Malathion and release larval or pupal parasites three weeks after spraying.

**Tripura:** Plough the interspaces for proper aeration of the soil. Clean the garden by weeding. Improve drainage facilities. Transplanting of seedlings should be taken up during this month. Prepare nursery beds for sowing of seednuts. Prepare raised beds in areas of poor drainage. The seedbeds are to be treated with 0.05 percent Chlorpyrifos twice at 20-25 days interval to protect the nuts from the attack of termites. Spray 1% Bordeaux mixture on coconut palms if bud rot is prevalent. Fill the top most 3-4 leaf axils of the palms with a mixture of 25g Sevidol (8G) with 250g fine sand per palm to protect the palms from rhinoceros beetle and red palm weevil.

**West Bengal:** Continue irrigation. Select the site for new plantation and dig out pits. Search for rhinoceros beetles on the crowns of the palms with beetle hook and kill the beetles. Fill the top most 3-4 leaf axils of the palms with a mixture of 25g Sevidol (8G) mixed with 250g fine sand. Take up cultivation of intercrops like ginger, turmeric and other seasonal vegetables.

# Market Review February 2012

## Highlights

- ◆ The price of milling copra, ball copra and coconut oil expressed a downward trend at all the major markets during the month under report.
- ◆ The international price of coconut oil expressed a downward trend during the month under report. The domestic price of coconut oil at Kochi market was marginally higher than that of the international price.

The market situation in February 2012 for coconut, copra and coconut oil was not different from the previous month. The downward trend continued except for a slight hike in the prices during the end of the month. The prices of copra and coconut fell below Minimum Support Price in major producing states driving the Government machinery to initiate activities for procurement under Price Support schemes.

## COCONUT OIL

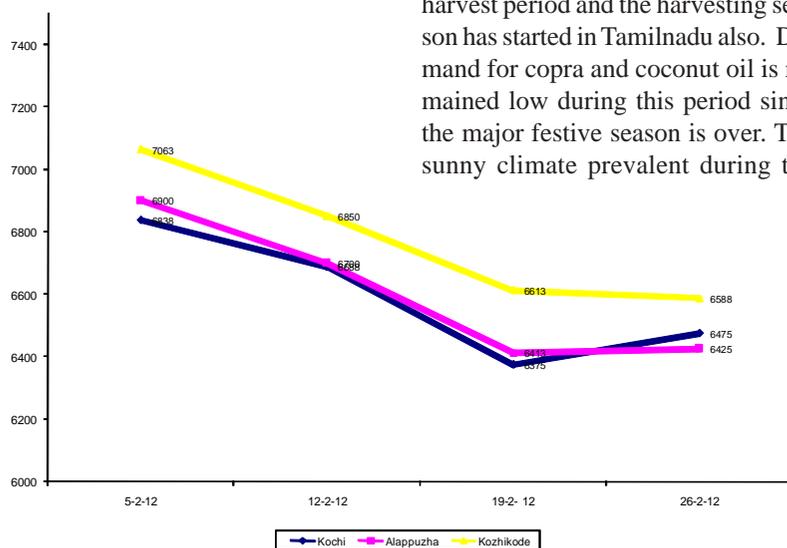
The price of coconut oil quoted at all the major marketing centres in the country expressed a downward trend during the month under review. The weekly average prices steadily declined at Kozhikode market while it decreased in the first three weeks and recorded a slight increase in the last

week at Kochi and Alappuzha.

The monthly average price of coconut oil at Kochi was Rs. 6594/- per quintal. The price of coconut oil at Alappuzha market also moved in tune with the price behavior at Kochi market. The monthly average price was Rs. 6609/- per quintal. The monthly average price of coconut oil at Kozhikode market was Rs. 6778/- which was the highest average price recorded in Kerala markets during the month of February 2012. The prices in all the three markets recorded 10-12 percent decrease over the prices prevalent in January 2012.

A surge in import of refined palm oil is reported during February 2012. This is expected to have an impact on the prices of coconut oil.

Kerala is passing through the peak harvest period and the harvesting season has started in Tamilnadu also. Demand for copra and coconut oil is remained low during this period since the major festive season is over. The sunny climate prevalent during the



Price behaviour of coconut oil during February 2012

summer months may lead to more conversion to copra and coconut oil. This increased arrival may have an impact on the prices.

## MILLING COPRA

The monthly average prices of FAQ copra recorded at Kochi market was Rs.4442/- per quintal. The monthly average prices of Rasi copra at Alappuzha market was Rs. 4469/- per quintal. The prices at Kochi and Alappuzha recorded a 12 percent decrease over the monthly average price of the previous month. The monthly average price of Rs.5065/- Office Pass copra at Kozhikode market was slightly higher (0.80 percent) than the price in January 2012. The procurement operations under Price Support Scheme have already been initiated in Tamilnadu by TANFED in February and will commence soon in Kerala by the designated agencies. With the commencement of the procurement of copra at Minimum Support Price, the prices of copra are expected to stabilize thus providing a relief to the coconut farmers. The Minimum support price of milling copra has been fixed at Rs. 5100/- per quintal for 2012 season.

The monthly average prices of milling copra at Ambajipeta market in Andhra Pradesh was Rs. 4000/- per quintal compared to Rs. 4308/- recorded during the previous month.

## EDIBLE COPRA

The monthly average prices of Rajapur copra at Kozhikode market was Rs. 6848/- per quintal, which was lower by 2.5 percent compared to the price of the previous month.

The monthly prices of ball copra at Kozhikode market averaged at Rs. 6072/- per quintal.

The monthly prices of ball copra at APMC market Tiptur, in Karnataka averaged at Rs. 5848/- per quintal in February 2012 while it was Rs 5850/- in Bangalore and Rs. 5761/- in Arsikere

recording a decline of 5-9 percent over the previous month.

The Minimum support price of edible copra has been fixed at Rs. 5350/- per quintal for 2012 season.

**DRY COCONUT**

The monthly average price of dry coconut was around Rs. 5688/- per thousand nuts at Kozhikode market which was 11.42 percent lower than that of the previous month.

**COCONUT**

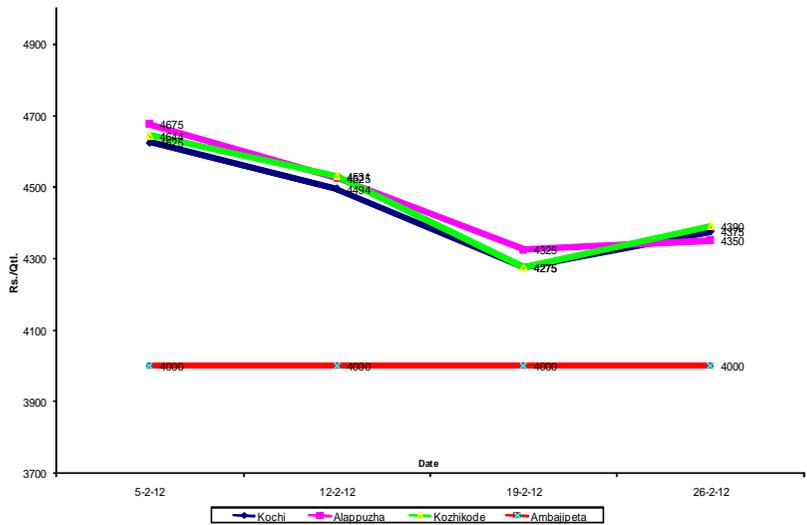
The monthly average price of Rs.7000/- per thousand nuts for dehusked coconut at Nedumangad market, was 5 percent lower than that of the previous month.

Arsikere APMC market recorded an average of Rs. 6197/- for thousand partially dehusked nuts which is 7.34 percent lower than that of previous month.

The monthly average prices of partially dehusked coconut at Bangalore APMC market was Rs. 6913/- which is 1.66 percent higher than that of previous month..

The monthly average price of partially dehusked coconut Grade-1 quality at Mangalore APMC market slid to Rs.10313/- per thousand nuts which is 2.63 percent lower than that of the previous month.

The Government of India have de-



Price behaviour of milling copra - February 2012

clared the Minimum Support price of dehusked mature coconut with water at Rs. 14/- per kg.

**TENDER COCONUT**

Prices of tender coconut at Kochi market ranged from Rs.20-25/- per nut.

**INTERNATIONAL PRICE**

The monthly average price of US \$1418 per MT for coconut oil in Europe (C.I.F. Rotterdam) for the month of February 2012 was marginally lower when compared with the price of previous month and lower by about 36 percent compared to that of the corresponding month last year. The monthly average price of US\$ 935 per

MT for copra was marginally lower than that of the previous month and about 31 percent lower than that of the corresponding month last year. The domestic price of US\$1440 for coconut oil at Kochi market was marginally higher than that of the international price.

The domestic price of coconut oil during the month of February 2012, in Philippines was US\$1400 per MT and in Indonesia; the price was US\$1380 per MT. The international price of Palm oil, Palm kernel oil and Soybean oil were US\$1055, US\$1340 and US\$ 915 per MT respectively.

**Market Price**

Date	Coconut Oil			Milling Copra				Edible Copra	Ball Copra				Dy coconut	Coconut	Partially dehusked coconut				
	Rs./Qtl.																Rs./1000 nuts		
	Kochi	Alappuzha	Kozhikode	Kochi (FAQ)	Alappuzha (Rasi Copra)	Kozhikode	Karkala	Kozhikode	Kozhikode	Tiptur	Bangalore	Arsikere	Kozhikode	Nedumangad	Arsikere	Bangalore	Mangalore (Grade -1)		
4-2-12	6838	6900	7063	4625	4675	4644	4000	6306	5988	5710	5900	5650	5425	7000	6250	7000	10500		
11-2-12	6688	6700	6850	4494	4525	4531	4000	6638	5950	6075	5900	5903	6050	7000	6663	7000	10600		
18-2-12	6375	6413	6613	4275	4325	4275	4000	6775	6100	5817	5900	5750	5800	7000	6000	7000	10650		
25-2-12	6475	6425	6588	4375	4350	4390	4000	6875	6250	5789	5700	5700	5475	7000	5875	6650	9500		
<b>Average</b>	6594	6609	6778	4442	4469	4460	4000	6648	6072	5848	5850	5751	5688	7000	6197	6913	10313		

Source: Kochi: Cochin Oil Merchants Association and Chamber of Commerce, Kochi - 2, Kozhikode: The Mathrubhumi daily Alappuzha: The Malayala Manorama daily, Arsikere : APMC, Arsikere Price quoted for office pass copra at Kozhikode and Rasi copra at Alappuzha markets. NT : No transaction