

ICT in Sri Lankan Cinnamon Industry: Bridging the Digital Divide

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Abstract

Sri Lankan Cinnamon is an export agricultural product with Sri Lankan identity. Significant of this research is to identify the impact of Information and Communication Technology (ICT) on the Sri Lankan cinnamon industry. The main problem investigated in this research is to find the impact of digital divide in the Sri Lankan cinnamon industry. The aim of this research is to develop a solution model to overcome the digital divide in cinnamon industry to become more competitive, effective and efficient.

Keyword: ICT in Cinnamon industry, Digital Divide, E-Agriculture, Agronomy, Sri Lankan Cinnamon.

1. Introduction

Cinnamon is the only endemic agricultural product which is exporting from Sri Lanka. The scientific name of the cinnamon is "Cinnamomum Zeylanicum".(Pittman, 2011). According to Gupta (2007) Sri Lanka had a dominant role in the international trade in the early 1st millennium BC due to Sri Lankan cinnamon. Sri Lanka is contributing 80% to 90% of the world cinnamon trade at present (Chomchalow, 2008).

Significant of this research is to identify the impact of Information technology on the Sri Lankan Cinnamon industry. This will be highly effective when Sri Lanka become the hub in Asia in year 2020.

2. Research Problem

The main problem investigated in this research is what is the impact of ICT in Sri Lankan cinnamon industry.

The aim of this research is to develop a solution model to overcome the digital divide in cinnamon industry to become more competitive, effective and efficient. It will gain maximum possible revenue to the country from the cinnamon industry by having effective and efficient product development and promotion. The model is covering use of ICT in cultivation, use of ICT in production, use of ICT in standardization and use of ICT in marketing. The government monitoring authority will use ICT as the strategic tool to link all the stakeholders in the industry. This will directly increase the foreign revenue to Sri Lanka.

3. Literature Review

THERE were many reasons found in literature as draw backs for the cinnamon industry in Sri Lanka. CMA (2007) has pointed some of them as 1.)lack of marketing skills 2.) lack of financial support to develop cinnamon as an industry 3.) low the product quality 4.) high production cost 5.) not exporting as value added product. The German development institute (2006) also has identify the following drawbacks in the Sri Lankan cinnamon industry. They are 1.)substitute products which are coming from countries like China, Indonesia, Vietnam and Philippine are producing Cassia cinnamon with very low labor cost with large scale production. These countries are using new strategies to capture global market. Sri Lankan cinnamon industry is in far behind the usage of new innovative technologies to promote products in the international market place. 2.) The market is requesting for innovative products. Most of the Sri Lanka cinnamons are going to the international market as raw products. Mangstl (2008) was stating that agro businesses in developed nations are enjoying with benefits of digital technologies but other countries are not getting the same due to digital divide.

It is describing that the requirement of use of innovative technologies in the cinnamon industry is essential. The industry must have improvement in the areas of cultivation, production, standardization and marketing.

Many countries such as Japan, Philippines, India, Indonesia are using ICT as a strategic tool for development of the agriculture sector.

Mangstl (2008) is describing that the use of e –Agriculture is supporting for cultivation, quality maintenance and direct access to the market place. The Philippines government has employed set of people with ICT background [Agricultural extension workers (AEWs)] to support adopting farmers in to ICT. They are equipped with mobile technologies, internet access and laptops. AEWs are visiting farmers regularly and supporting them to get use in to ICT. (Barroga et al, 2010). India is a country which is highly using ICT in agro business. They have implemented many systems to support farmers (Alavion and Allahyari, 2012). Daka and Chayal (2010) are saying that ICT can be used in the agricultural field as a reliable source of information about best practices, pest, pesticides, fluctuations in the market, methods of production, quality standards. It is linking farmers, traders, government authorities, risk covering institutes, quality assuring institutes and financial organizations.

Indonesia is a leading agricultural country. They are using ICT as a strategic tool to develop the agriculture in the country. (Hasibuan et al., 2012). According to Lee and Purnomo (2010), Indonesian government has employed Agricultural Extension Officers (AEO) to develop agriculture sector.

According to the above literature, Sri Lankan cinnamon is having a good demand internationally. But to sustain in the international market and getting the maximum profit for the product is an issue. Countries which are producing competitive and substitute products are highly using ICT in agriculture sector with government influences.

4. Methodology and Experimental Design

The core constructs of this model have adapted from the Technology Acceptance Model (TAM), an influential research model in the ICT and theoretical aspects related to e-commerce in agriculture. These theories were used in this research to develop the conceptual framework and hypotheses. In order to understand of the literature behind the study, literature survey has been conducted and field survey has been conducted with six categories of study areas including cinnamon farmers, peelers, intermediate collectors, exporters, certification authorities and buyers.

This section includes a review of the research method and design appropriateness, a discussion of the population and sample.

Data collected by using several methods. Interviews, observations, web research and telephone conversation are the techniques used to collect data.

It interviewed 76 farmers, 98 peelers 54 processors and collectors. 6 exporters interviewed and data of 37 exporters collected using by accessing web. There is only one international certification authority interviewed. 4 buyers data collected via interviews, 6 of them get connected via skype and 12 buyers data collected using internet.

Table 1: Summary of ICT users and not users of ICT

	Using ICT	Not Using ICT	Total Sample
Farmers	11	65	76
Peelers	0	98	98
Collectors	13	41	54
Exporters	37	0	37
Certification Institute	1	0	1
Buyers	18	18	18

According to survey results the use of e-commerce and ICT among Sri Lankan cinnamon farmers, peelers and intermediate collectors are low. Exporters buyers and certification authorities are using ICT in satisfactory level. There are several factors which are affecting the levels of e-commerce and ICT usage in the cinnamon industry. ICT literacy level, ability of accessing internet, knowledge of English language,

communication skills, ability of searching the web and ability of handling ICT tools have identified as factors which are influencing e-commerce and ICT use among the stakeholders of the cinnamon industry in Sri Lanka.

It is showing the use of ICT in the ground level is very low.

Since the English knowledge is poor among the ground level, it has become a barrier for ICT adoption.

According to literature review, farmers of competitive countries are using ICT as a strategic tool. They are using ICT in following areas such as awareness, marketing and standardization

They have used ICT to covered the above mentioned areas by implementing Education, Allowing direct access to the market, Maintain quality standards, Expand the market, Branding products, Government influences

Merchants of China, Vietnam and Indonesia are using the word “Cinnamon” to market “Cassia” in their advertisement in web portals. According to this competitors are using ICT tools to make wrong impression among end users and buyers about cinnamon.

5. Conclusion

The cinnamon industry is an industry with digital divide. Due to this, bottom line is suffering without information and education on product development and direct market access.

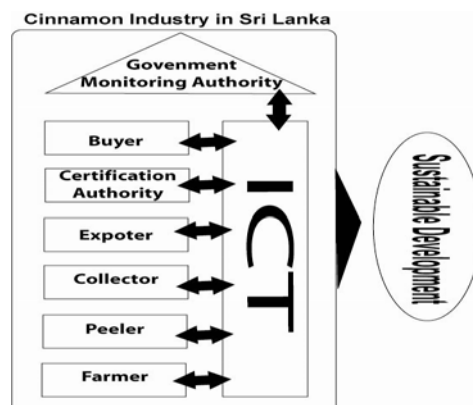


Fig. 1: Holistic integrated model for cinnamon industry in Sri Lanka.

It is possible to introduce various ICT Applications for each category. Farmers can use B2B portals, Information and knowledge managements systems, information systems and mobile technologies to obtain information and direct market to reach the vision. Peelers must be updated with the technologies and market requirements, market trends and standards. Since this is the most critical category in the production process and difficult category for the technology adoption, special attention must required. Collectors are the category who collect cinnamon from farmers, sorting and grading cinnamon. There for they should be updated with market requirements, market trends

and standards. They can use knowledge management systems, information systems and web sites to get information to optimize product qualities. Exporters must use B2B portals, interactive webs, informational webs and latest ICT tools for marketing, promotions and communication. Certification authorities are using international standard web sites and ICT tools. But they should be reported to the government authority. Buyers have no much control over the other parties and government. They can access latest prices, details and can directly communicate with exporters, certification authorities, and other categories on demand via the ICT channels.

Interrelation among the above six categories via ICT and use of e-systems and technologies will be given a competitive advantage for Sri Lankan cinnamon industry to achieve the sustainable development when Sri Lanka become the hub in Asia.

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