



## XV WORLD FORESTRY CONGRESS

Building a Green, Healthy and Resilient Future with Forests

2–6 May 2022 | Coex, Seoul, Republic of Korea

# Protecting special wild tree species and traditional knowledge towards securing livelihoods of rural communities: A study on Kithul (*Caryota urens*) industry in Sri Lanka

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## Abstract

People in tropical island countries have long-lasting connections with wild trees that help securing their livelihoods. Deforestation, extensive use of chemicals and unsustainable forest resource management have resulted in losing tree-based natural products and rural livelihoods based on such trees. As a tropical island country, Sri Lanka is a home for many different native palm tree species. When considering the economic value, Kithul (*Caryota urens*) has the highest potential and economic viability among the non-timber forest product categories in Sri Lanka (Senaratne et al, 2003). Rural communities use Kithul as a multiple-use tree with a considerable economic value through processing the Kithul sap into toddy, treacle and jaggery that have a high market demand locally and abroad (De Zoysa, 2017).

However, it can be observed that the present consumerism and monocultural practices affect the traditional Kithul industry. The Kithul product supply is insufficient to accommodate the market demand and the products indicate a low quality. Hence, this research investigates the causes for the low quality of products and the discouragement of rural communities to involve in Kithul industry, and finds ways to secure rural economies and livelihoods based on such industry.

Based on Sinharaja, Dediyaigala and Peak Wilderness lowland rainforests, the primary data of this research were collected conducting semi-structured interviews with the villagers who involved in Kithul industry. The Kithul products were observed and tasted during field visits to collect additional information. The government introduced chemicals to increase Kithul sap harvests and the forest conservation laws prohibiting access to forests have resulted in declining Kithul industry. If the rural communities given limited access to forests and encouraged to grow Kithul trees in their home gardens they could practice their traditional knowledge related to Kithul industry to sustainably re-assure their livelihoods.

Keywords: Kithul (*Caryota urens*) industry, traditional knowledge, rural communities, livelihoods, Sri Lanka

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## Introduction, scope and main objectives

Tapping different kinds of palm trees to extract sap is popular in tropical countries (Kapilan, 2015; Everett, 1995; Bernal et al, 2010; Deepakkumar, 2016; Kumar, 2012; Barh & Mazumdar, 2008). Most of the time, the livelihoods related to palm trees limit to home industries. To extract sap and other resources from these palm trees, people use traditional knowledge and herbs collected from forests. In Sri Lanka, Kithul palm (*Caryota urens*) is a naturally grown native tree. It is naturally spreading and

long lasting. No inputs are needed and it provides habitats and food for animals as well. Rural communities in Sri Lanka use Kithul as a multiple-use tree with a considerable economic value through processing the Kithul sap into toddy, treacle and jaggery that have a high market demand locally and abroad (De Zoysa, 2017). Moreover, Kithul vinegar and flour are produced for the local market.

The Kithul industry has a long history in Sri Lanka. During the ancient times, there was a close relationship between rural communities and forests. People depended on forests and this dependency created a social structure and traditional lifestyles. Extracting forest resources was not restricted and people had a sense of sustainable utilization of forest resources at that time.

When the modern consumerism arrived, the limits of dependency turned into an unlimited desire and greed towards extracting resources to earn profits through destroying forests. To protect the forests and other natural resources, governments implemented strict conservation laws and regulations. This has resulted in distancing rural communities from forests and disconnecting them from their traditional livelihoods based on forest resources.

The Kithul industry in Sri Lanka faced the same consequence. Despite the high demand for Kithul products, the rural communities lose access to forests to extract Kithul sap. There was no tradition of planting Kithul trees, and the naturally grown Kithul trees were also under threat due to monocultural practices such as tea, cinnamon and palm oil plantations. Against this background, at present the Kithul industry has reached out of the forests to the forest peripheries. The rural communities who used to extract Kithul sap as a non-timber forest product try to continue with their traditional livelihoods depending on forest peripheries. However, the customers complain about the low quality of the Kithul products and the unavailability of people who have traditional knowledge of Kithul industry. Subsequently, this research aims to find out the causes for the low quality of products and the discouragement of rural communities to involve in Kithul industry. The research also finds ways in which to secure rural economies and livelihoods based on Kithul industry.

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## **Methodology**

As the Kithul palm naturally grows in the lowland rainforests in Sri Lanka, the peripheries of the prominent lowland rainforests, namely, Sinharaja, Dediyaigala and Peak Wilderness were selected for this research. The research relied on qualitative data gathered through conducting semi-structured interviews with the villagers who live in the above-mentioned forest peripheries and involve in Kithul industry. In addition, forest and wildlife officials, Grama Niladharis (the lowest level government administrative officials in Sri Lanka), agricultural officials and the customers who buy Kithul products were interviewed. Altogether, primary data were collected from 31 respondents.

To collect additional information, the Kithul products were tasted and the production mechanisms in the selected areas were observed during field visits. The literature on Kithul industry has been reviewed to collect secondary data. The research was taken place in the year 2020 in the above mentioned selected forest peripheries.

The collected data were categorized manually under few themes and analyzed accordingly.

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## Results

The respondent villagers who involved in the Kithul industry revealed that they produce treacle, jaggery, toddy, vinegar and flour using the sap and bark of Kithul trees. The major problem mentioned was the restrictions imposed by the Forest Department and the Department of Wildlife Conservation prohibiting the entry into the forests. The villagers believe that the Kithul trees that naturally grown in forests have good harvests than the ones grown in home gardens. As they take a long time to grow, planting Kithul trees in home gardens do not provide quick results and profits to villagers. Subsequently, the projects initiated to promote Kithul plantation in home gardens became unsuccessful because the villagers wanted quick results and profits and there were no alternative livelihoods to generate income in the meantime. Most of the herbs used for toddy tapping can be easily collected from the forests and currently due to government restrictions, people cannot enter into forests to collect them. Hence the government has introduced chemicals to replace traditional herbs, but these have resulted in reducing the life span of Kithul trees.

The generation gap has badly affected the Kithul industry. During the eras of ancient kingdoms, there were certain castes who assigned to tap toddy. In the modern times, the new generations do not like to involve in Kithul industry for two reasons: first, due to the caste bases that yet linked with the industry; and second, the difficulties and dangers faced by the previous generations when involving in the industry. The new generations seem much concerned about their social status and the dangers faced by their previous generations when climbing tall Kithul trees for toddy tapping.

To address some of the issues related to Kithul industry, a national programme for Kithul development was initiated by the Ministry of Rural Industries and Self-Employment Promotion as per a Cabinet decision dated July 25, 2007. Later, this programme was implemented by the Ministry of Traditional Industries and Small Enterprise Development with a view to uplifting Kithul as a traditional industry and an avenue for self-employment promotion (Ministry of Traditional Industries and Small Enterprise Development, 2009). Under this national programme, an island-wide survey was conducted to collect necessary information and data related to Kithul tree distribution. Although this does not include data on Kithul trees in forests, the survey data shows Kithul tree distribution in private lands and the lands owned by the Land Reform Commission.

The national programme introduced training programmes to increase the number of Kithul tappers and impart tapping skills to young generation, provided safety kits and equipment for Kithul tappers, and introduced Kasper technology (a method of using chemicals) to increase the sap yield. The quality improvement for Kithul treacle and jaggery, registration and issue of identity cards to recognize Kithul producers and overcome legal impediments, facilitation to link the Kithul producers with large scale exporters, nursery development and Kithul plantation to increase the number of Kithul trees, promotion of value-added Kithul products, establishment of sales outlets, encouragement of Kithul related research, and organization of exhibitions, trade fairs and awareness programmes were the other proposals in the national programme (Ministry of Rural Economic Affairs, 2015).

The respondent villagers stated that at the initial stages of the implementation of the national programme, government-led Kithul sap collection and treacle and jaggery production centres were established in a few areas such as Kolonna and Weliketiya. However, these attempts were not successful for two reasons. First, the villagers earned more income by selling the home made end

products such as treacle and jaggery than selling raw Kithul sap to the centres. Second, the Kithul tappers produced toddy for their own consumption and to sell as an alcoholic drink. Hence, they did not sell their sap to the centres. Due to this, the established Kithul sap collection and treacle and jaggery production centres and the sales outlets became dysfunctional. The introduced Kasper method to replace traditional herbs with chemicals had been criticized by respondent villagers saying that this chemical usage destroys the Kithul flower and reduces the life span of the Kithul tree.

In the national programme, there were no methods to maintain the quality of the end products of the villagers or to buy such products for a reasonable price. Despite the government and a few private companies have involved in producing Kithul products rather than buying the end products from the traditional Kithul producers in villages. Although the national programme introduced newer tapping methods using chemicals and safety kits to promote the young generation in the Kithul industry, there were no ways to revive the traditional knowledge related to it.

The Kithul industry has become less popular due to some other reasons as well. The low prices offer by intermediaries for Kithul products, lack of direct access to markets, shortage of labour, less technical guidance to maintain high standard quality of products, and damages to Kithul flowers and toddy pots by wild animals especially by monkeys are some of the reasons. As there is no responsible authority or institution to improve the standard of Kithul industry, the low quality products get a big market space. Normally, the Kithul products are expensive and the low quality products also labeled with the same high price. For example, most of the Kithul treacle and jaggery products are consist of white sugar mixtures and do not have the original taste, but their prices are high.

The forest and wildlife officials had a different story. According to them, when the Kithul tappers enter into forests to collect raw materials related to the industry, they have no limitations. These villagers destroy the forests and if they have given permission, a lot of illegal activities such as hunting, mining and collecting medicinal plants will take place in the forests. Moreover, the forest and wildlife officials mentioned that they cannot get the responsibility if any accident happens to Kithul tappers inside the forests. As the protected areas are prohibited for people, the officials say that they need to obey the law.

The findings suggest that there are no collaborative programmes to connect the village communities and forest and wildlife officials together towards sustainable forest resource management and conservation. Even in social forestry programmes, there are no sustainable practices, proper community guidance or use of research data and information.

The respondent Grama Niladharis and the agricultural officials had the same problem of emerging contradictions between the law enforcement against toddy tappers and people's demands to tap toddy from the Kithul trees in the forest. The agricultural officials lack knowledge on Kithul industry promotion and this brings negative impact to such industry. The less success of the National Programme for Kithul Development suggests that the policies cannot be successfully implemented neglecting traditional knowledge and ground realities which embedded into villages for a long period of time.

The major complain from the customers of Kithul products was about the low quality, higher prices and the lack of sufficient products to match the existing market demand. The seasonal fluctuations of the products were another problem highlighted by the respondent buyers. The Kithul products

can be used in different types of traditional food items, but many people of the new generation do not know how to prepare these foods. There are no such food promotions and the Kithul products have not been promoted to reach the international market yet.

In 2021, the Minister of Plantations proposed the government to establish a Kithul Development Board tasking to develop and promote Kithul plantations and products. However, this has not been established yet (Daily FT, 2021).

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## Discussion

The results of the research discussed above indicate different requirements, demands and limitations of the stakeholders of the Kithul industry. To address these, a responsible institutional mechanism needs to be established. The current developments of the Kithul industry yet have been unable to provide stable livelihoods to rural communities in a sustainable manner. There is no plan to find paths to a win-win approach covering both sustainable rural livelihoods and conservation success. If the new knowledge and techniques attempt to exclude traditional knowledge, there is a limited chance to achieve success from an industry such as Kithul which closely connected with culture and traditions.

In modern conservation policies, communities are not outsiders and they should not be excluded. The communities live in the forest peripheries need to be included in conservation strategies. The current forest and wildlife policies in Sri Lanka do not have a concern on the mutual relationship between rural communities and forests. This has resulted in imposing restrictions upon communities and declining their traditional livelihoods based on Kithul industry.

The global trend is to improve the local level economy through developing traditional livelihoods. This can be addressed by protecting trees which generate traditional livelihoods and the culture around such trees. Conservation purposes need to be addressed within the lines of local identities and cultures. The findings of this research show the lack of knowledge the policy makers and officials have about the new global trends in conservation and rural economy. Sustainability cannot be achieved without maintaining the traditional relationship that the rural communities had with the forests.

The low quality products indicate the results of the lack of institutional mechanisms to maintain the quality and standard of the Kithul industry. The policy process needs multiple communication ways and integrated strategies connecting all stakeholders together towards promoting a sustainable Kithul industry. Without maintaining the mutual relationship between forests and rural communities, the Kithul tree-based economy cannot be promoted in Sri Lanka. If this could be promoted, the higher quality Kithul products could reach the local and international markets fulfilling the existing high demand without failure.

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## Conclusions

There is no doubt that the Kithul tree has a great potential to improve the rural economy and to conserve forests in Sri Lanka. However, the lack of traditional knowledge among new generations, the danger of climbing Kithul trees, caste issues, monocultural practices, low prices offer by intermediate buyers, insufficiency of quality products to fulfill the market demand, forest and wildlife policies that restrict the entrance into forests, loopholes of the introduced mechanisms to promote the industry and non-establishment of an authority for Kithul industry promotion have been identified as barriers. These contribute to the low quality of Kithul products.

To improve the Kithul industry towards enhancing the rural economy, the conservation strategies need to be connected with rural communities and their livelihoods. Conservation policies should not exclude people and there should be creative ways to connect the rural communities and forests together aiming their mutual dependence and survival. The traditional knowledge that embedded to Kithul industry should not be neglected when introducing new promotion programmes aiming high income generation and profits.

The Kithul industry can be developed as a home industry and as a part time job that could provide an additional income source to rural communities. With the support of the government authorities, high quality Kithul products can be produced and introduced to both local and international markets. The major challenge is to maintain the quality of the products and to avoid the intermediaries who promote low quality products.

As the Kithul tree grows naturally without added fertilizers or chemicals, the authorities also could introduce these trees to home gardens. Agro forestry and social forestry projects could pay more attention to Kithul. An integrated approach which collaborates forest and wildlife officials, other officials, rural communities and their traditional knowledge, and forests together could be able to promote Kithul industry in a sustainable manner.

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