**LITERATURE SURVEY**

## 1) Krishi-Bharat i: an interface for Indian farmer

**AUTHORS: Ghosh, Soumalya, A. B. Garg, Sayan Sarcar, PSV S. Sridhar, Ojasvi Maleyvar, and Raveesh Kapoor**

# Rapid growth in the field of ICT helps in basic aspects of mankind like- agriculture, education, healthcare etc. However, the moderate technical growth of ICT applications is confined to the community of a limited number of people, who live in digital pockets. The illiterate people like – farmer, shopkeeper etc. are unable to take the advantages of the ICT revolution. According to the UNESCO report, population of such people in the globe is 64% who are unable to use the technology either language or technical barrier. Moreover the percentage (76%) must be increased in the context of developing countries. The essential agriculture information is very useful to a farmer for taking effective decision thus we proposed to develop an iconic interface which is integrated with speech based interaction in Indian languages. The proposed interface is critically evaluated with the farmer from different states of India. The evaluation results proved the effectiveness of the proposed interface.

# 2) Krishi Ville—Android based solut ion for Indian agriculture

**AUTHORS:**  **Singhal, Manav, Kshit ij Verma, and Anupam Shukla**

# Information and Communication Technology (ICT) in agriculture is an emerging field focusing on the enhancement of agricultural and rural development in India. It involves innovative applications using ICT in the rural domain. The advancement of ICT can be utilized for providing accurate and timely relevant information and services to the farmers, thereby facilitating an environment for remunerative agriculture. This paper describes a mobile based application for farmers which would help them in their farming activities. We propose an android based mobile application - Krishi Ville which would take care of the updates of the different agricultural commodities, weather forecast updates, agricultural news updates. The application has been designed taking indian farming in consideration.

# 3) Blockchain based provenance for agricultural products:

# A dist ributed platform with duplicated and shared bookkeeping

# AUTHORS : Hua, Jing, Xiujuan Wang, Mengzhen Kang, Haoyu Wang, and Fei-

# The provenance (tracing) system of agricultural products is important for ensuring food safety. However, the stakeholders (growers, farmers, sellers etc.) are numerous and physically dispersed, making it difficult to manage data and information with a centralized approach. As a result, the production procedure remains non-transparent and trust is hard to build. In this paper, we propose an agricultural provenance system based on techniques of blockchain, which is featured by decentralization, collective maintenance, consensus trust and reliable data, in order to solve the trust crisis in product supply chain. Recorded information includes the management operations (fertilizing, irrigation, etc.) with certain data structure. Applying blockchain techniques to the provenance of agricultural product not only widens the application domain of blockchain, but also supports building a reliable community among different stakeholders around agriculture production.

# 4) Bitcoin and beyond: A technical survey on decentralized digital currencies

**AUTHORS** : **Tschorsch, Florian, and Björn Scheuermann**

Besides attracting a billion dollar economy, Bitcoin revolutionized the field of digital currencies and influenced many adjacent areas. This also induced significant scientific interest. In this survey, we unroll and structure the manyfold results and research directions. We start by introducing the Bitcoin protocol and its building blocks. From there we continue to explore the design space by discussing existing contributions and results. In the process, we deduce the fundamental structures and insights at the core of the Bitcoin protocol and its applications. As we show and discuss, many key ideas are likewise applicable in various other fields, so that their impact reaches far beyond Bitcoin itself.

**5)** **Towards using ICT to enhance flow of information to aid farmer sustainability in Sri Lanka**

**AUTHORS**: **L. N. De Silva, J. S. Goonetillake, G. N. Wikramanayake, and A.**

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Farmers need information at all stages of the farming life cycle to make optimal decisions. The required information includes not only prior knowledge but also real time (dynamic) information such as market prices and current production levels. Some valuable information needed by the farmers is produced by government organizations and is available in different locations in different formats. Although farmer is the most important stakeholder in agriculture, there has not been much effort to provide the essential information to farmers on a real time basis. This lack of information is creating many difficulties for farmers as they are not being able to make the correct decisions relating to their farming activities. Through field studies we have identified information required by farmers at various stages of the farming cycle and official sources where this information is available. Next we developed an information flow model that connects various information sources to farmers’ information needs. Based on these findings we are now developing a mobile phone based information system to deliver the required information to farmers in real time.