Information Management for Agricultural High Value Product Supply Chains

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Abstract

Developing high-value-crop supply chains, such as coffee, has the potential to improve the livelihoods of poor rural farmers in less developed countries. Systematic information management can greatly facilitate supply chain development by, for example, linking a specialty market in one country with potential producers in another. In this paper we describe the development of a prototype information management system for specialty coffee supply chain participants. We then describe future work to further develop it so as to better meet users' needs. And finally investigate and introduce tools and approaches appropriate to filtering information useful for making short- and medium-term agronomic and marketing management decisions.

The prototype CinfO system (a virtual discussion space for stakeholders worldwide interested in the diversification of hillside coffee-growing areas) consists of two parts: a central database and an Internet based user interface. Surveys were carried out to determine users' data requirements. A multi-user framework tailors information to users' needs in respect to data privacy by granting user specific access rights, language and visual needs. The prototype CinfO incorporates information about coffee production, farm management and coffee quality. A unique code system guides the data along the supply chain and guarantees traceability. The whole system is based on Internet technology, which enables quick and easy input and update of information of all participants in the supply chain in real-time. That is crucial in a highly dynamic market with constantly changing demands.

The long-term success of CinfO will depend on its ability to provide its users with relevant and timely data. Future development of the information system will extend the system with functions that facilitate Learning Selection methodology. These functions specifically address the ability of networks, as which supply chains can be considered, to generate information that permits more accurate and relevant decisions than could be derived from individual network members. The development and implementation of these functions requires communication between all chain participants to test, modify and continually improve the functions. The paper assesses the utility of different approaches to provide these functions, including for example Bayesian statistics and the Delphi method.

Keywords: Agriculture, Bayesian statistics, decision support, high value crop, information management, Learning Selection, speciality market, supply chain

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