

Neera – the hidden untapped treasure

Karnataka has a total area of 4.3 lakh ha under coconut and stands second next to Kerala in total area under coconut. The annual production in the state is 30,563 lakh nuts in a year. Coconut is cultivated in all 29 districts and occupies acreage more than 10,000 ha in 11 districts (*Annexure 1*). The crop is one of the most important horticultural crops cultivated in the state. Coconut cultivation in the state is undertaken in small and marginal holdings. But the mindset of the traditional coconut grower is attuned to processing for copra and coconut oil that their thoughts do not go out of this oil circle. But coconut is not just an oilseed crop. Exploiting the potentials of this crop to enable production of value added products will help in protecting the farmers from the annually recurring price fall during the peak production months.

It is in this context that products from the **coconut inflorescence sap like Neera, coconut palm syrup, jaggery, coconut sugar** etc gain importance. **Neera is the non-alcoholic and nutritious drink from the immature inflorescence of coconut** which can be promoted due to its potential for value addition, employment generation and better returns to the coconut farmers.

Neera :

Neera is a **nutritious health drink with 0% alcohol**, extracted from the immature inflorescence of coconut palm. It is a rich source of sugars, minerals and vitamins. It contains substantial amounts of iron, phosphorus and ascorbic acid. It is more nutritious than any of the commercially marketed fruit juices available in the country. The nutritional composition of Neera is given in *Annexure 2*. As it has very low Glycemic Index (GI) of 35(normal table sugar has GI 70), it can be used by diabetic patients. The sugar present in other fruit juices has a GI more than double that of Neera. A coconut palm can yield, on an average 2 litres of Neera per day, which may go even up to 4.5 litres based on the health of the palm and management of the garden.

The high nutritive value of Neera makes it an excellent health drink. It is wholesome, cool and good for improving the general health. It can be given as a supplement for iron

and vitamin deficiency. Clinical studies indicate medical applications for asthma, tuberculosis, bronchial suffocation and piles. It is believed to facilitate clear urination and prevent jaundice. Neera contains high amount of glutamic acid which is the amino acid used by the body to build proteins. It is high in inositol which is beneficial for the treatment of eye abnormalities, eczema etc.

Value added products from Neera

Palm syrup : Boiling the sap under moderate to low heat yields a sticky liquid with high mineral content which is called palm syrup. It is free from total fats and cholesterol with a sucrose content of 50% and a glycemic index of 35 GI. It can be used for healthy food preparations, as topping on wide variety of appetizers, desserts or beverages. It is also used in connection with Ayurveda and other systems of medicine.

Palm jaggery : Further boiling and crystallization of the sap in moulds yields palm jaggery. It is also used as a sweetening agent for the preparation of dishes and is superior to cane jaggery. Palm jaggery is used in ayurvedic preparations and in traditional systems of medicine

Palm sugar : Boiling the sap and preparation of granular palm sugar is the value added product of the future with immense potential from Neera. The application of this palm sugar is enormous owing to the high nutrient content and low glycemic index. Low GI food finds applications in lowering cholesterol levels. It is also good for weight maintenance preventing over weight and obesity. The product has increased demand in the domestic and international markets. It is a good substitute for commercial sweeteners available in the market.

Potential of Neera products :

We are living in an era where consumers are more conscious of health and quality. If cost was the deciding factor for purchase in the 20th century, **aspirations, health and quality decide the purchasing decisions today.** And with healthy, nutrient rich, mineral rich products like Neera and coconut palm sugar, developing and establishing a market space,

both in domestic and export market offers immense potential. The global demand for low calorie reduced sugar and sugar free products is increasing day by day with the increasing health awareness in the food market. The increase in the number of people with obesity, diabetes and dental caries is also alarming and Neera and coconut palm sugar can provide a healthy viable option.

Economics of Neera production in Karnataka :

There are 7.5 crore coconut palms in Karnataka. If a minimum of 1% of palms are tapped, 7.5 lakh palms can be tapped. **Neera technicians** can be developed to undertake Neera tapping in such a way that a skilled work force is evolved. A Neera technician can ideally tap around 15-20 palms per day. A new nomenclature of **Green collar jobs** is thus created which is related to agriculture production, contributes to food security, conserves soil, water and environment and generates employment, thus raising their standard of living. Neera tapping generates daily income to the farmer and the Neera technician which adds to their purchasing power. **The employment generated in Neera production if 10% of palms is tapped is around 5 lakhs.**

Permitting production of Neera and production of value added products from Neera will generate daily returns to the coconut farmer and the Neera technician. Daily income will increase the standard of living of the stakeholders. Moreover the potential for employment generation in the sector is enormous.

Potential contribution to GSDP of Karnataka through Neera production

The prospects for the economy of the state if Neera production is permitted was analysed. Production of Neera at a recovery rate of 1 litre per palm was calculated. The proportion of final pricing of Neera may be in such a way that the coconut farmer gets 50% of the income, Neera technician gets 25% of the income and 25% goes in for processing, costs.

GENERATION OF REVENUE THROUGH NEERA PRODUCTION IN KARNATAKA

Palms tapped		Neera production in 300 days (in MT)	Returns from sale of Neera in crores	Income to the coconut farmer in crores	Income to the Neera technician in crores
%	Number				
1	7,52,255	2,25,677	2,257	1,128	564
5	37,61,275	11,28,383	11,284	5,642	2,821
10	75,22,550	22,56,765	22,568	11,284	5,642

Increased income for the state through production of Neera **22,568 cr**

% increase in GSDP that can be attained **6%**

Additional income for Coconut farmer and Neera tapper **16,926 cr**

In a situation where 10% of the palms in the state are subject to tapping, the returns from Neera to the state amounts to Rs. 22,568 crores (Market price of Neera is taken as Rs. 100/-). The **generation of rural employment through Neera technicians is around 5 lakhs**. The total income of the work force of Neera technicians through production of Neera is around Rs. 5,642 crores while the income of the coconut farmers is to the tune of Rs. 11,284 crores, ie., **around Rs. 17000 crores additional income is generated** in the state by initiating Neera production. The additional income generated in the state through Neera production is ploughed back to the economy since it increases the purchasing power of the farmers and the Neera technicians.

Increase in GSDP through Neera production in the state is estimated to be 6%. Further processing of Neera to palm syrup, palm jaggery or coconut palm sugar will add more value to GSDP.

Global scenario in Neera and coconut palm sugar :

Neera and its value added products are manufactured by all the major coconut producing countries. The major players in the field are Indonesia, Phillipines, Thailand, Malaysia, Srilanka and Vietnam. The major destinations are USA, Canada, Norway, France, Middle

east, South Korea, Japan, Australia and Newzealand. Export of Neera and its products, especially palm sugar has shown a surging trend in production and market demand as a healthy and natural product. In Phillippines, projects on coconut sugar were initiated as early as 1995 and the other major coconut growing countries have stabilized their technology and packaging and have established speciality markets globally. Industries based on coconut with vast economic prospects have been established to cater to the domestic and local demands. It is note worthy that India leads the world in production and productivity of coconut ahead of Indonesia and Phillippines. Countries like Srilanka and Malaysia (which are very much behind us in production of coconut) have ventured into production of Neera and palm sugar. Asia Pacific Coconut Community(APCC) has developed quality standards for Neera and its products. Countries like Phillippines and Srilanka have their own standards for Neera and coconut palm sugar. Pictures of Neera and its value added products in the global markets is attached as *Annexure 3*.

Phillippines Coconut Authority promotes sale of coconut palm sugar with our Father of the Nation, **Gandhiji as their brand Ambassador**. Gandhiji's quotes dating back to 1939 are used to promote Neera and coconut palm sugar(*Annexure 4*). In Phillippines, Neera tapping and production of coconut palm syrup, coconut palm jaggery and coconut palm sugar is undertaken even by women's groups(*Annexure 5*).

Why coconut farmers in Karnataka are unable to produce Neera :

As per the Karnataka Excise Act 1965,

Section 11(A) defines "Excise tree includes the Gulmohwa, coconut, palm, palmyra, date, bagani or doddasal tree or any other tree, the fermented or unfermented juice from which toddy or any other liquor can be prepared".

Section 27 defines "Toddy means fermented or unfermented juice drawn from an excise tree".

This itself is a **contradiction since unfermented juice of coconut is included under toddy** even when it does not contain or consists of alcohol. Because of this wrong definition, Neera is deemed to be an alcoholic drink and it is a grave mistake. This

definition of Neera defeats the intention of the law maker since it gives a very wrong interpretation of a normal nutritious health drink.

It may also be understood that the act came at a time when technological advancements in food processing and packaging were in the infant stage and there was no technology for maintaining Neera in an unfermented stage. Also Neera doesn't come under the purview of the Excise act in any of the coconut producing countries. It is high time that amendments are made in the Karnataka Excise Act 1965.

If still included in Karnataka Excise Act 1965, it is suggested that separate definition be made for Neera in Karnataka Excise Act 1965 as a separate head with distinct legislation for Neera production processing and packaging.

Technology for Neera processing :

Defence Research Development Organization (DRDO) and Central Food Technological Research Institute (CFTRI) have evolved a technology to preserve neera through thermal processing at a temperature of more than 95 °C.

Role of Farmer Producer organizations in Karnataka in Neera production :

Formation of Coconut Producers Societies(CPS) was initiated by the Board with an objective to organize coconut farmers and establish grass root level farmer institutions for undertaking crop production, processing and marketing in a profitable manner thereby ensuring coconut farmers a remunerative price. CPS consists of around 40-100 farmers and possess a palm count in the range of 4000-5000. 20-25 CPS of a particular geographical area were aggregated to form Coconut Producers' Federations(CPF). CPFs can undertake activities like production of coconut chips, ball copra, desiccated coconut, virgin coconut oil, charcoal etc. CPFs are also extended support @ 50% subsidy for the installation of community infrastructure for copra making. **CDB has facilitated formation of 200 CPS and 41 federations in Karnataka. It is planned to form 2000 CPS and 100 Federations during the financial year.**

The Board has the broad objective of integrating CPFs to form Producer Companies(PC). CDB is facilitating activities for the formation of Producer Companies which are progressing in the states of Karnataka, Kerala and Tamilnadu. **10 Producer Companies will be formed in Karnataka during this year.** The idea is to transform a small farmers organization to a coherent, dynamic and vibrant functional team. Neera production, processing and packaging be undertaken under the auspices of the Federations of CPS registered with CDB. Marketing of Neera and its value added products can be undertaken by the Producer Companies. **CDB recommends that permission for Neera tapping be given on a pilot basis to Coconut Producer Federations registered with the Board.** The federations can form the base for Neera production.

Neera technicians –New Generation Green Collar Jobs:

Neera production is a skilled job and the skill of the tapper has an impact on the quantum of Neera produced. CDB has advocated for the development of a skilled task force called **Neera technician for production of Neera. Thus a green collar job is developed where the person can stay at home with his family, do production and earn higher incomes.** Trainings of 45 days duration can be given to the Neera technicians since yield of sap is very much dependent on the skill of the tapper. Value of Neera tapped could be shared between the farmer and the Neera technician in a fixed proportion so that both the stakeholders are benefited and the sector emerges in a sustained manner. These training can be coordinated by CDB in association with the State Agricultural Universities and the Department of Horticulture.

License for Neera production can be issued to Federations of CPS registered with CDB. Tapped Neera collected by the Federations through the member CPS can be brought to a primary processing centre which is localized within the district. The processing of Neera can be done under the strict supervision of officials. Further processing to other products like palm syrup, palm jaggery and palm sugar can be undertaken at the level of Federations or Farmer Producer Companies envisaged by CDB.

Relevance of making an entry to Neera production :

Production of coconut palm syrup, jaggery and sugar **generates rural employment and rural income, which adds to the GSDP of the state. Since the cash flow from production of inflorescence is daily and steady, the standards of living of the coconut farming community will be improved. Increased and stable returns will bring in more investments into the sector resulting in sustainable overall development of the society.** Increased returns to the coconut farmer and the Neera technician will pool back the money in to the economy through increased purchasing power benefiting the state as a whole.

It is to be noted that from 1.4.2014, import of agricultural products and their value added products can be done without import duty. Neera and value added products from Neera can be freely imported by any merchant in the country. These imported products do not come under the purview of Excise rules in the country. Moreover, the tax to be levied on these the imported products can only be on par with the tax on similar domestic products. In this situation, the coconut farmers and the economy of the state will be severely affected.

Neera production contributes to the GSDP of the state, generates rural employment and adds to the revenue of the state through increased purchasing power of the coconut farmer and the Neera technician. A community based planned production for the production of Neera and production of products like palm jaggery and palm sugar under the auspices of Coconut Producer Federations promoted by CDB can bring into the market different value added products from Neera and establish specialty markets for each product. This is possible only through appropriate amendments in the Karnataka Excise Act 1965. Thus in view of the immense potential it offers, Neera production may be permitted to be undertaken by CPS/CPF and Producer Companies in the state by amending the Karnataka Excise Act 1965.