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Development of Information System for enhancing upcountry vegetable cultivation in Sri Lanka

M.D.L. Senarath
Index no : 08/10039

Faculty of Information Technology
University of Moratuwa
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M.D.L. Senarath
Index no : 08/10039

Dissertation submitted to the Faculty of Information Technology, University of Moratuwa, Sri Lanka for the partial fulfillment of the requirements of the M.Sc in Information Technology

December 2012

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Declaration

I declare that this dissertation does not incorporate, without acknowledgement, any material previously submitted for a Degree or a Diploma in any University to the best of my knowledge and belief, it does not contain any material previously published or written by another person or myself except where due reference is made in the text. I also hereby give consent for my dissertation, if accepted, to be made available for photocopying and for interlibrary loans, and for the title and summary to be made available to outside organization.

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Signature

Supervised by

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Coordinator
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05/04/2013

Dedication

This report is sincerely dedicated to
The farmers who are engaged in the cultivation of vegetables in spite of the hard-ship they encounter in their daily living work instinctively for the benefit of society.

The Research community in the field of Agriculture who are using their knowledge, technology and skills for the improvement of living standards of our people

The Policy makers whose sole interest is the up-liftment and Development of the country

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Abstract

Sri Lanka is one of the developing countries in South-Asian region where Agriculture remains the mainstay of economy and approximately 33% of the total labor force is engaged in Agriculture. Production of rice is the most important activity and cultivation of other cereals, vegetables and fruits are also prominently in the economy of Sri Lanka. Therefore it is very important to analyze the agricultural information for the purpose of formulating policies and also enhancing the knowledge of farmers to encourage them to be in the Agriculture. In this context, production, price fluctuations, forecasting, seasonal indices and the factors which could affect for these variables are highly important. In this project, four upcountry vegetables namely potatoes, beans, carrot and cabbage were selected and, an attempt was made to develop a web-based information system, which can be used for effective decision making on expected harvest of selected crops with the utilization of lands, according to Agro-ecological measures and demographic characteristics and also on seasonal indices and time series forecasting to educate farmers, consumers and other interested parties as well. The regression models for estimated harvest were developed with the use of SPSS statistical software from the raw data collected from a sample survey conducted in Matale, Kandy, Nuwara-eliya and Badulla districts. The information system will provide users to select key variables by district, crop and the season and any of pre-defined categories of independent variables identified by each model and then visualize the expected harvest. The seasonal indices and most appropriate price forecasting trend lines were generated by considering monthly prices for a period of 2001 to 2010. These three measures would be a total solution that is available in the system for effective decision making.

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