



INFORMATICS  
INSTITUTE OF  
TECHNOLOGY

UNIVERSITY OF  
WESTMINSTER

## **Informatics Institute of Technology**

In collaboration with

**University of Westminster, UK**

6 COSC023C.Y - Final Year Project

### **“GRAIN PORT”**

**Supply and Demand Management System for Rice in Sri Lanka!**

A Dissertation By

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(IIT ID : 2018476 | UoW ID : W1742319)

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Submitted in partial fulfillment of the requirements for the

**BSc (Hons) Business Information Systems degree**

at the University of Westminster.

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## **Abstract**

Sri Lanka and Rice have a very close relationship which has a very long history. Sri Lanka is an Agriculture based country where paddy cultivation is the most famous around the whole country. Also, Sri Lankans staple food is known to be Rice. Keeri Samba, Samba and Naadu are considered as the three main varieties of Rice Sri Lankans consume while there is a vast variety than this three including various varieties of Basmati, Red raw rice and White Raw rice. Looking at the supply and demand related to Rice in Sri Lanka it could be noticed even though Sri Lanka produces higher quantities of rice, The country will also have to import some amount each year while the country exports the product as well. Paddy Cultivation being one of the biggest cultivations and Rice being the staple food of Sri Lanka, still it could be seen that there are lots of problems and issues when it comes to the Supply and Demand Management Related to Rice in Sri Lanka. This have caused numerous issues to the local farmers and even for the Consumers.

This project aims at identifying all these problems and issued faced by the local paddy farmers and the Sri Lankan general public who consumes rice and figure out the exact reasons for these problems. After identifying the reasons after thorough research and interviewing certain industry related personnel the researcher has come up with a latest IT solution named Grainport which will act as a system which increases the efficiency and the accuracy of the supply and Demand management related to Rice in Sri Lanka.

These problems and difficulties have continuously increased the demand for a system which will help to make sure that the supply and Demand management related to rice in Sri Lanka will be done in a more ordinary manner. Researcher has come up with a system with the use of latest trending technologies which will address these issues faced by the farmers and consumers. A system which acts as a decision support system for the government which predicts the quantity of rice to be imported to Sri Lanka each year based on the use of a Machine Learning Model. Also, the researcher has contributed to the research and development family by creating a dataset of his own by identifying a set of variables after interviewing industry related people and after thorough research on the domain. An additional interface for the farmers were also given in the system where the farmers themselves can enter or update details regarding their cultivations. System had been tested for functions and also with the expert's user testing which ensures the system covers all the necessary functions.

The main objective of the system is to make sure the supply and Demand Management related to Rice in Sri Lanka is carried out in a smoother hassle-free way without allowing any massive price fluctuations or any other trouble for the consumers or the users. It should be noted that the system is a proposed system for the government.

**Keywords** – Supply and Demand Management, Rice, Rice Import Quantity, Machine Learning, Sri Lanka, Agriculture, User Testing, Interviews, Dataset, Variables.