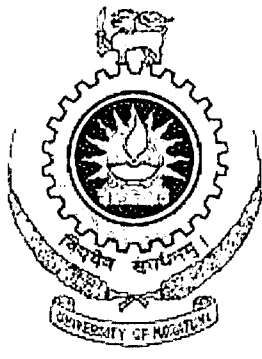


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# **Identify Improvement Opportunities in Desiccated Coconut Manufacturing Sector in Sri Lanka**



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**DEDICATION**

I dedicate this report to late Dr Wathugala as honor for his great contribution during his service at University of Moratuwa and specially for his professional guidance support and the influence as the course coordinator for MEng / PG Diploma in Manufacturing System engineering program intake IV group to make our Masters degree dream true.

Prasanna Bandara Dasanayaka

Ganegala Walawwa

Pitawala

Bopana

2009.12.30



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**DECLARATION**

I hereby declare this submission is my own work and that to the best of my knowledge and behalf, it contains no material previously published or written by another person nor materials, which to substantial extent, has been accepted for the award of any other academic qualification of a university of any other institute of higher learning except where acknowledgement is made in the text.

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.....  
Director  
National Cleaner Production Centre,  
Sri Lanka.

## **ABSTRACT**

Sri Lanka is now in a position to accelerate its economic growth in all sectors. Main agricultural products export sector plays a vital role in this scenario. Desiccated coconut is one of the most important economic products which can contribute considerably for the same. Even though the government is raising funds in deferent areas for improvement of coconut industry in Sri Lanka so far DC mill owners have not been able to over come their common manufacturing related issues since last decade.

The biggest problem at the moment desiccated coconut manufacturers face is its cost of production, depleting availability of raw coconut and lack of skill labour. This study mainly focuses to address those issues. But unfortunately unavailability of coconut will not be able to resolve over night. Since that how efficiently use the available resources is vital and discussed herewith.

Ultimate objective is to prepare a generic guideline to desiccated coconut manufacturing sector in Sri Lanka which highlighting present inefficiencies and improvement opportunities need to be carried out to overcome their manufacturing and energy utilization related issues to make their business profitable.

Using different tools and techniques in process improvement and waste reduction in manufacturing processes is vital in the world. "Cleaner production" is one of such tool can be applied in any area such as manufacturing, service providing etc mainly highlighting environmental concerns and waste elimination. Therefore "Cleaner Production" methodology has been used for evaluation of desiccated coconut manufacturing process and identifies the process inefficiencies.

For investigation of DC manufacturing process, Katana DC mill is selected as a modernized and medium scale DC plant which represents the majority of the desiccated mills in Sri Lanka. At the moment we have only 53 DC mills and 90% of those are in medium scale. Unless few machineries or equipment used, the production process and the technology available is identical in all DC mills in Sri Lanka. Cleaner production assessment tools and techniques have been used for execution of the investigation of DC production process.

This report finally covers the theoretical back ground of the cleaner production assessment methodology, practical application of it for investigation the manufacturing process, identify inefficient area and quantify the losses.

With the assessment we can understand the Katana DC plant operates with lot of inefficiencies in terms of raw material utilization and energy consumption which is common for all DC mills in Sri Lanka. Thus those issues are the opportunities for improvement. These opportunities can be categorize as short term solutions and long term implementation solution depending on the time and investment need to be done on the same. This report concluded general guideline for improvement opportunities of DC manufacturing and energy utilization.

Identifying those opportunities and implementation will definitely effect favorably on national economy because desiccated coconut industry is the major export oriented food processing industry in Sri Lanka.

Further selecting one of these specific improvement opportunity and doing a detail design is an important area which helps our motherland to take up to the next level and it is our responsibility as engineers.



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My special thanks goes to Mr.V.R. Sena Peiris (Director) Of the “National Cleaner Production Centre” and also I greatly indebted to Mr.Samantha Kumarasena (Deputy Director) Of the “National Cleaner Production Centre”, for their cooperation extended to me, by imparting his knowledge and guidance, without which –I would not have been able to complete this assignment.



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D.M.Prasanna Bandara Dasanayaka

01.01.2010

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## **NOMENCLATURE**

|        |   |
|--------|---|
| CDA:   | Coconut Development Authority                 |
| DC:    | Desiccated Coconut                            |
| FIFO:  | First In First Out                            |
| GDP:   | Gross Domestic Production                     |
| HACCP: | Hazardous Analysis and Critical Control Point |
| MEng:  | Master of Engineering                         |
| NA:    | Not Applicable                                |
| PG:    | Post Graduate                                 |
| UAE:   | United Arab Emirates                          |
| WITS:  | World Integrated Trade Solution               |