

Next-Gen smart value chain for cottage industry: A case of Kithul value chain

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1. Introduction

Kithul industry can be described as an established cottage industry in Sri Lanka. The sap extracted from the inflorescence of the Kithul tree is used as raw material for various products. Among them, Kithul treacle, jaggery, toddy, flour, vinegar, and timber are considered important ones. Currently, the ethnic niche consumes Kithul products in the European market despite a long history of Kithul trade with Great Britain, Belgium, Germany, France, and the Netherlands as shown by Customs' records of colonial 'Ceylon'. The value chain of Kithul contained few horizontal nodes and more vertical linkages. Information asymmetry and issues of the governance mechanism disturb the smooth flow of products from upstream to downstream. Performances of the Kithul value chain are badly affected by inherited human resources issues, especially the lack of trained tappers, traditional processing technology, poor market access, and the lack of coordination among value chain members. The lack of knowledge on information and communication technology of Kithul manufacturers also seems to be a reason for the decline in this cottage industry. Although some aspects of the value chain of the Kithul industry are challenging, technology collaborations and decentralized characters can be used to overcome the various problems faced by manufacturers and to give real value to Kithul products (Parthiban, Bandyopadhyay, & Basak, 2018) Therefore, this study was conducted to investigate the Kithul value chain, identify its structure, functions, and profiles of value chain actors, and to discover the structure of information and communication technology-driven, actor to actor collaborative, decentralized, value chain for the Kithul industry.

2. Materials and Methods

The study was carried out in Deniyaya, Kalawana and Elpitiya areas of the wet zone of Sri Lanka where the Kithul industry is established traditionally. Case Study Approach was used to collect qualitative data from the 50 respondents and respondent groups were Kithul tappers, processors and traders who are involved in the Kithul value chain. Qualitative data were converted to Quantitative data by using Microsoft Excel and analysed by IBM SPSS22 software. Non-availability of a data base on Kithul value chain, informal methods were instrumental to identify the value chain actors and collect the primary data. Data collection begins with storytelling exercise with selected Kithul value chain actors. Open ended discussions were conducted individually and audio records were used to store the information shared. Further, in-depth interviews were performed with same value chain actors with an interview guide. The key thematic areas of questions were on product portfolio, volume and values, cost of production, processing knowhow, and functions and roles of value chain actors. Moreover, field observations were used to monitor the work of each value chain actor, identify the technology they used, processing methods, issues, problems, and coping strategies to meet the market requirements. The knowledge and experience on mobile technology, social media and online sources were identified to develop ICT led future Kithul value chain.

3. Results and Discussion

Value chain begins with Kithul trees growing in home gardens, and wet zones forests where rural tappers produce sap. Upstream of the Kithul value chain consists with Kithul tree owner, Kithul tapper, and processor. Traditional knowledge, techniques, equipment are common in tapping and processing various products. Short value chain has few horizontal nodes and more vertical links. Downstream begins with local collectors, traders, processing companies, exporters and both local and foreign customers. The role of experienced tapper is vital to start the process and prepare the inflorescence. About one week period is needed to prepare the tree for the first tapping and the cost is around LKR2000-3000. The sap harvest depends on the quality of treatments used and the maintenance process. Basically, they sell their products to local collectors and a few of them were selling directly to the customers of village fairs. In contrast, Kithul toddy business exists within the village area and regular buyers were the main target. Farm gate price of one bottle of Kithul treacle was around LKR 800 and its market price was around LKR 1000-1200 and Kithul jaggery was priced at 450-600LKR/Kg., and in the market intermediaries selling those products for about 650-700 LKR/Kg.

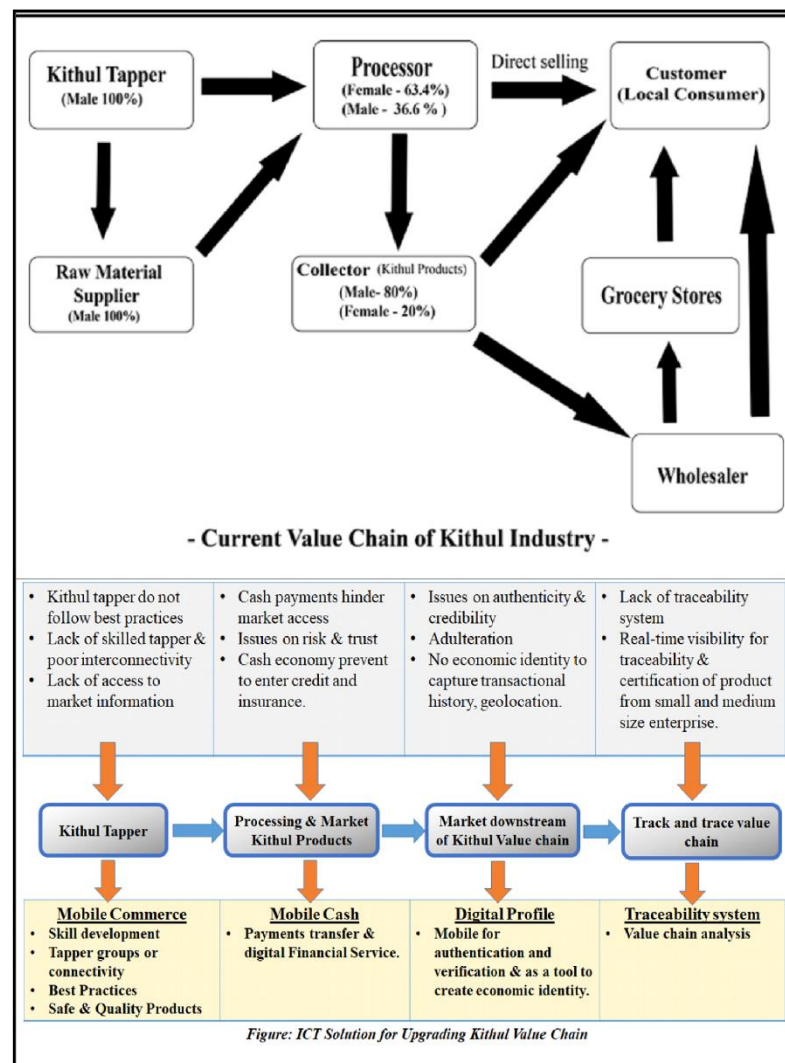


Figure 1. ICT solutions for upgrading Kithul value chain

Findings were able to identify potentials and drawbacks of the Kithul value chain. Due to the intervention of intermediaries in the value chain of Kithul products from the manufacturer to

the consumer, damage to the quality of Kithul products shows a decline in consumer taste. (Seneviratne & Dissanayake, 2016) The study showed that the Kithul tapper lacks the necessary defensive tactics, skilled manpower, coordination among value chain members, a collaboration between actors and the knowledge about the role they are supposed to play. The study revealed that the majority of those involved in the Kithul industry are elderly people due to their poor literacy on mobile technology and ICT they were ignored from the market orientation. Moreover, poor institutional involvement, as well as the lack of interest of members excluded them from modern value chains.

Taking into account the findings of the study, need for an ICT Next-Gen smart value chain aimed at overcoming the challenges of the present Kithul value chain and giving real value to the producer can be pointed out. Based on this new concept, ICT can be used to bridge the gap between actors in the current value chain, smooth flow of information, especially pricing and quality concerns and intensify the relationship between producers and consumers. This can be done through media such as online marketing, e-commerce, social media platform and mobile application which are widely used in today's society and high value Kithul related products can be marketed not only in the local market but also in foreign markets. In addition, the Next-Gen smart value chain highlights the need for public or private sector intervention to create new jobs. This will enable Kithul manufacturers to market their products directly to consumers through a digital platform.

4. Conclusions

Present Kithul value chain comprised of few nodes, short in length but network structure. Information asymmetry, poor market information on pricing, quality, and needs and wants of consumers badly affect the value chain performance. Digital identities have the potential to help farmers build pride in their profession, feel more informed, connect to new markets or buyers, access digital financial services and reduce their financial risk and act as a key enabler for digitizing the Kithul value chain and extending a wide range of services to rural users and enterprise customers. In the long-term, this will help lead to improved farming practices, increased digital and financial inclusion, and higher productivity.

5. References

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