

# CHEMICAL LEASING AND NANOTECHNOLOGY FOR AGRICULTURE SECTOR

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Degree of Master of Science

Department of Chemical and Process Engineering

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## **ABSTRACT**

During recent years the service-oriented business approach of Chemical Leasing has been researched and implemented at various companies of different industry sectors around the globe. The novel business model promotes sustainable use of chemicals through linking the supplier's sales income to chemical performance. Experiences show that key elements of a successful application of chemical leasing are know-how exchange and process optimization. Excessive use of chemicals in the agriculture sector emphasizes the potential in application of chemical leasing in the country.

Nanotechnology is a major emerging technology, which can revolutionize the agriculture sector by employing special nanoscale properties of matter. It can be applied to agrochemicals and fertilizer in order to improve quality and safety, as well as reduce environmental and health effects.

Sri Lanka as a country based on an agricultural economy has the potential to use these new technologies for its socio- economical development. Global need of ecologically sustainable farming system, increasing global nano food market, growing demand for safe and healthy food, threat from changing weather conditions and increasing risk of diseases to plants highlight the opportunities.

The proposed model performs as a national frame work for management of agrochemicals in the country. The research “chemical leasing & nanotechnology in agriculture sector” introduces the use of Blue Ocean strategy to enter the sustainable farming system.



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Keywords: Chemical Leasing, Nanotechnology, Pesticide, Agriculture Sri Lanka

## **DEDICATION**

Dedicated with gratitude to my loving parents for being the greatest pliers of my life...



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## LIST OF ABBREVIATIONS

CKD	Chronic Kidney disease
CNT	Carbon nanotubes
ICTA	International Center for Technology Assessment
IKSPC	Intermediate Knowledge and Service Providing Center
ITI	Industrial Technology Institute
NCP	North Central Province
NCPC	National Cleaner Production Centre
POP	Persistent organic pollutants integrated pest management (IPM)
SLINTEC	Sri Lanka Institute of Nanotechnology
UNIDO	United Nations Industrial Development Organization
WHO	World Health Organization



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